

# RECLAMATION

*Managing Water in the West*

## Scoping Summary Report

**Development of Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead, Particularly Under Low Reservoir Conditions**



**Volume I**  
**Scoping Summary Report**  
**Appendices A - S**



U.S. Department of the Interior  
Bureau of Reclamation  
Upper and Lower Colorado Regions

March 2006

## **Mission Statements**

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.



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## **Scoping Summary Report Executive Summary March 2006**

The level of detail presented in this document is appropriate for a scoping report. The Bureau of Reclamation will analyze and refine the information presented in this report through the remaining steps of the National Environmental Policy Act process.

On May 2, 2005, in a letter to the to the seven governors of the Colorado River Basin States, the Secretary of the Department of the Interior (Secretary) directed the Bureau of Reclamation (Reclamation) to develop specific Colorado River Lower Basin shortage guidelines and coordinated reservoir management strategies to address operations of Lake Powell and Lake Mead under low reservoir conditions (see Appendix A). It was anticipated that, among other potential elements, these strategies would identify those circumstances under which the Secretary would reduce the annual amount of water available for consumptive use from Lake Mead to the Lower Division states (Arizona, California, and Nevada) below the 7.5 million acre-feet (maf) apportionment (a “Shortage”) pursuant to Article II(B)(3) of the Supreme Court Decree in *Arizona v. California*.

Reclamation issued a Federal Register (FR) notice on June 15, 2005 (70 FR 34794-34795), Appendix B, which solicited public input on the content, format, mechanism, and analyses to be considered during the development of proposed shortage guidelines and reservoir management strategies. A series of public meetings were held, and the level of public interest and comment was high. The outcome of this process was a decision by the Department of the Interior (Department) to begin a formal National Environmental Policy Act process and preparation of an Environmental Impact Statement (EIS).

On September 30, 2005, Reclamation published a Notice of Intent (NOI) (70 FR 57322-57323), Appendix C, to prepare an EIS and described the proposed Action as having two elements: 1) adoption of specific Lower Basin shortage guidelines, and 2) coordinated reservoir management strategies to address operations of Lakes Mead and Powell under low reservoir conditions.

The NOI also initiated a public scoping process to solicit input on the scope of specific shortage guidelines and coordinated reservoir management strategies and the issues and alternatives to be considered and analyzed in the preparation of the EIS. As part of this process, four public scoping meetings were held throughout the Colorado River Basin, and Reclamation received a number of written comments. Four sets of comments were also received following the closing of the comment period and are being considered in this Scoping Summary Report. These include comments received from the initial government-to-government consultations with Indian Tribal Governments, the Basin States’ Preliminary Proposal Regarding Colorado River Interim Operations, and two supplemental comment letters submitted by Environmental Defense and the Defenders of Wildlife.

Comments received during the scoping process identified a broad range of concerns regarding the availability and reliability of Colorado River water supplies. While many of the concerns were related to reservoir operations during drought and under low reservoir conditions, there were other comments that expressed a need to consider other water supply, water management, and operational strategies or programs that could improve the availability and reliability of Colorado River water supplies. After thorough consideration of the issues and comments received to date, Reclamation anticipates that the elements of the proposed Action will include:

- 1) Adoption of guidelines that will identify those circumstances under which the Secretary would reduce the annual amount of water available for consumptive use from Lake Mead to the Lower Division states (Arizona, California, and Nevada) below 7.5 maf (a “Shortage”) pursuant to Article II(B)(3) of the Supreme Court Decree in *Arizona v. California*.
- 2) Adoption of guidelines for the coordinated operation of Lake Powell and Lake Mead that are designed to provide improved operation of the two reservoirs, particularly under low reservoir conditions.
- 3) Adoption of guidelines for the storage and delivery of water in Lake Mead to increase the flexibility to meet water use needs from Lake Mead, particularly under low reservoir conditions. These guidelines are anticipated to address the storage and delivery of non-system water, exchanges, and water conserved by extraordinary measures.
- 4) Modification of the substance and term of the existing Interim Surplus Guidelines, published in the FR on January 25, 2001 (66 FR 7772-7782), from 2016 to coincide with the proposed new guidelines described above.

The Secretary proposes that these guidelines will be interim in nature and will extend through 2025. Adoption of new guidelines along with modification of existing operational guidelines for a consistent interim period will provide the opportunity to gain valuable experience for operating the reservoirs under the modified operations and should improve the basis for making additional future operations decisions, whether during the interim period or thereafter.

Reclamation will consider the information and comments received during the scoping process in the development of the alternatives to be considered and evaluated in the EIS. Reclamation will develop this broad range of alternatives and coordinate these activities with the Cooperating Agencies (listed below), the Basin States, Indian Tribes, key stakeholders, and other interested parties. Reclamation’s goal is to develop a sufficient number of alternatives that will permit the evaluation of the full range of operational elements being considered under the proposed Action. This will enable Reclamation to identify the water supply management and operational strategies that provide the greatest benefit and that best meet the purpose and need of the proposed Action.

Five federal agencies are participating in this EIS process as Cooperating Agencies, which include the Bureau of Indian Affairs, the National Park Service, the U.S. Fish and Wildlife Service, the Western Area Power Administration, and the U.S. Section of the

International Boundary and Water Commission. The Cooperating Agencies are expected to assist in the development and evaluation of alternatives and in the preparation of the EIS. Reclamation will consult with and obtain the comments of these agencies due to their jurisdiction by law or special expertise with respect to any environmental impact that may result from the proposed Action.



# **Section 1.0 Introduction and Background**

## **1.1 Description of the Proposed Action**

The Bureau of Reclamation (Reclamation) acting on behalf of the Secretary of the Department of the Interior (Secretary) proposes to take action to adopt specific Colorado River Lower Basin shortage guidelines and coordinated reservoir management strategies to address operations of Lake Powell and Lake Mead, particularly under low reservoir conditions. This proposed Action will provide a greater degree of certainty to all water users and managers in the Colorado River Basin by providing more detailed guidelines for the operation of Lake Powell and Lake Mead and by allowing water users in the Lower Basin to know when, and by how much, water deliveries will be reduced during drought and low reservoir conditions. In addition, this proposed Action is designed to delay the onset and magnitude of shortages and will maximize the protection afforded to water supply, hydropower production, recreation and environmental benefits by water storage in Lakes Powell and Mead.

Reclamation has determined that the proposed adoption of specific Colorado River Lower Basin shortage guidelines and coordinated reservoir management strategies is a major federal action with the potential to significantly affect the quality of the human environment, and therefore, in compliance with the National Environmental Policy Act (NEPA) of 1969, as amended, is preparing an Environmental Impact Statement (EIS) to assess the potential environmental impacts associated with the proposed Action. One of the activities associated with preparation of an EIS is the solicitation and review of public, tribal, and agency input as a component of the identification and analysis of alternatives and potential environmental impacts. This process of determining the key environmental issues to be addressed in the EIS document is termed “scoping.”

## **1.2 Purpose of This Report**

This Scoping Summary Report provides a summary of the comments received and the issues raised during the scoping process and describes the current assessment of the proposed scope of the environmental analysis to be included in the EIS. The Department is publishing this Scoping Summary Report as a voluntary effort to assist in public understanding of this important document.

The level of detail presented in this document is appropriate for a scoping report. Reclamation will analyze and refine the information presented in this report through the remaining steps of the NEPA process.

## 1.3 Background

The Secretary is vested with the responsibility of managing the mainstream waters of the lower Colorado River pursuant to applicable federal law. This responsibility is carried out consistent with the Law of the River.<sup>1</sup> The Colorado River Basin Project Act of 1968 (CRBPA) directed the Secretary to adopt criteria for coordinated long-range operation of reservoirs on the Colorado River in order to comply with and carry out the provisions of the Colorado River Compact of 1922 (Compact), the Colorado River Storage Project Act of 1956 (CRSP), the Boulder Canyon Project Act of 1928 and the United States-Mexico Water Treaty of 1944. These criteria are commonly collectively referred to as the Long Range Operating Criteria (LROC). The Secretary sponsors a formal review of the LROC every five years.

The Secretary establishes an Annual Operating Plan (AOP) each year for the Colorado River reservoirs. The AOP describes how Reclamation will manage the reservoirs over a 12-month period, consistent with the LROC, applicable Federal laws, the United States-Mexico Water Treaty of 1944, interstate compacts, the 1964 Supreme Court Decree in *Arizona v. California* (Decree), and other documents relating to the use of the waters of the Colorado River. Further, as part of the AOP process, the Secretary makes annual determinations on the extent to which the reasonable beneficial use requirements of mainstream users in Arizona, California and Nevada (the Lower Division states) can be met. Reclamation consults annually with the Colorado River Basin States, Indian Tribes, and other interested parties in the development of the AOP.

In 2001, the Department of the Interior (Department) adopted Interim Surplus Guidelines (66 FR 7772-7782) that are used by the Secretary in making annual determinations regarding Normal and Surplus conditions for the operation of Lake Mead. Since adoption, these Guidelines have, among other operational and management benefits, provided the Department and entities in Arizona, California, and Nevada that rely on the Colorado River greater predictability in identifying when Colorado River water in excess of 7.5 million acre-feet (maf) will be available for use within these three states. A Normal year is a year in which annual pumping and release from Lake Mead will be sufficient to satisfy 7.5 maf of consumptive use in accordance with the Decree. A Surplus year is a year in which water is available for pumping or release from Lake Mead to satisfy greater than 7.5 maf of consumptive use, pursuant to Article II(B)(2) of the Decree after consideration of relevant factors, including the factors listed in the LROC. Surplus water is available to agencies that have contracted with the Secretary for delivery of Surplus water, for use when their water need exceeds their basic entitlement, and when the excess need cannot be met within the basic apportionment of their state subject to availability.

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<sup>1</sup> The treaties, compacts, decrees, statutes, regulations, contracts and other legal documents and agreements applicable to the allocation, appropriation, development, exportation and management of the waters of the Colorado River Basin are often referred to as the “Law of the River.” There is no single, universally-agreed upon definition of the “Law of the River,” but it is useful as a shorthand reference to describe this longstanding and complex body of legal agreements governing the Colorado River.

At this time, the Department does not have detailed guidelines in place that define the circumstances under which the Secretary would reduce the annual amount of water available for consumptive use from Lake Mead to the three Lower Division states below 7.5 maf pursuant to Article II(B)(3) of the Decree. Nor are there guidelines in place to enable the Secretary to manage the competing interests of Lake Powell and Lake Mead under low reservoir conditions. As a consequence of this, water users who rely on the Colorado River in these states are not currently able to identify particular reservoir conditions under which the Secretary would reduce the annual amount of water available for consumptive use from Lake Mead to the Lower Division states below 7.5 maf. Nor are these water users able to identify the frequency or magnitude of any potential future annual reductions in their water deliveries.

The adoption of specific Colorado River Lower Basin shortage guidelines and coordinated reservoir management strategies to address operations of Lake Powell and Lake Mead, particularly under low reservoir conditions, will enable the water users that rely on the Colorado River to better plan for periods of less than Normal water deliveries. Additionally, these management strategies are also expected to facilitate conservation of reservoir storage, thereby minimizing the adverse effects of long-term drought or low-reservoir conditions in the Colorado River Basin.

## **1.4 Lead and Cooperating Agencies**

Reclamation is the Lead Agency in preparing the proposed EIS. Five Cooperating Agencies are also participating in this EIS process which include the Bureau of Indian Affairs, the National Park Service, the U.S. Fish and Wildlife Service, the Western Area Power Administration, and the U.S. Section of the International Boundary and Water Commission. Reclamation will consult with and obtain the comments of these agencies due to their jurisdiction by law or special expertise with respect to any environmental impact that may result from the proposed Action.

## **1.5 Public Involvement and the Scoping Process**

Scoping is the phase in the NEPA process whereby the initial range of issues to be analyzed in the EIS is determined. This phase occurs as early in the process as possible and is an open process intended to obtain the views of the public, agencies, tribes and other interested parties regarding the scope of the study.

For this project, Reclamation held two series of public meetings to obtain input from the public regarding the scope of the study. The initial series of public meetings was held in July 2005 (see Federal Register (FR) notice of June 15, 2005, Appendix B). The purpose of this first series of meetings was to solicit input from the public regarding the content, format, mechanism, and analysis to be considered during the development of the proposed shortage guidelines and reservoir management strategies. The outcome of this initial public input process was a decision by the Department to begin a formal NEPA process and preparation of an EIS. The second series of public meetings was held in November 2005 (see FR notice of September 30, 2005, Appendix C). The purpose of

this second series of meetings was to solicit comments from the public on the scope of specific shortage guidelines and other coordinated reservoir management strategies and the issues and alternatives that should be considered and analyzed in the EIS. A discussion of the Public Scoping Meetings is provided in Section 2.0.

## 1.6 Organization of This Report

This report includes an introduction and background discussion (Section 1), an overview of the public participation and scoping process (Section 2), an overview of the method used to catalog, review and evaluate the comments received (Section 3), a summary of the number and nature of comments received (Section 4), a listing and discussion of the issues that were raised by certain comments that were determined to be beyond the proposed scope of the environmental assessment required for the proposed Action (Section 5), and a section that describes the proposed scope of the EIS (Section 6).

As noted in Section 1.5, Reclamation conducted two series of public meetings for this project. The results of and public input received in the initial series of meetings are summarized in a memorandum dated September 7, 2005, a copy of which is provided in Appendix D.

Further, the comments and issues raised in the initial series of public meetings are considered, evaluated, and analyzed jointly with the comments received in the second series of meetings. The results of the preliminary evaluation of all of the comments received are discussed in Section 4. Reclamation will consider the input received to date as it prepares this EIS.

This report also provides the following supporting information, included as appendices to this report:

- A. The Secretary's Letter to the Seven Colorado River Basin States on May 2, 2005
- B. June 15, 2005, Federal Register Notice
- C. September 30, 2005, Federal Register Notice
- D. Memorandum – Summary of Preliminary Public Input for the Development of Management Strategies for Lake Powell and Lake Mead, Including Lower Basin Shortage Guidelines, Under Low Reservoir Conditions, September, 2005
- E. Public Involvement Plan
- F. Notices of Public Meetings – News Releases
- G. November 1, 2005, Salt Lake City, Utah Public Meeting Documents
- H. November 2, 2005, Denver, Colorado Public Meeting Documents
- I. November 3, 2005, Phoenix, Arizona Public Meeting Documents
- J. November 8, 2005, Henderson, Nevada Public Meeting Documents
- K. Public Meeting Presentation
- L. Methodology for Categorizing/Cataloging Public Comments
- M. January 19, 2006, Las Vegas, Nevada Tribal Consultation Meeting Documents
- N. January 27, 2006, Phoenix, Nevada Tribal Consultation Meeting Documents
- O. February 16, 2006, Phoenix, Arizona Tribal Consultation Meeting Transcripts

- P. Tribal Consultation Meeting Presentation
- Q. February 3, 2006, Proposal from Colorado River Basin States
- R. February 1, 2006, Environmental Defense Letter
- S. February 21, 2006, Defenders of Wildlife Letter
- T. List of Commentors Sorted by Commentor Type
- U. Summary of Comments – Comment Database
- V. Summary of Issues Raised in Comments – Grouped by Resource/Issue Area
- W. Copies of Unique Comments
- X. Preliminary EIS Table of Contents
- Y. News Articles

## **2.0 Public Participation Process**

Reclamation is committed to providing opportunities for the public, stakeholders and other interested parties to engage in meaningful participation through the EIS process. To achieve this goal, a Public Involvement Plan was developed and will be used and updated throughout this process (see Appendix E). The objectives of this Public Involvement Plan are to meet the public participation requirements set forth in NEPA for an EIS, identify interested parties or stakeholders, and secure public input that will provide information and facilitate the decisions needed to define, formulate, analyze, compare, and recommend for adoption specific Colorado River Lower Basin shortage guidelines and coordinated reservoir management strategies to address operations of Lake Powell and Lake Mead, particularly under low reservoir conditions. Further, by enlisting an outreach approach that is truly inclusive, a wide variety of citizens, tribal governments, and state and local agencies are engaged in this process and are expected to provide valuable input on the proposed Action and all alternatives to be considered and analyzed.

### **2.1 Public Notification**

The public scoping process for the proposed Project was designed to solicit input from the public; from federal, state, and local agencies; and from other interested parties concerning the scope of specific shortage guidelines and other coordinated management strategies and the issues and alternatives that should be considered and analyzed in the preparation of the EIS. It should be noted that before issuing a Notice of Intent (NOI) in September 2005 (see Appendix C), Reclamation held a series of meetings pursuant to the FR notice published on June 15, 2005 (see Appendix B). As part of this process, Reclamation also held two public meetings that were used to exchange information regarding the project and that provided the public an opportunity to present their comments. These public meetings were attended by individuals and groups interested in the management of the Colorado River water supplies, the operation of the facilities that are used in the management of these supplies, and other aspects of the proposed Action.

Reclamation published in the FR on September 30, 2006 (70 FR 34794-34795), Appendix C, a notice to solicit comments from the public and Reclamation's intent to hold four meetings to receive additional oral or written comments from the public relative to the proposed Action.

Reclamation also issued news releases on September 30, 2005, and on October 28, 2005, that were published in various upper and lower Colorado River Basin community newspapers. These two news releases also provided notice of Reclamation's intention to hold four meetings to receive additional oral or written comments from the public relative



to the proposed Action and EIS. Copies of these two news releases are provided in Appendix F.

Reclamation also published the above notices on its website at the following address:

<http://www.usbr.gov/lc/region/programs/strategies.html>

Reclamation will use this website to distribute and make available pertinent documents and other related information to the public.

## 2.2 Public Meetings

Reclamation conducted two sets of public meetings to solicit input from the public. The first set of public meetings were conducted at the times and locations noted in Table 2-1. The second set of meetings consisted of four Public Scoping Meetings and were conducted at the times and locations noted in Table 2-2. The public meetings and public comment process resulted in moderate participation by a cross section of interested stakeholders, including local business communities and special interest and environmental groups, as well as federal, state, and local agencies. According to the sign-in sheets from the six public meetings, a total of 134 individuals attended the meetings. Copies of the sign-in sheets from the two July 2005 public meetings are provided in Appendix D. Copies of the sign-in sheets from the four November 2005 Public Scoping Meetings are provided in Appendices G, H, I and J.

**Table 2-1  
July 2005, Public Meeting Attendance**

Meeting Date/Time	Location	Number of Attendees
Tuesday July 26, 2005 10 a.m. to 12 noon	Henderson Convention Center, Grand Ballroom, 200 South Water Street, Henderson, Nevada.	46
Thursday July 28, 2005 10 a.m. to 12 noon	Hilton Salt Lake City Center, Topaz Room, 255 South West Temple, Salt Lake City, Utah	33

**Table 2-2  
November 2005, Public Scoping Meeting Attendance**

Meeting Date/Time	Location	Number of Attendees
Tuesday November 1, 2005 6 p.m. to 8 p.m.	Hilton Salt Lake City Center, Topaz Room, 255 South West Temple, Salt Lake City, Utah	7
Wednesday November 2, 2005 6 p.m. to 8 p.m.	Adam's Mark Hotel, Tower Court D, 1550 Court Place, Denver, Colorado	18
Thursday November 3, 2005 6 p.m. to 8 p.m.	Arizona Department of Water Resources, 3 <sup>rd</sup> Floor, Conference Rooms A&B, 500 North Third Street, Phoenix, Arizona	23
Tuesday November 8, 2005 6 p.m. to 8 p.m.	Henderson Convention Center, Grand Ballroom, 200 South Water Street, Henderson, Nevada	7

Reclamation staff provided a presentation to the attendees at each of the four meetings with the following outline:

- ◆ Welcome and Introductions
- ◆ Purpose of Meeting
- ◆ Background on proposed study
- ◆ Objectives of the study
- ◆ Process Schedule
- ◆ Information on Issues/Processes

A copy of the presentation is provided in Appendix K. The presentation was followed by a question and answer period.

The meeting attendees were invited to also submit their comments and suggestions in writing to one of the following addresses:

<b>Lower Colorado Region</b>	<b>Upper Colorado Region</b>
Regional Director Bureau of Reclamation Lower Colorado Region Attention: BCOO-1000 P.O. Box 61470 Boulder City, Nevada 89006-1470 Faxogram: (702) 293-8156 Email: strategies@lc.usbr.gov	Regional Director Bureau of Reclamation Upper Colorado Region Attention: UC-402 125 South State Street Salt Lake City, Utah 84318-1147 Faxogram: (801) 524-3858 Email: strategies@uc.usbr.gov

During the course of the public meetings, members of the public were invited to provide oral comments. These oral comments were recorded by a Court Reporter that was retained by Reclamation and that was present at each of the four meetings. The Court Reporter used computerized stenotype machines and Computer Aided Transcription to create a record of the oral comments. These transcripts reflect the verbatim comments provided by the commentors in the different Public Scoping Meetings. A copy of the transcripts from each of the four November 2005 meetings is presented in Appendices G, H, I, and J, respectively.

### **2.3 Comment Period**

Reclamation provided a 62-day comment period consistent with the Public Notice issued on September 30, 2005.

## **2.4 Newspaper and Other Printed Media**

Local and regional newspapers and other media sources have printed articles in the past two to three years presenting information to the public on the Colorado River Basin drought and water supply conditions as well as the recent proposed Action. Appendix Y presents 15 newspaper articles from different newspapers published throughout the Colorado River Basin that provide a representational range of information presented by the news media.

## **3.0 Comment Review and Analysis**

This section describes the processes used to receive, catalog, and evaluate the context of the public comments. All written comments received were processed consistent with the following set of protocols to ensure consistency and accuracy of handling and disposition.

### **3.1 Comment Receipt and Cataloging**

Comments were received by Reclamation's Upper and Lower Basin Regional Offices, and screened to identify duplicate copies of letters received from the same commentor.<sup>2</sup> Following this initial screening, the comment letters were assigned a code and source identification and entered into a database.

Appendix L provides a description of the methodology used to categorize the comment letters and comments received. Appendix U provides a listing of the commentors who submitted comment letters. This list of commentors is sorted by commentor type and is listed according to the source identification assigned to the different commentor groups.

Also, as previously noted, two sets of comments correlating to the two separate public input processes conducted by Reclamation were recorded. The first set of comments relate to public meetings held in July 2005 and hereinafter are collectively referred to as Group 1 Comments. The second set of comments relate to the public meetings held in November 2005 and are hereinafter collectively referred to as Group 2 Comments.

As previously noted in Subsection 1.6, the Group 1 and 2 Comments are considered, evaluated, and analyzed jointly within this report.

### **3.2 Data Entry of Individual Comments**

Following initial cataloging, each comment letter was evaluated and the specific comments provided therein were identified. When more than one issue was presented within any given comment letter, an additional numeric code was used to define the order in which the comments/issues were presented within the letter. For example, the second comment/issue raised within the third letter received from a local agency would be assigned the following code "L-0003.2."

Individual comment summaries were then entered into a sortable and searchable database to facilitate subsequent efficient summarization and retrieval of specific comments

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<sup>2</sup> The word "commentor" is a commonly used term in the NEPA process and EIS preparation process and generally refers to any person, agency, or other entity that provides written or oral comments or input relative to the content, process, scope, or analysis of the NEPA/EIS process.

related to specific issues. It should be noted that several hundred form letters (identical comment letters) were received. While each commentor and respective comments were considered, the identical form letters were grouped to minimize the number of database entries.

### 3.3 Data Analysis and Summarization

After being entered into the database, the comments were further sorted by the following resource and/or issue areas to assess and summarize the concerns related to the proposed study.

- Format/Mechanism
- Agriculture Resources
- Cultural Resources
- Groundwater
- Land Use / Planning
- Public Services
- Reservoir Management
- Transboundary Impacts
- Utilities / Service Systems
- Water Quality
- Water Use
- Alternatives
- Content
- Biological Resources
- Energy / Power Production
- Hydrology
- Population / Housing
- Recreation
- Socio-economics
- Transportation / Traffic
- Water Supply / Quantity
- Water Rights
- Miscellaneous

This approach facilitated a comprehensive identification of the range of issues that were raised in the comment letters with respect to the proposed Action. Results from this analysis are summarized in the following sections of this report.

## **4.0 Evaluation of Public Comments**

As previously noted, Reclamation issued several notices and held public meetings to encourage public input with respect to the proposed Action and EIS. In the initial series of meetings, Reclamation sought public input relative to the content, format, mechanism, and analysis to be considered during the development of the proposed guidelines and strategies.

Based on several factors, including the comments received during the initial series of meetings held pursuant to the FR notice published on June 15, 2005 (see Appendix B), Reclamation determined that it would utilize a public process pursuant to NEPA for the development of specific Colorado River Lower Basin shortage guidelines and coordinated reservoir management strategies to address operations of Lake Powell and Lake Mead, particularly under low reservoir conditions. It further determined that it would be beneficial to conduct additional public scoping meetings to solicit further public input with regard to the scope of the studies and analyses to be undertaken, as well as the issues and alternatives to be considered in the EIS. Therefore, Reclamation issued additional notices regarding its intent to prepare an EIS and notice to solicit comments and hold public scoping meetings (see Appendix C, FR notice published on September 30, 2005). The comments from the two public input processes conducted thus far (Group 1 and Group 2 comments) have been merged and analyzed to assess the entire range of issues identified in the comment letters.

The following summary provides a general overview of the number of comments by issue. Some comments concerned more than one subject; therefore, some comments have been included in more than one quantitative issue summary although they were counted only once for the total comments category in Subsection 4.1.

Each individual commentor submitted one or more scoping comment letters, each containing one or more individual comments that were categorized by subject. The most frequently raised issues for a given resource area are summarized below. No ranking of importance is implied within the presentation order of these most frequently raised issues.

### **4.1 Overview and Number of Commentors and Comments**

A total of 1,153 written comment letters were received and these letters contained some 5,340 comments. Some 924 (approximately 80 percent) of the 1,153 letters received consisted of form letters. The form letters represent comment letters that were essentially identical in form and content. There were two different form letters. The first form letter was repeated 15 times and the second form letter was repeated 909 times. As a consequence of the large number of form letters, only 231 of the 1,153 comment letters received were considered unique. Also, of the 5,340 comments received, only some 278 comments were considered unique because many of the comments in the different letters



are repeated or raise the same issue. Appendix W presents copies of the 231 unique written comment letters.

Table 4-1 provides a summary of the number of comment letters and comments by commentor type. The commentor types represent the different interest groups that submitted comment letters and include businesses; federal, state and local agencies; special interest groups; and individuals.

**Table 4-1  
Breakdown of Comment Letters and Comments Received by Commentor Type**

Comment / Factor	Commentor Type							Total
	Meeting Series	Business	Federal Agency	Special Interest / Environmental Group	Individual	Local Agency / Water District	State Agency	
Total Number of Written Comment Letters Received	Group 1	3	5	14	1,054	8	4	<b>1,088</b>
	Group 2	2	1	13	27	17	5	<b>65</b>
	<b>Total</b>	<b>5</b>	<b>6</b>	<b>27</b>	<b>1,081</b>	<b>25</b>	<b>9</b>	<b>1,153</b>
Total Number of Comments Provided Within Comment Letters	Group 1	5	32	72	4,897	27	32	<b>5,065</b>
	Group 2	7	23	45	56	110	34	<b>275</b>
	<b>Total</b>	<b>12</b>	<b>55</b>	<b>117</b>	<b>4,953</b>	<b>137</b>	<b>66</b>	<b>5,340</b>
Number of Unique Comment Letters Received	Group 1	3	5	14	132	8	4	<b>166</b>
	Group 2	2	1	13	27	17	5	<b>65</b>
	<b>Total</b>	<b>5</b>	<b>6</b>	<b>27</b>	<b>159</b>	<b>25</b>	<b>9</b>	<b>231</b>
Number of Unique Comments <sup>1</sup>	Group 1	4	32	37	38	19	25	<b>154</b>
	Group 2	7	19	21	17	52	33	<b>149</b>
	<b>Total</b>	<b>9</b>	<b>50</b>	<b>58</b>	<b>50</b>	<b>69</b>	<b>54</b>	<b>278</b>

**Notes:**

1. The total number of unique comments is not equal to the numeric sum of the unique comment in Group 1 and 2 because some of the comments are repeated between the two groups.

## 4.2 General Assessment of Issues Raised in Comments

As noted in Table 4-1, Reclamation received comment letters from a wide range of interest groups that included businesses; federal, state and local agencies; special interest groups; and individuals. These letters included some 5,340 comments. To facilitate the assessment of comments, those comments with common themes or that raised similar issues or questions were organized and combined. As a result, only some 278 unique comments were identified.

In terms of comment content, some comments raised several issues and concerned more than one subject. For example, several comments requested “*consideration and evaluation of the transfer of Lake Powell and Lake Mead storage to groundwater aquifers.*” Such an action would likely result in less water being stored in one or both reservoirs and the development and employment of numerous groundwater basins in order to achieve an equivalent amount of storage capacity. This alternative reservoir operation and water management scenario would, at a minimum, need to consider and include analysis of resource factors or issues such as groundwater, hydrology, recreation, reservoir management, water supply/quantity, and water rights. Therefore, the comment

- “consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers,” involves at least six different subject matters that may need to be considered and analyzed in the proposed study. Other comments similarly raised several issues and concerned more than one subject.

Consistent with the above, the issues raised in the different comments have been organized in the categories noted in Section 3.3. The number of issues raised in each comment category is summarized in Table 4-2.

**Table 4-2**  
**Summary of Number of Comments Raised in Each Issue Category**

<b>Commenter Type</b>	<b>Group 1</b>	<b>Group 2</b>	<b>Total</b>
Format / Mechanism	1,941	55	1,996
Content	4,036	177	4,184
Agriculture Resources	18	32	50
Biological Resources	1,039	36	1,075
Cultural Resources	23	4	27
Energy / Power Production	10	32	42
Groundwater	958	12	970
Hydrology	3,032	142	3,174
Land Use / Planning	11	38	49
Mitigation/Monitoring	1	8	9
Population / Housing	11	9	20
Public Services	18	36	54
Recreation	1,035	25	1,060
Reservoir Management	3,047	117	3,164
Socio-economics	3,042	161	3,203
Transboundary Impacts	16	62	78
Transportation / Traffic	10	1	11
Water Supply / Quantity	3,057	161	3,218
Water Quality	964	38	1,002
Water Rights	2,970	108	3,078
Alternatives	1	16	17
Miscellaneous	21	13	34

#### **4.2.1 Format/Mechanism**

Reclamation solicited comments and suggestions from the public on the Format and Mechanism of the proposed strategies to address the coordinated operations of Lake Powell and Lake Mead and also possible shortage guidelines. The Format is intended to address the body of rules that would encapsulate the criteria. Mechanism relates to the process method that the guidelines or shortage criteria would be incorporated into the body of laws, treaties, compacts, agreements, and rules that govern the operations and management of the Colorado River which are commonly referred to as the Law of the River.

A large number of comment letters suggested that the preferred method for development and evaluation of the proposed shortage guidelines and reservoir management strategies is through an EIS. The comments noted that all reasonable alternatives need to be

considered, analyzed and included in the EIS to provide a proper advisory document. A need for the type of public process provided through a NEPA process was expressed in many comments. It is generally believed that this type of process will provide the many interested parties an opportunity to review and comment on the alternatives and analyses that will be considered in the EIS. The entities that requested to be consulted in this process included federal agencies, the Basin States, Indian Tribes, Non-governmental Organizations (NGOs), municipalities, electrical utilities and associations, and other interested parties.

Several comments suggested that water supply problems could be resolved by updating the Colorado River Compact of 1922 (Compact). The underlying theme of these comments was that the Colorado River is oversubscribed and that the allocations provided by the Compact need to be revised to reflect the river's supply limitations and changing societal demands. In contrast, other comments noted that the guidelines and strategies developed through this process will need to be consistent with the Law of the River, which means that the Compact should not be re-opened.

The number of comments that suggested that the guidelines be interim versus those that suggested that the guidelines be permanent were approximately even. Several of the comments that preferred interim guidelines indicated that the interim period, along with flexible guidelines, are needed to permit adjustment to the guidelines as experience is gained and conditions change.

Many comments suggested that a basin-wide approach was needed for development of solutions to the water supply challenges presented by the drought conditions. The comments also suggested that the potential impacts to both the Upper and Lower Basin users needed to be evaluated in the EIS and that both direct and indirect impacts need to be considered.

Several comments recommended the adoption of the proposed guidelines be in the form of guidelines as opposed to formal federal regulations and that this type of criterion could best be adopted through incorporation into the LROC and AOP processes.

The complete list of comments that relate to Format/Mechanism aspects of the proposed Action is presented in Appendix V, Table V-3.

#### **4.2.2 Content**

Reclamation solicited comments and suggestions from the public on alternatives or the content of possible alternatives that may be considered. Content relates to the provisions or rules to be included in a specific alternative. These provisions or rules would be used to enact an action or series of actions needed to render the desired result(s). For example, in the case of the previously adopted Interim Surplus Guidelines, the annual declaration of Surplus conditions and Surplus releases are predicated on a trigger system that is tied to certain Lake Mead water levels and projected inflow conditions. As such, the principal contents or rules of the Interim Surplus Conditions consist of the Lake Mead water level triggers and projected inflows.

Over 4,100 comments were received that referenced elements that could be included in an alternative. Many of these comments were either identical, or raised the same issue, or repeated the same theme and therefore, there are only some 158 unique comments.

In terms of actual alternatives that were offered, there were only three proposals submitted. These are discussed in Section 4.4.

Some of the general elements that the comment letters suggest be included in the alternatives include the following:

- The decommissioning of Glen Canyon Dam (and associated draining of Lake Powell),
- A sustainable sediment management program for Lake Powell and Lake Mead,
- The transfer of Lake Powell and Lake Mead storage to groundwater aquifers,
- Updating the Compact to reflect the Colorado River's supply limitations and changing societal demands,
- The restoration of natural flows through Glen and Grand Canyons,
- Protection of cultural resources in Glen Canyon,
- More aggressive water conservation now to minimize drought impacts in future years,
- Guidelines that provide priority to water supply over hydrogeneration,
- Guidelines that require Mexico and Nevada to share in shortages with Arizona,
- Aggressive tamarisk eradication efforts to conserve water,
- Assumption that Yuma Desalting Plant will be operated at full capacity in future years,
- Stricter management of new housing development as a means to manage water needs,
- Use of ocean desalination water to make up shortages,
- Alternative pricing schedules for agricultural water that do not include subsidies and encourage conservation, and
- Alternative that includes interstate water leasing and inter/intra-basin water transfers and exchanges.

In addition, there were some comments that were more specific in terms of what they wanted the guidelines to specify. For example, several comment letters recommended limiting the maximum Lake Mead delivery reduction (Shortage) to 600 thousand acre-feet per year (kaf/year). Another example is a recommendation that the Shortage determination be based on the protection of the minimum power pool water surface elevations at lakes Powell and Mead. And yet another example is the recommendation to provide a requirement for a minimum 8.23 maf/year objective release from Lake Powell.

The complete list of comments that relate to the content of the possible alternatives is presented in Appendix V, Table V-2.

### 4.2.3 Agricultural Resources

A total of 50 comments (18 from Group 1 and 32 from Group 2) were received relating to agricultural issues. However, only some 26 of these comments are considered to be unique comments.

Encouraging water conservation measures was a common theme as was recommending the evaluation of a long-term land fallowing program. Adjusting the pricing schedule for agricultural water by removing the subsidies currently provided was offered as a strategy to encourage more efficient water use. One comment letter suggested assessing agricultural water users a surcharge that could be used to fund infrastructure improvements geared towards conservation and enhanced efficiency (e.g. converting ditches to pipelines).

Many comments letters expressed a concern that agricultural and crop production would be severely impacted and asked that these impacts be considered and evaluated in the EIS. Similarly, several comment letters expressed concerns regarding the likelihood that the subject guidelines would trigger efforts to reallocate water between agriculture and municipal uses. The underlying concern of these types of comments was that these types of relocations would have the potential to significantly impact agriculture in the western states. In contrast, there were also numerous comments that recommended the temporary fallowing of agricultural lands as a means to manage the short-term effects of potential Colorado River water delivery reductions.

The complete list of comments that relate to agriculture is presented in Appendix V, Table V-4.

### 4.2.4 Biological Resources

A total of 1,075 comments (1,039 from Group 1 and 36 from Group 2) were received on the topic of biological resources. However, only some 35 of these comments are considered to be unique comments.

Approximately 95 percent of the comments that were received on the topic of biological resources concerned two issues: 1) decommissioning of Glen Canyon Dam, and 2) restoration of the natural flows through the Glen and Grand Canyons. These comments had little to no relevance on the proposed Action but rather were more focused on the desire to restore the natural biological systems and ecosystem of the river in order to provide improved habitat for native fish and bird species.

Other similar comments expressed concerns that some of the proposed Actions would reduce the instream flows and or significantly affect the water levels of the reservoirs the consequence of this being potential impacts to the habitat and species that depend on these systems. The types of projects that were cited as being a concern included; water transfers and exchanges, aggressive water conservation, operation of the Yuma Desalting Plant, tamarisk eradication efforts, amongst others. In some cases, the comments expressed that there may be positive effects that could result from the actions, such as more surface water becoming available through tamarisk eradication efforts. However, other comments pointed out potential negative effects, such as the potential adverse effects that a reduction in instream flows might have due to transfers and exchanges of water rights, changes in the points of diversion of some water, and a general reduction in

Lake Mead releases associated with a Shortage declaration. The additional suggestion provided by many of these comments was that there would be a need to evaluate the potential impacts to riparian vegetation, fish and wildlife habitats in the affected systems.

The complete list of comments that relate to biological resources is presented in Appendix V, Table V-5.

#### **4.2.5 Cultural Resources**

A total of 27 comments (23 from Group 1 and 4 from Group 2) were received on the topic of cultural resources. However, only three of these comments are considered to be unique comments.

The primary issue raised in the comment letters regarded the protection of cultural resources in Glen Canyon. In order to do this, several comment letters suggested discontinuing storage of water at Lake Powell. They point out that these cultural resources are at risk of damage due to the ongoing fluctuations of lake levels and that there is a need to consider the effects of this and other related programs on these cultural resources.

Assessing the impacts of any guidelines or strategies on Native American cultural resources was the third comment presented. Several Indian Tribes asked that Reclamation evaluate any and all effects that may result from water reductions to the Indian Tribes.

The complete list of comments that relate to cultural resources is presented in Appendix V, Table V-6.

#### **4.2.6 Energy/Power Production**

A total of 42 comments (10 from Group 1 and 32 from Group 2) were received on the topic of energy/power production. However, only 27 of these comments are considered to be unique comments.

Comments received on the topic of energy/power production ranged from giving greater consideration to power production in the proposed guidelines to giving little to no priority to power production in the management of Lake Powell and Lake Mead. Most of the comment letters received from entities that have a vested interest in the power that is generated from Glen Canyon Dam and Hoover Dam suggested that there should be some consideration given to either protection or maximization of power production within the new guidelines. On the contrary, other comment letters suggested that water supply (amongst other) management factors have a higher priority within the Law of the River and therefore, power production should not be a factor when determining annual water releases from Glen Canyon and Hoover dams, particularly under low reservoir conditions. However, even though there were differences in opinions, almost all comments asked for an evaluation of potential impacts to power production and power users.

There were also some commentors that advocated for replacing hydroelectric power generation with wind and solar power. The basis for their comments was that lost energy production capacity from Glen Canyon and Hoover dams could be offset by energy production from these alternative sources.



The complete list of comments that relate to energy and power is presented in Appendix V, Table V-7.

#### **4.2.7 Groundwater**

A total of 970 comments (958 from Group 1 and 12 from Group 2) were received on the topic of groundwater resources. However, only 13 of these comments are considered to be unique comments.

The role of groundwater basins and groundwater storage was the focal point of comments that were received on the topic of groundwater resources. The comments fell into three general categories as follows:

1. Those that suggest that Lake Powell, and perhaps Lake Mead, may no longer be needed if all of the water was stored in groundwater basins;
2. Those that suggest that the water supplies of the Colorado River Basin could be more effectively managed and conserved through increased conjunctive use of surface, groundwater, and other sources of supply; and
3. Those that express a concern of potential impacts to groundwater supplies as users transition to or place a greater burden on groundwater supplies during Shortages or under future increased water demand conditions.

Some comment letters cite that one of the benefits of water storage in groundwater aquifers is the water conserved by minimizing the evaporation that would otherwise occur from water stored in Lake Powell and Lake Mead. Utilizing the aquifers as storage of Surplus water in times of excess precipitation or river flows was another comment received. Water could then be withdrawn as conditions necessitate.

The complete list of comments that relate to groundwater resources is presented in Appendix V, Table V-8.

#### **4.2.8 Hydrology**

A total of 3,174 comments (3,032 from Group 1 and 142 from Group 2) were received on the topic of hydrology. However, only some 113 of these comments are considered to be unique comments.

Comments received on the topic of hydrology primarily dealt with water deliveries, river flows, and storage, if the Glen Canyon Dam was decommissioned, if all or a portion of the surface storage was shifted to groundwater aquifers, or if the Compact was updated and amended. Many comment letters also noted the concern that hydrologic conditions could also be potentially affected by limiting releases from Lake Powell, reducing Lake Mead releases and deliveries to the Lower Division states, returning treated wastewater to the river in order to augment supplies, implementing water conservation methods, and other similar actions. A large group of comments also suggest that the water supplies of the Colorado River are oversubscribed. They further suggest that climate changes have reduced the Normal or average yield of the basin and therefore, a re-evaluation of the basin's Normal flow estimates and perhaps a re-allocation of the supplies may be needed. These are just a few examples of the potential conditions and issues that the comment letters suggest will need to be evaluated during the environmental review process.

The complete list of comments that relate to hydrology is presented in Appendix V, Table V-9.

#### **4.2.9 Land Use**

A total of 49 comments (11 from Group 1 and 38 from Group 2) were received on the topic of land use. However, only some 28 of these comments are considered to be unique comments.

Most of the comments that were received on the topic of land use related to potential water supply reductions and related impacts to urban and agricultural land use. Other similar concerns related to intra- and inter-state sale, lease, transfer, trade or exchange of water within the Basin and their impacts to urban and agricultural land use.

Some comment letters also expressed concern regarding how new housing developments would impact current water needs. A few of these comment letters suggest that future water shortages could be minimized by limiting new housing development within the Basin States.

A few comment letters suggested that water conservation and new land use designations can also be used to delay or minimize the effect of water shortages. For example, requiring artificial grass to be used instead of turf, limiting the construction of new golf courses, limiting population and housing growth in certain areas, were all mentioned as land use management methods that could be used to reduce water needs.

The complete list of comments that relate to land use is presented in Appendix V, Table V-10.

#### **4.2.10 Mitigation and Monitoring**

A total of nine comments (one from Group 1 and eight from Group 2) were received on the topic of mitigation and monitoring. These comments generally were concerned with the long-term effects of the potential actions and suggested that some level of monitoring would be needed to avoid potential adverse impacts. For example, the potential impacts to groundwater water quality resulting from increased off-stream storage and perhaps third party impacts associated with new land fallowing programs would need to be monitored to develop and implement some type of mitigation that would serve to avoid or minimize impacts.

One comment letter stated the need to develop monitoring and accounting systems to evaluate impacts of shortages. Another similar comment requested an evaluation of the consistency and potential impacts of the proposed Action with those of other established programs (i.e. LCRMSCP, Adaptive Management Program, etc.).

The complete list of comments that relate to mitigation and monitoring is presented in Appendix V, Table V-11.

#### **4.2.11 Population and Housing**

A total of 20 comments (11 from Group 1 and 9 from Group 2) were received on the topic of population. However, only some 14 of these comments are considered to be unique comments.

The majority of comments received on this topic suggested managing or limiting population growth and new housing development in certain areas as a means for managing water needs in the Colorado River Basin. The related concern is that expected population growth in the basin will place a higher burden on already limited water supplies and that further population increases may result in more frequent and severe water supply shortages.

One comment letter suggested a potential flaw in the water supply planning process in areas like Arizona where there is a requirement to demonstrate a 100-year assured water supply as a condition of land development approvals. Specifically, the comment letter notes that in many cases these assured water supplies are based on water deliveries from the Colorado River. If these deliveries are subject to Shortage reductions, then the assured water supplies are not entirely reliable. The comment letter suggests that the jurisdictional agencies need to reconsider the approval of new land developments based on the limited reliability of Colorado River water supplies. On a related subject, one comment letter suggests that new development be limited to that which the local supplies can sustain and that more local supplies need to be developed in order to reduce reliance on Colorado River water supplies.

The complete list of comments that relate to population or housing is presented in Appendix V, Table V-12.

#### **4.2.12 Public Services**

A total of 54 comments (18 from Group 1 and 36 from Group 2) were received on the topic of public service/utilities. However, only some 36 of these comments are considered to be unique comments.

There were two general public service related groups of comments that were received on this topic area, water and electricity service. Water service related comments were expressed from numerous municipalities (cities) and tribal communities. Specifically, they are concerned how a potential reduction in Colorado River water deliveries to them may affect their ability to provide and maintain water service to their customers. Similarly, electric service related comments were expressed by many municipalities (cities), tribal communities, and electric management entities. They expressed concerns regarding the potential loss of power generating capacity at Hoover and Glen Canyon Dam and the effect on their ability to provide and maintain electric service to their customers.

The complete list of comments that relate to public services is presented in Appendix V, Table V-13.

#### **4.2.13 Recreation**

A total of 1,060 comments (1,035 from Group 1 and 25 from Group 2) were received on the topic of recreation. However, only some 19 of these comments are considered to be unique comments.

The majority of comments received on the topic of recreation related to the effects of the proposed Action on recreation or recreation related businesses within the mainstem reservoirs and different river reaches. For example, the proponents of the alternatives

that consider the decommissioning of Glen Canyon Dam, restoring natural flows through the Glen and Grand Canyons, or transferring Lake Powell and Lake Mead storage to groundwater aquifers suggest that such actions will have a positive effect on recreation as recreationists will have a greater appreciation of a natural Colorado River system as opposed to the current system of dams and reservoirs.

Other comment letters suggest that the new guidelines include provisions that would help to maximize the water surface levels of Lake Mead and Lake Powell. The concern is that low water surface elevations severely threaten recreational activities at both reservoirs as well as throughout the different park units along the river. This may impact the communities that currently rely on recreation, the marinas and businesses, and concessionaires at the affected parks/recreation facilities. Generally, it was suggested that the EIS consider any potential impacts to all facets of recreation on Lake Mead and Lake Powell as well as to the different park units along the river.

The complete list of comments that relate recreation is presented in Appendix V, Table V-14.

#### **4.2.14 Reservoir Management**

A total of 3,164 comments (3,047 from Group 1 and 117 from Group 2) were received on the topic of reservoir management. However, only some 99 of these comments are considered to be unique comments.

Approximately 94 percent of the comments received on the topic of reservoir management included suggestions for the decommissioning of Glen Canyon Dam, transferring all or a portion of the Lake Powell and Lake Mead storage to groundwater basins, and development of a sustainable sediment management program for Lake Powell and Lake Mead. Other common themes presented in the comments included the restoration of the natural flows of the river within Glen and Grand Canyons to restore the riparian habitat and protect the cultural resources; maximizing lake levels to protect power production, managing the reservoir water levels to protect marinas, managing the Lake Mead water levels to protect Southern Nevada Water Agency's (SNWA) drinking water supply and intake capacity, and maintaining the effectiveness of these primary reservoirs for flood management. Identifying reservoir operation strategies that may yield opportunities to improve fish and wildlife management and recreation was also suggested.

Some comment letters also provided specific recommendations on possible guidelines, or component thereof, for management of the reservoirs. The suggested criterion included; specific limitations on the releases from Lake Powell and Lake Mead, specific water surface elevations to be used as triggers for a Shortage declaration, specific values for minimum objective releases from Lake Powell, specific reservoir equalization criteria, amongst other. Other similar but more general suggestions included re-evaluation of how the active storage in the Upper Basin is calculated, development of alternatives to the 602(a) criteria, and ensuring that any guidelines developed in this regard are consistent with the Law of the River.

Lastly, some comment letters also suggested a need for the new reservoir management guidelines to be consistent with other existing programs and environmental commitments

such as the Lower Colorado River Multi-species Conservation Plan, the Interim Surplus Guidelines, Glen Canyon Adaptive Management Program, amongst others. In some cases the comments referred to the Biological Assessments and Biological Opinions developed for these other programs and the requirement to adhere to the reservoir operation strategies stated therein.

The complete list of comments that relate to reservoir management is presented in Appendix V, Table V-15.

#### **4.2.15 Socio-Economics**

A total of 3,203 comments (3,042 from Group 1 and 161 from Group 2) were received on the topic of socio-economics. However, only some 139 of these comments are considered to be unique comments.

Almost all of the comments received on the topic of socio-economics raised the issue of fiscal ramifications or social impacts associated with the different alternatives that may be considered in the EIS. Because the population and economy of the Basin States is so heavily dependent on the Colorado River water supplies, almost any new action has the potential to result in some direct or indirect effect to some portion of the population or their economies. Some comment letters made very general statements relating to this while others were more specific. For example, some comment letters expressed concern that the decommissioning of Glen Canyon Dam has a high potential to result in such great socio-economic impacts throughout the basin that such an alternative cannot be considered. Similarly, the socio-economic impacts associated with actions such as the restoration of the natural flows through the Glen and Grand canyons, transferring storage from lakes Powell and Mead to groundwater aquifers and even the smallest reduction in deliveries to one or more states need to be considered in the EIS. Other acceptable programs such as water conservation, construction of more storage capacity, and other water augmentation options represent examples of potential activities that the comment letters suggest will also need to be analyzed to ascertain the potential socio-economic impacts of these potential new or expanded activities.

The complete list of comments that relate to socio-economics is presented in Appendix V, Table V-16.

#### **4.2.16 Transboundary Issues**

A total of 78 comments (16 from Group 1 and 62 from Group 2) were received on the topic of transboundary impacts. However, only some 33 of these comments are considered to be unique comments.

A large number of the comments received on the topic of transboundary issues relate to the U.S.-Mexico Water Treaty of 1944 (Treaty) and how Mexico's Colorado River water deliveries stipulated in the Treaty might be addressed in or affected by this process. Several of the comment letters suggested that Mexico should share in any and all shortages. Other comment letters expressed concerns regarding the potential impacts to Mexico or the Colorado River Delta that could result from a Shortage declaration.

In some instances, the comment letters identified issues or potential transboundary effects that would need to be addressed or evaluated in the EIS, such as water quality, water

supply salinity, operation of the Yuma Desalting Plant, and potential reductions to the bypass flows, amongst others.

The complete list of comments that relate to transboundary issues is presented in Appendix V, Table V-17.

#### **4.2.17 Transportation/Traffic**

A total of 11 comments (ten from Group 1 and one from Group 2) were received on the topic of transportation / traffic. However, only some ten of these comments are considered to be unique comments.

Comments received on the topic of Transportation and Traffic mostly focused on boat and watercraft issues. Many of the comment letters expressed concern with regard to the potential impacts that the proposed Action might have on boating, navigation and boat safety, both within the reservoirs and different river reaches. Some letters requested that consideration be given to eliminating boating on Lake Mead to prevent fuel spills that can imperil the quality of the water supply. Another comment letter justified a recommendation to eliminate house boats on Lake Powell by citing the high cost of fuel and the high cost of navigating a house boat from one end of Lake Powell to the other.

The complete list of comments that relate to transportation is presented in Appendix V, Table V-18.

#### **4.2.18 Water Supply / Water Quantity**

A total of 3,218 comments (3,057 from Group 1 and 161 from Group 2) were received on the topic of water supply and water quantity. However, only some 141 of these comments are considered to be unique comments.

A large number of comments received on this proposed Action fall under this category. From suggesting aggressive water conservation efforts, forbearance agreements, water supply augmentation proposals, groundwater and offstream storage options, proportional sharing or market-based shortage strategies, varying release schedules, re-evaluation of actual flows and water user allocations, impacts to treaty obligations, to power production and tribal concerns – all relate back to water supply and have been raised as issues to consider during the development of alternatives and environmental impact review process.

The complete list of comments that relate to water supply or water quality is presented in Appendix V, Table V-19.

#### **4.2.19 Water Quality**

A total of 1,002 comments (964 from Group 1 and 38 from Group 2) were received on the topic of water quality. However, only some 35 of these comments are considered to be unique comments.

Most of the comments received on the topic of water quality had a few recurring themes including; addressing general water quality concerns throughout the system, sediment management, salinity effects and management options, operation of the Yuma Desalting Plant, potential water supply augmentation projects including returning wastewater to the system, cloud seeding, tamarisk eradication, and ocean desalination. In all these

comments, there was a general suggestion that the EIS consider potential impacts to water quality that may result from the different alternatives.

The complete list of comments that relate to water quality is presented in Appendix V, Table V-20.

#### **4.2.20 Water Rights**

A total of 3,078 comments (2,970 from Group 1 and 108 from Group 2) were received on the topic of water rights. However, only some 86 of these comments are considered to be unique comments.

Most of the comments received on the topic of water rights raised the concerns that the proposed Action has the potential to affect the water rights of different parties. For example, the existing distribution of water entitlements between the Upper and Lower Basin and between the different states, is made possible, in part, by the storage that is provided by Lake Powell. Therefore, the decommissioning of Glen Canyon Dam, as suggested in some comment letters, might have significant effects on the water rights of many and this needs to be considered in the EIS. Similarly, utilizing groundwater aquifers to replace storage from Lakes Mead and Powell would have not only surface water rights implications but also groundwater rights implications. Some other comments suggested the redistribution of Colorado River water rights to provide an entitlement for instream uses.

A few comment letters addressed the need to develop guidelines that would facilitate a market based system that would provide the basis for intra- and interstate transfers, leasing arrangements, water rights sales, trades, and other forms of water exchanges. These types of transactions are believed to form part of the solution to managing or mitigating future impacts related to shortages.

A common concern expressed by some comment letters is the need to develop guidelines that provide the highest level of protection possible to entitlement holders with senior water rights. On the contrary, some comment letters suggested that shortages should be shared by all at the same proportional levels of their entitlements. Other comments had varying suggestions on how the shortages should be allocated to or shared by Mexico, Arizona and Nevada.

A fair number of comments suggested that there is a need, and perhaps a legal requirement, to augment the water supplies of the Colorado River system in order to adequately provide for and protect the water rights of existing entitlement holders.

In all the comments received on the topic of water rights, there was a general suggestion that the EIS consider potential impacts to water rights that may result from the different alternatives to be considered.

The complete list of comments that relate to water rights is presented in Appendix V, Table V-21.

#### **4.2.21 Miscellaneous**

A total of 34 comments (21 from Group 1 and 13 from Group 2) were received in this category. However, only some 23 of these comments are considered to be unique comments.

The miscellaneous comments received varied widely and addressed such issues as; coordination and consultation with different interest groups, demonstration of support for other comments submitted, and requests for information on the environmental impact review process.

The complete list of comments that fall under the miscellaneous category is presented in Appendix V, Table V-22.

#### **4.2.22 Alternatives**

A total of 17 comments (one from Group 1 and 16 from Group 2) were received regarding the development of the alternatives. However, only three of these comments are considered to be unique comments. These comments included a specific alternative proposal submitted by a group of NGOs which they refer to as the “Conservation Before Shortage” proposal. However, there was one comment letter that opposed this alternative and suggested that it not be considered in the proposed EIS due to several misrepresentations contained therein. Another set of recommendations that were provided by another NGO was contained in a report entitled “One Dam Solution.” While not an alternative in itself, the recommendations provided therein are addressed in the various other resource issues summarized hereinbefore. A third set of recommendations for inclusion in an alternative were received from the State of Arizona. This set of recommendations included very specific recommendations for the development of the shortage and coordinated reservoir operation guidelines.

Lastly, a fourth set of recommendations was submitted jointly by the Seven Colorado River Basin States. These recommendations were received after the closing of the comment period and were therefore evaluated separately as discussed below in Section 4.3.

The complete list of comments that relate to alternatives development is presented in Appendix V, Table V-23.

### **4.3 Comments Received After the Comment Period**

The official comment period for this Scoping Summary Report extended from September 30, 2005 to November 30, 2005, a period of 62 days. For this scoping process, four sets of comments were received following the closing of the comment period as noted below. These comments are not included in the previous evaluation of comments as summarized in Section 4.2. However, these comments will be considered in the development of alternatives, scoping of the EIS, and determination of the range of analyses to be conducted. Reclamation will continue to receive public input during this process. Reclamation also plans to issue public notices, through issuance of FR notices, at different points in the process as new pertinent information is developed and when documents are available for public review and comment.



### 4.3.1 Consultations With Indian Tribal Governments

Consistent with the requirements of Executive Order 13175 regarding “Consultation and Coordination With Indian Tribal Governments,” Reclamation invited Indian Tribal Governments to participate in government-to-government consultations relevant to the proposed Action. Executive Order 13175 requires agencies to engage in meaningful consultation and collaboration with tribal officials in the development of Federal policies that have may have tribal implications. In this respect, Reclamation has already conducted three meetings to inform the tribal representatives about the proposed Action and the study process. The notices and meetings were also used to solicit input and comments from tribal representatives regarding the proposed Action, its potential impacts on any trust assets, tribal health and safety, traditional cultural properties, historic properties, sacred sites, or any other issues or resources of tribal concern that may associated with the proposed Action. The times and locations of the three meetings are noted in Table 4-3.

**Table 4-3  
Tribal Consultation Meeting Attendance**

Meeting Date/Time	Location	Number of Attendees
10:00 am, Thursday January 19, 2006	McCarran International Airport Mezzanine Meeting Rooms 4 and 5 5757 Wayne Newton Blvd. Las Vegas, NV	7
10:00 am, Friday January 27, 2006	400 North Fifth Street Conference Rooms A and B Phoenix, AZ	14
9:30 am, Thursday February 16, 2006	Courtyard Marriott Hotel 2101 East Camelback Road, Phoenix, AZ	8

The invitees to the January 19, 2006, Las Vegas, Nevada meeting consisted of representatives of member tribes of the Ten Tribes Partnership. The members of the Ten Tribes Partnership include the following Colorado River Basin Indian Tribes:

- Chemehuevi Indian Tribe
- Cocopah Indian Community
- Colorado River Indian Tribes
- Fort Mojave Indian Tribe
- Jicarilla Apache Tribe
- Northern Ute Tribe
- Navajo Nation
- Quechan Indian Tribe of the Fort Yuma Reservation
- Southern Ute Indian Tribe
- Ute Mountain Ute Indian Tribe

The invitees to the January 27, 2006, Phoenix, Arizona meeting consisted of representatives from Indian Tribes that have rights to or an interest in the Central Arizona Project (CAP) water supply. The invited Indian Tribes included the following:

- Ak Chin
- Mojave-Apache
- Gila River Indian Community
- Pasqua-Yaqui
- Salt River Pima- Maricopa Indian Community
- San Carlos Apache
- Tohono O’odham
- Tonto Apache
- Yavapai-Prescott

The invitees to the February 16, 2006, Phoenix, Arizona meeting also consisted of representatives of member tribes of the Ten Tribes Partnership.

According to sign-in sheets from the meetings noted above, a total of 29 individuals attended the meetings. Appendices M and N contain copies of the sign-in sheets from the first two tribal consultation meetings. The second page of the transcript from the third tribal consultation meeting which is included in Appendix O provides a list of attendees at the third meeting.

Reclamation staff provided a presentation to the tribal governments representatives during the first two meetings. A copy of this presentation is included as Appendix P. The third meeting was a follow up to the second meeting and was used to update the attendees on the EIS process status and present additional information.

During the course of the public meetings, tribal representatives were invited to provide oral comments and ask questions. These oral comments were also recorded by court reporters that were retained by Reclamation and that were present at each of the two meetings. Transcripts that reflect the verbatim comments provided by the attendees at the January 19, 2006, January 27, 2006, and February 16, 2006 meetings are presented in Appendix M, Appendix N, and Appendix O, respectively.

An overview of the oral comments received during these three Tribal Government consultation meetings follows:

#### **Overview of Comments Received in Las Vegas, Nevada Meeting – January 19, 2006**

1. A higher priority should be given to Tribal Water rights when considering reductions in deliveries of Colorado River water.
2. Reclamation should be looking at and implement drought mitigation strategies by 2007.
3. Reclamation should include a process to educate non-Indians on Indian Water Rights that are allocated by treaties.
4. The priority of Indian Water Rights, which in many cases precede 1912, should be duly noted and considered in this study.
5. Recommend a forum that would include all stakeholders be used to develop an alternative that best meets the needs and addresses the interests of all.

6. Inquires whether the Secretary is committed to allocate money to projects that can be used to delay or mitigate the effects of the drought.
7. Would like to see a detailed breakdown of who is using Colorado River water and how much is being used.
8. The shortages should be limited to water rights holders that have lower priority rights than the Tribe's Senior Rights that predate 1922.
9. Request that the Government-to-Government consultation process be preserved throughout entire project process.
10. Notes that while water and power are important to the Tribes; having a river and having water flow through the river is also important.
11. Need to consider the effects of low river flows on the Tribe's ability to pump water from the river and also their ability to divert their entitlement through these pump systems at low river stages.

#### **Overview of Comments Received in Phoenix, Arizona Meeting – January 27, 2006**

1. Request that the San Carlos, Apache, and Yavapai tribes be put on the mailing list for all notices related to this project.
2. Update the name and reflect new Chairperson of the Pasqua-Yaqui tribe.
3. Recommends that Basin States and Indian Tribes work together on development of alternatives and that Secretary should not base decisions only on Basin States' recommendations.
4. Secretary and Reclamation should provide notices to all Tribes on all Colorado River operations related issues.
5. Analysis needs to consider and evaluate how alternatives may impact the 67,000 AF considered in the Gila River Indian Community water settlement.
6. Consider/evaluate the effect that Surplus deliveries have on all Colorado River water users and the availability of water during droughts.
7. Consider providing technical assistance to a Working Group made up of tribal representatives that would work to develop or evaluate alternatives, similar to Basin States Working Group.
8. Consider/evaluate how the reduced deliveries to the State of Arizona under the different alternatives would affect the water deliveries to the different tribes that receive water from the CAP.
9. The study should consider the effects to all Colorado River water users which includes Tribes and not just focus on needs of and impacts to cities and large irrigation districts
10. Consider the changing climatic conditions and the effect on the average water supply that may now be available from the Colorado River Basin.
11. Consider the drought and shortage provisions provided in the Ak-Chin's water settlement legislation.

12. Need to respect the water rights and entitlements afforded to the Tribes through different treaties, agreements, contracts, etc.
13. Concerned that Tribal interests and concerns will be superseded by the Basin States' recommendations and their proposed alternatives.
14. Recommend that a Workshop format be used for future consultations with the Tribes.
15. Request that a person involved in the technical evaluation of the different alternatives be available to the Tribes in future consultations.
16. Request consultation meetings at interim points between now and before the finalization of the alternatives and publishing of the EIS.
17. Request copies of the project related FR notices published on June 2005 and September 2005.
18. Request that Reclamation make a presentation on the Federal Government's perspective on the plan being developed by Arizona for addressing and mitigating future Colorado River reduced deliveries to instate users.
19. Inquires why the invitations to the Tribes for Government-to-Government consultations relative to this project were not sent to all of the 22 Arizona tribes.
20. Request that the Tribe's Attorney(s) be copied on all project related correspondence and notices when such has been designated by a Tribe.
21. Analysis should consider and evaluate impacts to all tribes that have water rights settlements and not just be limited to the impacts to only those tribes that have CAP entitlements.

#### **Overview of Comments Received in Phoenix, Arizona Meeting – February 16, 2006**

1. Expressed concern that Reclamation had not invited the Indian Tribes to participate in previous meetings between Reclamation and Basin States, i.e. reference to the Basin States' negotiations and working group meetings. Also, recommended that Reclamation invite the Indian Tribes to participate in future meetings between Reclamation and Basin States.
2. Expressed interest and concern on how the Basin State's proposal would fit into the overall NEPA process and the EIS.
3. Inquired whether Reclamation had its own alternative that would be considered in the EIS.
4. Expressed interest and concern as to whether the Basin States' proposal would automatically be accepted by Reclamation as the preferred alternative.
5. Inquired how the balancing between Lake Powell and Lake Mead is determined and what the Upper Basin's water delivery responsibilities were to the Lower Basin, i.e. minimum annual and 10-year average Lake Powell release requirements.

6. Inquired on the feasibility of storing more water in the Upper Basin reservoirs as a means to conserve water, i.e. by minimizing evaporation losses that normally occur in Lake Powell and Lake Mead.
7. Inquired whether there have been negotiations with Arizona on how they would take their lowest priority water for the CAP and whether there was a negotiated change in their policy.
8. Suggest that consideration be given to the role of groundwater in the Phoenix area in managing shortages and impacts to the cities.
9. Expressed interest and concern with regard to effects of a Shortage declaration and a reduction of deliveries on the pool of water that is available to the Secretary for settlement of Indian water rights and more particularly the pool that may come from non-Indian Agricultural priority water.
10. Inquired whether Agricultural would take the hit for shortages in Arizona.
11. Inquired on the economics relating to the potential Agricultural water user's change from surface water to groundwater supplies and the value of doing such in order to forestall a future shortage, considering alternate payback methods or other economic incentives.
12. Suggested that Colorado River water supply augmentation options may be less desirable than demand management options because in a demand management situation, one knows the water is there whereas with a water augmentation project such as cloud seeding, the supply is less tangible.
13. Expressed concern that water augmentation options that relied on groundwater development projects might not necessarily provide new or non-system water.
14. Inquired whether Reclamation was requesting additional comments from the Indian Tribes before the scoping report is issued.
15. Inquired whether Reclamation would have the alternatives available by early-May and would they be ready for presentation at the mid-year Colorado River Water Users Association board meeting that is scheduled for May (2006).
16. Requested that Reclamation consider and analyze how any of the alternatives fit within the concept of meeting Navajo Nation needs of water from the Colorado River and potential claims that the Navajo Nation may have.
17. Requested that Reclamation consider the Navajo Nation's Colorado River entitlements, rights and claims in both the Upper and Lower Basins.
18. Requested that Reclamation consider the Navajo Nation's unquantified water rights and how the proposed Action may affect these rights and their ability to meet their municipal water needs.
19. Expressed concern that each time Reclamation adopts a new action dealing with Colorado River management that the ability of the Federal Government to meet the needs of the Navajo Nation becomes more difficult and this increases the barrier to achieving future resolution on these issues.

20. Requested that Reclamation consider the initial letter submitted on August 31, 2005 which addressed the need to account for the outstanding water supply needs and claims of the Navajo Nation.
21. Suggested that another factor that could contribute to future shortages within the basin and perhaps the State of Arizona is the existence of the Navajo Nation's claim to additional water supplies.
22. Pointed out that the Navajo Nation is involved in ongoing discussions with the United States and the State of Arizona concerning its mainstem claims. However, further noted uncertainty regarding the long-range outlook for those negotiations.
23. Noted that the Navajo Nation's claims are essentially a claim to prior perfected rights that would be like the other Tribe's water rights that they would be senior water rights, and they are concerned how a shortage may affect these rights.
24. Noted an additional concern with regard to how a Shortage call or a curtailment in the Upper Basin to meet the past term Compact obligations may affect the Tribe's water rights and water supplies.

It should be noted that the government-to-government consultation process with the Indian Tribes is expected to continue throughout the EIS preparation process. Reclamation anticipates that it will continue to receive input from the Indian Tribes on this process and with respect to the EIS. Reclamation values this input and will consider the comments from the Indian Tribes in its development of the alternatives, evaluation of issues and potential impacts, and in the preparation of the EIS.

#### **4.3.2 Basin States' Preliminary Proposal Regarding Colorado River Interim Operations**

The Seven Basin States, Reclamation and others have consulted regularly over the last two years with regard to the development and evaluation of management strategies for the Colorado River system. Previously, individual entities within the Seven Basin States submitted oral and written comments to Reclamation regarding the process that would be used to develop and adopt these strategies as well comments on the analyses to be conducted as part of this EIS process. Through these ongoing consultations and related negotiations, the Seven Basin States prepared a preliminary set of recommendations that were submitted to the Secretary on February 3, 2006 (see Appendix Q). This set of recommendations, hereinafter referred to as the "*Basin States' Preliminary Proposal Regarding Colorado River Interim Operations*," outlines criteria and programs that the Seven Basin States recommend be included in the proposed Action and within the scope of the EIS.

A summary of the main points provided in the Basin States' Preliminary Proposal Regarding Colorado River Interim Operations follows:

1. The Basin States are still actively working on matters addressed in the Basin States' Proposal and anticipate further refinement of some of the elements provided therein.

2. Implementation of the operational and accounting procedures can be accomplished without modification to the Long Range Operating Criteria or other elements of the Law of the River.
3. Recommends that the Department of the Interior initiate consultation, as soon as possible, with U.S. Section of the International and Boundary Commission on the implementation of Treaty Shortages pursuant to the U.S.-Mexico Treaty of 1944.
4. The states are moving forward with a package of other actions that include implementation of a demonstration program for extraordinary conservation, system efficiency projects, an action plan for augmentation projects, and other similar programs that can be used to delay and mitigate the effects of the drought.
5. Provides recommendations on the allocation of Unused Basic Apportionment Water under Article II(B)(6) of the 1964 Decree in Arizona v. California.
6. Provides an operating strategy for the coordinated management of Lake Powell and Lake Mead whereby the Lake Powell annual release is adjusted, when the projected elevation of Lake Powell is below 3,575 feet or the projected elevation of Lake Mead is below 1,075 feet. The strategy also provides year by year Lake Powell equalization elevations through 2025.
7. Recommends that the Interim Surplus Guidelines be modified to reduce the water that would otherwise be delivered under a Partial Domestic Surplus condition and would extend the effective period of the modified Interim Surplus Guidelines through the end of 2025.
8. Recommends shortage guidelines based on a Lake Mead “Stepped-Shortage” strategy. The recommendations define the stepped reductions up to an annual reduction volume of 600 kaf and notes that increased reductions required below a Lake Mead water surface elevation of 1,025 feet would be determined through additional consultations and based on projected hydrology.
9. Recommends that Mexico proportionally share in the delivery reductions during Shortage Conditions and that the proportion of the shortage to be borne by Mexico be approximately 17 percent ( $1.5 \text{ maf} / 9 \text{ maf} \times 100\% = 17\%$ ).
10. Proposes a Lake Mead Intentionally Created Surplus (ICS) Program that would;
  - a. Enable a User of Colorado River water to earn Extraordinary Conservation Storage Credits in Lake Mead,
  - b. Provides for up to 625 kaf/year of total ICS Credits to be earned by the water users,
  - c. Provides for a maximum cumulative amount of ICS credits of 2.1 maf,
  - d. Provides for the delivery of ICS credits from Lake Mead to the holder of the credits.
11. Recommends that the Secretary develop procedures that would permit Colorado River water contractors to purchase and fallow annual or permanent water rights on tributaries within the Lower Division states (Tributary Conservation) that

- increases the contribution of water to the Colorado River mainstem for diversion by the Contractor.
12. Recommends that the Secretary develop procedures that would permit a Colorado River Water Contractor to make contributions of capital to the Secretary for use in Secretarial projects designed to realize efficiencies that save water that would otherwise be lost to the system. In return, the Contractor(s) would receive a portion of the conserved water, for a temporary period of time. The water supply benefit to the Contractor would be in proportion to their contribution towards the total cost of the project.
  13. Recommends that the Secretary develop procedures that would allow non-Colorado River System water in a Lower Division state to be introduced into, conveyed through, and diverted from the system.
  14. Recommends that the Secretary develop procedures that would permit a Contractor in Arizona, California, or Nevada to secure additional water supply by funding the development of non-Colorado River System water supply in one Lower Division State for use in another State by exchange.
  15. While the proposal does not provide recommendations on required new or modifications to the existing Colorado River water accounting mechanisms, it does recommend that a description and evaluation of such new or modified accounting mechanisms be evaluated in Reclamation's current NEPA process.
  16. Recommends that the effective period for the proposed interim operations begin 30 days from the publication of the Secretary's Record of Decision in the FR and remain in effect through December 31, 2025.
  17. Includes a Draft Agreement whereby the Seven Basin States agree to support and bind themselves to the principles noted in the Basin States' Preliminary Proposal Regarding Colorado River Interim Operations.

#### **4.3.3 Environmental Defense Supplemental Comment Letter**

At the request of Environmental Defense and other NGOs, Reclamation met with and provided technical support to these NGOs over the last twelve months with regard to the NGOs' efforts in the development and evaluation of management strategies for the Colorado River system. Previously, Environmental Defense along with other NGOs submitted oral and written comments to Reclamation regarding the process that would be used to develop and adopt these strategies as well comments on the analyses to be conducted as part of the proposed NEPA process. In addition, these entities developed and submitted a recommended strategy referred to as "Conservation Before Shortage." Reclamation provided modeling support to Environmental Defense and other NGOs throughout their proposal development phase.

On February 1, 2006, Environmental Defense submitted a letter to Reclamation with a request that this letter and comments provided therein be accepted as a supplement to their previous comments (see Appendix R). A summary of the comments provided in this supplemental comment letter follows:



1. Expressed concern that Reclamation is considering initiation of multiple independent NEPA analyses on numerous proposals for Colorado River management and mechanisms related and unrelated to the subject project.
2. Analysis under NEPA needs to compare the impacts of all available options and approaches to managing the Colorado River system.
3. Postulates that the volume of ICS water will bear on the probabilities that water in reservoir storage will be within defined “bands” or “shortage trigger” elevations.
4. Encourages Reclamation to ensure that analysis of alternatives under the NEPA process is complete.

#### **4.3.4 Defenders of Wildlife Supplemental Comment letter**

On February 21, 2006, Defenders of Wildlife submitted a supplemental comment letter to Reclamation. The letter was submitted to identify concerns regarding the Basin States’ Preliminary Proposal Regarding Colorado River Interim Operations and how the proposal would be considered within the NEPA process and EIS. A summary of the comments provided in this letter follows:

1. Inclusion of all or part of the Basin States’ proposal as an alternative in the subject NEPA process will change the scope of Reclamation’s proposed Action as originally announced in the NOI issued on September 30, 2005.
2. Urges Reclamation to re-evaluate the scope of its proposed Action to ensure that its EIS encompasses the full suite of actions, alternatives and impacts as it considers the Basin States’ Preliminary Proposal Regarding Colorado River Interim Operations.
3. Suggests that - if all or part of the Basin States’ preliminary proposal are connected actions, or if Reclamation carries forward parts of their proposal that do not fall within the proposed Action described in the NOI issued on September 30, 2005, Reclamation must prepare one EIS and must rescope.
4. Suggests that delays caused by rescoping will be insignificant in comparison to delays triggered during the draft EIS comment period as a result of new actions or alternatives that are introduced during the draft EIS comment period rather than during the scoping period.

## **4.4 Alternatives Offered**

An alternative referred to as the “Conservation Before Shortage” alternative has been offered by a group of NGOs that include; Defenders of Wildlife, Environmental Defense, National Wildlife Federation, Pacific Institute, Sierra Club and the Sonoran Institute. The alternative is founded on the rationale that shortage criteria should attempt to maximize the reliability and predictability of water deliveries to the Lower Division states by introducing increased flexibility into the management of river resources when Shortage conditions are imminent. The “Conservation Before Shortage” policy essentially consists of two sets of criteria tied to projected elevations at Lake Mead

proposed on January 1 of a given year, according to Reclamation's August 24-month study. These criteria consist of three "conservation triggers," which impose progressively increasing conservation goals as lake levels drop from 1100 feet to 1050 feet, and a "shortage trigger," which imposes involuntary shortages in the Lower Basin as are necessary to accomplish absolute protection of Lake Mead at a minimum elevation of 1000 feet. The details of this proposed alternative are described in Comment Letter No. G.003, Appendix W.

A second alternative was offered by the NGO known as "Living Rivers" and is reported to be supported by several other NGOs. This alternative, which is provided in the form of a report, is referred to as the "One-Dam Solution." The report does not provide information on how the proposal would meet the objectives of the proposed Action, that is – develop water supply management strategies to address reservoir operations during drought and low reservoir conditions. Rather, the report criticizes current management and operations of the Colorado River and questions the need for Glen Canyon Dam and the storage provided in Lake Powell. In summary, the commentor(s) request that Reclamation consider the following actions within the context of preparing an EIS for the subject project:

1. Pursue transfers of Lakes Powell and Mead storage to groundwater aquifers,
2. Develop sustainable sediment management programs for Lakes Powell and Mead,
3. Evaluate the costs and benefits of decommissioning Glen Canyon Dam and the restoration of natural flows through Glen and Grand Canyons, and
4. Identify new water allocation guidelines that reflect the amount of water that the Colorado River actually provides, how it should be distributed, and what amounts are needed to protect critical habitats and endangered/listed species.

The details of the "One-Dam Solution" report are provided in Comment Letter No. G.001, Appendix W.

A third set of recommendations, which may provide the bases for a third alternative, was submitted by the Seven Basin States and is outlined in their "*Basin States' Preliminary Proposal Regarding Colorado River Interim Operations*," submitted to the Secretary on February 3, 2006 (see Comment Letter No. S-2006, Appendix Q). This set of recommendations were previously summarized in Section 4.3.2.

## **5.0 Discussion of Comments Determined to be Outside the Scope of this Project or NEPA Process**

In some cases, some of the issues raised in the comment letters have been determined to be beyond the scope of the proposed Action or EIS, and therefore, will not be addressed in the EIS. This is the case for the following issue as explained below.

### **5.1 Decommissioning of Glen Canyon Dam**

Lake Powell and Glen Canyon Dam on the Colorado River have been designated parts of the nation's critical infrastructure. In particular, the ability to store water in Lake Powell during periods of higher flows enables the states of Utah, Colorado, Wyoming and New Mexico to utilize their apportionment of Colorado River water while meeting their obligations for water delivery to the states of Arizona, California and Nevada, particularly during periods of drought.

In addition, the hydropower generated by Glen Canyon Dam is a critical element in meeting the electricity demands in the southwestern states. Furthermore, hydropower revenues from Glen Canyon and other CRSP dams are an important part of the funding mechanism for numerous participating water supply projects and several important environmental initiatives including the Upper Colorado Basin and San Juan River Recovery Programs and the Glen Canyon Dam Adaptive Management Program.

Finally, Section 120 of Public Law 107-63, enacted November 5, 2001, and in subsequent years, "bars the use of funds appropriated for the Department of the Interior by any Act to study or implement any plan to drain Lake Powell or to reduce its water level below the range required for the operation of the Glen Canyon Dam." Consistent with this language, Reclamation will not consider the request to evaluate the feasibility of decommissioning Glen Canyon Dam.

## 6.0 Proposed Scope of the EIS

The preliminary scope of the EIS is discussed below. This preliminary scope has been determined after review and analysis of the comments and public input received to date. These comments, in addition to input and feedback that will be received during agency consultation and coordination, will help determine the final scope of the EIS.

### 6.1 Proposed Federal Action

Subsequent to the FR notice published on September 30, 2005 (Appendix C), the description of the proposed Action has been refined as a result of the scoping process to reflect, among others, three important considerations that were identified by commentors:

1. ***Importance of Encouraging Conservation of Water:*** Many comments focused on and stressed the importance of encouraging and utilizing water conservation as an important tool to better manage limited water supplies and therefore minimize the likelihood and severity of potential future shortages (see example in Appendix W, Comment Letter No. G-003, “Conservation Before Shortage” proposal submitted to the Department on July 18, 2005). Water conservation can occur through a number of approaches. The different approaches will be explored and discussed in the EIS including: extraordinary conservation, forbearance, financial incentives to maximize conservation, dry-year options, and associated storage and recovery methodologies and procedures to address conservation actions by particular parties.
2. ***Importance of Consideration of Reservoir Operations at all Operational Levels:*** Many comments urged the Department to consider and analyze management and operational guidelines for the full range of operational levels at Lake Powell and Lake Mead (see example in Appendix Q, Comment Letter No. S-2006, “Basin States’ Preliminary Proposal Regarding Colorado River Interim Operations” submitted to the Department on February 3, 2006). It was suggested that this approach is considered integral and prudent to the development of new low-reservoir operational guidelines, as the approach and management of these reservoirs at moderate and high elevations has a direct impact on the available water in storage, thereby affecting the likelihood and severity of potential future shortages.
3. ***Term of Operational Guidelines:*** Comments submitted to the Department urged the Department to consider adoption of interim, rather than permanent, operational guidelines (see examples in Appendix W, Comment Letter Nos. L-2002 through L-2006 submitted to the Department by several Arizona municipalities). In this manner, the Department would have the ability to use actual operating experience for a period of years, thereby facilitating a better understanding of the operational effect of the new guidelines; modifications would then be made, if necessary, during or preferably at the end of the interim

period. In particular, the Department was also urged to consider adopting additional operational guidelines for both low and higher reservoir elevations for a consistent period of years. At this time, it is important to note, the Department has detailed operational guidelines for declaration of Surplus conditions at higher elevations of Lake Mead through 2016, but does not have similar detailed operational guidelines for either Lake Powell or the lower operational levels of Lake Mead.

After thorough consideration of the comments and issues identified by commentors, the description of the proposed Action has been refined to address the broader range of issues found within the comments received to date. Specifically, the elements of the proposed Action include:

1. Adoption of guidelines that will identify those circumstances under which the Secretary would reduce the annual amount of water available for consumptive use from Lake Mead to the Lower Division states (Arizona, California, and Nevada) below 7.5 maf (a “Shortage”) pursuant to Article II(B)(3) of the Decree.
2. Adoption of guidelines for the coordinated operations of Lake Powell and Lake Mead that are designed to provide improved operation of the two reservoirs, particularly under low reservoir conditions.
3. Adoption of guidelines for the storage and delivery of water in Lake Mead to increase the flexibility to meet water use needs from Lake Mead, particularly under low reservoir conditions. These guidelines are anticipated to address the storage and delivery of non-system water, exchanges, and water conserved through extraordinary measures.
4. Modification of the substance and term of the existing Interim Surplus Guidelines, published in the FR on January 25, 2001 (66 FR 7772-7782), from 2016 to coincide with the proposed new guidelines described above.

The Department proposes that these guidelines will be interim in nature and will extend through 2025. Adoption of new guidelines along with modification of existing operational guidelines for a consistent interim period will provide the opportunity to gain valuable experience for operating the reservoir under the modified operations and should improve the basis for making additional future operational decisions, whether during the interim period or thereafter.

It is the intent of the Department to adopt and implement the above proposed Action in a manner that is consistent with applicable federal law, and further, in a manner that does not require any additional statutory authorization. In this regard, Reclamation proposes to implement the proposed Action consistent with the Compact, the Decree, and other provisions of applicable federal law. It is the intent of the Department that the proposed Action will be consistent with and provide implementing guidance that would be used each year by the Department in implementing the LROC.

## **6.2 Study Area**

The geographic scope in which specific issues and potential effects associated with the proposed new or modified guidelines has not yet been defined. The geographic scope will

be defined following the development of the alternatives and after consideration of additional anticipated input and feedback that will be received during agency consultation and coordination and from additional public input.

### **6.3 Alternatives to Be Considered in the EIS**

Reclamation will develop the alternatives to be considered and evaluated in the EIS by considering the information and comments received through the scoping process. It is anticipated that these alternatives will be developed with the assistance of the Cooperating Agencies and in consultation with the Basin States, Indian Tribes, key stakeholders, and other interested parties. Reclamation's goal is to develop a sufficient number of alternatives that will permit the evaluation of the range of operational elements being considered under the proposed Action. This will enable Reclamation to identify the water supply management and operational strategies that provide the greatest benefit and that best meet the purpose and need of the proposed Action.<sup>3</sup>

Each alternative is expected to contain a unique set of operational elements. While there are numerous variables that may be considered to create a large number of alternatives, there are four major elements of the proposed Action that need to be considered from a reservoir and river operations perspective as previously described in Section 6-1.

For the purposes of discussion within this Subsection and in Table 6-1, the four major elements have been abridged into the respective headings of: 1) Shortage Guidelines, 2) Coordinated Reservoir Operations, 3) Lake Mead Storage and Delivery of Conserved and Non-system Water, and 4) Interim Surplus Guidelines. For each of these four major elements, there are different strategies or options that can be developed to yield different possible outcomes. For example, for the first element (Shortage Guidelines), three of many possible options could be to develop and adopt Shortage Guidelines: 1) that apply shortages when Lake Mead has insufficient water to meet needs, 2) that would protect the minimum power pool elevation at Lake Mead, and 3) based on a stepped shortage strategy (reduced deliveries that correlate with predetermined Lake Mead water surface elevations). Similarly, for the three other major elements of the proposed Action, there are numerous different strategies or options that also relate to each respective element.

To facilitate the development of the alternatives, Reclamation has developed a matrix of possible options for each of the four major elements of the proposed Action (See Figure 6-1). A particular alternative would be comprised of one option from each of the four major elements. It is anticipated that other options will be identified during the development and refinement of alternatives for the EIS.

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<sup>3</sup> It should be noted that the mere inclusion of an action alternative in an agency's EIS does not indicate that the agency has concluded that the matter under consideration is within the legal jurisdiction of the agency. See e.g., 40 C.F.R. § 1502.14(c) ("Alternatives including the proposed action.")

**Figure 6-1  
Matrix of Major Elements and Examples of Options that May be Considered in the Development of Alternatives**

		Major Elements of the Proposed Action Alternatives			
		1	2	3	4
		Shortage Guidelines	Coordinated Reservoir Operations	Lake Mead Storage and Delivery of Conserved and Non-System Water	Interim Surplus Guidelines
<b>Strategies or Options for Each Element</b>	<b>A</b>	Basin States Proposal (stepped shortages up to 600 kaf and then reconsult).	Absolute protection of minimum power pool elevation (3490') at Glen Canyon Dam	No Extraordinary Water Conservation and/or Water Augmentation Programs considered	No modification or extension and Interim Surplus Guidelines end in 2016
	<b>B</b>	CBS Proposal (step shortages capped at 600 kaf, and absolute protection of Lake Mead Elevation of 1,000')	Balance Contents (when combined storage in Lakes Powell and Mead is low, adjust releases from Lake Powell [within a specified range] to maintain equal storage in Lakes Powell and Mead)	Basin States proposal for Storage/Delivery Program with Lake Mead Storage Pool volume of up to 2.1 maf and Extraordinary Water Conservation and/or Water Augmentation Programs With Annual Yield of Up To 625 kaf/year	Extension of Interim Surplus Guidelines to 2026 with no modification
	<b>C</b>	No protection of critical elevations. Release full annual entitlement amounts until reach dead pool, then outflow = inflow.	Tiered Release (incrementally reduce the Lake Powell annual release when Lake Powell storage is low)	CBS proposal for conservation of different volumes of water tied to varying Lake Mead water levels prior to shortage	Basin States proposal for modification of Interim Surplus Guidelines and the modified guidelines are extended to 2025
	<b>D</b>	Probabilistic protection of minimum power pool elevation (1050') at Lake Mead (80P1050)	Basin States Proposal (combination of balance contents and tiered release - under low reservoir storage conditions, either reduce Lake Powell release or balance contents depending on projected Lake Mead and Lake Powell elevations)		
	<b>E</b>	Absolute protection of SNWA Intake (1000') at Lake Mead (80P1000)	Current Conditions (Lake Powell minimum objective release of 8.23 maf unless 602(a) storage criterion is met)		

Notes:

1. CBS refers to the "Conservation Before Shortage" proposal submitted by Environmental Defense, et. al.

Clearly, a large number of alternatives could be generated if all possible combinations were used. It is expected that a reasonable range of alternatives will be developed to address the broad range of comments and issues raised during the scoping process. Reclamation will develop this range of alternatives and coordinate with the Cooperating Agencies, Basin States, Indian Tribes, key stakeholders, and other interested parties in the refinement and selection of alternatives to be considered in the EIS.

#### **6.4 Scope and Content of the EIS**

The Department's current assessment of the scope of the EIS is discussed below. A detailed outline of the table of contents proposed for the EIS is included as Appendix X.

Chapter 1 of the EIS will present a general introduction and overview of the proposed Action including background information. The purpose and need for the proposed Action along with a discussion of related and ongoing actions will also be presented in this chapter.

Chapter 2 will provide a detailed description of the proposed Action, including study area and identification of the proposed Action components. A discussion of the alternatives will be presented along with a discussion on the methodology used to develop the alternatives and the screening/evaluation process that was applied for selection of alternatives according to the NEPA requirements for alternatives. The last part of Chapter 2 will include a summary of the impacts identified for the recommended alternative.

Chapter 3 will present the environmental setting and the environmental consequences of the different alternatives. This includes a description of the environmental baseline conditions and characteristics of the study region and Study Area as they relate to each resource. The chapter will also describe the process and assumptions used in the impact determinations. This will include descriptions of the river system operations under each of the alternatives and will compare and contrast these conditions to those under a predetermined baseline condition. Chapter 3 will also provide detailed descriptions of the different resource impact analysis and results thereof. For this EIS, the potential environmental resources and issues to considered/evaluated include: Water Supply, Water Quality, Reservoir and River Flow Issues, Aquatic Resources, Special-Status Species, Socioeconomics, Recreation, Energy Resources, Air Quality, Visual Resources, Cultural Resources, Indian Trust Assets, and Environmental Justice. This chapter may also include a discussion or summary of environmental commitments.

Chapters 4 will discuss other NEPA considerations. This chapter will also identify and discuss the potential cumulative environmental impacts of the proposed Action and alternatives and any proposed mitigation measures. The discussion will include a listing of the alternatives considered for the cumulative analysis. Unavoidable significant impacts of the proposed Action and alternatives, including the No Action Alternative, will be addressed. The methods of assessment, significance criteria, and regulatory setting of each resource will also be presented. Chapter 4 will also discuss other NEPA topics, such as the relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity.



Chapter 5 will cover the consultation and coordination process, including the scoping process conducted with the public and the consultation and coordination conducted with the Cooperating Agencies, Basin States, Indian Tribes, and other stakeholders.

It should be noted that the preliminary list of resources to be addressed in the EIS were identified and refined after considering issues raised during the scoping process. It is anticipated that further refinement of the preliminary list of resources to be addressed in the Final EIS may occur following the development of alternatives and as a result of additional input and feedback that may be received during agency consultation and coordination.

# Appendices

## Volume I

- A. The Secretary's Letter to the Seven Colorado River Basin States on May 2, 2005
- B. June 15, 2005, Federal Register Notice
- C. September 30, 2005, Federal Register Notice
- D. Memorandum – Summary of Preliminary Public Input for the Development of Management Strategies for Lake Powell and Lake Mead, Including Lower Basin Shortage Guidelines, Under Low Reservoir Conditions, September, 2005
- E. Public Involvement Plan
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- G. November 1, 2005, Salt Lake City, Utah Public Meeting Documents
  - G.1 Sign-In Sheet (1)
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  - H.1 Sign-In Sheet (1)
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- I. November 3, 2005, Phoenix, Arizona Public Meeting Documents
  - I.1 Sign-In Sheet (1)
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  - I.4 Sign-In Sheet (4)
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- J. November 8, 2005, Henderson, Nevada Public Meeting Documents
  - J.1 Sign-In Sheet (1)
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  - J.4 Transcript
- K. Public Meeting Presentation
- L. Methodology for Categorizing/Cataloging Comments
- M. January 19, 2006, Las Vegas, Nevada Tribal Consultation Meeting Documents
  - M.1 Request to Initiate Consultation
  - M.2 Sign-In Sheet (1)
  - M.3 Transcript

## **Appendices (Continued)**

- N. January 27, 2006, Phoenix, Arizona Tribal Consultation Meeting Documents
  - N.1 Request to Initiate Consultation
  - N.2 Sign-In Sheet (1)
  - N.3 Sign-In Sheet (2)
  - N.4 Sign-In Sheet (3)
  - N.5 Transcript
- O. February 16, 2006, Phoenix, Arizona Tribal Consultation Meeting Transcript
- P. Tribal Consultation Meeting Presentation
- Q. February 3, 2006, Proposal from Colorado River Basin States
  - Q.1 Letter to the Secretary of the Interior
  - Q.2 Attachment A – Preliminary Proposal
  - Q.3 Attachment B – Draft Agreement
- R. February 1, 2006, Environmental Defense Letter
- S. February 21, 2006, Defenders of Wildlife Letter

## **Appendix A**

**The Secretary's Letter to the Seven  
Colorado River Basin States on  
May 2, 2005**



THE SECRETARY OF THE INTERIOR  
WASHINGTON

MAY 02 2005

Honorable Jon Huntsman, Jr.  
Governor of Utah  
Salt Lake City, Utah 84114

Dear Governor Huntsman:

In accordance with the 2005 Annual Operating Plan for Colorado River Reservoirs (2005 AOP), transmitted to you by my letter of November 19, 2004, the Department has conducted a mid-year review to determine if the runoff forecast warrants an adjustment to the release amount from Lake Powell for the remainder of water year 2005. The Department has conducted public meetings and sought recommendations from the seven Colorado River Basin States on this issue.

The Department has reviewed all of the information presented during this review, and we have concluded that an adjustment to the release amount from Lake Powell during the next five months is not warranted. In particular, we note that the current runoff forecast into Lake Powell during the spring snowmelt season from April - July, 2005 is projected to be 106% of average, and that overall Colorado River system storage is approximately 10% better at this time than had been projected last fall when the Department committed to undertake this mid-year review. Moreover, if runoff in the Colorado River Basin remains at average levels, the contents of Lake Mead and Lake Powell are projected to be approximately equal by September 2006. This transmittal supplements the 2005 AOP and incorporates by reference the applicable provisions of the Criteria for Coordinated Long-Range Operation of Colorado River Reservoirs (Operating Criteria), and the 2005 AOP, including but not limited to, Article II(5) of the Operating Criteria and the section entitled "Disclaimer" at page 27 of the 2005 AOP.

In previous multi-year droughts in the Colorado River Basin we have seen individual years of average or above-average flow. Therefore, it is premature to conclude from this one year of average flow in the Upper Basin and above average flow in the Lower Basin that the drought in the Colorado River Basin has ended. With reduced system storage at this time, we remain very concerned about the impacts of drought throughout the Basin. Accordingly, in upcoming consultations on development of the 2006 AOP, scheduled to begin in June of this year, the Department will propose to include a provision that requires a mid-year review next April if the March 15, 2006 runoff forecast projects decreased storage in the Colorado River system. The purpose of the review will be to determine if an adjustment to the release amount from Lake Powell for water year 2006 is warranted.



When developing annual operating plans for the Colorado River, including this and future mid-year reviews, the Department retains authority pursuant to applicable law and the Operating Criteria to adjust releases from Glen Canyon Dam to amounts less than 8.23 million acre-feet per year. This authority was recognized at the time the Department established the Operating Criteria in 1970. Specifically, the Department transmitted the following statement to the Governors of each of the Colorado River Basin States on June 9, 1970: "...[T]he Operating Criteria imposes no firm or fixed obligation that 8.23 million acre-feet be released each year from Lake Powell. That quantity is stated as an "objective" of the Operating Criteria." At the time the Department made this statement it had been considering a formal request by the Upper Basin states to reduce the referenced Art. II release volume of 8.23 million acre-feet. The unambiguous statement that the "Operating Criteria imposes no firm or fixed obligation that 8.23 million acre-feet be released each year from Lake Powell" reflects the contemporaneous position of the Secretary of the Interior at the time of the adoption of the Operating Criteria. Like this statement of Departmental position, the relevant provisions of Art. II of the Operating Criteria remain unchanged since 1970.

Recent progress in the administration of the Colorado River has been achieved, in large part, due to the close and productive working relationships among the Colorado River Basin states. While we regret that the Basin states were unable to reach a consensus recommendation on operations for the remaining five months of this water year, we appreciate the extensive and productive efforts of the Governor's representatives to review and consider actions to address reduced supplies in the Basin. We believe that these discussions have produced a deeper understanding of the management challenges facing the Colorado River Basin and will facilitate our development of additional tools to improve coordinated management of the reservoirs in the Colorado River system.

The Department recognizes that it is preferable to develop strategies to address drought and other water management challenges in processes other than annual operating plan consultation meetings. In order to determine the most appropriate way to address these challenges, I am directing Reclamation to convene a meeting of the Colorado River Management Work Group by May 31, 2005. The purpose of the meeting will be to consult with the Colorado River Basin States and the public on the most appropriate processes and mechanisms to address these management challenges.

We do not underestimate the challenges we face in this effort. It has been well understood for decades that there are areas of substantial disagreement between the Upper and Lower Colorado River Basin states on a number of fundamental issues regarding interpretation of the Colorado River Compact of 1922. For example, the opinions of the Upper and Lower Basins differ as to the requirements under the Compact for contribution of water to meet the U.S.-Mexico Treaty of 1944. The Department intends to develop operational tools that can continue to assure productive use of the Colorado River into the future, while avoiding unnecessary, protracted or destabilizing litigation.

Honorable Jon Huntsman, Jr.

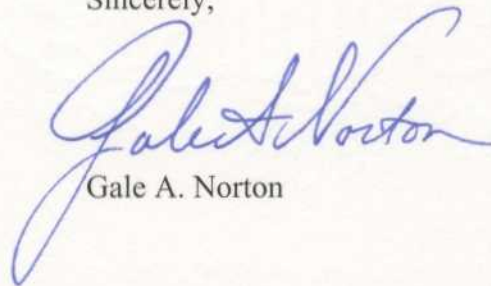
3

After this consultation, the Department intends to issue a notice through the Federal Register on or before June 15, 2005 to begin work on these matters. At a minimum, we will address the following matters in our upcoming Federal Register notice: 1) Development of Lower Basin Shortage Guidelines, and, 2) Development of Conjunctive Management Guidelines for Lake Powell and Lake Mead. It is my expectation that, regardless of the particular process utilized, the Department will complete these processes by December 2007.

In the past five years we have seen many achievements on the Colorado River. However, recent years of drought, decreasing system storage and increasing demands for Colorado River water supplies require that all users of Colorado River water adhere to the limitations established in conformance with the "Law of the River." The importance of the Colorado River to the Southwestern United States for water supply, hydropower production, recreation, fish and wildlife habitat, and other benefits dictates that all parties must work together to find creative solutions that will conserve reservoir storage and help to minimize the adverse effects of drought in the Colorado River Basin.

I remain committed to working with all stakeholders to find solutions within the framework of the Law of the River to ensure that the Department's management of the Colorado River continues to respect and implement the applicable provisions of the Colorado River Compact, the Mexican Water Treaty and other applicable law.

Sincerely,

A handwritten signature in blue ink that reads "Gale A. Norton". The signature is fluid and cursive, with a long, sweeping underline that extends to the left and then loops back under the name.

Gale A. Norton

cc: Mr. D. Larry Anderson  
Director  
Utah Division of Water Resources  
1636 West North Temple, Room 310  
Salt Lake City, Utah 84116



Honorable Jon Huntsman, Jr.

4

Identical letters sent to:

Honorable Dave Freudenthal  
Governor of Wyoming  
Cheyenne, Wyoming 82002

Honorable Bill Owens  
Governor of Colorado  
Denver, Colorado 80203

cc: Mr. Patrick T. Tyrrell  
State Engineer  
State of Wyoming  
Herschler Building, 4<sup>th</sup> Floor East  
Cheyenne, Wyoming 82002-0370

cc: Mr. Rod Kuharich  
Director  
Colorado Water Conservation Board  
1313 Sherman Street, Suite 721  
Denver, Colorado 80123

Honorable Kenny Guinn  
Governor of Nevada  
Carson City, Nevada 89701

Honorable Bill Richardson  
Governor of New Mexico  
Santa Fe, New Mexico 87501

cc: Mr. George Caan  
Director  
Colorado River Commission of Nevada  
555 East Washington Avenue, Ste. 3100  
Las Vegas, Nevada 89101-1048

cc: Mr. John D'Antonio  
State Engineer  
P.O. Box 25102  
Santa Fe, New Mexico 87504-5102

Honorable Janet Napolitano  
Governor of Arizona  
Phoenix, Arizona 85007

Honorable Arnold Schwarzenegger  
Governor of California  
Sacramento, California 95814

cc: Mr. Herb Guenther  
Director  
Arizona Department of Water Resources  
500 N. Third Street  
Phoenix, Arizona 85004

cc: Mr. Gerald R. Zimmerman  
Executive Director  
Colorado River Board of California  
770 Fairmont Avenue, Suite 10  
Glendale, California 91203-1035



cc: Honorable Stephen L. Johnson  
Administrator  
Environmental Protection Agency  
401 M Street, SW  
Washington, D.C. 20460

Mr. Arturo Duran  
Commissioner, United States Section  
International Boundary and Water  
Commission  
4171 North Mesa, Suite C-100  
El Paso, Texas 79902-1441

Mr. Don Ostler  
Executive Director  
Upper Colorado River Commission  
355 South 400 East  
Salt Lake City, Utah 84111

Members of the Colorado River  
Management Work Group

Mr. Michael S. HacsKaylo  
Administrator  
Western Area Power Administration  
P.O. Box 281213  
Lakewood, Colorado 80228-8213

Mr. L. Richard Bratton  
Chairman  
Upper Colorado River Commission  
P.O. Box 669  
Gunnison, Colorado 81230

Colonel Richard G. Thompson  
District Engineer  
Corps of Engineers  
Los Angeles District  
915 Wilshire Blvd., Suite 980  
Los Angeles, California 90017

# **Appendix B**

**June 15, 2005, Federal Register Notice**

Bureau of Land Management lands, inquiries may also be directed to Taylor Brelsford, Subsistence Coordinator, Alaska State Office, 222 West 7th Avenue, #13, Anchorage, Alaska 99513; phone (907) 271-5806.

**SUPPLEMENTARY INFORMATION:** Regional Council discussion during the meeting will be devoted to the review and recommendation of the East Alaska Draft Resource Management Plan and Environmental Impact Statement.

Dated: June 7, 2005.

Henri R. Bisson,  
State Director.

[FR Doc. 05-11774 Filed 6-14-05; 8:45 am]  
BILLING CODE 4310-JA-P

## DEPARTMENT OF THE INTERIOR

### Bureau of Reclamation

#### Colorado River Reservoir Operations: Development of Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions

**AGENCY:** Bureau of Reclamation, Interior.

**ACTION:** Notice to solicit comments and hold public meetings on the development of management strategies for Lake Powell and Lake Mead, including Lower Basin shortage guidelines, under low reservoir conditions.

**SUMMARY:** The Secretary of the Interior (Secretary) has directed the Bureau of Reclamation (Reclamation) to develop additional Colorado River management strategies to address operations of Lake Powell and Lake Mead under low reservoir conditions. It is anticipated that, among other potential elements, these strategies could identify those circumstances under which the Department of the Interior (Department) would reduce annual water deliveries, and the manner in which annual operations would be modified.

**DATES AND ADDRESSES:** Two public meetings will be held to solicit comments on the content, format, mechanism, and analysis to be considered during the development of management strategies for Lake Powell and Lake Mead under low reservoir conditions. Oral and written comments will be accepted at the public meetings to be held at the following locations:

- *Tuesday, July 26, 2005*—10 a.m. to 12 noon, Henderson Convention Center, Grand Ballroom, 200 South Water Street, Henderson, Nevada.
- *Thursday, July 28, 2005*—10 a.m. to 12 noon, Hilton Salt Lake City Center,

Topaz Room, 255 South West Temple, Salt Lake City, Utah.

Written comments on the proposed development of these strategies may be sent by close of business on *Wednesday, August 31, 2005*, to: Regional Director, Bureau of Reclamation, Lower Colorado Region, Attention: BCOO-1000, P.O. Box 61470, Boulder City, Nevada 89006-1470, fax at 702-293-8156, or e-mail at [strategies@lc.usbr.gov](mailto:strategies@lc.usbr.gov); and/or Regional Director, Bureau of Reclamation, Upper Colorado Region, Attention: UC-402, 125 South State Street, Salt Lake City, Utah 84318-1147, fax at 801-524-3858, or e-mail at [strategies@uc.usbr.gov](mailto:strategies@uc.usbr.gov).

**FOR FURTHER INFORMATION CONTACT:**

Terrance J. Fulp, Ph.D., at 702-293-8500 or e-mail at [strategies@lc.usbr.gov](mailto:strategies@lc.usbr.gov); and/or Randall Peterson at 801-524-3633 or e-mail at [strategies@uc.usbr.gov](mailto:strategies@uc.usbr.gov). If special assistance is required regarding accommodations for attendance at either of the public meetings, please call Nan Yoder at 702-293-8495, fax at 702-293-8156, or e-mail at [nyoder@lc.usbr.gov](mailto:nyoder@lc.usbr.gov) no less than 5 working days prior to the applicable meeting(s).

**SUPPLEMENTARY INFORMATION:** In recent years the Department has undertaken a number of initiatives to improve the efficient and coordinated operation and management of the Colorado River. For example, a number of Indian water rights settlements have been enacted and implemented, while additional settlements are under active negotiation. Important programs have been developed in the Upper and Lower Basins to address conservation of endangered species. Scientific investigations are proceeding under the framework of the Glen Canyon Adaptive Management Program to study the impacts to and improve the values for which the Grand Canyon National Park and the Glen Canyon National Recreation Area were established. In 2003, water users in California executed agreements that will assist California to limit its use of water from the Colorado River to its normal year apportionment of 4.4 million acre-feet (maf).

More recently a new management challenge has emerged on the Colorado River. The Colorado River Basin has experienced the worst five-year drought in recorded history. Drought in the Basin has impacted system storage, while demands for Colorado River water supplies have continued to increase. During the period from October 1, 1999, to October 1, 2004, storage in Colorado River reservoirs fell from 55.7 maf to 29.7 maf.

In the future, low reservoir conditions may not be limited to drought periods as additional development of Colorado River water occurs. The Colorado River is of strategic importance in the southwestern United States for water supply, hydropower production, recreation, fish and wildlife habitat, and other benefits. In addition, the Republic of Mexico has an allocation to the waters of the Colorado River pursuant to a 1944 treaty with the United States.

In a May 2, 2005, letter to the Governors of the Colorado River Basin States, issued in the context of the 2005 Annual Operating Plan mid-year review, the Secretary directed Reclamation to develop additional strategies to improve coordinated management of the reservoirs in the Colorado River system. Pursuant to that direction, Reclamation conducted a public consultation workshop on May 26, 2005, in Henderson, Nevada, and has prepared this **Federal Register** notice. In order to assure the continued productive use of the Colorado River into the future, Reclamation is soliciting public comments on, at a minimum, the development of management strategies for the operation of Lake Powell and Lake Mead under low reservoir conditions.

It is the Department's intent that the development of additional management strategies, including Lower Basin Shortage Guidelines, will provide guidance to the Secretary's Annual Operating Plan decisions, and provide more predictability to water users throughout the Basin, particularly those in the Lower Division States of Arizona, California, and Nevada. For example, in 2001 the Department adopted Interim Surplus Guidelines (66 FR 7772) that are used by the Secretary in making annual determinations regarding "Normal" and "Surplus" conditions for the operation of Lake Mead. Among other provisions, these Guidelines have allowed the Department and entities in Arizona, California, and Nevada that rely on the Colorado River greater predictability in identifying when Colorado River water in excess of 7.5 maf will be available for use within these three states. In contrast, at this time the Department does not have detailed guidelines in place for annual determinations of releases from Lake Mead of less than 7.5 maf to water users in the three Lower Division States (often referred to as a "shortage" condition on the lower Colorado River). Therefore, water users who rely on the Colorado River in these states are not currently able to identify particular reservoir conditions under which the Secretary would release less than 7.5 maf for use

on an annual basis. Nor are these water users able to identify the amount of any potential future annual reductions in water deliveries. By developing additional management strategies, these users would be better able to plan for periods of less than full water deliveries. Additional operational tools may also facilitate conservation of reservoir storage, thereby minimizing the adverse effects of long-term drought or low-reservoir conditions in the Colorado River Basin.

Over the past year, the seven Colorado River Basin States have been proactively discussing strategies to address the current system-wide drought in the Colorado River Basin. In addition, Reclamation has conducted detailed briefings for stakeholders in the Colorado River Basin and other interested entities regarding future scenarios for Colorado River operations. Reclamation will integrate available technical information in the upcoming development of additional management strategies for Colorado River operations.

Reclamation intends to utilize a public process during the development of management strategies for Lake Powell and Lake Mead under low reservoir conditions. By this notice, Reclamation invites all interested members of the general public, including the seven Colorado River Basin States, Indian Tribes, water and power contractors, environmental organizations, representatives of academic and scientific communities, representatives of the recreation industry, and other organizations and agencies to present oral and written comments concerning the content, format, mechanism, and analysis to be considered during the development of these proposed strategies.

Reclamation has not yet determined the appropriate level of National Environmental Policy Act (NEPA) documentation for the upcoming development of additional management strategies. However, to ensure timely consideration of technical information and public comment, Reclamation is proceeding, at this time, as if the development of additional management strategies would require preparation of an Environmental Impact Statement. Information received by Reclamation pursuant to this **Federal Register** notice and the upcoming public meetings will be analyzed in order to define the nature of any proposed federal actions, the level of appropriate NEPA documentation, and the need, if any, for additional scoping activities. In addition to NEPA documentation, other compliance activities, as appropriate,

will be undertaken pursuant to applicable Federal law.

#### Public Disclosure

Written comments, including names and home addresses of respondents, will be made available for public review. Individual respondents may request that their home address be withheld from public disclosure, which will be honored to the extent allowable by law. There may be circumstances in which respondents' identity may also be withheld from public disclosure, as allowable by law. If you wish to have your name and/or address withheld, you must state this prominently at the beginning of your comment. All submissions from organizations, business, and from individuals identifying themselves as representatives or officials of organizations or businesses, will be made available for public disclosure in their entirety.

Dated: June 6, 2005.

**Darryl Beckmann**,  
Deputy Regional Director—UC Region,  
Bureau of Reclamation.

Dated: June 7, 2005.

**Robert W. Johnson**,  
Regional Director—LC Region, Bureau of  
Reclamation.

[FR Doc. 05-11776 Filed 6-14-05; 8:45 am]

BILLING CODE 4310-MN-P

## DEPARTMENT OF JUSTICE

### Office of Community Oriented Policing Services, Agency Information Collection Activities: Proposed Collection; Comments Requested

**ACTION:** 60-day notice of information collection under review: Annual Report to Congress—Expired COPS Awards Exceeding \$5 Million.

The Department of Justice (DOJ) Office of Community Oriented Policing Services (COPS) has submitted the following information collection request to the Office of Management and Budget (OMB) for review and approval in accordance with the Paperwork Reduction Act of 1995. The proposed information collection is published to obtain comments from the public and affected agencies. The purpose of this notice is to allow for 60 days for public comment until August 15, 2005. This process is conducted in accordance with 5 CFR 1320.10.

If you have comments especially on the estimated public burden or associated response time, suggestions, or need a copy of the proposed

information collection instrument with instructions or additional information, please contact Rebekah Dorr, Department of Justice Office of Community Oriented Policing Services, 1100 Vermont Avenue, NW., Washington, DC 20530.

Written comments and suggestions from the public and affected agencies concerning the proposed collection of information are encouraged. Your comments should address one or more of the following four points:

- Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;
- Evaluate the accuracy of the agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;
- Enhance the quality, utility, and clarity of the information to be collected; and
- Minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g., permitting electronic submission of responses.

#### Overview of This Information Collection

(1) *Type of Information Collection:* New Collection.

(2) *Title of the Form/Collection:* Annual Report to Congress—Expired COPS Awards Exceeding \$5 Million.

(3) *Agency form number, if any, and the applicable component of the Department sponsoring the collection:* Form Number: None. Office of Community Oriented Policing Services.

(4) *Affected public who will be asked or required to respond, as well as a brief abstract:* Primary: State, Local, or Tribal Government. Law enforcement agencies that are recipients of COPS grants over \$5,000,000 that are programmatically and financially closed out or that otherwise ended in the immediately preceding fiscal year.

(5) *An estimate of the total number of respondents and the amount of time estimated for an average respondent to respond/reply:* It is estimated that approximately 10 respondents annually will complete the form within one hour.

(6) *An estimate of the total public burden (in hours) associated with the collection:* There are approximately 10 total annual burden hours associated with this collection.

# **Appendix C**

**September 30, 2005**  
**Federal Register Notice**

or faxed comments should be submitted by October 17, 2005.

**John W. Roberts,**

*Acting Chief, National Register/National Historic Landmarks Program.*

**ARKANSAS**

**Faulkner County**

Lee, Carl and Esther, House, (Mixed Masonry Buildings of Silas Owens, Sr. MPS) 17493 US 65S, Damascus, 05001170

Tyler—Southerland House, (Mixed Masonry Buildings of Silas Owens, Sr. MPS) 36 Southerland, Conway, 05001168

Ward, Earl and Mildred, House, (Mixed Masonry Buildings of Silas Owens, Sr. MPS) 1157 Mitchell St., Conway, 05001169

Webb, Joe and Nina, House, (Mixed Masonry Buildings of Silas Owens, Sr. MPS) 2945 Prince, Conway, 05001171

**Washington County**

Prairie Grove Battlefield (Boundary Increase II), N of US 62, E of Prairie Grove, Prairie Grove, 05001167

**COLORADO**

**Montrose County**

North Rim Road, Black Canyon of the Gunnison National Park, Black Canyon of the Gunnison National Park, Crawford, 05001181

**GEORGIA**

**Bartow County**

ATCO—Goodyear Mill and Mill Village Historic District, Roughly bounded by Sugar Valley Rd., Cassville rd. and Pettit Creek, Wingfoot Trail and Litchfield St., Cartersville, 05001172

**MAINE**

**Androscoggin County**

Keystone Mineral Springs, Keystone Rd., Poland, 05001175

**Cumberland County**

Battery Steele, Florida Ave., Peaks Island, Portland, 05001176

Lakeside Grange #63, Main St., jct. of Main St. and Lincoln St., Harrison, 05001173

**Hancock County**

Garland Farm, 1029 ME 3, Bar Harbor, 05001174

**MINNESOTA**

**Cook County**

Grand Portage National Monument, Off US 61 within the area of the Grand Portage Indian Reservation, Grand Portage, 05001180

**MISSOURI**

**Madison County**

St. Louis, Iron Mountain and Southern Railroad Depot, Allen St., 150 ft. No of Jct. of Allen and Kelly Sts., Fredericktown, 05001178

**MONTANA**

**Park County**

Hepburn, John, Place, 626 E. River Rd., Emigrant, 05001177

**New Mexico**

**Santa Fe County**

Kelly, Daniel T., House, (Buildings Designed by John Gaw Meem MPS) 531 E. Palace Ave., Santa Fe, 05001182

**OREGON**

**Multnomah County**

Harrison Court Apartments, 1834 SW. 5th Ave., Portland, 05001179

[FR Doc. 05-19526 Filed 9-29-05; 8:45 am]

**BILLING CODE 4312-51-P**

**DEPARTMENT OF THE INTERIOR**

**Bureau of Reclamation**

**Colorado River Reservoir Operations: Development of Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions**

**AGENCY:** Bureau of Reclamation, Interior.

**ACTION:** Notice of intent to prepare an environmental impact statement (EIS) and notice to solicit comments and hold public scoping meetings on the development of Lower Basin shortage guidelines and coordinated management strategies for the operation of Lake Powell and Lake Mead under low reservoir conditions.

**SUMMARY:** Pursuant to the National Environmental Policy Act (NEPA), the Bureau of Reclamation (Reclamation) proposes to conduct public scoping meetings and prepare an EIS for the development of Lower Colorado River Basin Shortage Guidelines and Coordinated Management Strategies for Operation of Lake Powell and Lake Mead Under Low Reservoir Conditions. The Secretary of the Interior (Secretary) has directed Reclamation to develop additional Colorado River management strategies to address operations of Lake Powell and Lake Mead under low reservoir conditions.

The proposed action is to develop these guidelines and strategies. Through the NEPA process initiated by this **Federal Register** notice, Reclamation is considering development of: (1) Specific guidelines that will identify those circumstances under which the Department of the Interior (Department) would reduce annual water deliveries from Lake Mead to the Lower Basin States below the 7.5 million acre-foot

(maf) Lower Basin apportionment and the manner in which those deliveries would be reduced, and (2) coordinated management strategies for the operation of Lake Powell and Lake Mead.

Alternatives to be analyzed in the EIS have not been developed at this time and will be developed through the NEPA process, including through the upcoming EIS scoping meetings.

**DATES AND ADDRESSES:** Four public meetings will be held to solicit comments on the scope of specific shortage guidelines and other coordinated management strategies and the issues and alternatives that should be analyzed. Oral and written comments will be accepted at the public meetings to be held at the following locations:

- Tuesday, November 1, 2005—6 p.m. to 8 p.m., Hilton Salt Lake City Center, Topaz Room, 255 South West Temple, Salt Lake City, Utah.
- Wednesday, November 2, 2005—6 p.m. to 8 p.m., Adam's Mark Hotel, Tower Court D, 1550 Court Place, Denver, Colorado.

- Thursday, November 3, 2005—6 p.m. to 8 p.m., Arizona Department of Water Resources, Third Floor, Conference Rooms A&B, 500 North Third Street, Phoenix, Arizona.

- Tuesday, November 8, 2005—6 p.m. to 8 p.m., Henderson Convention Center, Grand Ballroom, 200 South Water Street, Henderson, Nevada.

Written comments on the proposed development of these strategies may be sent by close of business on *Wednesday, November 30, 2005*, to: Regional Director, Bureau of Reclamation, Lower Colorado Region, Attention: BCOO-1000, PO Box 61470, Boulder City, Nevada 89006-1470, faxogram at (702) 293-8156, or e-mail at [strategies@lc.usbr.gov](mailto:strategies@lc.usbr.gov); and/or Regional Director, Bureau of Reclamation, Upper Colorado Region, Attention: UC-402, 125 South State Street, Salt Lake City, Utah 84318-1147, faxogram at (801) 524-3858, or e-mail at [strategies@uc.usbr.gov](mailto:strategies@uc.usbr.gov).

**FOR FURTHER INFORMATION CONTACT:** Terrance J. Fulp, PhD., at (702) 293-8500 or e-mail at [strategies@lc.usbr.gov](mailto:strategies@lc.usbr.gov); and/or Randall Peterson at (801) 524-3633 or e-mail at [strategies@uc.usbr.gov](mailto:strategies@uc.usbr.gov). If special assistance is required regarding accommodations for attendance at any of the public meetings, please call Nan Yoder at (702) 293-8495, faxogram at (702) 293-8156, or e-mail at [nyoder@lc.usbr.gov](mailto:nyoder@lc.usbr.gov) no less than 5 working days prior to the applicable meeting(s).

**SUPPLEMENTARY INFORMATION:** In recent years the Colorado River Basin experienced the worst five-year drought

in recorded history. Drought in the Basin has impacted system storage, while demands for Colorado River water supplies have continued to increase. In the future, low reservoir conditions may not be limited to drought periods as additional development of Colorado River water occurs. The Colorado River is of strategic importance in the southwestern United States for water supply, hydropower production, recreation, fish and wildlife habitat, and other benefits. In addition, the Republic of Mexico has an allocation to the waters of the Colorado River pursuant to a 1944 treaty with the United States.

In 2001, the Department adopted Interim Surplus Guidelines (66 FR 7772) that are used by the Secretary in making annual determinations regarding "Normal" and "Surplus" conditions for the operation of Lake Mead. Since adoption, these Guidelines have, among other operational and management benefits, allowed the Department and entities in Arizona, California, and Nevada that rely on the Colorado River greater predictability in identifying when Colorado River water in excess of 7.5 maf will be available for use within these three States. In contrast, at this time the Department does not have detailed guidelines in place for annual determinations of releases from Lake Mead of less than 7.5 maf to water users in the three Lower Division States of Arizona, California, and Nevada (often referred to as a "shortage" condition on the lower Colorado River). Therefore, water users who rely on the Colorado River in these States are not currently able to identify particular reservoir conditions under which the Secretary would release less than 7.5 maf for use on an annual basis. Nor are these water users able to identify the amount of any potential future annual reductions in water deliveries.

Over the past year, the seven Colorado River Basin States have been proactively discussing strategies to address the recent period of system-wide drought in the Colorado River Basin. In addition, Reclamation has conducted detailed briefings for stakeholders in the Colorado River Basin and other interested entities regarding future scenarios for Colorado River operations.

Currently, each year, the Secretary establishes an Annual Operating Plan (AOP) for the Colorado River Reservoirs. The AOP describes how Reclamation will manage the reservoirs over a 12-month period, consistent with the Criteria for Coordinated Long-Range Operation of Colorado River Reservoirs Pursuant to the Colorado River Basin Project Act of September 30, 1968 (Long-Range Operating Criteria), the

Decree entered by the U.S. Supreme Court in the *Arizona v. California* litigation, and other provisions of applicable Federal law. Reclamation consults annually with the Colorado River Basin States, Indian tribes, and other interested parties in the development of the AOP. Further, as part of the AOP process, the Secretary makes annual determinations under the Long-Range Operating Criteria regarding the availability of Colorado River water for deliveries to the Lower Division States. To meet the consultation requirements of Federal law, Reclamation also consults with the Colorado River Basin States, Indian tribes, and other interested parties during the five-year periodic reviews of the Long-Range Operating Criteria.

During the mid-year review of the 2005 AOP conducted this past spring, the Department received conflicting recommendations from the Colorado River Basin States regarding operations of Glen Canyon Dam for the remainder of the 2005 water year. In a May 2, 2005, letter to the Governors of the Colorado River Basin States, issued to complete the 2005 AOP mid-year review, the Secretary directed Reclamation to develop additional strategies to improve coordinated management of the reservoirs in the Colorado River system. Pursuant to that direction, Reclamation conducted a public consultation workshop on May 26, 2005, in Henderson, Nevada; issued a **Federal Register** notice soliciting public comments on June 15, 2005; and conducted public meetings on July 26 and July 28, 2005, in Henderson, Nevada, and Salt Lake City, Utah, respectively. Reclamation received a broad range of public comments and suggestions from these discussions, not all of which can be addressed in this proposed process. In addition, some suggestions may be part of ongoing or future efforts.

In order to assure the continued productive management and use of the Colorado River into the future, Reclamation is now soliciting public comments on the development of Lower Basin shortage guidelines and coordinated management strategies for the operation of Lake Powell and Lake Mead under low reservoir conditions. Reclamation will utilize a public process pursuant to NEPA. By this notice, Reclamation provides notice of its intent to prepare an EIS on this action, and provides notice of its upcoming EIS scoping meetings. Reclamation invites all interested members of the general public, including the seven Colorado River Basin States, Indian tribes, water and

power contractors, environmental organizations, representatives of academic and scientific communities, representatives of the recreation industry, and other organizations and agencies to present oral and written comments concerning the format and scope of specific shortage guidelines and coordinated management strategies, and the issues and alternatives to be considered during the development of these proposed guidelines and strategies. Reclamation anticipates publishing a "scoping report" after completion of the public scoping meetings identified in this **Federal Register** notice.

All comments received will be considered as Reclamation develops formal alternatives under NEPA. Similar to the surplus guidelines referenced above, it is likely that these shortage guidelines will be interim in nature. It is the Department's intent that these guidelines and coordinated management strategies will provide guidance to the Secretary's AOP decisions, and provide more predictability to water users and the public throughout the Colorado River Basin, particularly those in the Lower Division States. The Department does not intend to evaluate the decommissioning of Glen Canyon Dam.

#### Public Disclosure

Written comments, including names and home addresses of respondents, will be made available for public review. Individual respondents may request that their home address be withheld from public disclosure, which will be honored to the extent allowable by law. There may be circumstances in which respondents' identity may also be withheld from public disclosure, as allowable by law. If you wish to have your name and/or address withheld, you must state this prominently at the beginning of your comment. All submissions from organizations, business, and from individuals identifying themselves as representatives or officials of organizations or businesses, will be made available for public disclosure in their entirety.

Dated: September 22, 2005.

**Rick L. Gold,**

*Regional Director—UC Region, Bureau of Reclamation.*

Dated: September 22, 2005.

**Jayne Harkins,**

*Deputy Regional Director—LC Region, Bureau of Reclamation.*

[FR Doc. 05-19607 Filed 9-29-05; 8:45 am]

**BILLING CODE 4310-MN-P**

## **Appendix D**

**Memorandum – Summary of Preliminary  
Public Input for the Development of  
Management Strategies for Lake Powell  
and Lake Mead, Including Lower Basin  
Shortage Guidelines, Under Low  
Reservoir Condition, September, 2005**



# MEMORANDUM

Date: September 7, 2005

To: File  
Administrative Record

From: Terrance Fulp, Area Manager, Boulder Canyon Operations Office,  
Lower Colorado Region  
Randy Peterson, Chief, Environmental Resources Division,  
Upper Colorado Region

Subject: Summary of Preliminary Public Input for the Development of  
Management Strategies for Lake Powell and Lake Mead, including Lower  
Basin Shortage Guidelines, Under Low Reservoir Conditions

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## INTRODUCTION

The purpose of this memorandum is to summarize and document the activities and results of the initial public involvement process. The Secretary of the Interior (Secretary) has directed the U.S. Bureau of Reclamation (Reclamation) to develop additional Colorado River management strategies to address operations of Lake Powell and Lake Mead, including Lower Basin Shortage Guidelines, under low reservoir conditions.

Reclamation is proceeding, at this time, under the assumption that the development of the guidelines and management strategies may require preparation of an Environmental Impact Statement. Reclamation intends to utilize a public process during the development of management strategies for Lake Powell and Lake Mead under low reservoir conditions. As such, Reclamation has invited interested members of the general public, including the seven Colorado River Basin States, Indian Tribes, water and power contractors, environmental organizations, representatives of academic and scientific communities, representatives of the recreation industry, and other organizations and agencies to present oral and written comments concerning the content, format, mechanism, and analysis to be considered during the development of these proposed strategies.

This technical memorandum is organized as follows:

- Introduction and Background

- Public Participation Process
- Comment Review and Database Entry

This memorandum also provides the following supporting information, included as attachments to this technical memorandum.

**Attachments:**

- A. Acronyms
- B. Federal Register Notice
- C. Notices of Public Meetings – News Releases
- D. Public Meeting Sign-In Sheets
- E. Public–Meeting- PowerPoint Presentation

## **PUBLIC PARTICIPATION PROCESS**

The public participation process for the proposed Action was designed to solicit input from the public; from federal, state, and local agencies; and from other interested parties concerning the content, format, mechanism, and analysis to be considered during the development of the proposed strategies and guidelines. As part of this process, Reclamation held two public meetings that provided the public an opportunity to present their comments. These public meetings were attended by individuals and groups interested in the management of the Colorado River water supplies, the operation of the facilities that are used in the management of these supplies, and other aspects of the proposed Project.

### **Public Notices**

Reclamation published in the June 15, 2005, Federal Register, Volume 70, No. 114, page 34794-34795, a notice to solicit comments from the public and Reclamation's intent to hold two meetings to receive additional oral or written comments from the public relative to the subject project. A copy of the Federal Register notice is provided in Attachment B.

Reclamation also issued News Releases on June 15, 2005 and on July 22, 2005 that were published in various upper and lower Colorado River basin community newspapers. These two news releases also provided notice of Reclamation's intention to hold two meetings to receive additional oral or written comments from the public relative to the subject project. Copies of these two news releases are provided in Attachment C.

Lastly, Reclamation also published the above notices on its Website at the following address:

<http://www.usbr.gov/newsroom/newsrelease/index.cfm>

### **Public Meetings**

Reclamation conducted two public meetings to solicit input from the public with respect to the content, format, mechanism, and analysis to be considered during the development of these proposed strategies and guidelines. In general, the public meeting and public comment process resulted in good participation by a cross section of the general public, including local business communities and special interest and environmental groups, as

well as federal, state, and local agencies. The meetings were held at the locations and on the dates noted below.

According to sign-in sheets from the two public meetings, a total of 79 individuals attended the meetings. Attachment D contains copies of the sign-in sheets from the two public meetings.

**Table 1**  
**Public Meeting Attendance**

<b>Meeting Date/Time</b>	<b>Location</b>	<b>Number of Attendees</b>
Tuesday July 26, 2005 10 a.m. to 12 noon	Henderson Convention Center, Grand Ballroom, 200 South Water Street, Henderson, Nevada.	46
Thursday July 28, 2005 10 a.m. to 12 noon	Hilton Salt Lake City Center, Topaz Room, 255 South West Temple, Salt Lake City, Utah	33

Reclamation staff provided a presentation to the attendees at each of the two meetings. The presentation generally followed the following outline:

- ◆ Welcome and Introductions
- ◆ Purpose of Meeting
- ◆ Background on proposed study
- ◆ Objectives of the study
- ◆ Process Schedule
- ◆ Information on Issues/Processes

A copy of the presentation is provided in Attachment E. The presentation was followed by a question and answer period.

The attendees were instructed to submit their comments and suggestions in writing to one of the following addresses:

Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
Attention: BCOO-1000  
P.O. Box 61470  
Boulder City, Nevada 89006-1470  
Email: [strategies@lc.usbr.gov](mailto:strategies@lc.usbr.gov)  
Faxogram: (702) 293-8156

Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
Attention: UC-402  
125 South State Street  
Salt Lake City, Utah 84318-1147  
Email: [strategies@uc.usbr.gov](mailto:strategies@uc.usbr.gov)  
Faxogram: (801) 524-3858

### **Comment Period**

Reclamation provided a 77-day comment period consistent with the Public Notice issued on June 15, 2005. The comment period closed on August 31, 2005.

## **COMMENT REVIEW AND DATABASE ENTRY**

This section presents a summary of the number and general content of the comments received during the public comment period. All public comments received were directed to Reclamation to ensure consistency and accuracy of handling and disposition. All written comments received were processed consistent with the following set of protocols.

### **Comment Receipt and Cataloging**

Comments were received by Reclamation's Upper and Lower Colorado Region Offices.. Reclamation's Lower Colorado Regional Office staff screened the comments to identify duplicate copies of letters received from the same Commentors.<sup>1</sup> Original copies of all comment letters are being maintained by Reclamation.

As comments were received, the comment letters were assigned a code and source identification and entered into a database. Code identifications were assigned according to the following method:

1. Comments were classified and assigned a letter code according to commentor type or category, i.e. federal agency (F), state agency (S), local agency or water district (L), special interest or environmental group (G), individual (I), business (B).
2. A number code was then assigned to identify comment letters by the sequence in which they were received. For example, the third letter received from a local agency was assigned the code "L.003", which signifies that that this was the third letter received from a local agency.

### **Data Entry of Individual Comments**

Following initial cataloging, each comment letter was evaluated and the specific comments provided therein were identified. When more than one issue was presented within any given comment letter, an additional numeric code was used to define the order in which the comments/issues were presented within the letter. For example, the second comment/issue raised within the third letter received from a local agency would be assigned the following code "L-0003.2."

Individual comment summaries were then entered into a sortable and searchable database to facilitate subsequent efficient summarization and retrieval of specific comments related to specific issues. It should be noted that several hundred form letters (identical comment letters) were received. While each commentor and respective comments were considered, the approximately identical form letters were grouped to minimize the number of database entries.

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<sup>1</sup> The word "commentor" is a commonly used term in the NEPA process and EIS preparation process and generally refers to any person, agency, or other entity that provides written or oral comments or input relative to the content, process, scope, or analysis of the NEPA/EIS process.

## Data Analysis and Summarization

After being entered into the database, comments were sorted by three main categories;

- ◆ Format/Mechanics
- ◆ Content, and
- ◆ Analysis

The “Analysis” category was further sorted by the following resource and/or issue areas to assess the public and agency concerns related to the proposed study.

- ◆ Agriculture Resources
- ◆ Cultural Resources
- ◆ Groundwater
- ◆ Land Use / Planning
- ◆ Public Services
- ◆ Reservoir Management
- ◆ Transboundary Impacts
- ◆ Utilities / Service Systems
- ◆ Water Quality
- ◆ Water Use
- ◆ Alternatives
- ◆ Biological Resources
- ◆ Energy / Power Production
- ◆ Hydrology
- ◆ Population / Housing
- ◆ Recreation
- ◆ Socio-economics
- ◆ Transportation / Traffic
- ◆ Water Supply / Quantity
- ◆ Water Rights
- ◆ Miscellaneous

This approach facilitated a comprehensive identification of all issues that were presented with respect to the proposed development of additional Colorado River management strategies to address operations of Lake Powell and Lake Mead, including Lower Basin Shortage Guidelines, under low reservoir conditions. Results from this analysis are summarized in the following sections of this report.

### Overview of Number of Commentors and Comments

A total of 1,087 written comment letters were received and these contained some 5,060 comments. Some 924 of the 1,087 letters received consisted of form letters sent by different individual commentors. There were two different form letters. The first form letter was repeated 15 times. The text and comments in these 15 form letters were essentially the same. The second form letter was repeated 909 times. Similarly, the text and comments in these 909 form letters were also essentially the same. As such, of the 1,087 comment letters received, only some 165 can be considered unique.

Table 2 provides a summary of the number of comment letters and comments by Commentor Type.

**Table 2  
Number of Commentors Submitting Written Comments**

Comment / Factor	Commenter Type						Total
	Business	Federal Agency	Special Interest / Environmental Group	Individual	Local Agency / Water District	State Agency	
Total Number of Written Comment Letters Received	3	5	13	1054	8	4	<b>1,087</b>
Total Number Comments Provided Within The Comment Letters	5	32	67	4,897	27	32	<b>5,060</b>
Number of Unique Comment Letters Received	3	5	13	132	8	4	<b>165</b>
Number of Unique Comments	5	32	32	48	20	28	<b>149<sup>1</sup></b>

Notes:

1. The total number of Unique Comments is different than the numeric sum of the unique comments of the different Commentor types because some of the comments are common between the different Commentor types.

### **Use of Results in the Proposed Study**

Based on the public comments provided in this preliminary public input process, Reclamation has determined that the adoption and implementation of one or more additional Colorado River management strategies and /or guidelines will, most likely, represent a federal action that may be subject to review under the National Environmental Policy Act (NEPA) and the preparation of an Environmental Impact Statement (EIS). As such, Reclamation is proceeding, at this time, under the assumption that the development of the management strategies and guidelines will require preparation of an EIS.

Reclamation will undertake the subject study effort in a multi-phased approach. The proposed first phase of the study (Phase I) is expected to be comprised of a more thorough public scoping process which will include a formal consultation process with the seven Colorado River Basin States, Tribal Governments, other stakeholders and interested parties. This process is expected to generate a range of alternatives and issues to be considered and addressed in the subsequent phases of the study.

Copies of the detailed comment letters and their analyses will be combined and evaluated with additional comments that are anticipated will be received during the Public Scoping process. The combined set of comments will subsequently be evaluated and thereafter will be provided to all resource specialists on the study team to ensure that they consider the relevant issues in their technical analyses as the study proceeds.

### **Proposed Public Scoping Phase and Scoping Meetings**

One of the required activities associated with preparation of an EIS is the solicitation and review of public and agency input as a component of the identification and analysis of potential environmental impacts and alternatives. This process of determining the key environmental issues to be addressed in the EIS document is termed “scoping.” The scoping for this project will be a separate and additional step from this preliminary public input process.

# Attachments

- A. Acronyms
- B. Federal Register Notice
- C. Notices of Public Meetings – News Releases
  - C.1 June 15, 2005, News Release
  - C.2 July 22, 2005, News Release
- D. Public Meeting Sign-In Sheets
  - D.1 July 26, 2005, Henderson, Nevada, Sign-In Sheet (1)
  - D.2 July 26, 2005, Henderson, Nevada, Sign-In Sheet (2)
  - D.3 July 26, 2005, Henderson, Nevada, Sign-In Sheet (3)
  - D.4 July 28, 2005, Salt Lake City, Utah, Sign-In Sheet (1)
  - D.5 July 28, 2005, Salt Lake City, Utah, Sign-In Sheet (2)
- E. Public Meeting Presentation

# **Attachment A**

## **Acronyms**



## Acronyms

AF	acre feet
af/yr	acre-feet per year
CEQ	Council on Environmental Quality
Department	Department of the Interior
maf	Million Acre-Feet
NEPA	National Environmental Policy Act
NOI/NOP	Notice of Intent/Notice of Preparation
Proposed Project	Development of Management Strategies for Lake Powell and Lake Mead, including Lower Basin Shortage Guidelines, Under Low Reservoir Conditions
Secretary	Secretary of the Department of the Interior
Reclamation	U.S. Bureau of Reclamation

# **Attachment B**

## **Federal Register Notice**

Bureau of Land Management lands, inquiries may also be directed to Taylor Brelsford, Subsistence Coordinator, Alaska State Office, 222 West 7th Avenue, #13, Anchorage, Alaska 99513; phone (907) 271-5806.

**SUPPLEMENTARY INFORMATION:** Regional Council discussion during the meeting will be devoted to the review and recommendation of the East Alaska Draft Resource Management Plan and Environmental Impact Statement.

Dated: June 7, 2005.

Henri R. Bisson,  
State Director.

[FR Doc. 05-11774 Filed 6-14-05; 8:45 am]

BILLING CODE 4310-JA-P

## DEPARTMENT OF THE INTERIOR

### Bureau of Reclamation

#### Colorado River Reservoir Operations: Development of Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions

**AGENCY:** Bureau of Reclamation, Interior.

**ACTION:** Notice to solicit comments and hold public meetings on the development of management strategies for Lake Powell and Lake Mead, including Lower Basin shortage guidelines, under low reservoir conditions.

**SUMMARY:** The Secretary of the Interior (Secretary) has directed the Bureau of Reclamation (Reclamation) to develop additional Colorado River management strategies to address operations of Lake Powell and Lake Mead under low reservoir conditions. It is anticipated that, among other potential elements, these strategies could identify those circumstances under which the Department of the Interior (Department) would reduce annual water deliveries, and the manner in which annual operations would be modified.

**DATES AND ADDRESSES:** Two public meetings will be held to solicit comments on the content, format, mechanism, and analysis to be considered during the development of management strategies for Lake Powell and Lake Mead under low reservoir conditions. Oral and written comments will be accepted at the public meetings to be held at the following locations:

- *Tuesday, July 26, 2005*—10 a.m. to 12 noon, Henderson Convention Center, Grand Ballroom, 200 South Water Street, Henderson, Nevada.
- *Thursday, July 28, 2005*—10 a.m. to 12 noon, Hilton Salt Lake City Center,

Topaz Room, 255 South West Temple, Salt Lake City, Utah.

Written comments on the proposed development of these strategies may be sent by close of business on *Wednesday, August 31, 2005*, to: Regional Director, Bureau of Reclamation, Lower Colorado Region, Attention: BCOO-1000, P.O. Box 61470, Boulder City, Nevada 89006-1470, fax at 702-293-8156, or e-mail at [strategies@lc.usbr.gov](mailto:strategies@lc.usbr.gov); and/or Regional Director, Bureau of Reclamation, Upper Colorado Region, Attention: UC-402, 125 South State Street, Salt Lake City, Utah 84318-1147, fax at 801-524-3858, or e-mail at [strategies@uc.usbr.gov](mailto:strategies@uc.usbr.gov).

**FOR FURTHER INFORMATION CONTACT:**

Terrance J. Fulp, Ph.D., at 702-293-8500 or e-mail at [strategies@lc.usbr.gov](mailto:strategies@lc.usbr.gov); and/or Randall Peterson at 801-524-3633 or e-mail at [strategies@uc.usbr.gov](mailto:strategies@uc.usbr.gov). If special assistance is required regarding accommodations for attendance at either of the public meetings, please call Nan Yoder at 702-293-8495, fax at 702-293-8156, or e-mail at [nyoder@lc.usbr.gov](mailto:nyoder@lc.usbr.gov) no less than 5 working days prior to the applicable meeting(s).

**SUPPLEMENTARY INFORMATION:** In recent years the Department has undertaken a number of initiatives to improve the efficient and coordinated operation and management of the Colorado River. For example, a number of Indian water rights settlements have been enacted and implemented, while additional settlements are under active negotiation. Important programs have been developed in the Upper and Lower Basins to address conservation of endangered species. Scientific investigations are proceeding under the framework of the Glen Canyon Adaptive Management Program to study the impacts to and improve the values for which the Grand Canyon National Park and the Glen Canyon National Recreation Area were established. In 2003, water users in California executed agreements that will assist California to limit its use of water from the Colorado River to its normal year apportionment of 4.4 million acre-feet (maf).

More recently a new management challenge has emerged on the Colorado River. The Colorado River Basin has experienced the worst five-year drought in recorded history. Drought in the Basin has impacted system storage, while demands for Colorado River water supplies have continued to increase. During the period from October 1, 1999, to October 1, 2004, storage in Colorado River reservoirs fell from 55.7 maf to 29.7 maf.

In the future, low reservoir conditions may not be limited to drought periods as additional development of Colorado River water occurs. The Colorado River is of strategic importance in the southwestern United States for water supply, hydropower production, recreation, fish and wildlife habitat, and other benefits. In addition, the Republic of Mexico has an allocation to the waters of the Colorado River pursuant to a 1944 treaty with the United States.

In a May 2, 2005, letter to the Governors of the Colorado River Basin States, issued in the context of the 2005 Annual Operating Plan mid-year review, the Secretary directed Reclamation to develop additional strategies to improve coordinated management of the reservoirs in the Colorado River system. Pursuant to that direction, Reclamation conducted a public consultation workshop on May 26, 2005, in Henderson, Nevada, and has prepared this **Federal Register** notice. In order to assure the continued productive use of the Colorado River into the future, Reclamation is soliciting public comments on, at a minimum, the development of management strategies for the operation of Lake Powell and Lake Mead under low reservoir conditions.

It is the Department's intent that the development of additional management strategies, including Lower Basin Shortage Guidelines, will provide guidance to the Secretary's Annual Operating Plan decisions, and provide more predictability to water users throughout the Basin, particularly those in the Lower Division States of Arizona, California, and Nevada. For example, in 2001 the Department adopted Interim Surplus Guidelines (66 FR 7772) that are used by the Secretary in making annual determinations regarding "Normal" and "Surplus" conditions for the operation of Lake Mead. Among other provisions, these Guidelines have allowed the Department and entities in Arizona, California, and Nevada that rely on the Colorado River greater predictability in identifying when Colorado River water in excess of 7.5 maf will be available for use within these three states. In contrast, at this time the Department does not have detailed guidelines in place for annual determinations of releases from Lake Mead of less than 7.5 maf to water users in the three Lower Division States (often referred to as a "shortage" condition on the lower Colorado River). Therefore, water users who rely on the Colorado River in these states are not currently able to identify particular reservoir conditions under which the Secretary would release less than 7.5 maf for use

on an annual basis. Nor are these water users able to identify the amount of any potential future annual reductions in water deliveries. By developing additional management strategies, these users would be better able to plan for periods of less than full water deliveries. Additional operational tools may also facilitate conservation of reservoir storage, thereby minimizing the adverse effects of long-term drought or low-reservoir conditions in the Colorado River Basin.

Over the past year, the seven Colorado River Basin States have been proactively discussing strategies to address the current system-wide drought in the Colorado River Basin. In addition, Reclamation has conducted detailed briefings for stakeholders in the Colorado River Basin and other interested entities regarding future scenarios for Colorado River operations. Reclamation will integrate available technical information in the upcoming development of additional management strategies for Colorado River operations.

Reclamation intends to utilize a public process during the development of management strategies for Lake Powell and Lake Mead under low reservoir conditions. By this notice, Reclamation invites all interested members of the general public, including the seven Colorado River Basin States, Indian Tribes, water and power contractors, environmental organizations, representatives of academic and scientific communities, representatives of the recreation industry, and other organizations and agencies to present oral and written comments concerning the content, format, mechanism, and analysis to be considered during the development of these proposed strategies.

Reclamation has not yet determined the appropriate level of National Environmental Policy Act (NEPA) documentation for the upcoming development of additional management strategies. However, to ensure timely consideration of technical information and public comment, Reclamation is proceeding, at this time, as if the development of additional management strategies would require preparation of an Environmental Impact Statement. Information received by Reclamation pursuant to this **Federal Register** notice and the upcoming public meetings will be analyzed in order to define the nature of any proposed federal actions, the level of appropriate NEPA documentation, and the need, if any, for additional scoping activities. In addition to NEPA documentation, other compliance activities, as appropriate,

will be undertaken pursuant to applicable Federal law.

#### Public Disclosure

Written comments, including names and home addresses of respondents, will be made available for public review. Individual respondents may request that their home address be withheld from public disclosure, which will be honored to the extent allowable by law. There may be circumstances in which respondents' identity may also be withheld from public disclosure, as allowable by law. If you wish to have your name and/or address withheld, you must state this prominently at the beginning of your comment. All submissions from organizations, business, and from individuals identifying themselves as representatives or officials of organizations or businesses, will be made available for public disclosure in their entirety.

Dated: June 6, 2005.

**Darryl Beckmann**,  
Deputy Regional Director—UC Region,  
Bureau of Reclamation.

Dated: June 7, 2005.

**Robert W. Johnson**,  
Regional Director—LC Region, Bureau of  
Reclamation.

[FR Doc. 05-11776 Filed 6-14-05; 8:45 am]

BILLING CODE 4310-MN-P

## DEPARTMENT OF JUSTICE

### Office of Community Oriented Policing Services, Agency Information Collection Activities: Proposed Collection; Comments Requested

**ACTION:** 60-day notice of information collection under review: Annual Report to Congress—Expired COPS Awards Exceeding \$5 Million.

The Department of Justice (DOJ) Office of Community Oriented Policing Services (COPS) has submitted the following information collection request to the Office of Management and Budget (OMB) for review and approval in accordance with the Paperwork Reduction Act of 1995. The proposed information collection is published to obtain comments from the public and affected agencies. The purpose of this notice is to allow for 60 days for public comment until August 15, 2005. This process is conducted in accordance with 5 CFR 1320.10.

If you have comments especially on the estimated public burden or associated response time, suggestions, or need a copy of the proposed

information collection instrument with instructions or additional information, please contact Rebekah Dorr, Department of Justice Office of Community Oriented Policing Services, 1100 Vermont Avenue, NW., Washington, DC 20530.

Written comments and suggestions from the public and affected agencies concerning the proposed collection of information are encouraged. Your comments should address one or more of the following four points:

- Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;
- Evaluate the accuracy of the agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;
- Enhance the quality, utility, and clarity of the information to be collected; and
- Minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g., permitting electronic submission of responses.

#### Overview of This Information Collection

(1) *Type of Information Collection:* New Collection.

(2) *Title of the Form/Collection:* Annual Report to Congress—Expired COPS Awards Exceeding \$5 Million.

(3) *Agency form number, if any, and the applicable component of the Department sponsoring the collection:* Form Number: None. Office of Community Oriented Policing Services.

(4) *Affected public who will be asked or required to respond, as well as a brief abstract:* Primary: State, Local, or Tribal Government. Law enforcement agencies that are recipients of COPS grants over \$5,000,000 that are programmatically and financially closed out or that otherwise ended in the immediately preceding fiscal year.

(5) *An estimate of the total number of respondents and the amount of time estimated for an average respondent to respond/reply:* It is estimated that approximately 10 respondents annually will complete the form within one hour.

(6) *An estimate of the total public burden (in hours) associated with the collection:* There are approximately 10 total annual burden hours associated with this collection.

# **Attachment C**

## **Notice of Public Meetings**

### **C.1 June 15, 2005, News Release**

# News Release

## June 15, 2005

Lower Colorado Region  
Boulder City, Nev.

Media Contact:

Bob Walsh  
702-293-8421

Barry Wirth  
801-524-3774

Released On: June 15, 2005

### **Reclamation Seeks Public Comment on Development of Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions**

The Bureau of Reclamation today filed a Federal Register Notice requesting public comment on the development of management strategies for Lakes Powell and Mead, on the Colorado River, under low reservoir conditions. Among the management strategies anticipated are shortage guidelines for the Lower Colorado River Basin.

The strategies will likely identify those circumstances under which the Department of the Interior would reduce annual Colorado River water deliveries and the manner in which annual operations of the Colorado River reservoirs would be modified under low reservoir conditions.

The Department expects the strategies to provide guidance to the Secretary's Annual Operating Plan decisions, and provide more predictability to water users throughout the Basin, particularly the Lower Basin states of Arizona, California, and Nevada.

The Annual Operating Plan - developed in consultation with the Basin States, water and power users, Tribes, environmental and recreational groups and other interested parties - guides operation of the Colorado River. Among other elements, it specifies whether the amount of Colorado River water available to be released from Lake Mead to Lower Basin users in a given year will be "normal" (7.5 million acre-feet), "surplus" (more than 7.5 million acre-feet) or "shortage" (less than 7.5 million acre-feet).

Interim Surplus Guidelines were adopted in 2001 for use in making annual determinations regarding "normal" and "surplus" conditions. Those guidelines allow the Department and entities in Arizona, California, and Nevada to have greater predictability in identifying when more than 7.5 maf of Colorado River water will be available for use within these three states.

Adoption of detailed guidelines for making "shortage" determinations would enable water users in the three states to identify reservoir conditions under which less than 7.5 maf would be available for use on an annual basis, as well as the amount of any potential future annual reductions in water deliveries. This would allow these users to better plan for periods of less than full water deliveries. Additional operational tools may also facilitate conservation of reservoir storage, minimizing the adverse effects of long-term drought or low-reservoir conditions in the Colorado River Basin.

Reclamation will use a public process to develop these strategies. To begin that process, Reclamation is soliciting comments from all interested parties on the content, format, mechanism and analysis to be considered during their development.

There will be two public meetings to solicit comments, but individuals or entities that cannot attend the meetings may still submit comments, to the addresses and within the timeframes noted below.

The dates, times and locations of the public meetings are:

- Tuesday, July 26, from 10:00 a.m. to 12:00 noon PDT at the Henderson Convention Center Grand Ballroom, 200 South Water Street, Henderson, Nevada; and
- Thursday, July 28, from 10:00 a.m. to 12:00 noon MDT at the Hilton Salt Lake City Center Topaz Room, 255 South West Temple, Salt Lake City, Utah.

Oral and written comments will be accepted at these meetings.

All comments must be received by close of business (4:00 p.m. Mountain Daylight or Pacific Daylight Time) on Wednesday, August 31, 2005.

Comments can be mailed, faxed, or e-mailed to:

Regional Director, Bureau of Reclamation, Lower Colorado Region, Attention: BCOO-1000, P.O. Box 61470, Boulder City, Nevada 89006-1470, (702) 293-8156, [strategies@lc.usbr.gov](mailto:strategies@lc.usbr.gov); and/or Regional Director, Bureau of Reclamation, Upper Colorado Region, Attention: UC-402, 125 South State Street, Salt Lake City, Utah 84318-1147, (801) 524-3858, [strategies@uc.usbr.gov](mailto:strategies@uc.usbr.gov).

The full Federal Register Notice is available on Reclamation's Web site, at <http://www.usbr.gov/lc/region/g4000/docs/strategies.pdf>

# **Attachment C**

## **Notice of Public Meetings**

### **C.2 July 22, 2005, News Release**



# News Release

## July 22, 2005

Lower Colorado Region  
Boulder City, Nev.

Media Contact:

Robert Walsh  
702-293-8421

Doug Hendrix  
801-524-3837

Released On: July 22, 2005

### **Public meetings seek comment on development of management strategies for Lake Powell and Lake Mead under low reservoir conditions**

Public meetings will be held in Las Vegas, NV, and in Salt Lake City, UT, on July 26 and July 28, respectively, to solicit comments on the content, format, mechanism and analysis Reclamation should consider during the development of management strategies for Lake Powell and Lake Mead under low reservoir conditions.

The strategies will likely identify those circumstances under which the Department of the Interior would reduce annual Colorado River water deliveries to users in Nevada, Arizona and California, and the manner in which annual operations of these two Colorado River water bodies would be modified under low reservoir conditions.

The dates, times and locations of the meetings are:

- Tuesday, July 26, from 10:00 a.m. to 12:00 noon PDT at the Henderson Convention Center Grand Ballroom, 200 South Water Street, Henderson, Nevada.
- Thursday, July 28, from 10:00 a.m. to 12:00 noon MDT at the Hilton Salt Lake City Center Topaz Room, 255 South West Temple, Salt Lake City, Utah.

Oral and written comments will be accepted at the meetings. Entities or individuals who are unable to attend a meeting but who wish to submit comments can do so until 4:00 p.m. Mountain or Pacific Daylight Time on Wednesday, August 31, 2005. Comments can be mailed, faxed, or e-mailed to:

Regional Director, Bureau of Reclamation, Lower Colorado Region, Attention: BCOO-1000, P.O. Box 61470, Boulder City, Nevada 89006-1470, (702) 293-8156, [strategies@lc.usbr.gov](mailto:strategies@lc.usbr.gov); and/or Regional Director, Bureau of Reclamation, Upper Colorado Region, Attention: UC-402, 125 South State Street, Salt Lake City, Utah 84138-1147, (801) 524-3858, [strategies@uc.usbr.gov](mailto:strategies@uc.usbr.gov).

A Federal Register Notice regarding this proposed action is available on Reclamation's Web site, at [www.usbr.gov/lc/riverops.html/strategies.pdf](http://www.usbr.gov/lc/riverops.html/strategies.pdf)

# **Attachment D**

## **Public Meeting Sign-In Sheets**

### **D.1 July 26, 2006, Henderson, Nevada Sign-In Sheet (1)**

Development of Management Strategies for Lake Powell and Lake Mead  
under Low Reservoir Conditions Public Meeting

Henderson Convention Center  
Henderson, Nevada  
July 26, 2005, 10:00 AM

CONTACT INFORMATION FOR INTEREST MAILING LIST

Name	Agency	Phone	Email Address
1. <u>Margaret George</u>	<u>MCCWA</u>	<u>505 7785</u> <u>928 988</u>	<u>mrglaw@npgcable.com</u>
2. <u>V. DANOS</u>	<u>AMNWA</u>	<u>602 240 492</u>	<u>vdanos@amnwa.org</u>
3. <u>Abbas Amirteymour</u>	<u>CRB</u>	<u>818 548 3023</u>	<u>abamir@crb.ca.gov</u>
4. <u>DON GROSS</u>	<u>AOWR</u>	<u>602-417-2400</u>	<u>djgross@AZwater.gov</u>
5. <u>Krystal Pruzinsky</u>	<u>Brown &amp; Caldwell</u>	<u>702-266-8083</u>	<u>kpruzinsky@browncauld.com</u>
6. <u>Anthony Miller</u>	<u>CRC of NV</u>	<u>702-486-2516</u>	<u>anthony.miller@crc.nv.gov</u>
7. <u>JAN MATUSAK</u>	<u>MWD</u>	<u>213-217-6772</u>	<u>jmatusak@mwdh2o.com</u>
8. <u>Sandra Donnelly</u>	<u>Big Bend WD</u>	<u>(702) 639-5631</u>	<u>sdonnelly@cleanwaterteam.com</u>
9. <u>Harvey Boyce</u>	<u>Ari 2 Pwr Auth.</u>	<u>(602) 542-4263</u>	<u>harvey@powerauthority.org</u>
10. <u>Phillip Lehn</u>	<u>CRC of NV</u>	<u>702-486-2669</u>	<u>plehn@crc.nv.gov</u>
11. <u>Ernie Buschman</u>	<u>SCMR</u>	<u>702-361-6440</u>	<u>Buschman EPE@Aol.Com</u>
12. <u>Janice D. Paul</u>	<u>City of Billhead City</u>	<u>(928) 763-0123</u>	<u>janice@billheadcity.com</u>
13. <u>PERRI BENEMERIS</u>	<u>AOWR</u>	<u>602 417 2400</u> <u>X7171</u>	<u>perbenemeris@azwater.gov</u>
14. <u>Patrick F Quinn</u>	<u>NELLIS AFD</u>	<u>702-652-6121</u>	<u>patrick.quinn@nellis.af.mil</u>
15. <u>Joli Algotz</u>	<u>Ft Mojave Tribe</u>	<u>928 346-1606</u>	<u>jalgots@ftmojave.com</u>
16. <u>CHARLES F MOON</u>	<u>CHUMARIN INDIAN TRIBE</u>	<u>760 858-4219</u>	<u>charles15@yahoo.com</u>
17. <u>Tom Hine</u>	<u>AZ Power Auth.</u>	<u>619 818 9392</u>	<u>thineesg@yaflo.com</u>
18. <u>JULIAN RHINEHART</u>		<u>702 252-4046</u>	<u>JULIANR@COX.NET</u>
19. <u>DAVID HASKELL</u>	<u>TURNING RIVERS</u>	<u>928 567 8873</u>	<u>dhaskell@peoplepc.com</u>
	<u>JAMES Co. PA Fishing Guild</u>	<u>702-565-5396</u>	<u>fishingcorp@AOL.com</u>

# **Attachment D**

## **Public Meeting Sign-In Sheets**

### **D.2 July 26, 2005, Henderson, Nevada Sign-In Sheet (2)**

**Development of Management Strategies for Lake Powel and Lake Mead  
under Low Reservoir Conditions Public Meeting**

**Henderson Convention Center  
Henderson, Nevada  
July 26, 2005, 10:00 AM**

**CONTACT INFORMATION FOR INTEREST MAILING LIST**

Name	Agency	Phone	Email Address
20. Gary Warsletski	NPS-LAKE Mead/NRA	293-8920	gary-warsletski@nps.gov
21. Brian Young	WAPA-DSW	602-605-2524	byoung@wapa.gov
22. Jim Holland	NPS LAKE MEAD NRA	702 273 5886	Jim.Holland@nps.gov
23. Kara Gillon	Defenders of the Earth	505-248-0118 435-259-1063	kgillon@defenders.org
24. JOHN WEISHEIT	LIVING RIVER/CO. RIVERKISPER		JOHN@LIVINGRIVERS.ORG
25. MICHAEL B. JACKSON	Attorney	(530)283-1007	mjathy@sbcglobal.net
26. KATHLEEN RICHARDS	CITY OF HENDERSON	267-2516	kathleen.richards@cityofhenderson.com
27. Ken Rice	BOR	928-645-0401	Ken@uc.usbr.gov
28. Ken Baughman	Wellton-Mohawk	928-785-3351	kbaughman@wmidd.org
29. Jeremy Dault	BUR	293 8423	
30. JOANN SchocH	CONGR US. J. PORTER	387-4941	
31. BRIAN McBRIDE	" "	" "	
32. AUSA Divine	I.I.D.	760-339-9036	ajdivine@iid.com
33. GEORGE CAAN	CRC Colorado River	702-486-2670	gcaan@cr.crv.gov
34. Jerry Zimmerman	Beard of CR	818-543-412	jvzimmerman@crbic.gov
35. Robert S. Lynch	Attorney	602 259-5908	rslynch@rslynch.aty.com
36. Bruce Moore	BOR	293-8553	bmoore@lc.usbr.gov
37. J. BARRY SHUPE	USAF-NEWIS AFB	652-8228	james.shupe@nltis.af.mil

# **Attachment D**

## **Public Meeting Sign-In Sheets**

### **D.3 July 26, 2005, Henderson, Nevada Sign-In Sheet (3)**

**Development of Management Strategies for Lake Powel and Lake Mead  
under Low Reservoir Conditions Public Meeting**

**Henderson Convention Center  
Henderson, Nevada  
July 26, 2005, 10:00 AM**

**CONTACT INFORMATION FOR INTEREST MAILING LIST**

Name	Agency	Phone	Email Address
38. Tom Maher	SNWA	702-862-3702	tom.maher@snwa.com
39. Jim Davenport	CRCA	702-486-2689	jdavenport@crca.nv.gov
40. Doyle Wilson	Lake Havasu City	928-453-6660	wilsondo@lhcab.gov
41. Michael Amey	Self	702-255-1536	mamey1@aol.com
42. Ed Kehring	Self	702-796-9079	edv2@com.net
43. Henry Brown	LV Review Journal	702-383-0350	hbrown@reviewjournal.com
44. Eickman	W. River Watershed P.	702-555-8522	eickman@crvcd.org
45. Wm Davis	Self	293-1097	
46. Peggy Reef	SNWA	822-3309	peggy.reef@snwa.com
47.			
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# **Attachment D**

## **Public Meeting Sign-In Sheets**

### **D.4 July 28, 2005, Salt Lake City, Utah Sign-In Sheet (4)**



**Development of Management Strategies for Lake Powell and Lake Mead  
under Low Reservoir Conditions Public Meeting**

**Hilton Hotel  
Salt Lake City, Utah  
July 28, 2005, 10:00 AM**

**CONTACT INFORMATION FOR INTEREST MAILING LIST**

Name	Agency	Phone	Email Address
1. JOHN WEISHEIT	LIVING RIVERS	435-259-1063	JOHN@LIVINGRIVERS.ORG
2. Michael Garrod	Sweetwater Authority	(619) 409-6752	mgarrod@sweetwater.org
3. KIM ROBERTS	NATC TANK SERV	928-608-1205	KIM-ROBERTS@NPS.GOV
4. PERRI BERNARDIS	ADWR	602-4172400	pbernardis@azwater.gov
5. STEVEN WARD	FRIENDS of LAKE POWELL	928-645-1001	WARD-STEW@ARAMARK.COM
6. Dae Holladay	Holiday Exp.	801-266-2087	dae@bikerest
7. CURR BARRETT	CREDA	435-882-0164	cibarre@cttglobal.net
8. Stephen Trimble	writer/photographer	801-364-3031	stew@stephentrimble.net
9. Chuck Klingenstein	Jobs + Skills	953-4925	cklingenstein@jma.net.com
10. Werner A. Ruenmundo	seft	298-5011	wruenmunde@msn.com
11. JIM WECHSLER	SIERRA CLUB	801-583-2090	jawex@arcos.net
12. Sam Loftin	WAPA	801-524-6381	loftin@wapa.gov
13. Ted Rampton	WAMPS	801-566-3938	ted@wamps.com
14. JARED HANSEN	CUWCD	801-226-7152	Jhansen@cuwcd.com
15. Jason Wisser	Branca Canal	817-933-5122	jwisser@brancahd.com
16. Mark Thiesse	Associated Reg	214-222-8465	
17. Dan Resmondo	ARAMARK	928-615-1011	Resmondo-Dan@ARAMARK.com
18. Clayton Palmer	WAPA	(801) 524-3522	CSPalmer@wapa.gov
19. Jayne Kelleher	Reclamation	701-524-3610	jkelleher@recl.usbr.gov

# **Attachment D**

## **Public Meeting Sign-In Sheets**

**D.5 July 28, 2005, Salt Lake City, Utah Sign-In Sheet (5)**

**Development of Management Strategies for Lake Powell and Lake Mead  
under Low Reservoir Conditions Public Meeting**

**Hilton Hotel  
Salt Lake City, Utah  
July 28, 2005, 10:00 AM**

**CONTACT INFORMATION FOR INTEREST MAILING LIST**

Name	Agency	Phone	Email Address
20. Bob Brister		(801) 363-8898	bbrister@greens.org
21. Jerry Zimmerman	CRR	818-543-4676	jzimmerman@crb.ca.gov
22. Larry Anderson	Ut Div of Water Res	538-7256	LarryAnderson@utd.gov
23. Don Ostler	Upper Colo. R. Comm.	801-531-1150	dostler@uc.usbr.gov
24. Randy Seaborn	Colo. Water Cons Bd.	303-866-3441	randy.seaborn@state.co.us
25. Paul Rusanowski	Sleeping Group	888-270-2157	p.rusanowski@sleepinggroup.com
26. Tom Maher	SNWA	702-862-3702	tom.maher@snwa.com
27. Bill Rideout	DOI	531-3639	billrideout@msn.com
28. Boyd Clayton	UTAH WATER RIGHTS	801-538-7390	boydclayton@utah.gov
29. Robert Key	WWR	801-336-775	RobertKey@wrh.gov
30. Barry Wirth	Reclamation	801-524-3774	bwirth@uc.usbr.gov
31. Carlo Hyde		801-451-6245	
32. Doug Hendrix	BOB	(901) 524-3837	dhendrix@uc.usbr.gov
33. Daniel Hafan	Dick Powell	435-896-5890	dghafan@fem.gov
34.			
35.			
36.			
37.			

# **Appendix E**

## **Public Involvement Plan**

**Public Involvement Plan**  
**Development of Lower Basin Shortage Guidelines and**  
**Coordinated Management Strategies for Lake Powell and Lake**  
**Mead Under Low Reservoir Conditions**

*Revised 1/5/06<sup>1</sup>*

**Lead Agency**

Bureau of Reclamation (Reclamation), Upper and Lower Colorado River Regions

**Project**

The Secretary of the Interior (Secretary) has directed Reclamation to develop additional Colorado River management strategies to address operations of Lake Powell and Lake Mead under low reservoir conditions. Reclamation proposes to conduct public scoping meetings and prepare an EIS for the development of Lower Colorado River Basin Shortage Guidelines and Coordinated Management Strategies for Operation of Lake Powell and Lake Mead Under Low Reservoir Conditions. The proposed action is the development and adoption of these guidelines and strategies.

**Situation Analysis**

The Colorado River water supply is of utmost importance to Colorado River users and stakeholders. It is a finite system, however, with increasing demands for a variety of uses – farming, urban water supply, power producers, recreation, and environment. The Colorado River is governed by a complex body of existing laws, the Law of the River, that guides appropriation, allocation and use of Colorado River water. Furthermore, the Upper and Lower Basin states have differing priorities and needs, which can be in conflict.

While near term water conservation actions and program may minimize future drought impacts, the Secretary of the Interior has directed Reclamation to develop management strategies for operations under low reservoir conditions that will include shortage guidelines.

For the development of the strategies and guidelines, a reasonable range of alternatives, including those recommended by stakeholders, will need to be considered. Recognizing that not all issues and alternatives raised by stakeholders will be “ripe” for consideration, Reclamation needs to be sensitive to stakeholders’ issues and concerns.

**Goal**

The goal of this project is to meet public participation requirements set forth in the NEPA for an EIS, identify interested parties or stakeholders, and secure public input that will provide information and facilitate the decisions needed to define, formulate, analyze, compare, and recommend for adoption, water supply management strategies that can be used under low reservoir conditions. This may include the adoption of Shortage Guidelines that can be used to manage water supplies and deliveries in the Lower Basin under shortage conditions.

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<sup>1</sup> This document is subject to revision as the project progresses.

## **Objectives**

- Educate stakeholders and interested parties about the study, process, and decisions needed.
- Provide a clear description of alternatives so stakeholders can differentiate between perceived vs. real impacts.
- Engage the public, stakeholders and other interested parties in open and constructive dialogue about project alternatives and issues that may affect them.
- Identify key issues that will be addressed in the environmental review process.
- Identify and address potential “hot button” issues and avoid surprises through the process (for agencies, stakeholders, the public and consultants).
- Ensure that Reclamation and consultants are fully aware of, understand, and appropriately address all community and stakeholder concerns.
- Provide a forum for interested parties to receive briefings on the modeling and analyses of alternatives considered and for the solicitation and exchange of ideas for improvements to the alternatives.
- Provide opportunities for the public to contribute to the process, especially by identifying issues and potential alternatives.
- Generate trust, confidence and credibility in the project, process and partners.
- Facilitate an efficient public involvement process.
- Identify third-party endorsers of the process and outcomes and utilize when possible.

## **Guiding Principles**

- People tend to support what they help create.
- Public participation/public involvement programs must be sincere attempts to involve stakeholders and the public in decision-making.
- Communication must be targeted to all the people who have a stake in the project.
- The outreach program must be sensitive to accommodating multi-cultural demographics.
- Information must be factual, accurate, consistent and presented in a timely fashion.
- Project issues must remain focused and dealt with when and where they occur.
- Consultants and staff must be approachable, must work to fully understand all stakeholder concerns, and must be responsive.
- Communications need to be regular, consistent and repetitive to compete effectively with the many other messages and/issues that will be raised by stakeholders and other interested/affected parties, and reported by the media.
- Provide separate Government-to-Government meetings for affected tribes.
- Take advantage of existing stakeholder venues (e.g. regularly scheduled meetings) when planning briefings/meetings
- Establish a public involvement process that meets EIS requirements of NEPA and Section 106 of the National Historic Preservation Act. Distinguish between these processes and ad hoc requests for additional meetings with the stakeholders.
- Implement the 2002 CEQ requirements for cooperative agency involvement
- Acknowledge the difference between cooperative agency vs. other involvement.

## **Tactical Approach**

### **I. Identify Potential Cooperating Agencies**

Cooperating Agencies are being identified in accordance with NEPA and CEQ guidelines.

**Responsible entity:** Reclamation

### **II. Public Identification and Assessment**

Known and potential stakeholders and their key issues and concerns will be identified to help tailor outreach activities for best results. A database / mailing list will be developed and updated as needed to keep stakeholders and interested parties informed and up-to-date. These stakeholders could include:

- Federal agencies
- Colorado River Basin states
- Indian Tribes (e.g., the Ten Tribes Partnership, CAP tribes and tribes potentially involved in compliance w/National Historic Preservation Act)
- Mexico (IBWC)
- Energy / Power interests
- Businesses
- Environmental/Non-Governmental Organizations (e.g. SW Rivers, Pacific Institute, Defenders of Wildlife, etc.)
- Recreation interests
- Agricultural
- General public
- Local agencies
- Elected officials
- Media
- Environmental justice communities
- Recreation
- MSCP

**Responsible entities:** Consultant team in consultation with Reclamation

**Deliverable:** Stakeholder database / mailing list

### **III. Develop and Revise Key Messages**

To ensure consistencies and relevance of message, and guide the development of information materials and presentations, and support development of management strategies, key messages related to the project and audience specific messages will be developed and updated as necessary throughout the projects. These key messages will be used in information materials and as talking points throughout the project.

**Responsible entities:** Consultant team in consultation with Reclamation

**Deliverable:** Key messages

### **IV. Informational Materials**

To educate and inform audiences about the study and related issues, a variety of information materials will be developed. These materials will support the public meetings and other outreach efforts. Materials will be designed to be easy to reproduce

and include on the project website. Language will be appropriate for laypersons, and be consistent with the key messages. All materials will be updated as needed.

- **Fact sheet**

A general fact sheet for use at public meetings, presentations, and other venues will be developed. The fact sheet will include project contact information. Issue-oriented fact sheets could be developed if needed. The value of translating the fact sheet and other materials into other language will be evaluated.

**Responsible entity:** Consultant

**Deliverable:** General fact sheet, expected to be one, double-sided page, designed in accordance with Reclamation guidelines.

**Optional:** Issue-oriented fact sheets; multi-language materials.

- **Frequently Asked Questions (FAQs)**

The FAQs will support the fact sheet with typical and anticipated questions and answers about the project, as well as those questions Reclamation wants the stakeholders to ask. The FAQs will be updated as needed.

**Responsible entity:** Consultant

**Deliverable:** One FAQ, expected to be one, double-sided page, designed in accordance with Reclamation guidelines.

- **Web site**

A page providing information about the LRC strategies will be developed for the Reclamation website. All public outreach materials (fact sheets, presentations, maps, comments (Phase 1 only), meeting announcements) will be included. An email link for comments and questions will also be included.

**Responsible entity:** Reclamation, with assistance as requested from Consultant.

- **Maps**

Project maps will be developed to provide important visual references for stakeholders and the public in written materials and at public meetings. Maps included on the website will be modified to a PDF format that uploads easily for users.

**Responsible entity:** Reclamation

- **Briefing packets**

Project materials will be assembled into background/information packets for elected officials and their staffs, and media representatives. These packets are also useful for small group presentations and meetings.

**Responsible entity:** To be determined

- **PowerPoint presentations**

A basic project “canned” presentation for briefings, public meetings, and other outreach efforts will be developed. The presentation can be customized for specific audiences.

**Responsible entity:** Reclamation, with assistance as requested from Consultant.



## V. Formal Consultations

It is important to the success of this process that agencies, Tribes, and other inter-governmental entities are informed and involved, and that issues are addressed in a timely and cooperative manner. Reclamation will conduct consultation meetings at the outset of the process, prior to key milestones, and throughout the process as needed. Appropriate meeting format will be developed to effectively and actively seek input from these entities, and results and outcomes will be documented.

**Responsible entity:** Reclamation

**Deliverables:** Meeting results and outcomes.

## VI. Stakeholder Outreach

For the purposes of this plan, “stakeholders” are considered to be those agencies and/or organizations that are expected to be, or have been, involved in this process because of a direct vested interest in the outcome. Working with these stakeholders to identify and address issues of concern and sensitivity may forestall opposition and lead to support of the outcome. Appropriate outreach tactics for these stakeholders could include:

- One-on-one briefings
  - Meet with key stakeholders as needed, ideally at least once each phase of the study.
  - Provide opportunities for one-on-one briefings on an ongoing basis for individuals and representatives of larger organizations.
- Small group briefings
  - Offer presentations to groups of individuals and/or representatives of larger organizations with similar issues/objectives.
- Speakers Bureau
  - Make presentations to groups’ existing membership at regularly scheduled meetings and/or opportunistically.

Project spokespersons will be identified to ensure consistency of message, and provided with appropriate support and materials.

**Responsible entity:** Reclamation with support from Consultant team.

**Deliverables:** Meeting results and outcomes.

## VII. General Public Outreach

Although members of the public are indeed “stakeholders,” for the purposes of this plan, it is assumed that the public is generally represented by a more formal stakeholder entity. The complexity of the issues makes it unlikely that a private citizen will be heavily involved. Nevertheless, it is important to provide the public with the opportunity to be informed and involved, and for Reclamation to take advantage of opportunities to meet with the public. Methods for informing and involving the public include:

- Scoping meetings
- Reclamation project spokesperson(s) to be available for community briefings upon request

- Public meeting for release of scoping report
- Other calendared public meetings or workshops
- Public hearings and informational meetings on draft and final EIS

Responsibility for planning and conducting public meetings and workshops are expected to be as follows:

- Schedule meeting venues that are convenient and appropriate to community - Reclamation
- Publicize meetings through e-mail notices, advertisements, calendar notices, project website, media release - Reclamation
- Prepare sign-in sheets, comment cards, speaker cards - Consultant
- On-site meeting coordination: name tags, agenda, informational materials, poster boards, signage, presentation materials - Reclamation
- Follow up with meeting summary, posted on project website – Reclamation

**Responsible entities:** Reclamation and Consultant Team

**Deliverables:** Meeting announcements, calendar notices, presentations, sign in sheets, comment cards, poster boards, meeting summary

### **VIII. Media Relations**

Media relations is an important tool for reaching a larger audience, educating the public and stakeholders on the purpose and need of the study, and generating support for the process and decision-making. Reclamation Public Affairs staff will direct media outreach activities, with the support of the consultant. Activities could include:

- News media and editorial board briefings and endorsement.
- Preparing proactive and reactive media responses.
- ID media targets, including print, broadcast and electronic.
- Develop and revise media database as needed.
- ID media spokespersons and conduct media training as necessary.
- Coordinate editorial board briefings.
- Prepare news releases and op-ed pieces at key milestones.

**Responsible entity:** Reclamation

### **Timeline – Phase I**

A draft project timeline is attached. More detailed timelines for each phase will be developed as project progresses.

- October 2005
  - Review public involvement plan
  - Set up scoping meetings
  - Prepare fact sheet, presentation
  - Activate website
  - Stakeholder assessment
  
- November 2005
  - Scoping meetings
    - Tuesday, November 1, 2005 – Salt Lake City, Utah.
    - Wednesday, November 2, 2005 – Denver, Colorado.

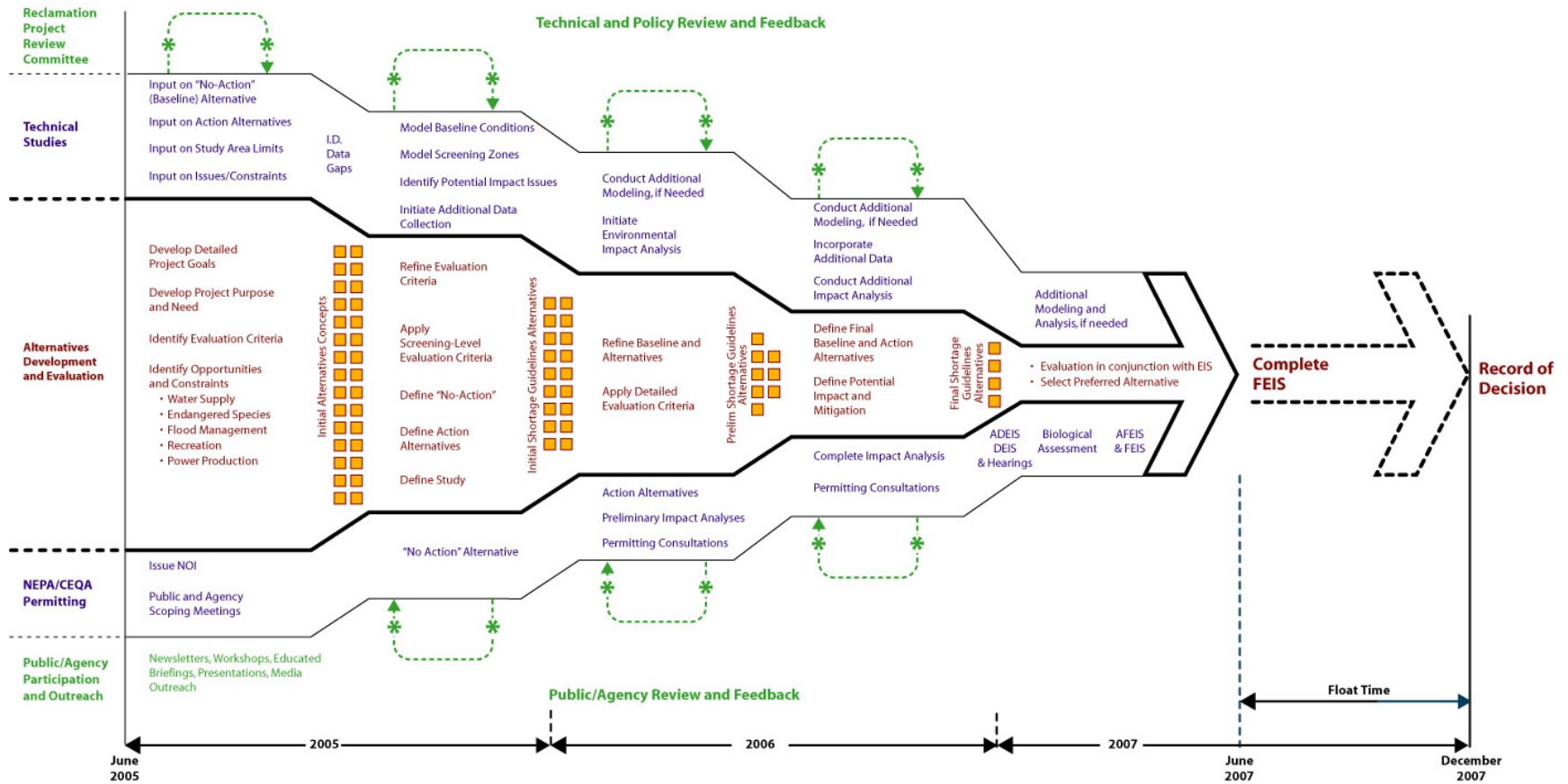
- Thursday, November 3, 2005 – Phoenix, Arizona.
  - Tuesday, November 8, 2005 – Henderson, Nevada.
- Written comments on the proposed development of these strategies may be sent by close of business on Wednesday, November 30, 2005
- Approve Public Involvement Plan Outline
  
- December 2005
  - Send letters of invitation to cooperating agencies
  - Send consultation letters to Tribes, Mexico
  - Draft scoping meeting summary report
  
- January 2006
  - Finalize scoping report
  - Approve Public Involvement Plan
  - Update project info sheets/FAQ
  - Public meeting to comment on findings/scoping report
  - Ed boards to educate media

#### **Public Involvement Plan Evaluation**

Evaluation of the PIP will occur periodically throughout the life of the public involvement effort and adjusted accordingly. As such, the PIP and all associated outreach tactics will be in a constant state of revision to appropriately align with new or changed conditions. We can, however, gauge our efforts and effectiveness on multiple levels, including those described below.

- Quantify number of individuals participating in public meetings, small group discussions, and additional communications.
- Assess level of stakeholder understanding.
- Assess level of stakeholder satisfaction that the process is open, objective and fair.
- Evaluate confidence of decision-makers in process as a whole.
- Assess media coverage

## LOWER COLORADO RIVER SHORTAGE GUIDELINES ALTERNATIVES DEVELOPMENT APPROACH



# **Appendix F**

## **Notice of Public Meetings – News Releases**

### **F.1 September 30, 2005, News Release**

Lower Colorado Region  
Boulder City, Nev.

Media Contact: Bob Walsh Barry Wirth  
702-293-8421 801.524.3774

Released On: September 30, 2005

## **Reclamation Seeks Public Input on Water Shortage Management Strategies at Lakes Powell and Mead**

As required by the National Environmental Policy Act (NEPA), the Bureau of Reclamation today issued a Federal Register Notice that announces the next in a series of upcoming scoping meetings for soliciting public comment on the development of Lower Basin shortage guidelines and coordinated management strategies for the operation of Lakes Powell and Mead under low reservoir conditions.

As part of the process, Reclamation proposes to prepare an Environmental Impact Statement that identifies guidelines and strategies under which the Department of the Interior would reduce annual water deliveries from Lake Mead to Lower Basin States below the 7.5 million acre-foot Lower Basin apportionment and the manner in which those deliveries would be reduced.

To solicit comments on the scope of specific shortage guidelines, public meetings will be held in Salt Lake City, Utah; Denver, Colo.; Phoenix, Ariz.; and Henderson, Nev., between November 1 and November 8, 2005.

Guidelines and strategies developed through the NEPA process will likely identify those circumstances under which the Department of the Interior would reduce annual Colorado River water deliveries to users in Nevada, Arizona and California, and the manner in which annual operations of these two Colorado River water bodies would be modified under low reservoir conditions.

The dates, times and locations of the meetings are:

\* Tuesday, November 1, 2005 -- 6:00 p.m. to 8:00 p.m. (Mountain Standard Time), Hilton Salt Lake City Center, Topaz Room, 255 South West Temple, Salt Lake City, Utah.

\* Wednesday, November 2, 2005 -- 6:00 p.m. to 8:00 p.m. (Mountain Standard Time), Adam's Mark Hotel, Tower Court D, 1550 Court Place, Denver, Colo.

\* Thursday, November 3, 2005 -- 6:00 p.m. to 8:00 p.m. (Mountain Standard Time), Arizona Department of Water Resources, Third Floor, Conference Rooms A&B, 500 North Third Street, Phoenix, Ariz.

\* Tuesday, November 8, 2005 -- 6:00 p.m. to 8:00 p.m. (Pacific Standard Time), Henderson Convention Center, Grand Ballroom, 200 South Water Street, Henderson, Nev.

Both oral and written comments will be accepted at the meetings. Entities or individuals who are unable to attend a meeting but wish to submit written comments can do so by close of business on Wednesday, November 30, 2005. Comments can be mailed, faxed, or e-mailed to:

.. ..

Regional Director, Bureau of Reclamation, Lower Colorado Region, Attention: BCOO-1000, P.O. Box 61470, Boulder City, NV 89006-1470, fax (702) 293-8156, [strategies@lc.usbr.gov](mailto:strategies@lc.usbr.gov); and/or

Regional Director, Bureau of Reclamation, Upper Colorado Region, Attention: UC-402, 125 South State Street, Salt Lake City, UT 84138-1147, fax (801) 524-3858, [strategies@uc.usbr.gov](mailto:strategies@uc.usbr.gov).

A Federal Register Notice regarding this proposed action is available on Reclamation's Web site, at [www.usbr.gov/lc/riverops.html](http://www.usbr.gov/lc/riverops.html).

Reclamation is the largest wholesale water supplier and the second largest producer of hydroelectric power in the United States, with operations and facilities in the 17 Western States. Its facilities also provide substantial flood control, recreation, and fish and wildlife benefits.

# **Appendix F**

## **Notice of Public Meetings – News Releases**

### **F.2 October 28, 2005, News Release**



Lower Colorado Region  
Boulder City, Nev.

Media Contact: Bob Walsh Barry Wirth  
702.293.8421 801.524.3774

Released On: October 28, 2005

## **Reclamation Seeks Public Input on Colorado River Water Management Strategies**

The Bureau of Reclamation will conduct four public scoping meetings in early November to collect public comments regarding the development of Lower Basin shortage guidelines and coordinated management strategies for the operation of Lakes Powell and Mead under low reservoir conditions.

The dates, times and locations of the meetings are:

" Tuesday, November 1, 2005 6:00 p.m. to 8:00 p.m. (Mountain Standard Time), Hilton Salt Lake City Center, Topaz Room, 255 South West Temple, Salt Lake City, Utah.

" Wednesday, November 2, 2005 6:00 p.m. to 8:00 p.m. (Mountain Standard Time), Adams Mark Hotel, Tower Court D, 1550 Court Place, Denver, Colorado.

" Thursday, November 3, 2005 6:00 p.m. to 8:00 p.m. (Mountain Standard Time), Arizona Department of Water Resources, Third Floor, Conference Rooms A&B, 500 North Third Street, Phoenix, Arizona.

" Tuesday, November 8, 2005 6:00 p.m. to 8:00 p.m. (Pacific Standard Time), Henderson Convention Center, Grand Ballroom, 200 South Water Street, Henderson, Nevada.

Both oral and written comments will be accepted at the meetings. Entities or individuals who are unable to attend a meeting but wish to submit written comments can do so by close of business on Wednesday, November 30, 2005. Comments can be mailed, faxed, or e-mailed to: Regional Director, Bureau of Reclamation, Lower Colorado Region, Attention: BCOO-1000, P.O. Box 61470, Boulder City, NV 89006-1470, fax (702) 293-8156, strategies@lc.usbr.gov; and/or Regional Director, Bureau of Reclamation, Upper Colorado Region, Attention: UC-402, 125 South State Street, Salt Lake City, UT 84138-1147, fax (801) 524-3858, strategies@uc.usbr.gov.

A Federal Register Notice regarding this proposed action is available on Reclamation's Web site, at [www.usbr.gov/lc/riverops.html](http://www.usbr.gov/lc/riverops.html).

Reclamation proposes to prepare an Environmental Impact Statement that identifies guidelines and strategies under which the Department of the Interior would reduce annual water deliveries from Lake Mead to Lower Basin States below the 7.5 million acre-foot Lower Basin apportionment and coordinate the operation of Lakes Powell and Mead under low reservoir conditions.

###

Reclamation is the largest wholesale water supplier and the second largest producer of hydroelectric power in the United States, with operations and facilities in the 17 Western States. Its facilities also provide substantial flood control, recreation, and fish and wildlife benefits.

# **Appendix G**

## **November 1, 2005, Salt Lake City, Utah Public Meeting Documents**

### **G.1 Sign-In Sheet**



# **Appendix G**

## **November 1, 2005, Salt Lake City, Utah Public Meeting Documents**

### **G.2 Transcript**

Public Comment Forum

1 APPEARANCES:

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4 FOR THE BUREAU OF RECLAMATION

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6 RANDY PETERSON, SLC

7 TERRY FULP, BOULDER

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Public Comment Forum

1           SALT LAKE CITY, UTAH, November 1, 2005, 6:00 P.M.

2           MR. PETERSON: Evening, welcome to this public  
3 meeting on the development of shortage guidelines and  
4 coordinated management strategies for Lakes Powell and  
5 Mead. I'm Randy Peterson, I'm with the Bureau of  
6 Reclamation here in Salt Lake.

7           (Power Point Presentation).

8           I think with that we'll open it up for comments.  
9 Let's talk about the comment period, there's a couple  
10 opportunities here. I think this slide covers basically  
11 what we've shown before and this is the focus of where  
12 we're headed toward alternative developments. Help us  
13 with that in your comments and this is the place to send  
14 them. We'll take them by fax, E-mail, regular mail, by  
15 public comment tonight, or written comment on the  
16 comment cards. So with that, I think we'll open it up  
17 to public comment. If you'd be so kind to spell your  
18 name for the court reporter, that will be helpful.

19           MR. WECHSLER: Good, we get the delight of spelling  
20 my last name. Jim Wechsler, that's W-e-c-h-s-l-e-r.  
21 And I'm with the Sierra Club, but I'm part of a group  
22 that, Sierra is part of a group including Defender's of  
23 Wildlife, Environmental Defense, National Wildlife  
24 Federation, Pacific Institute, and the Senoras (sic)  
25 that have already submitted a proposal called

Public Comment Forum

1 Conservation Before Shortage. We're really pleased that  
2 an EIS is being done, and with a complete analysis of  
3 the cost and benefits and the environmental  
4 implications.

5 We also think that the shortage criteria should be  
6 crafted for the long haul, and implemented as a  
7 permanent policy. The recent drought is quite possibly  
8 only a preview of what's to come, given what we have  
9 learned from the long term record of the Colorado River,  
10 from what we know about long term drought periods in  
11 North America which appear to be the orders of  
12 centuries, and the probability of climate change to  
13 reduce inflows over the next several decades. And I  
14 don't know, is everybody in this room familiar with the  
15 CBS proposal? Because there's no reason for me to  
16 mention why it's good if everybody is familiar. All  
17 right.

18 I've only got one page, so it's not bad.

19 The Conservation Before Shortage proposal is much  
20 like some other proposals that are being considered by  
21 the states. It has triggers at which point there would  
22 be conservation within the lower basin. One of the  
23 differences is that the conservation is to be sort of  
24 prearranged voluntary conservation and compensated.  
25 Monetary compensation for say a rancher who was

Public Comment Forum

1 conserving water or a farmer. Some of its benefits are  
2 reduced need for new water projects that introduces  
3 flexibility into Colorado River management and will  
4 allow those who are willing and able to reduce their  
5 usage to be compensated for doing so and avoids needing  
6 to impose restrictions in water use on those who cannot.

7 By eliminating the potential for water shortage is  
8 when they cannot easily be accommodated. This policy  
9 will limit the need for costly new projects. Of course  
10 the point that's -- would cause a group of environmental  
11 groups to come up with a proposal is we would like to  
12 see protection for the environment. The fish wildlife  
13 and natural areas on the Colorado do not, for the most  
14 part, have their own water rights, they are last in line  
15 for water. And they're the most vulnerable of all the  
16 water users to a drought. The Conservation Before  
17 Shortage proposal reduces overall water consumption in  
18 dry years, decreasing the risk of shortage that can  
19 disproportionately impact environmental uses in the  
20 future, and also by increasing protection against  
21 shortage for water users that have inflexible demands.

22 It will allow some water to stay there for the  
23 fish and wildlife that need it to survive, and still  
24 meet critical human needs. It improves power  
25 production, consistent maintenance of the reservoir



Public Comment Forum

1 storage and power head above baseline conditions in  
2 average to low flow conditions. It will result in  
3 increased power production, improve power revenues as  
4 well as elimination of the risk if the elevations at  
5 Lake Mead will drop below the minimum power head, and  
6 thereby will improve the reliability of power  
7 protection. It gives an increased certainty for water  
8 users. And it will significantly reduce the likelihood  
9 of involuntary and uncompensated shortages in the lower  
10 basins at levels above 500,000 acre feet, which is the  
11 approximate level at which a shortage exceeds the  
12 ability of the Arizona water bank to buffer. I think  
13 the Conservation Before Shortage proposal is interesting  
14 because it offers an active anticipatory approach that  
15 protects Colorado River water users and the environment  
16 from abrupt reductions in the amount of water available.

17 The proposal would create a predictable rational  
18 system for water users and distribute the costs between  
19 water and power users and the federal government.

20 And finally, CBS, the Conservation Before Shortage  
21 proposal, includes Mexican water users in the solution,  
22 as they could be the ones conserving the water, and  
23 thereby reducing the need for conservation among US  
24 water users.

25 Finally, what's not in the typed up comments, is I

Public Comment Forum

1 don't really expect our proposal to be adopted whole  
2 cloth, but I think it's an example, has a number of good  
3 things in it, is an example of the way we would like to  
4 see this approached, and hope it will be approached, and  
5 think that maybe when developing the alternatives it may  
6 be worth it to take some parts from one set of  
7 suggestions and some parts from others to make a final  
8 plan.

9 MR. PETERSON: Thank you, Jim. Other comments  
10 from our guests?

11 (End of public comments.)

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Public Comment Forum

1 STATE OF UTAH )

2

3 COUNTY OF SALT LAKE )

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6 I, Linda J. Smurthwaite, Certified Shorthand  
7 Reporter, Registered Professional Reporter, and notary  
8 public within and for the county of Salt Lake, State of  
9 Utah do hereby certify:

10 That the foregoing proceedings were taken before  
11 me at the time and place set forth herein, and was taken  
12 down by me in shorthand and thereafter transcribed into  
13 typewriting under my direction and supervision.

14 That the foregoing pages contain a true and  
15 correct transcription of my said shorthand notes so  
16 taken.

17 In Witness Whereof, I have subscribed my name this  
18 2nd day of November, 2005.

19

20

21 LINDA J. SMURTHWAITE  
22 CERTIFIED SHORTHAND REPORTER

23

24

25

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# **Appendix H**

## **November 2, 2005, Denver, Colorado Public Meeting Documents**

### **H.1 Sign-In Sheet (1)**

**Bureau of Reclamation**  
**Development of Colorado River Management Strategies Under Low Reservoir Conditions Scoping Meeting**  
**Sign-In Sheet**

**November 2, 2005**

Name	Affiliation	Mailing Address	Phone	Email	How do you prefer to be contacted? US Mail or E-Mail
Marc Ross	Rock the Earth	1536 Wynkoop St., Suite 6200 Denver, CO 80202	303-454-3304	MarcR@rockTheEarth.net	e-mail
Carolyn Kiverner	HDR Inc	305 E 17th Ave Suite 700 Denver CO, 80203	303 764 1599		mail.
Bill Jackson	Nat'l. Park Service	1201 Oakridge Dr Fort Collins, CO 80528	970-225-3503	bill-jackson@nps.gov	e-mail
Jennifer Lat	Env. Defense	2334 Broadway Boulder CO 80304	303 447 7209	<del>fitzjoe</del> jplatt@ed.org	"
Chris Treese	Colo. R. District	705 1120 Glenn St Spgs 81602	970 545 8522	ctreese@crwcd.org	✓
Jim Pokrandt	"	"	"	jpokrandt@crwcd.org	✓
Kim Milne	Denver Post	1566 Broadway Denver CO 80202	303-820-1290	kmilne@denverpost.com	✓
Randy Seaholm	CWCB	1313 Sherman St Denver, Colo	303-866-3441	randyseaholm@state.co.us	
Ken Lykens	MWH	1801 California St. Suite 2900 Denver, CO 80202	303-291-2174	Kenneth.Lykens@mwhglobal.org	both

# **Appendix H**

## **November 2, 2005, Denver, Colorado Public Meeting Documents**

### **H.2 Sign-In Sheet (2)**



# **Appendix H**

## **November 2, 2005, Denver, Colorado Public Meeting Documents**

### **H.3 Transcript**



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6 PUBLIC MEETING RE: DEVELOPMENT OF LOWER  
7 BASIN SHORTAGE GUIDELINES AND COORDINATED  
8 MANAGEMENT STRATEGIES FOR LAKE POWELL  
9 AND LAKE MEAD UNDER LOW RESERVOIR CONDITIONS

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10  
11 WEDNESDAY, NOVEMBER 2, 2005, 6:00 P.M.

12 ADAM'S MARK HOTEL

13 1550 COURT PLACE, TOWER COURT D

14 DENVER, COLORADO  
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## P R O C E E D I N G S

The following public comments were made:

DAVID MAZOUR: My name is David Mazour, M-a-z-o-u-r. I work for Tri-State Generation and Transmission Association. Tri-State is a power supplier -- a consumer-owned power supplier that provides electricity to 44 rural distribution systems in four states. The end user of those 44 systems owns them, and those 44 systems own us. So we're truly consumer-owned. Tri-State is a member of CREDA, Colorado River Energy Distributors Association, and CREDA represents the power customers from the Colorado River storage project, and I'm appearing here today on behalf of CREDA.

CREDA will be -- an executive director will be testifying or making comments tomorrow at your forum in Phoenix, but I was requested to just make a few very, very brief comments, and the comment I'd like to make -- well, actually, two points. First of all, CREDA is involved in a number of Colorado River processes. One is the stakeholders' process in developing the annual operating plan. CREDA is involved in the adaptive

1 management program for the Grand Canyon below Lake  
2 Powell, and CREDA is also a representative and an  
3 active participant in the recovery program in the  
4 upper Colorado River. So the power customers are  
5 involved in several forums.

6           Power impacts are an issue that we feel  
7 should be considered as these shortage criteria are  
8 being developed, and this request is -- and as I  
9 say, Leslie James will be commenting more  
10 thoroughly tomorrow -- but I just wanted to make a  
11 point that as these shortage criteria are being  
12 developed, the power impacts really need to be  
13 evaluated because the revenues from the sale of  
14 power are used to operate and maintain the  
15 reservoir as well as about \$20 million a year from  
16 power revenues that are used for nonoperational  
17 programs, for environmental programs. They fund  
18 the salinity control program. They fund parts of  
19 the adaptive management program. And they also are  
20 a key funder in the upper Colorado River recovery  
21 program for the endangered fish. And so, again,  
22 that's the brief comment I'd like to make, and  
23 we'll have further details and more information  
24 tomorrow.

25           Thank you very much.

1                   JENNIFER PITT: Hi. I'm Jennifer  
2 Pitt -- J-e-n-n-i-f-e-r P-i-t-t -- with  
3 Environmental Defense, and I have a few comments.

4                   First of all, a full NEPA analysis is  
5 called for. I think we know that's coming. We  
6 want to see a complete analysis of costs, benefits,  
7 and environmental implications of each alternative.  
8 Also, we'd like to see these shortage criteria be  
9 enacted permanently. We think that permanent  
10 guidelines really would meet the nature of the  
11 scale of drought that -- the time scale that we're  
12 dealing with, and we've heard suggestions that the  
13 shortage criteria might be promulgated as  
14 coterminous with the surplus guidelines, which I  
15 think takes us out to 2015 or 2016, and I think  
16 that's probably inappropriate given what we know  
17 about projected water supply and demands going into  
18 the future.

19                  I also wanted to talk a little bit about a  
20 proposal that Environmental Defense has developed  
21 in cooperation with another -- a number of other  
22 nonprofits. It's called Conservation Before  
23 Shortage -- and I've actually brought a stack of  
24 copies if anyone is interested. I think we've  
25 already submitted it to Reclamation for

1 consideration. I just wanted to describe it very  
2 briefly and run through some of the benefits that  
3 we see of this kind of approach to developing  
4 shortage guidelines; and, specifically, this  
5 Conservation Before Shortage proposal addresses the  
6 need to look at how water is distributed in the  
7 Lower Basin. It doesn't address some of the other  
8 issues that Reclamation is seeking comment on right  
9 now.

10 To give you a very brief description of  
11 the program, it is a program of voluntary and  
12 compensated water conservation where the volume of  
13 conserved water is tied to lake elevations at Mead  
14 and increases -- in other words, conservation  
15 increases -- as water in storage decreases.  
16 Funding for this program would be a combination of  
17 federal outlays and fees imposed on water and power  
18 users in the Lower Basin. So just quickly to run  
19 through some of the benefits that we see of this  
20 kind of approach -- and I have four main points to  
21 make . . .

22 Number 1, this would reduce the need for  
23 new storage projects. The introduction of  
24 flexibility into Colorado River management would  
25 allow those who are willing and able to reduce

1 water use to be compensated for doing so and to  
2 avoid the need to impose reductions in water use  
3 for those who cannot. By eliminating the potential  
4 for water shortages where they cannot easily be  
5 accommodated, this policy would limit the need for  
6 costly new water projects to protect water users  
7 where they cannot tolerate interruptions in their  
8 water supplies. I'm thinking particularly about  
9 urban water users who are the juniors in the Lower  
10 Basin.

11           Number 2, we think that there are some  
12 benefits here in this proposal for the environment.  
13 Fish, wildlife, and natural areas on the Colorado  
14 River don't, for the most part, have their own  
15 water rights. As such, they are essentially last  
16 in line for water, and they're the most vulnerable  
17 of all water users to drought. The Conservation  
18 Before Shortage proposal would reduce overall water  
19 consumption in dry years, decreasing the risk of  
20 shortages that could disproportionately impact  
21 environmental uses in the future. Also, by  
22 increasing protection against shortage for water  
23 users who have inflexible demands, it will allow  
24 some water to remain in the river for wildlife that  
25 needs it to survive while still meeting critical

1 human needs.

2           Number 3, we think there's a benefit here  
3 for improved power production. Consistent  
4 maintenance of reservoir storage and power head  
5 above baseline conditions in average to low-flow  
6 conditions would result in increased power  
7 production and improved power revenues, as well as  
8 the elimination of the risk that elevations at Mead  
9 would drop below the minimum power head, improving  
10 the reliability of power production.

11           And, finally, and perhaps most  
12 importantly, we think this proposal would increase  
13 certainty for water users. Conservation Before  
14 Shortage will significantly reduce the likelihood  
15 of involuntary and uncompensated shortages in the  
16 Lower Basin, particularly at levels of half a  
17 million acre feet, which is the level at which  
18 shortage exceeds the ability of the Arizona Water  
19 Bank to buffer shortages.

20           Conservation Before Shortage offers a  
21 proactive approach. It protects Colorado River  
22 water users and the environment from abrupt  
23 reductions in the amount of water available. You  
24 know, it's hard to reach a consensus when someone  
25 has to lose -- and this is really more a comment

1 directed at Lower Basin water users. The current  
2 deadlock between the states reflects a zero-sum  
3 approach to river management, where one state or  
4 one water user is expected to shoulder the full  
5 burden of a drought by suffering a large and  
6 uncompensated shortage, while others are  
7 unaffected. Conservation Before Shortage suggests  
8 a more cooperative and even-handed approach to  
9 coping with drought. Conservation Before Shortage  
10 would create a predictable and rational system for  
11 water users and distribute the costs between water  
12 and power users and the federal government. And,  
13 finally, it could -- or we propose it could include  
14 Mexican water users in the solution, thereby  
15 reducing the need for conservation among U.S. water  
16 users. Thank you.

17 (There were no further comments.)  
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C E R T I F I C A T E

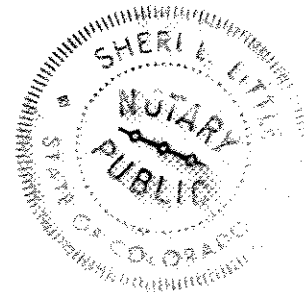
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STATE OF COLORADO )  
 ) ss.  
CITY AND COUNTY OF DENVER )

I, Sheri L. Little, Registered Professional Reporter and Notary Public in and for the State of Colorado, duly appointed to take the PUBLIC MEETING RE: DEVELOPMENT OF LOWER BASIN SHORTAGE GUIDELINES AND COORDINATED MANAGEMENT STRATEGIES FOR LAKE POWELL AND LAKE MEAD UNDER LOW RESERVOIR CONDITIONS held on Wednesday, November 2, 2005, in Denver, Colorado, certify that the public comments were taken in shorthand by me at the time and place aforesaid and were thereafter reduced to typewritten form by me and processed under my supervision, the same consisting of 8 pages, and that the same is a full, true, and complete transcription of my shorthand notes. I further certify that I am not related to, employed by, nor counsel to any of the parties herein, nor otherwise interested in the events of the within cause.

IN WITNESS WHEREOF, I have affixed my notarial seal this 10th day of November, 2005. My commission expires November 17, 2008.

*Sheri L. Little*  
-----  
SHERI L. LITTLE  
REGISTERED PROFESSIONAL REPORTER



# **Appendix I**

## **November 3, 2005, Phoenix, Arizona Public Meeting Documents**

### **I.1 Sign-In Sheet (1)**



# **Appendix I**

## **November 3, 2005, Phoenix, Arizona Public Meeting Documents**

### **I.2 Sign-In Sheet (2)**



# **Appendix I**

## **November 3, 2005, Phoenix, Arizona Public Meeting Documents**

### **I.3 Sign-In Sheet (3)**

**Bureau of Reclamation**  
**Development of Colorado River Management Strategies Under Low Reservoir Conditions Scoping Meeting**  
**Sign-In Sheet**

**November 3, 2005**

Name	Affiliation	Mailing Address	Phone	Email	How do you prefer to be contacted? US Mail or E-Mail
Lisa McKnight	Salmon, Lewis & Weldon, P.L.C.	2850 E. Camelback C. Phoenix, AZ 85016	#200 602-801-9065	lmm@slwplc.com	e-mail
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Pera Benavides	ADWR	500 N 3rd ST PHX 85003	602 417 2400 X7171	pfbenavides@azwater.gov	e-mail
Robert Lynch	Attorney at Law	Robert S Lynch & Assoc. 390 E Polk Ave, Suite 140, Phoenix, AZ 85004	602 257-5908	rslynch@rslynch.com	e-mail
Brad Warren	WAPA	Po Box 11606 SLC, UT 84147	801-524-6372	warren@wapa.gov	"
DUSTIN GARRICK	Univ. of AZ	2608 E. 4th St. TUCSON, AZ 85716	520-400-4333	dustingarrick@gmail.com	email
Tim Pierson	Colorado River Indian Community		520-796-1344	tlpierson@gricket.com	Email
Carole Klopatek	Fort McDowell Yavapai Nation		480 816 7161	CKLOPATEK@FTMCDOWELL.ORG	Email
Brian Young	WAPA	615 S. 43rd AVE PHX, AZ 85009	602 605-2594	byoung@wapa.gov	e-mail
Tim Henley	AWRA	500 N 3rd ST PHOENIX AZ 85004	602 417 2418	tjhenley@azwater.com	e-mail

# **Appendix I**

## **November 3, 2005, Phoenix, Arizona Public Meeting Documents**

### **I.4 Sign-In Sheet (4)**





# **Appendix I**

## **November 3, 2005, Phoenix, Arizona Public Meeting Documents**

### **I.5 Transcript**

DEVELOPMENT OF LOWER BASIN SHORTAGE GUIDELINES  
AND COORDINATED MANAGEMENT STRATEGIES FOR LAKE POWELL  
AND LAKE MEAD UNDER LOW RESERVOIR CONDITIONS

PUBLIC MEETING

Phoenix, Arizona

November 3, 2005  
6:00 p..m.

REPORTED BY:  
DIANE DONOHO, RPR  
Certified Reporter  
Certificate No. 50691

PREPARED FOR:  
TERRY FULP

COPY

1                   A PUBLIC MEETING was taken at 6:00 p.m. on  
2 Thursday, November 3, 2005, at the Arizona Department of  
3 Water Resources, 500 North Third Street, Third Floor,  
4 Conference Rooms A and B, Phoenix, Arizona, before Diane  
5 Donoho, a Certified Reporter, Certificate No. 50691, in and  
6 for the State of Arizona.

7

8 APPEARING:

9

10                   Terry Fulp  
11                   U.S. Bureau of Reclamation  
                    P.O. Box 61470  
                    Boulder City, Nevada 89006-1470

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1           MR. FULP: I'll entertain any questions. Let me  
2 say one last thing, that we made it clear on the Federal  
3 Register notice that said these kind of guidelines might be  
4 interim in nature. The surplus guidelines certainly have a  
5 finite link to them. We again are soliciting comments from  
6 you with regard to all of these issues. With that said, any  
7 questions? Good. We all understand. That's great. Okay.

8           Nan hands me one clarification, and that is  
9 we're -- we will do this scoping report. It's goal is to  
10 publish it in February. If you do want your comment to be  
11 exactly in that report, please remake it during this  
12 comment period. The previous comments will be carried  
13 forward, but they'll be two separate records. That's just a  
14 clarification. We will obviously use all the comments we  
15 received to help us and form our process and make sure we're  
16 doing it in the correct way. Okay. With that said and no  
17 more questions, let's go to the next one.

18           So here we are again, and while we're here  
19 tonight, we're going to formulate alternatives for the  
20 development of these two pieces, shortage guidelines again  
21 for the Lower Basin and coordinated management strategies  
22 for operating Lake Powell and Mead when the reservoirs are  
23 relatively low. We're also asking for any comments on other  
24 issues and factors that need to be considered.

25           Couple ways you can make comments. Obviously

1 tonight you can make comments. Given the number of people  
2 we have here, you do not have to fill out a comment card.  
3 We'll just turn it over to you, and we'll ask you to please  
4 go over to one of the microphones there in the center, state  
5 your name clearly and also spell it for our reporter,  
6 please, so that we get it clearly captured. You can also  
7 submit by U.S. mail, fax, or e-mail again by close of  
8 business Wednesday, November 30, any comments to us and  
9 these addresses and fax numbers and e-mail addresses are all  
10 in your handout. I urge you to please take one so that you  
11 have this if you do intend to make a comment.

12 Okay. With that, that's all we have for prepared  
13 remarks, and I will just open it up to the floor. If anyone  
14 would like to make a comment this evening. Take your time.  
15 Harvey.

16 MR. BOYCE: My name is Harvey Boyce, B-O-Y-C-E.  
17 I'm here representing the Arizona Power Authority, and we'd  
18 like to offer the following into the record:

19 Public power users in Arizona that receive  
20 hydropower generation from the Hoover Dam via water  
21 deliveries from Lake Mead encourage the federal officials  
22 involved in this process to consider the language found in  
23 the 1928 Boulder Canyon Project Act and the 1984 Hoover  
24 Power Plant Act and those Power contracts written thereto.  
25 We find that reclamation is required acting for the

1 Secretary of the Interior to generate and deliver hydropower  
2 to the customers of Hoover, also referred to as the Hoover  
3 Allottees, which there are 15 in number. Further the 1928  
4 Act directs the Secretary of the Interior to provide for  
5 hydrogeneration to make the Boulder Canyon Project  
6 financially secure. We note that water users of Lake Mead  
7 provide less than 1 percent of the Project's funding.  
8 Consequently the power users, those 15 customers, bear the  
9 bulk of the responsibility to ensure that the financial and  
10 integrity of the Boulder Canyon Project remains sound.

11 Therefore, the concerns of the power community  
12 within Arizona must be made a part of the modeling criteria  
13 and the process such that the elevation of Lake Mead is  
14 maintained at or above the minimum power pool elevation.

15 Furthermore the Arizona Power Authority requests  
16 that the Hoover power users be included throughout this  
17 process. Thank you.

18 MR. FULP: Thanks, Harvey. Peter?

19 MR. CULP: Thanks very much. And thanks for the  
20 opportunity to comment tonight. My name is Peter Culp,  
21 spelled C-U-L-P. I'm an attorney with the Sonoran Institute  
22 in Phoenix, Arizona. Sonoran Institute is a nonprofit  
23 organization that works throughout the intermountain west on  
24 issues related to land use and water policy.

25 I'm here today on behalf of a number of

1 nongovernmental organizations that are working on issues  
2 related to the Colorado River. That includes Defenders of  
3 Wildlife, Environmental Defense, the National Wildlife  
4 Federation, Pacific Institute, Sierra Club, the Sonoran  
5 Institute, and the Nature Conservancy. All of these  
6 organizations take quite different approaches to the work  
7 that we do on the Colorado River, but we've come together on  
8 this issue because of the importance of the issue of  
9 shortage sharing on the river. And we all recognize that  
10 the combination of drought, the continued development of  
11 uses in the upper basin, Lower Basin, and Mexico, and  
12 potential climate change in the future mean that the  
13 Colorado River has probably entered a new era of management.

14           As an initial matter, I just wanted to make two  
15 comments with regard to the process that the Bureau is  
16 undertaking and also the outcomes we'll be getting to.  
17 First, we believe that a full NEPA analysis is called for  
18 with the shortage criteria. That would include complete  
19 analysis of the costs and benefits, environmental  
20 implications of each, the alternatives that are to be  
21 considered.

22           Secondly, we think that the shortage criteria  
23 that the Bureau is going to be developed should really be  
24 crafted for the long haul and should hopefully be  
25 implemented as a permanent policy. The reason for that, as



1 I think we recognize that -- and I think we all need to  
2 recognize, that the drought that we're in today is really  
3 just giving us a preview of the situation which we're all  
4 going to face in the future, particularly given what we  
5 know, given the long-term hydrologic record of the Colorado  
6 River and also the probability that climate change may  
7 reduce the amount of flow that's available to water users in  
8 the future.

9           With that said, the organizations I'm here for  
10 tonight have been monitoring the discussions between the  
11 seven basin states for some time, and although we are not  
12 invited to participate directly in those discussions, a  
13 number of us have a strong interest in them and began  
14 meeting over this winter to try and develop an alternative  
15 shortage proposal that we hope would be constructed for the  
16 basin states process. We meet with reclamation staff  
17 several times to review the results of the technical  
18 modeling runs that have been done for the river using the  
19 Riverware model, and Reclamation has quite generously  
20 provided us some additional help in doing some modeling in  
21 order for us to evaluate potential shortage criteria. All  
22 that modeling work led to the development of a shortage  
23 proposal that we're calling Conservation Before Shortage.  
24 In essence, what the proposal does -- and I won't get into  
25 excruciating detail here -- but it's basically proposing a

1 set of voluntary market-based reductions in Lower Basin use  
2 that would be tied to specific tiers of lake levels in Lake  
3 Mead. As originally modeled, the proposal was that around  
4 1100 feet the Secretary would seek about 200,000 acre feet  
5 of reduction in Lower Basin use through voluntary payments  
6 to folks that forebear use of water; at 1075, 400,000 acre  
7 feet; at 1050, 600,000 acre feet. And for argument's sake  
8 we had assumed protection of 1,000 feet in Lake Mead with  
9 involuntary shortages being imposed after that point.

10           What we were suggesting was that this mechanism  
11 would be paid for via sort of a shortage mitigation fund  
12 that would involve federal contributions plus surcharges on  
13 water delivery and hydropower under low reservoir  
14 conditions, the result being that, instead of having  
15 involuntary shortages which would cause economic impacts to  
16 folks that have inflexible demand, we would instead have  
17 voluntary compensated shortages in advance of any  
18 involuntary loss of water and hopefully achieve a sort of a  
19 reduction in the probability of shortage, also delay the  
20 onset of shortage, and limit the extent of shortage in order  
21 to prevent any really significant losses in the Lower Basin  
22 to Lower Basin users.

23           The detail of that proposal is in the comment  
24 letter that we submitted in July to the Bureau. I've got  
25 brought some extra copies of it today tonight if folks would

1 be interested. We're also in the process of developing a  
2 slightly revised version of that proposal based on what we  
3 learned through the Arizona stakeholders' process which we  
4 will be submitting to the Bureau before November 30.

5           Regardless we're not really suggesting that the  
6 precise numbers conservation levels or the lake levels that  
7 we've suggested in the proposal are necessarily the right  
8 ones. We're also not suggesting that protecting 1,000 feet  
9 is the right decision or any other level. And note that  
10 actually the Arizona stakeholder proposal includes a tiered  
11 shortage strategy of their own which imposes progressively  
12 larger shortages in the Lower Basin as need drops past 1075.

13           That may be the right way to administer  
14 shortages. That's not what we're saying. The purpose of  
15 what we're doing is really to suggest and hopefully  
16 demonstrate some of the benefits that could be associated  
17 with the inclusion of a voluntary market-based mechanism for  
18 conservation as a part of a shortage strategy. And I hope  
19 we make the case that such a strategy should be part of  
20 whatever shortage criteria are ultimately adopted by the  
21 Bureau.

22           There are essentially three primary benefits in  
23 our view associated with doing a voluntary conservation  
24 strategy in advance of imposing the shortage. Number 1, it  
25 produces increased certainty for water users in the Lower

1 Basin because it significantly reduces the likelihood of  
2 involuntary and uncompensated shortages in the Lower Basin.  
3 It also allows potentially for the inclusion of Mexico in  
4 that conservation strategy which reduces the need for  
5 conservation among the U.S. water users.

6           Secondly, it creates some benefits related to  
7 power protection because it allows us to maintain reservoir  
8 storage in power head at higher levels than we would see  
9 under average to low flow conditions. That essentially  
10 eliminates the risk that Lake Mead drops below its minimum  
11 power head and thus increases the reliability of power  
12 production for the Lower Basin. Probably most importantly  
13 it creates some increased flexibility in river management  
14 because it allows those who are willing and able to reduce  
15 water use to be compensated for doing so during low flow  
16 conditions. And that has a couple of pretty important  
17 benefits.

18           First, it avoids the need to impose reduction in  
19 water use on the water users who have inflexible demands.  
20 And by eliminating the potential for shortages where they  
21 cannot easily be accommodated, that will hopefully eliminate  
22 the need for costly new projects to be undertaken to protect  
23 those folks that have those inflexible demands and thus  
24 cannot tolerate any interruption in water supply.

25           Secondly, it protects a series of environmental

1 values because I think, as we all know, the fish and  
2 wildlife and environmental values on the river don't  
3 currently have their own water rights. As a result, they're  
4 essentially last in line for water and are thus the most  
5 vulnerable of all the users to the drought.

6 By reducing the overall water consumption in dry  
7 years, we can decrease the risk of larger shortages that  
8 will disproportionately hit environmental values throughout  
9 the basin. And finally by increasing the protection for  
10 folks that really have inflexible demand, particularly the  
11 municipalities, we can reduce -- we can make it possible for  
12 some water to remain in the river to provide the needed  
13 support for those environmental values.

14 The overall intent is to provide sort of a  
15 proactive approach that will protect Colorado River water  
16 users and the environment from abrupt reductions in the  
17 amount of water that's available. The states, as we all  
18 know, are working very, very hard to try and come up with a  
19 consensus proposal on shortage criteria, conjunctive  
20 management, and other issues. I'd like to suggest though is  
21 that's it's very hard to reach consensus when somebody has  
22 to agree to lose. And I think in many ways the current  
23 deadlock within the states about how to approach shortage  
24 change may reflect in some sense that there is sort of  
25 zero-sum approach in which someone is ultimately going to

1 bear the brunt of a large involuntary uncompensated  
2 shortage.

3 Our intent is to suggest that maybe by  
4 introducing some increased flexibility through the  
5 introduction of the market mechanism that allows people to  
6 voluntarily reduce use, we can create a more cooperative and  
7 also predictable system for water users and distribute the  
8 cost of the shortages between water and power users and the  
9 Federal Government.

10 So anyway I do have a few copies of our original  
11 proposal. There will be another one being submitted on or  
12 before November 30, and I appreciate the opportunity to  
13 speak tonight. Thank you.

14 MR. FULP: Peter, could you make the written  
15 comments available if you are so inclined. Other comments?

16 MR. LYNCH: I'm Bob Lynch. I am an attorney here  
17 in Phoenix and here on behalf of the Irrigation and  
18 Electrical District Association of Arizona. Our members and  
19 associate members buy most of the power sold in Arizona from  
20 the Colorado River Storage Project and most of the power  
21 sold through the Arizona Power Authority from Hoover as well  
22 as a good slug of the power from the Parker Davis project.  
23 So we are very much concerned about the impacts on power  
24 generation from shortage criteria that will be developed or  
25 might be developed by the Secretary through this process.

1           The problem is that short criteria, at least in  
2 my view, are just a way of coming up with a mathematical  
3 model for cutting off Central Arizona Project's water and  
4 for complicating our ability to have the necessary water to  
5 generate power on the river. Neither of these are  
6 particularly nice outcomes and is probably a good reason why  
7 since 1928 shortage criteria have not been developed on the  
8 Colorado river for the Lower Basin states.

9           I'm concerned about your scoping process  
10 initially. If I understand the current status of affairs  
11 correctly, there are serious questions about modeling that  
12 have not been resolved related to the past practice of  
13 stopping analysis of minimum power fuel at Lake Powell but  
14 not at Lake Mead. I know that the Arizona Department of  
15 Water Resources has sent some letters requesting some  
16 alternative models be run. I don't know what the answer to  
17 that is or whether the Reclamation is going to do that.  
18 There have also been discussions about not following the  
19 minimum release criterion on long range operative criteria,  
20 8.23 million-acre feet. There's been some talk about the  
21 fact that the Secretary of the Interior has the authority to  
22 in an appropriate circumstance ignore that criterion and  
23 lower that minimum release annually on a given year without  
24 any further criteria. I haven't seen anything in the  
25 Department of the Interior that would provide any kind of

1 legal justification for that.

2           But the bottom line is that the assumptions are  
3 being discussed if not assaulted in this process at this  
4 time. Yet Mr. Culp's proposal, your slides all appear to  
5 operate on the basis that the law of river long-range  
6 operating criteria in the status quo in terms of past  
7 practice are not going to change. If that's true, fine.  
8 But if you scope this EIS on the basis that that is the  
9 case, if it turns out not to be, then you've got to go back  
10 to Square 1 underneath it and start it over again because  
11 the assumptions everyone is relying on to identify the  
12 alternatives and to comment on them and to work with them  
13 and analyze them will be wrong.

14           So your first task in my view is getting it  
15 settled among the seven basin states, you know, with or  
16 without shotguns, as to whether or not this set of  
17 assumptions is going to continue to hold true for the  
18 process. If it is, fine. If it isn't, well, we'll deal  
19 with that probably in court. But that's the, you know, the  
20 800-pound gorilla in this process right now. And with a  
21 60-day scoping period, you sort of come to the end the  
22 public process the end of this month, and I don't think all  
23 of these issues will be put to bed by then. I could be  
24 wrong, but the way things are going, I don't think so.

25           So we're all in a quandary or at least maybe I'm



1 the only one in a quandary over how to suggest to you  
2 various alternatives that need to be assessed and identified  
3 in order to have an adequate document as a draft  
4 environmental impact statement to present to the public. I  
5 know, for instance, that, if you assume that there be will  
6 be conditions covered by this criteria that cause either of  
7 these reservoirs to drop below the minimum power pool,  
8 you've got a very serious economic analysis associated with  
9 those events in addition to the environmental and other  
10 consequences of not having that water supply.

11 Those impacts include the cost to the purchasing  
12 entities for alternative water supplies, the cost to the  
13 programs authorized by Congress, the difficulties in dealing  
14 with legal issues that have already been mentioned tonight  
15 about the obligations of the Secretary to deliver this  
16 resource and generate it. Both reservoirs are covered by  
17 funds within the United States Treasury. They're different  
18 kind of funds, but basically they're used to pay the bills.  
19 And Power pays essentially all the bills for both the  
20 Boulder Canyon Project and Colorado River storage Project as  
21 well as a good slug of the bills for the Parker Davis  
22 Project.

23 There are some very serious socioeconomic  
24 consequences associated with this and related economic  
25 damage in communities, especially rural communities and

1 agricultural communities, in all three states that will have  
2 to be assessed. So deciding whether you're going to protect  
3 minimum power pool at Glen Canyon or Hoover or neither is a  
4 major cut and a major analysis that you're going to have to  
5 go through in deciding how to fashion alternatives to  
6 display in the draft environmental impact statement. And  
7 you're going to have to gather some information. One of the  
8 unfortunate things that has crept into the Council on  
9 Environmental Regulations is the requirement to go get  
10 information if you haven't got it. In a day of adaptive  
11 management, I don't think that makes any sense, but it's  
12 there. And I doubt seriously that the agency's got its arms  
13 around these potential economic or socioeconomic  
14 consequences at this point.

15           There are other factors that appear not to be  
16 within what you are currently contemplating. For instance,  
17 shortages absorbed by Mexico under the 1944 treaty are not  
18 in these slides. Now, I know that's governed by a treaty  
19 and that makes things a little more complicated, and  
20 shortages and surpluses mean different things in different  
21 documents. But I don't see how you contemplate analyzing  
22 what might happen to the Lower Basin states without  
23 including an analysis of what might happen with regard to  
24 the treaty in Mexico. Whether you get the Mexican  
25 government to cooperate in that event is not relevant to

1 having to analyze what the impacts would be if they did or  
2 didn't cooperate. And those factors will have to be  
3 included in your development of alternatives.

4           The future is related to water supply storage  
5 availability of water in Lake Mead, the other strategies  
6 that are being worked on in the Lower Basin, alternative  
7 storage in the area of the All-American Canal. It's a whole  
8 panoply of things that will potentially affect our ability  
9 to conserve water in the Lower Basin will need to be  
10 included.

11           I think also you're going to have to take a hard  
12 look at the statutory requirement to augment water supplies  
13 that's contained in the 1968 account and is, of course, an  
14 unfulfilled promise to the basin as a whole and the lower  
15 basin especially. That is not an idle promise. It was a  
16 major reason why Arizona ultimately supported the Act with  
17 the Central Arizona Project being the stepchild of the  
18 river. And augmentation has been an activity that  
19 reclamation has been involved in on an experimental basis  
20 before, and it needs to be factored into the analysis as  
21 part of one or more alternatives that would come into play.  
22 I won't ask the agency to support that concept. I'm just  
23 trying to tell you you have to analyze it whether you want  
24 to support it or not.

25           That's probably enough for you to chew on for

1 this evening. I will be submitting written comments by the  
2 November 30 deadline, and thank you for the opportunity.

3 MR. FULP: Thanks. Other comments?

4 MS. JAMES: My name is Leslie James. I'm  
5 executive director of the Colorado River Energy Distributors  
6 Association or CREDA. I won't reiterate several of the  
7 comments that were made by Mr. Boyce and Mr. Lynch, but I  
8 did want to provide a few supplemental remarks.

9 CREDA is a nonprofit organization that represents  
10 the majority of the power customers of the Colorado River  
11 Storage Project of which we all know that Glen Canyon is the  
12 largest feature of the project. CREDA members in six states  
13 serve over four million consumers and all are nonprofit  
14 entities.

15 The 1956 Colorado River Storage Act, Section 7,  
16 requires that hydroelectric power plants be operated so as  
17 to produce the greatest practical amount of power and  
18 energy. Section 5 of that Act also established the basin  
19 fund, and both Harvey and Bob talked about how the power  
20 function or the authorized power purpose is the paying  
21 partner of these projects. In the CRSP power revenues fund  
22 about 95 percent of the irrigation investment in the project  
23 along with all the power investment, operation maintenance,  
24 replacements, as well as funding the adaptive management  
25 program down here at Glen Canyon Dam, a portion of the Upper

1 Basin Recovery Implementation Program, a portion of the  
2 Solidity Control Program. And all of this funding comes  
3 from the basin fund.

4 As both Bob and Harvey mentioned, the Hoover  
5 funding and CRSP funding are different in some respects but  
6 are the same in other respects. The basin fund's sole  
7 source of money are power revenues. The drought has been  
8 quite unkind to basin fund. The utility customers who  
9 purchase power from western area power administration from  
10 the Colorado River Storage Project have seen quite serious  
11 impacts. In fact since about 1999 the Colorado River  
12 Storage Project rate has increased 44 percent, and yet  
13 deliveries, power deliveries have been reduced by  
14 22 percent.

15 Now, those numbers don't even taken into  
16 consideration the individual utility impact that they have  
17 had to make to supplement the amount of deliveries that  
18 could not be made because of CRSP resources reduction.  
19 Based on some preliminary analysis, in the event power  
20 generation ceased at Glen Canyon Dam even for a few months  
21 each year from 2007 to 2009, the CRSP rate would have to  
22 increase 99.8 percent.

23 The initial notice back in the summer indicated  
24 that it's the Department's intent that the development of  
25 management strategies would provide more predictability to

1 water users throughout the basin. It is our view that,  
2 based on power being an authorized purpose of this project  
3 as well as the financial considerations, that the impacts  
4 on -- the economic impacts on power generation need to be  
5 treated equally, if not more so, in all of this analysis.

6 We'd like to thank Arizona Department of Water  
7 Resources. We were able to make a presentation at one of  
8 the early meetings to talk about these impacts from the CRSP  
9 power customers' standpoint and thank the Bureau for the  
10 opportunity to make comments. And we'll submit written  
11 comments by the deadline. Thank you.

12 MR. FULP: Thank you. Other comments? Okay.  
13 That concludes our meeting then, and I just again would  
14 reiterate what Bob said, keep Dennis and his family in your  
15 thoughts and prayers. Thanks for being here.

16 (WHEREUPON the meeting concluded at 8:00 p.m.)

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STATE OF ARIZONA )  
 ) ss.  
COUNTY OF MARICOPA )

BE IT KNOWN that the foregoing meeting was taken before me, DIANE DONOHO, Certified Reporter, Certificate No. 50691, in and for the State of Arizona; that the foregoing pages are a true and correct transcript of all proceedings had upon the taking of said meeting, all done to the best of my skill and ability.

I FURTHER CERTIFY that I am in no way related to any of the parties hereto, nor am I in any way interested in the outcome thereof.

DATED at Phoenix, Arizona, this \_\_\_\_\_day of \_\_\_\_\_, 2005.

\_\_\_\_\_  
Diane Donoho, RPR  
Arizona Certified Reporter  
Certificate No. 50691

# **Appendix J**

## **November 8, 2005, Henderson, Nevada Public Meeting Documents**

### **J.1 Sign-In Sheet (1)**





# **Appendix J**

## **November 8, 2005, Henderson, Nevada Public Meeting Documents**

### **J.2 Sign-In Sheet (2)**



# **Appendix J**

## **November 8, 2005, Henderson, Nevada Public Meeting Documents**

### **J.3 Sign-In Sheet (3)**



# **Appendix J**

## **November 8, 2005, Henderson, Nevada Public Meeting Documents**

### **J.4 Transcript**

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PUBLIC MEETING  
US DEPARTMENT OF THE INTERIOR  
BUREAU OF RECLAMATION

Held at the Henderson Convention Center  
200 Water Street  
Grand Ballroom C  
Henderson, Nevada

On Tuesday, November 8, 2005  
From 6:00 to 8:00 p.m.

Reported by: Lori M. Judd, CCR #233, RMR

1 HENDERSON, NEVADA, TUESDAY, NOVEMBER 8, 2005, 6:00 PM

2 \* \* \* \* \*

3 MR. FULP: Welcome to this public meeting  
4 concerning the development of lower basin shortage  
5 guidelines and coordinated management strategies for  
6 Lake Powell and Lake Mead under low reservoir  
7 conditions.

8 I'm Terry Fulp with the Bureau of  
9 Reclamation in Boulder City and the Lower Colorado  
10 Region, and because we have not a large audience, I'm  
11 going to go ahead and ask that we just go around and  
12 introduce ourselves, please.

13 (Introduction of audience members.)

14 MR. FULP: Thank you.

15 If you do choose to make a comment,  
16 please make sure -- we'll hand you a microphone and  
17 state your full name and spell it so we get it  
18 recorded properly.

19 I think that's about it for the  
20 housekeeping. Let's just get started.

21 (Slide presentation by Mr. Fulp.)

22 MR. FULP: Questions? Are there any questions  
23 about that information? Okay, good. Then let me  
24 walk into the comment period.

25 Again, there are several ways you can



1 submit your comments. And again, we're looking for  
2 comments that would help us with this formulation of  
3 these alternatives we are going to actually study in  
4 the environment impact statement, as well as other  
5 factors that you think need to be considered in the  
6 study.

7 Here's how you can submit them,  
8 certainly tonight by public comment, we give you that  
9 opportunity; you can send them to us by U.S. mail; by  
10 fax; or by e-mail, and there is a handout with these  
11 addresses in the back. Please feel free to take them  
12 and we remind you that the comment, this comment  
13 period ends at close of business Wednesday, November  
14 30. Okay, with that, I'll open it up to, if anyone  
15 would like to give us a comment this evening.

16 MR. CAAN: I've got a comment, if I may, and I  
17 think everyone will hear me without the microphone.

18 My name is George Caan. I'm the  
19 Executive Director of the Colorado River Commission.  
20 I'll give you a card.

21 First, I want to thank the Bureau of  
22 Reclamation for having put on these meetings and  
23 getting the public's input into this plan. Today I'm  
24 speaking not as the director of the Colorado River  
25 Commission, but instead as a board member of the

1 Colorado River Energy Distributors Association, known  
2 as CREDA. CREDA is a nonprofit organization composed  
3 of power customers who take power from the upper  
4 basin projects, known as the CRSP.

5 My purpose today is to offer to the  
6 bureau a suggestion to insure that the bureau work  
7 closely with western to analyze impact to the basin  
8 fund for whatever shortage criteria that comes out,  
9 and let me be specific. The revenues from the Upper  
10 Colorado River projects paid by power customers go  
11 into a basin fund and then those revenues and funds  
12 are used to pay for the operation, maintenance,  
13 repair and upkeep of those projects. In addition to  
14 that, over \$20 million is used from that fund to pay  
15 for environmental programs that are not power  
16 related, directly power related.

17 The shortage criteria and the drought  
18 could or will have an impact on the power production  
19 of those facilities. Therefore, the revenues  
20 produced by those facilities will be reduced. We  
21 aren't suggesting what to do with respect to that  
22 reduction, all we're saying is that we would like the  
23 bureau to work very closely with western to assess  
24 the impact on that fund from the shortage criteria,  
25 and then to look at strategies that might be put in

1 place in appropriations or others to pay for some of  
2 the non-power related costs and help support the  
3 funding of the operation and the maintenance of those  
4 facilities. Thank you.

5 MR. FULP: Thank you. Other comments?

6 It's okay, take your time.

7 Going one last time, anyone else?

8 Okay, then we thank you for coming.

9 This concludes this public meeting,  
10 although we will stay here until 8:00 p.m. as we've  
11 published. So if you think of something else you  
12 wanted to tell us, please come back and our recorder  
13 will record you on that.

14 Thanks a lot.

15 (Break in proceedings.)

16 (Continued public statement.)

17 MR. HIATT: I'm John Hiatt, H-I-A-T-T, and this  
18 opportunity to address shortage criteria is an  
19 historic opportunity to maybe relook at some of the  
20 things that have been done on the Colorado River  
21 system, starting in the 1920s.

22 The bureau's own projections suggest  
23 that shortage will be the norm in the future on the  
24 Colorado River, so therefore, what we are doing here  
25 with addressing shortage criteria is really looking

1 at the future rules as to how we will divvy up the  
2 Colorado River.

3 It's very important that we not repeat  
4 the mistakes that were made in the 1920s, when it was  
5 done originally, so this is really the opportunity to  
6 do that.

7 One of the things that should happen  
8 here is that the range of interests at the table  
9 during these discussions should be expanded. In the  
10 1920s it was only the states at the table. At this  
11 point in time environmental interests need to be  
12 included as well and there can certainly be  
13 responsible environmentalists who can and would  
14 participate in terms of the procedures and in terms  
15 of deciding how the river should be divvied up. One  
16 needs to look at the impacts on users, and that  
17 includes wildlife, that includes every possible user  
18 of water and decisions made that will have the least  
19 permanent or long-term impact. That would mean in  
20 terms of farmers, people growing wheat would be  
21 shorted before people growing oranges or dates or  
22 something that requires a long lead time to produce a  
23 crop.

24 We also need to look at the impacts of  
25 the shortage criteria on off-river resources because

1 one of the things that will happen is when water from  
2 the river is not available, people will use ground  
3 water and that ground water in some cases will come  
4 from sources which drain directly into the river. In  
5 other cases it will come from places which drain into  
6 other basins, but we need to look at what will happen  
7 when people go to alternative sources, and those  
8 impacts may take place as much as, or more than 100  
9 miles away from the river itself, but they are going  
10 to be significant.

11 We need to look at the impact on some  
12 of the minor drainages in the lower basin as a result  
13 of what happens here in terms of shortage criteria.  
14 That would be things like the Virgin River, the Muddy  
15 River, and even as far away as the Amargosa River,  
16 which doesn't connect in any way to the Colorado, but  
17 ground water pumping to make up shortage on the  
18 Colorado River system could dramatically impact that  
19 very minor drainage, but one that is vital in its  
20 land area.

21 In terms of management of the lake,  
22 Lake Powell and Lake Mead, that's in some ways  
23 relatively simple because it's really two big  
24 interests there. There's recreation, power  
25 generation. Wildlife interests are significant, but

1 not nearly as great. And there are certainly  
2 mathematic formulas to figure out the most efficient  
3 way to generate power between the two reservoirs to  
4 maximize the amount of power generated.

5 Las Vegas is in a unique position in  
6 this scheme of things because it's the only large  
7 city on the river and it both takes water out of the  
8 river and it puts effluent back into the river. So  
9 therefore not only does it affect the river  
10 volumetrically, but it affects it water quality-wise,  
11 and that's very important.

12 So as we deal with shortage criteria  
13 and less water in the river, water quality becomes of  
14 greater and greater importance. Salinity, which has  
15 been on the back-burner for the last two decades,  
16 needs to come forward as a major. The more saline  
17 the water, the more water is required for irrigation.  
18 So it means that water used downstream will be less  
19 efficiently used. So all of the upstream people who  
20 put water into the river and all of the upstream  
21 sources of saline water need to be examined so that  
22 salinity and water quality are addressed as key  
23 components in terms of river management. This was  
24 started many years ago and essentially fell by the  
25 wayside.

1                   The other thing that needs to be looked  
2                   at is how states can trade water with one another.  
3                   This has been something which basically hasn't  
4                   happened until recently. There's still a number of  
5                   obstacles to the free trade of water between the  
6                   states, but in the final analysis as we are  
7                   addressing an over-committed river, we will have to  
8                   address how water can be traded between those who  
9                   need it, who need it most, and those who maybe can  
10                  find either other alternatives or can find that other  
11                  economic activities and other economic benefits, for  
12                  instance money, can be traded for water.

13                   That's all.

14                  MR. FULP: Thank you.

15                   (Meeting concluded at 8:00 p.m.)

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REPORTER'S CERTIFICATE

STATE OF NEVADA )  
                  ) ss.  
COUNTY OF CLARK )

I, Lori M. Judd, a duly commissioned Notary Public, Clark County, State of Nevada, do hereby certify:

That I reported the foregoing proceedings on Tuesday, November 8, 2005, commencing at the hour of 6:00 p.m.

That I thereafter transcribed my said shorthand notes into typewriting and that the typewritten transcript of said proceedings are a complete, true and accurate transcription of my said shorthand notes taken down at said time.

I further certify that I am not a relative or employee of an attorney or counsel involved in said action, nor a person financially interested in said action.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal in my office in the County of Clark, State of Nevada, this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

\_\_\_\_\_  
LORI M. JUDD  
CCR #233, RMR



# **Appendix K**

## **Public Meeting Presentation**

# RECLAMATION

*Managing Water in the West*

## **Development of Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions**

Public Meetings



U.S. Department of Interior  
Bureau of Reclamation

## **Shortage Guidelines and Management Strategies Public Meeting**

- Welcome and Introductions
- Purpose of Meeting
- Background, Need, Setting
- Process
- Key Concepts
- Questions and Comments

RECLAMATION

## Purpose of this Meeting

- To solicit comments on the formulation of alternatives for the development of:
  - Shortage guidelines for the Lower Basin (circumstances under which less than 7.5 million acre-feet would be delivered annually to the Lower Division States (Arizona, California, and Nevada))
  - Coordinated management strategies for the operations of Lake Powell and Lake Mead under low reservoir conditions

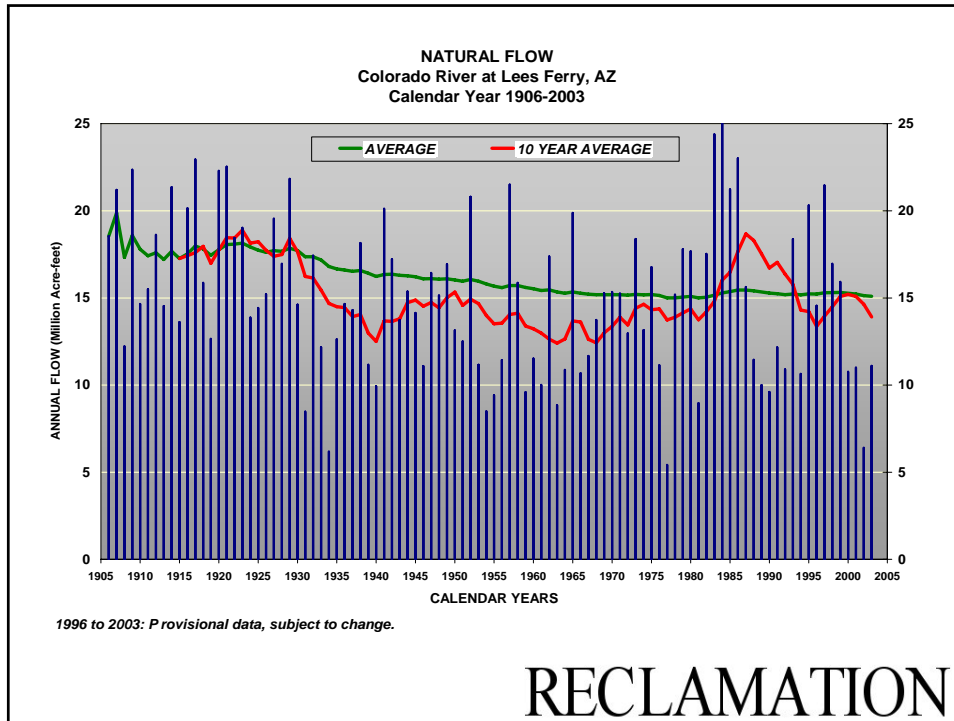
RECLAMATION

## Colorado River Basin Hydrology

- 16.5 million acre-feet (maf) allocated annually
- 13 to 14.5 maf of consumptive use annually
- 60 maf of storage
- 15.1 maf average annual “natural” inflow into Lake Powell over past 100 years
- Inflows are highly variable year-to-year



RECLAMATION



### Colorado River Basin Drought Water Year Unregulated Inflow to Lake Powell, 1999-2005

- 1999                    109 % of average
- 2000                    62 % of average
- 2001                    59 % of average
- 2002                    25 % of average
- 2003                    51 % of average
- 2004                    49 % of average
- 2005                    105 % of average

RECLAMATION

## Colorado River Basin Drought

- Inflows from 2000 through 2004 were the lowest in any five-year period in our 100-year historical record
- Inflows in 2005:
  - 105% of average in Upper Basin
  - Over 200% of average in Lower Basin
- System is now 59% full (was over 90% full in 1999)
- 2005 “rolled back” one year of the drought
- It is not unusual to have a few years of above average inflow during a sustained drought (e.g., the 1950’s)

RECLAMATION

## Setting and Need

- **Drought conditions have impacted storage in the Colorado River system**
- **Water use continues to increase**
- **The Secretary of the Interior may declare a shortage condition in the Lower Basin**
  - Delivery of less than 7.5 maf to Arizona, California, and Nevada
- **To date, there has never been a shortage in the Lower Basin and there are no shortage guidelines**
- **Guidelines will:**
  - Inform the Secretary’s decision in the Annual Operating Plan process
  - Provide a degree of certainty to the water users in the Lower Basin

RECLAMATION

## **Process**

- In 2004, the Secretary challenged the Basin States to develop a drought mitigation plan for the Colorado River Basin
- Basin States have been studying potential operational scenarios to lessen the impacts of drought conditions using Reclamation as a technical resource
- In May 2005, the Secretary directed Reclamation to engage in a process to develop guidelines for Lower Basin shortages and the operation of Lakes Powell and Mead under low reservoir conditions
- The process must be completed by December 2007

**RECLAMATION**

## **Process**

- **Public Consultation** (June 15 – August 30, 2005)
  - Solicited comments on content, format, mechanisms and analysis to be considered to address drought and other management challenges
  - Comments received:
    - 149 unique comments (posted on Reclamation web site)
    - Considering these comments in our project planning efforts

**RECLAMATION**

## Process

- **Public Scoping Period** (September 30 – November 30, 2005)
  - Initiating environmental review pursuant to NEPA
  - Holding public scoping meetings
  - Soliciting comments on the development of alternatives for guidelines and strategies
  - Comments that are received will:
    - Advise alternatives development and analysis
    - Be summarized in a report made available in February, 2006

RECLAMATION

## Schedule

- **JUN 2005** – FR notice initiating public process
- **SEP 2005** – FR notice to initiate NEPA and scoping of issues and alternatives
  - 60-day comment period
  - Public meetings
  - Scoping report
- **DEC 2006** – DEIS available to public
- **OCT 2007** – FEIS available to public
- **DEC 2007** – Record of Decision

RECLAMATION

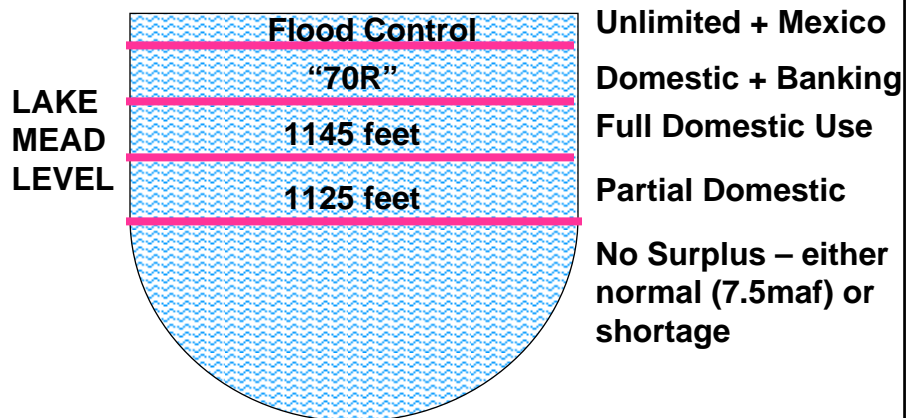
## Key Concepts

- Operating Guidelines
- Coordinated Reservoir Management
- Shortage in the Lower Basin

RECLAMATION

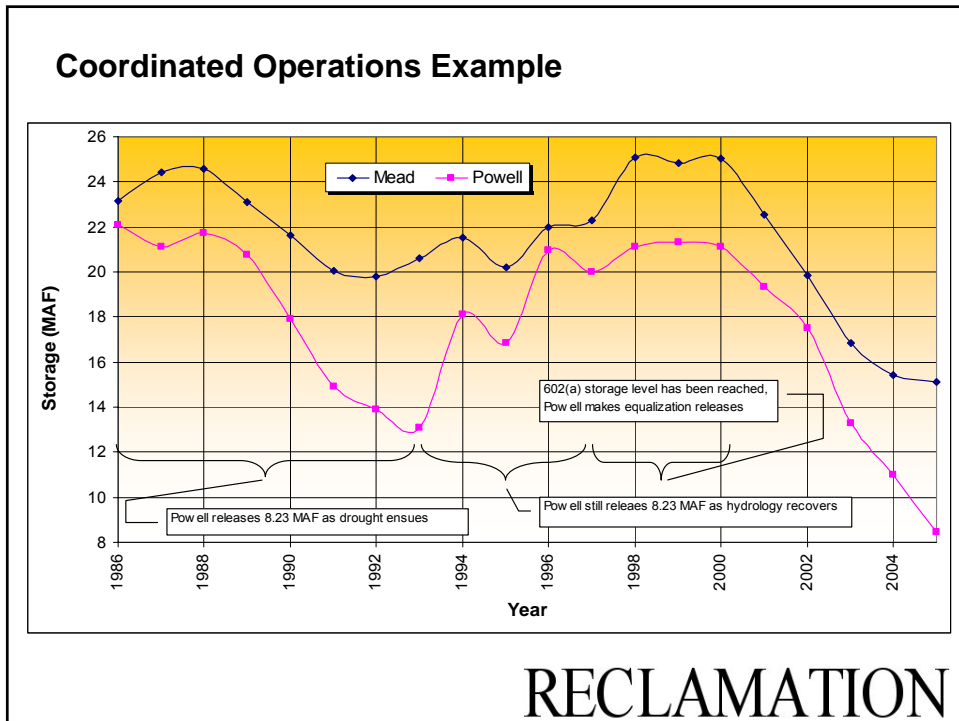
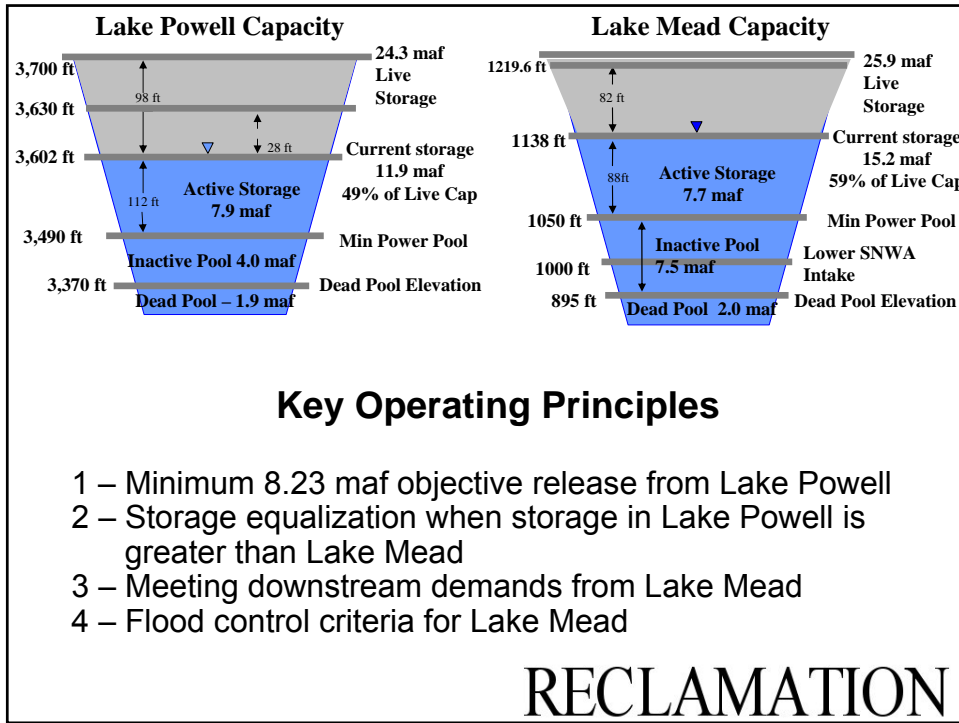
## Interim Surplus Guidelines

(example of operating guidelines)



RECLAMATION





## Mass Balance at Lake Mead

- Given current demands in the Lower Basin (including Mexico), and minimum objective release from Lake Powell, Lake Mead storage will continue to decline
  - Inflow = 9.0 maf  
(release from Powell + side inflows)
  - Outflow = - 9.5 maf  
(LB and Mexico apportionments + downstream regulation, gains and losses)
  - Mead evaporation loss = - 0.8 maf
  - Balance = - 1.3 maf

RECLAMATION

## Shortage in the Lower Basin

- In the Lower Basin, the Secretary as Watermaster, may declare a shortage – delivery of less than 7.5 maf to the Lower Division States (Arizona, California, and Nevada)
- To date, there has never been a shortage in the Lower Basin and there are currently no shortage guidelines
- Trade-offs when a shortage exists:
  - Magnitude
  - Duration

RECLAMATION

# Questions?

RECLAMATION

## Comments

- Submit comments/suggestions on:
  - Formulation of alternatives for the development of:
    - Shortage guidelines for the Lower Basin (circumstances under which less than 7.5 maf would be delivered annually to the Lower Division States (Arizona, California, and Nevada))
    - Coordinated management strategies for the operations of Lake Powell and Lake Mead under low reservoir conditions
  - Other issues or factors that need to be considered in study

RECLAMATION

## Comments

- submit by mail, faxogram or e-mail
- Wednesday, November 30, 2005, close of business

**Regional Director**  
**Bureau of Reclamation**  
**Lower Colorado Region**  
**Attention: BCOO-1000**  
**P.O. Box 61470**  
**Boulder City, Nevada**  
**89006-1470**  
fax number 702-293-8156  
e-mail: [strategies@lc.usbr.gov](mailto:strategies@lc.usbr.gov)

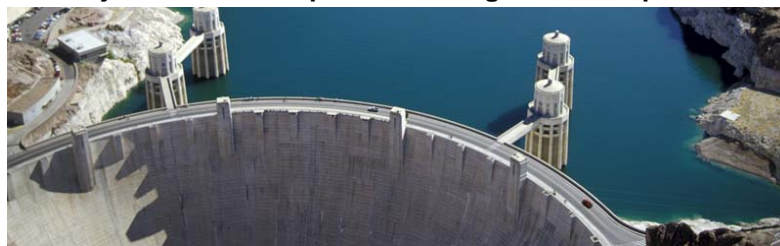
**Regional Director**  
**Bureau of Reclamation**  
**Upper Colorado Region**  
**Attention: UC-402**  
**125 South State Street**  
**Salt Lake City, Utah**  
**84318-1147**  
fax number 801-524-3858  
e-mail: [strategies@uc.usbr.gov](mailto:strategies@uc.usbr.gov)

# RECLAMATION



### Development of Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions

Project website: <http://www.usbr.gov/lc/riverops.html>



# RECLAMATION

# **Appendix L**

## **Methodology for Categorizing/Cataloging Public Comments**

## **Description of Methodology Used for Categorizing/Cataloging Comments**

During public comment period, Reclamation received comments, suggestions and questions concerning several issues. In an effort to simplify the evaluation of the comments received, several steps were taken to organize the comments into a sortable database. As comments were received, they were assigned a code and source identification and entered into a database. Code identifications were assigned according to the following method:

- (1) Comments were classified and assigned a letter code according to commentor category, i.e. federal agency (F), state agency (S), local agency or water district (L), special interest or environmental group (G), individual (I), business (B).
- (2) A number code was then assigned to identify comment letters by the sequence in which they were received. For example, the third letter received from a local agency would be assigned the code “L-003”, which signifies that that this was the third letter received from a local agency.
- (3) When more than one issue was presented within any given comment letter, an additional numeric code was used to define the order in which the issues were presented within the comment letter. For example, the second issue raised within the third letter received from a local agency would be assigned the following code “L-003.1.”

The specific issues raised within a written comment or letter, or during a public meeting were coded according to the above method for easy reference between the original source of the comments and the sortable database. In addition, comments were assigned source identifications to help differentiate between written comment letters and oral comments made at public meetings. The date on which comments were received was also included as part of the source identification.

# **Appendix M**

## **January 19, 2006, Las Vegas, Nevada Tribal Consultation Meeting Documents**

### **M.1 Request to Initiate Consultation**



IN REPLY REFER TO:

# United States Department of the Interior

BUREAU OF RECLAMATION  
Lower Colorado Regional Office  
P.O. Box 61470  
Boulder City, NV 89006-1470



BCOO-1000  
ENV-6.00

DEC 23 2005

Honorable Charles Wood  
Chairman, Chemehuevi Indian Tribe  
P.O. Box 1976  
Havasas Lake, CA 92363-1976

Subject: Request to Initiate Consultation on the Development of Lower Colorado River Basin  
(Lower Basin) Shortage Guidelines and Coordinated Management Strategies

Dear Chairman:

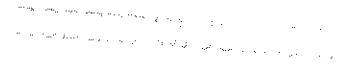
The Secretary of the Department of the Interior has recently directed the Bureau of Reclamation to develop Lower Basin shortage guidelines and coordinated management strategies for Lake Powell and Lake Mead under low reservoir conditions. Reclamation, in accordance with National Environmental Policy Act (NEPA) and Council on Environmental Quality regulations, has begun to prepare an Environmental Impact Statement (EIS) to address the proposed guidelines and strategies. A notice was published in the Federal Register on September 30, 2005, that announced the start of the scoping process and the intent to prepare an EIS (70 Federal Register 57322).

On behalf of the Department, we would like to initiate government-to-government consultation with the Chemehuevi Indian Tribe, in concert with the initiation of our NEPA process for this proposed action, to identify and consider potential impacts to any tribal trust resources as a result of the proposed action.

Mr. Rick Gold, Regional Director, Upper Colorado Region, and I respectfully request an opportunity to consult with you on these planned actions and discuss your interest and involvement in the NEPA process for this proposed action. To that end, we have arranged a meeting at McCarran Airport, Las Vegas, Nevada, Rooms 4 and 5, on January 19, 2006, from 10:00 a.m. to 12:00 noon.

Our staff will call your office during the next few weeks regarding this request. You may call Ms. Nan Yoder at 702-293-8495 or contact her by email at [nyoder@lc.usbr.gov](mailto:nyoder@lc.usbr.gov) to discuss the consultation process or to confirm your availability for the meeting.

Sincerely,

  
Robert W. Johnson  
Regional Director

Identical Letter Sent To:

Continued on next page.



Identical Letter Sent To:

Honorable Sherry Cordova  
 Chairwoman, Cocopah Indian Tribe  
 West Fourth 15<sup>th</sup> and Avenue G  
 Somerton, AZ 85350

Honorable Nora McDowell  
 Chairperson, Fort Mojave Indian Tribe  
 500 Merriman Avenue  
 Needles, CA 92363

Honorable Mike Jackson, Sr.  
 President, Quechan Indian Tribe  
 P.O. Box 1899  
 Yuma, AZ 85366

Honorable Clement Frost  
 Chairman, Southern Ute Indian Tribe  
 P.O. Box 737  
 Ignacio, CO 81137

Honorable Levi Pesata  
 President, Jicarilla Apache Nation  
 P.O. Box 507  
 Dulce, NM 87528

bc: Mr. Bryan Bowker  
 Acting Regional Director  
 Bureau of Indian Affairs  
 P.O. Box 10  
 Phoenix, AZ 85001

LC-1000, LC-1100, BCOO-1000, BCOO-1003, PXAO-1000, NAOO-1100, UC-100,  
 UC-105, UC-402, UC-438, UC-700, UC-720

BCOO-1000-Chrono Daily WBR:NYoder:ms:12/21/05:8495  
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Honorable Daniel Eddy, Jr.  
 Chairman, Colorado River Indian Tribes  
 Route 1, Box 23-B  
 Parker, AZ 85344-9704

Honorable Joe Shirley, Jr.  
 President, Navajo Nation  
 P.O. Box 9000  
 Window Rock, AZ 86515

Honorable Maxine Natchees  
 Business Committee Chairwoman  
 Northern Ute Indian Tribe  
 P.O. Box 190  
 Fort Duchesne, UT 84026

Honorable Selwyn Whiteskunk  
 Chairman, Ute Mountain Ute Tribe  
 P.O. Box 248  
 Towaoc, CO 81334

# **Appendix M**

## **January 19, 2006, Las Vegas, Nevada Tribal Consultation Meeting Documents**

### **M.2 Sign-In Sheet (1)**



# **Appendix M**

## **January 19, 2006, Las Vegas, Nevada Tribal Consultation Meeting Documents**

### **M.3 Transcript**

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**PUBLIC MEETING**  
**US DEPARTMENT OF THE INTERIOR**  
**BUREAU OF RECLAMATION**

Held at McCarran International Airport  
5757 Wayne Newton Boulevard  
Mezzanine Meeting Rooms 4 and 5  
Las Vegas, Nevada

On Thursday, January 19, 2006  
10:00 a.m. to 11:35 a.m.

Reported By: Janice David, CCR No. 405

1 LAS VEGAS, NEVADA, JANUARY 19, 2006, 10:00 A.M.

2 \* \* \* \* \*

3 (Slide presentation by Mr. Fulp.)

4 MS. CONDON: I understand why Powell  
5 drops quicker in a drought. Explain why Mead  
6 takes longer to recover.

7 MR. FULP: Yes. That's a good question.  
8 When the flows get back good, again if I can use  
9 that, the way I said that, I apologize for it, but  
10 when the flows become better, Powell has to fill  
11 sufficiently to get this storage criterion met  
12 before it equalizes, it starts sharing the water.  
13 So, it has to really recover fairly high before we  
14 start sharing the water again.

15 MS. CONDON: So, you're taking more out  
16 of Mead?

17 MR. FULP: And Mead still goes down,  
18 because you're still consuming water at Mead, yes.

19 MS. CONDON: Okay.

20 MR. FULP: That's a very good question.  
21 Thanks. Next slide.

22 (Slide presentation by Mr. Fulp.)

23 MR. ARTHUR: Excuse me. If there is no,  
24 if there has been, never been a shortage, how,  
25 then, is it determined that your shortage, as we

1 speak of it, is occurring?

2 MR. FULP: I think I understand your  
3 question. Since we've never had one, how would we  
4 figure out how to have one?

5 We don't know. I mean, with the  
6 secretary, we know this: The secretary has the  
7 ability by law to declare the shortage. She would  
8 look at lots of factors. If she has no  
9 guidelines, she would have to look at lots of  
10 factors to determine how to do it.

11 Again that's kind of our purpose of  
12 putting guidance in place, so that it's as fair as  
13 it can be, as reasonable as it can be, and  
14 hopefully to balance the impacts in the best way.

15 Did that answer your question? No?

16 MR. ARTHUR: Well, let me keep -- I may  
17 come across it.

18 MR. GOLD: Let me try. Without  
19 guidelines you could conceivably, in your mind,  
20 say, as long as there was water in Lake Mead you  
21 could release it. But there would be impacts as  
22 Lake Mead was drawn down. So, at some point some  
23 might say, we've already got there. We would  
24 start to have recreation impacts at Lake Mead. At  
25 some point we would start to have impacts on the

1 power plant at Lake Mead. So, you could just say,  
2 as long as there's water I will deliver seven and  
3 a half million acre feet until there is less than  
4 seven and a half million acre feet in Mead and  
5 then I don't have a choice.

6 For instance, if there is only five acre  
7 feet in Lake Mead, guess what? You're going to  
8 deliver no more than five. So, it's that idea  
9 about how do you decide that drives our need to  
10 say, now we should look at the impacts of various  
11 ways to decide how would we declare a shortage.  
12 And as Terry put it, when would we declare a  
13 shortage and how big a shortage would, would we  
14 declare? And those decisions, because they have  
15 never been made, are sort of like, gee, we don't  
16 know. We know the secretary could, but we don't  
17 know how the secretary would.

18 MR. FULP: You bet. Thank you, Rick.  
19 Hopefully that -- other questions? That's a good  
20 segway into, we wanted to, before we ask for  
21 comments formally to be taken here we did want to  
22 make sure if you have any other questions up to  
23 this point in a more informal manner, please ask  
24 us so, I know it's a lot to dump on you probably.

25 MR. ALGOTS: Terry mentioned a few



1 minutes ago, when reduced deliveries are  
2 necessary, does Mexico take the same hit as the  
3 other states?

4 The question is, Terry had just mentioned  
5 a few moments ago about when, when reduced  
6 deliveries was necessary, that it would be spread  
7 among the lower basin states and Mexico.

8 And my question is, does Mexico share  
9 that hit in the same proportion as the other, the  
10 United States would?

11 MR. FULP: It does. There is a provision  
12 in the treaty that essentially states that, that  
13 in, under conditions of extraordinary drought, I  
14 believe are the exact terms, that Mexico would  
15 share a proportion with the US in terms of  
16 shortages.

17 MR. ALGOTS: A shortage criteria would be  
18 an extraordinary drought?

19 MR. FULP: We believe so, yes.

20 MR. ALGOTS: Or is that having to settle  
21 in court sometime later?

22 MR. FULP: Might be. You don't ever know  
23 for sure, but I believe the common thinking is  
24 that constitutes an extraordinary drought, yes.

25 MR. ALGOTS: Thank you.

1 MR. FULP: Other questions?

2 MR. HVINDEN: I have a question. Is the  
3 priority status going to be figured into the  
4 guidelines?

5 MR. FULP: Absolutely. The priority  
6 status is the legal framework within which we  
7 operate. So, absolutely, barring individuals who  
8 want to make their own agreements, I mean, there  
9 might be some of that as well, but we would,  
10 priority, a priority system.

11 Any other questions?

12 MS. CONDON: Or the, the existing surplus  
13 guidelines when, when you have a million acre  
14 feet, the 1,100 --

15 MR. FULP: I'm sorry. Those are lake  
16 elevations. I didn't explain that very well, did  
17 I? Those are just the lake surface elevations.

18 MS. CONDON: So, that really doesn't tell  
19 us --

20 MR. FULP: What the delivery is.

21 MS. CONDON: -- what that amount is below  
22 that line.

23 MR. FULP: That's right. We can give you  
24 some pretty rough estimates. Our estimates, there  
25 was a little bit of complication in the way the

1 guidelines were written in terms of how to  
2 determine exactly, but in the partial domestic  
3 that's roughly about 300,000 additional acre feet  
4 is made available.

5 MS. CONDON: Okay.

6 MR. FULP: And in the full domestic it  
7 was more in the 600,000 rough estimate. There  
8 was, there were formulas in the guidelines on how  
9 to compute exactly.

10 MR. GOLD: And I would point out that  
11 those guidelines exist. They're something we put  
12 in place. So, if you're curious, we can provide  
13 them for you.

14 MR. FULP: Right.

15 MS. CONDON: I know -- very aware of  
16 that. I just haven't had the chance to look at  
17 them. So --

18 MR. FULP: And they are available on our  
19 website, and you have that website in your hand.

20 MS. CLANI: So, the secretary will  
21 determine the shortage based on the annual  
22 operating plan or the information provided?

23 MR. FULP: Could I restate that just a  
24 little bit? During the annual operating plan  
25 process, so prior to the beginning of the water

1 year we would apply these guidelines, and that  
2 would tell us what the condition in the lower  
3 basin will be for the coming year.

4 For instance, if it's a lake level type  
5 of guideline, it would say, if on January 1st Lake  
6 Mead is below this level, this is how much of a  
7 shortage will be applied. That, that's kind of an  
8 example. And then that annual operating plan, we  
9 develop it with a public process of state and  
10 submit it to the secretary as a recommendation.  
11 And then she has the final authority, of course,  
12 but, but generally follows those recommendations.

13 MS. CLANI: Okay.

14 MR. HEART: As you look at this diagram  
15 on number, page three, back to 1905 is truly low  
16 compared to 2005. The big difference in that  
17 water was really short. The natural flows,  
18 1955 --

19 MR. FULP: Yes.

20 MR. HEART: -- compared to today, those  
21 are our two lowest points. On here we also need  
22 to have usage compared to 1955 compared to today,  
23 the lower basin versus the upper basin.

24 Do you have some sort of diagram showing  
25 the usage comparison?

1 MR. FULP: We do. We didn't bring it  
2 today unfortunately. We can make that available  
3 to you.

4 MR. HEART: That also impacts what's  
5 going on here. You're talking about restrictions,  
6 about treaties. You're talking about, the  
7 gentleman talks about Mexico and the treaty of  
8 Mexico. The treaty of the 10 tribes is, it's  
9 going to impact them all, the smaller reservoirs,  
10 the upper basin. And impacts they have, is there  
11 a priority on tribes themselves and their treaties  
12 on usage compared to a City of Las Vegas? Who  
13 goes priority, a treaty over a city, city's usage?  
14 And I need a little answer to that.

15 I don't know what that comparison is or  
16 what the secretary of interior is doing with this.  
17 I think tribes need to be a priority. And as you  
18 talk about government-to-government consultation,  
19 based on the consultation process that we're doing  
20 today, tribes need to be in the forefront of this  
21 as you start to looking at allocations and  
22 cutbacks. We are talking about Mead and Lake  
23 Powell but also the ones that are shorter going to  
24 the reservations, going to the tribes' needs.  
25 We're also a growing population. Sometimes we're

1 always left out of the equation.

2 So, I think we need to bring that up to  
3 the forefront to the Interior to tell them that  
4 they need to calculate that as a priority for us  
5 to, as native tribes. We've lost too much  
6 already, and we need to keep what we have. I know  
7 Mexico is asking for some. Our population is  
8 different from 1955 to now. We're in a big  
9 shortage right now. Our treaties need to come to  
10 the forefront, also.

11 MR. FULP: Okay. We understand. We  
12 appreciate that, those comments. And as we go  
13 through the process we need to make sure we set up  
14 the proper relationship with you so that, that  
15 those comments are continued.

16 MR. HEART: Starting to look at drought  
17 mitigation plan, you have to have this  
18 accomplished by 2007. 2

19 MR. ARTHUR: In addition to Manuel's  
20 question, at what point did, I know we're just  
21 making comments to you. You're taking comments  
22 today.

23 So, at what point in this discussion do  
24 we get answers?

25 MR. FULP: Well, throughout the process

1 we'll take input, and we'll do our best to answer  
2 your questions as we go along through that.  
3 Certainly the final decision is scheduled for  
4 December, 2007 through the process of, via the  
5 record of decision, but I think what we would like  
6 to do today is to set up something with you, if  
7 you wish. And we could meet with you periodically  
8 or whatever it is that makes sense to both, tell  
9 you where we are in the process but also to  
10 continue to get your input. And hopefully as we  
11 go through that we can officially answer some of  
12 these questions that you have.

13 MS. CONDON: The other question that I  
14 have is how the, the tribes and the nations are  
15 fitting into your schedule, you know, and how you,  
16 how do you see this government consultation  
17 meetings going forward?

18 MR. FULP: Good, and I think that's a  
19 valid question. And really what we were wanting  
20 to do today is really ask you that, how you, what  
21 makes most sense to you. We are open to probably  
22 any of your suggestions. Really, we could have  
23 periodic meetings. We can meet as a group. We  
24 can meet individually. Again I think it's really  
25 an open question, and we would like your input on

1 that, and we'll make that happen.

2 Certainly again we can just give you  
3 periodic updates in whatever way, but we want to  
4 make sure if that meets your need, we don't want  
5 to just send you volumes of stuff via e-mail which  
6 might make no sense, that might not help you.

7 MR. HEART: There was a comment made  
8 during the Colorado River water meeting, and I  
9 just heard this. I wasn't at the meeting, that a  
10 non-tribal member said the Indians pulled the  
11 wools over the eyes of BR to get their water. And  
12 that's a really negative comment from people that  
13 don't understand who we are as native tribes and  
14 our treaty rights and our water issues and our  
15 allocations that come to us. So, there also needs  
16 to be, in this process, an educational process for  
17 non-Indians to understand that we have these water  
18 rights that are allocated to us by treaties. The  
19 government has to fulfill those issues, too, on  
20 our part.

21 So, there has also got to be an education  
22 part on this part. If somebody comes out with a  
23 comment like that at the Colorado users water  
24 conference, then they do not know what we are as  
25 native Americans and how we came to be today.



1 MR. FULP: I understand. I would agree  
2 that's an inappropriate comment. I certainly  
3 personally didn't hear it, but we absolutely have,  
4 have, know what your rights are. Most, if not  
5 all, are present perfected rights, at least in the  
6 lower division I'm familiar with. We would be  
7 very happy to receive that, any that, or any  
8 additional input from you and make that available  
9 through this public process to help inform those  
10 people, absolutely.

11 MR. EDDIE: I would like to add that I  
12 agree with the gentleman here on comments made  
13 previously at other meetings along the same lines.  
14 Look at the, the water doctrine was done, but  
15 nowhere in there is it mentioned about the  
16 priority status of Indian water except under the  
17 winter doctrine, which I believe was in 1912 or  
18 thereabouts. And I have to agree with him along  
19 those lines, because right now today in these  
20 drought conditions everything is out there. All  
21 of a sudden tribal water is probably the only  
22 access water that's out there right now.

23 So, I think at least there should be some  
24 mention of it somewhere in there, because I've  
25 noticed in those documents there is hardly any.

1 And this is what brings the whole questions at  
2 these meetings.

3 MR. FULP: There questions or comments?

4 MR. BUMA: Well, I have a, I, I read in  
5 the Arizona Republic the other day about the  
6 meeting states, and apparently in the meeting they  
7 were unable to come to any really agreement as to  
8 how to handle these potential shortages. And I  
9 assume that in those discussions that sort of  
10 criteria will consider such as recreation,  
11 agriculture, that sort of thing.

12 Does Reclamation have a preconceived idea  
13 of how they're going to wake the leads of various  
14 water users before they start to, to look at how  
15 they're going to apportion out of shortage,  
16 understanding that the law of the river has to  
17 rule. I mean, the water rights will be satisfied  
18 first, and then down the ways, but it's  
19 interesting to me that you hold a separate meeting  
20 with the states and then one with the tribes.  
21 Maybe there is a reason for that. I'm sure  
22 whether it's political or there is some reason for  
23 that, I'm just curious as to what came out of the  
24 previous meeting, if there is something there that  
25 would be useful for us to discuss here.

1           Do you have anything to offer on, along  
2 those lines?

3           MR. FULP: Very good points you're making  
4 here. Let me maybe, unless Rick, ask Rick to jump  
5 in here at any time.

6           I think certainly we do not have a  
7 preconceived notion, I mean, that's the point of  
8 this process, is to, to take input and to try to  
9 figure out what the best course of action is. So,  
10 now with that said, certainly the secretary has a  
11 unique relationship with the basin states. And  
12 just as other parties can request consultations,  
13 they request consultations with us. We're very  
14 hopeful, I think, still that the states are going  
15 to at least come up with something that's on a  
16 consensus basis, but we prefer, of course, is that  
17 they don't all come in with guns drawn, if I can  
18 use that analogy, and, and want to duke it out and  
19 fight it out and maybe even go to court about it,  
20 because, you know, we don't really want to get  
21 tied up in lengthy litigation here and not be able  
22 to effectively operate the system. I mean, that's  
23 our goal here, is to be able to effectively  
24 operate the system when you have these, these poor  
25 realm of conditions.

1           Go ahead.

2           MR. GOLD: Let me add, Terry, I agree  
3 with everything you just said. The meetings that  
4 the states have been holding are, in fact, their  
5 meetings. And as Terry mentioned, they have  
6 invited us as a resource to say, what if, and  
7 we've done all kind of modeling for them. Our  
8 process, processes so far, the public processes  
9 that we talked about, the scoping and the public  
10 meetings that we've had are, in fact, open to  
11 everybody. So, we haven't set up a separate  
12 process to deal with this task.

13           We're here, I think, because we  
14 understand our responsibility relative to the  
15 Native American tribes in this basin and our need  
16 to sit down with you and deal on a  
17 government-to-government basis. So, I think as  
18 you see us now move forward and as the schedule  
19 pointed out to, to further discussions with you,  
20 if you so desire to have a draft EIS, which would  
21 be a public document and public hearings, they  
22 won't be state hearings. They will be public  
23 hearings. They will be everybody invited. So,  
24 that's where, from my perspective at least, we,  
25 and our responsibility is the broad-based NEPA

1 analysis that gets us into that full public arena  
2 with some special consideration paid to the, to  
3 the trust efforts, the Native American issues in  
4 the basin. That's the way I would get at your  
5 question.

6 MR. BUMA: Well, I think that one of the  
7 things that, and actually these things always boil  
8 down to some sort of political resolution and  
9 political input. But to avoid a confrontation  
10 between the states and Indian tribes by them  
11 coming to some sort of separate agreement and then  
12 trying to, you know, arrange an agreement with,  
13 with the tribes and then later on a plan, resolve  
14 things that way, it seems to me that if a forum  
15 could be open where we're all on board at the same  
16 time and don't do separate groups, make separate  
17 agreements, I think that is probably the, 5  
18 something that Reclamation could do that. No one  
19 else is in a position to do, since they're the  
20 broker.

21 And so, just my personal perspective, I  
22 would think from a political standpoint that would  
23 be well-advised.

24 MR. GOLD: I guess my reaction is, I  
25 think that's our concept as well. That's why we

1 have a public meeting, just to get everybody's  
2 ideas in. I think, I think it's really important  
3 that the work that the secretary challenge the  
4 states to come up with, we would hope they present  
5 us an alternative. It won't be the answer that we  
6 simply take down and say, okay. States are done.  
7 That's the secretary's decision. That's why we  
8 have to look at an array of alternatives in our  
9 EIS, to look at the breath of the environmental  
10 impacts of what those decisions might be, and then  
11 the secretary becomes the decision-maker when she  
12 signs a record of decision hopefully in December  
13 of 2007.

14 So, the, it's unique. I think we're  
15 going to do our best to, to stay public and keep  
16 everything at our table. That certainly can't  
17 control what the states want to do at their table  
18 or, quite frankly, what you all might want to do  
19 at your table, inviting us or not inviting us, as  
20 Terry pointed out. So, I think that's an  
21 important idea, and I think it's, it's valuable to  
22 recognize, and you've hit on some of the very key  
23 issues that things like the law of the river have  
24 to prevail. So, there is some backstops and some  
25 boundaries within which we're going to have to

1 work to create shortage guidelines and an option  
2 for coordinated operational power and reservoir  
3 conditions.

4 And that's the other thing I would point  
5 out to you, is I know the temptation is to say, we  
6 need to solve all the problems of the Colorado  
7 River basin. But our task is to identify shortage  
8 criteria. And if there is a, try to coordinate  
9 the operation of Powell and Mead. Otherwise, it's  
10 the old, you can't eat the whole elephant message.  
11 You have to have some discrete pieces to deal  
12 with.

13 MR. HEART: It's easier said than done.  
14 You have seven states here. I don't see anybody  
15 at the table from agricultural side. You also  
16 have your power plants, hydro power. You have  
17 your recreation, recreational use and domestic  
18 use. Then you have your tribes and their  
19 treaties, and you have two countries, seven  
20 states, upper basin, lower basin, all these  
21 people. It's going to take a lot to compile all  
22 this information. So, you need to have input from  
23 all of these, from different areas.

24 And I go back to my first comment, is  
25 usage, how much, how many people are using this

1 water? When you find out and identify the numbers  
2 of usage and then the tribal allocations to each  
3 tribe and possible cities for the different  
4 entities, the power, the agriculture, the  
5 recreation, and compile all that and then try to  
6 look at fluctuations of how much can they really,  
7 their bare bottom usage can be. So, it's easier  
8 said than done. You need to compile all this data  
9 on, how many more meetings are you going to have  
10 from now until the end of your draft or your first  
11 draft? Do you have any more meetings besides the  
12 ones you have on, on here with other states and  
13 the different entities that you're talking about?

14 MR. FULP: Yes. Certainly we don't have  
15 an exact time line of the meetings laid out, but  
16 that's again part of why we're here, to figure out  
17 what kind of meeting progression you all prefer.  
18 We will have also the general public process  
19 meetings as we go along as well. So, as the time  
20 line and project gets laid out for its next phase,  
21 we'll have set up absolute dates for public  
22 meetings to, to share with the general public, but  
23 we're also willing to share, you know, along the  
24 way with you at whatever frequency you like.

25 So --



1           MR. HEART: As part of this project that  
2 the secretary has in mind will there be dollars  
3 allocated to certain projects, like increasing a  
4 reservoir or decreasing a reservoir? Will there  
5 be dollars allocated to reach canals if there  
6 needs to be some put in place?

7           I'm just throwing this out as food for  
8 thought. Will there be dollars allocated to this  
9 project?

10          MR. GOLD: My answer to you is, if you're  
11 talking about the process of developing shortage  
12 guidelines and is there a way to coordinate the  
13 operation of Lakes Powell and Mead, my answer to  
14 you is, no. It's not about funding something.  
15 It's about how --

16          MR. HEART: There is a give and take to  
17 this, Rick. There is a give and take to this. If  
18 you're taking, you're going to take water away  
19 from people because of a shortage, because of a  
20 drought and they have to take less than what  
21 they're allocated, there has got to be a give and  
22 take. There is communication, cooperation.  
23 That's the give and take, and the education, the  
24 education analogy, why we use it, why we need it,  
25 and what the purpose is. So, these three things

1 come into play. So, there has got to be something  
2 down the road that the Interior's got to think  
3 about as dollars are always being cut on any kind  
4 of water project.

5 MR. GOLD: I understand.

6 MR. FULP: And I think, again I might  
7 just add one thing. I don't disagree at all.  
8 Again we've got a certain amount we can deal with  
9 here. There are other parallel processes that  
10 might, in fact, be initiated to build new things  
11 or construct things. It's just not, as Rick said,  
12 contained inside this process.

13 We would still like to hear the ideas,  
14 though, and --

15 MR. HEART: Well, I would like to see  
16 some kind of usage, how many people are using this  
17 water. | 7

18 MR. FULP: We actually have that. We  
19 just didn't bring it. We'll be glad to send it to  
20 you.

21 MR. HEART: I would like to see  
22 allocations for all the tribes, what they're  
23 allocated off the upper and lower basin. This is  
24 more complex than what you guys were talking  
25 about. This is just generic what you guys are

1 bringing right now. I need more information about  
2 this from the top to the bottom, and it includes  
3 Mexico, because we're dealing with two countries,  
4 too, and their treaty rights on water. So, you  
5 got to put everything on the table before we can  
6 come up with a plan. If you don't, then you just  
7 give us a little bit of information, and we're  
8 going to be short-falling ourselves, not only the  
9 tribe but everybody that's involved with the whole  
10 Colorado River basin.

11 MS. CONDON: The evaluation for those  
12 tribes' senior rights prior to 1922, that's got to 8  
13 come up off the top anyway. It isn't involved in  
14 the allocation, and it would be protected, should  
15 be I mean.

16 MR. HEART: Should be, but there is  
17 always a challenge on that.

18 MS. CONDON: Right. Right. But I would  
19 assume that that's something, that's certainly  
20 something you'll be hearing.

21 MR. GOLD: That's part of the --

22 MR. FULP: Part of the backstop and  
23 boundaries that --

24 MS. CONDON: Right. Right.

25 MR. FULP: Well, again just to follow up

1 here, our purpose here wasn't to withhold  
2 information, of course. And you know that, I  
3 know, but we didn't want to overwhelm you either.  
4 We want to get across what the idea is and then  
5 again schedule something more with you if that  
6 would help.

7 MR. HEART: I just didn't want to beat  
8 around the bush. I want to get right to the  
9 point, get to the thing, get things done, because  
10 you don't have time. Time is of the essence. If  
11 you don't do it, you take this at a slow pace,  
12 you'll never reach that deadline. Then you're  
13 going to start doing shortcuts. As long as you  
14 put it and get it right to the point, then we can  
15 probably deal with it.

16 And I speak for the mountain. I don't  
17 know if the other tribes feel the same way or even  
18 the, the power portion or the agriculture or  
19 recreation or the cities or the states. I don't  
20 know what they feel.

21 MR. FULP: Right. Well, certainly just  
22 for that thought a little bit, we've certainly  
23 heard from all those communities through the  
24 public part of the process so far. They will  
25 still have much more input as well, but when we

1           come out with a scoping report, you'll be able to  
2           receive that. We've received lots of comments  
3           from the ag interest, the power interest, through  
4           that, these two public entities.

5           MS. CONDON: Can you explain this, this,  
6           the scoping report, are you going to have  
7           identified several different alternatives for your  
8           shortage guidelines at that point and what you're  
9           then going to analyze?

10          MR. FULP: Unfortunately, we don't think  
11          we'll be that far along to have alternatives yet.  
12          What we will do is obviously share all the  
13          comments that we've received. I know we can draw  
14          some conclusions obviously about what we've  
15          learned. But given the time frame we have here,  
16          we won't have all the alternatives sorted out yet.  
17          So, there is still, but that would come shortly  
18          afterwards. And we're certainly asking for input  
19          now, then, and all through the process. We want  
20          to make sure you understand it's not only today  
21          you get to input to the process.

22          MS. CONDON: Right. That's why I was  
23          trying to figure out exactly how we can work in  
24          the process as you move along.

25          MR. FULP: We just didn't come with a lot

1 of preconceived notions of how it should work. We  
2 just wanted to open up and say we want it to work  
3 and get your input on what's best for, again each  
4 of you individually or collectively, however you  
5 want to do it.

6 MR. ARTHUR: Your scoping meeting  
7 basically, and what this is is basically  
8 consultation with the tribes.

9 MR. FULP: Correct.

10 MR. ARTHUR: So, in this process, the  
11 exchange of information, how do you propose to  
12 handle that, where we're meeting in this room here  
13 in Vegas?

14 MR. FULP: Yes.

15 MR. ARTHUR: And obviously you've already  
16 had several meetings or throughout the greater  
17 states. So, you have some information.

18 MR. FULP: Yes, and so, yeah. Let me try  
19 to peel that apart a little bit. So, the scoping  
20 report will be made available. You'll get a  
21 notice of it. It's, it will be available on a  
22 website. That's the easiest way to distribute it  
23 these days if that's all right. If it's not, we  
24 can send it to you directly, of course. So,  
25 that's how the information to date received from

1 the public meetings throughout would be  
2 disseminated.

3 And then the thing I want to say, yes,  
4 the scoping period for how to do it and what to do  
5 as well as for input on that would help us from,  
6 the alternatives is over, but we will continue to  
7 take input along the way. And our anticipation is  
8 we'll have our public meetings along the way. So,  
9 I don't want to imply there that, that the public  
10 input part is now over, because we've had two  
11 public meetings and the time frame is expired.  
12 We'll have them as needed as well as you can give  
13 us input anytime along the way.

14 For, for you particularly, I mean, if you  
15 want to have some particular relationship with us,  
16 we're open to that. It can be a meeting set  
17 again, periodic meetings. It can be at your call.  
18 It can be whatever makes sense to you all. Again  
19 we didn't come with preconceived notions of how to  
20 do it, because we weren't sure what your input on  
21 that would be.

22 MR. ARTHUR: We do have the 10 tribes.

23 MR. FULP: Yes.

24 MR. ARTHUR: And I think somewhere  
25 represented here might be, at least for the lower

1 basin, might be, all of the 10 tribes there may be  
2 represented in total, but we have our, had a brief  
3 discussion on this in reference to how to get  
4 informed and how to communicate with the states  
5 and yourselves. We're open to it.

6 MR. FULP: Good. Okay. I mean, we just  
7 happen to take that organization for this meeting  
8 and the 10 tribes. Were invited to the meeting,  
9 and we thought that was a nice sized meeting to  
10 begin with with you all. And so that's fine with  
11 us. If that would make sense, that would work out  
12 just fine from our view, absolutely. And, of  
13 course, there are other tribes in the basin, and  
14 we're consulting with them as well. We just chose  
15 this avenue, contact the 10 of you to get a start.

16 MS. CLANI: I just have another quick  
17 comment. I recognize, or it's recognized that a  
18 lot of public input is going to be asked in this  
19 process, but I just wanted to make it known from  
20 the Navajo Nation's position, is that, you know,  
21 that the government-to-government relationship is <sup>9</sup>  
22 preserved through this entire process, because I  
23 know that you've talked extensively about, we  
24 really want the public. We see this as public  
25 involvement. But we want to make sure that's also



1 recognized that there is this ongoing  
2 government-to-government relationship.

3 MR. FULP: Absolutely.

4 MS. CLANI: And that it doesn't get  
5 caught up then seen as just another public  
6 comment.

7 MR. FULP: Great. I understand. And  
8 again if, if we can set up something that helps  
9 facilitate that, we're very open to that.

10 MR. BUMA: You've collected quite a bit  
11 of information now. Have you done anything, work  
12 with that information? I mean, were there any  
13 conclusions yet since all the comments you  
14 received thus far?

15 MR. FULP: We're certainly working on it.  
16 We've received a good number of comments that  
17 first scoping period. We pretty much heard what  
18 needed to happen, and that was basically do a NEPA  
19 process. That was the strong message we got in  
20 terms of how, in terms of the last scoping period  
21 for alternatives. We're just right still  
22 analyzing all of that now. We've certainly heard  
23 from, again the agricultural side, the power side.  
24 So, we see different views obviously, but we're  
25 condensing all of that now.

1           So, we didn't really come prepared today  
2 to try to summarize it because, frankly, we're not  
3 done summarizing it. But by another month we'll  
4 have it, and we'll make it available and would be  
5 willing to sit and talk to you about it once it  
6 becomes available if you have additional comments  
7 or questions about it.

8           Sorry I can't give you a more definitive  
9 answer than that.

10           MR. BUMA: You have until, until the end  
11 of 2007?

12           MR. FULP: Yes.

13           MR. BUMA: Okay. So, is there any  
14 indication relative to that when one might think,  
15 if the plan continues the way it is, that you  
16 would consider declaring a shortage?

17           MR. FULP: I understand your question.  
18 It's certainly depending on where you draw the  
19 level in the lake. If that's, that may be the  
20 simplest way to think about it. But I can give  
21 you some feel for some of the modeling we've done  
22 to date that, you know, and again it depends  
23 highly on also the hydrology received.

24           If you look at kind of what I'll loosely  
25 call the worst case, meaning the drought of the

1 '50s repeated itself again, now we could see  
2 shortages again, depending on where you define the  
3 level in the next, say, five to seven years. But  
4 it's, that's fairly speculative, of course, again  
5 because we don't know exactly what level we  
6 declare a shortage, and we don't know what the  
7 hydrologies are. But that's the kind of bounding  
8 modeling gives us. We try to bound the answers as  
9 well as, then as we really get down to the  
10 alternatives we'll be able to look at the  
11 hydrologic risks and then map that into the risk  
12 to the resources.

13 Does that help a bit?

14 MR. BUMA: I understand what you're  
15 saying, yeah. I just thought maybe, I understand  
16 the hydrologic implications. I'm just curious  
17 politically how far down the road you were since  
18 you established a deadline.

19 MR. FULP: Right.

20 MR. GOLD: We did, Terry, make an annual  
21 operating plan determination for one year, '06.

22 MR. FULP: Yes, we did. And that was  
23 actually given the conditions we have now. It put  
24 us in that, if you can flip to that little, I  
25 think it's one up, the little diagram, yeah.

1 Because of where we are now, the declaration this  
2 year for the lower division was actually this  
3 partial domestic surplus. Now, the states in the  
4 lower division have told us to date that they're  
5 not planning to take any of that extra water based  
6 on the fact that we've just seen one good year out  
7 of five straight drought years. And it's prudent  
8 water management says, if you don't need it, don't  
9 take it.

10 So, right now all three states have  
11 agreed to leave it in the system and not take that  
12 extra, say, 300,000 acre feet of water, even  
13 though that is the declaration you made, because  
14 that's what these guidelines tell us to do.

15 MR. ALGOTS: Is that water bank water for  
16 those states, or is it something that's retained  
17 in the system?

18 MR. FULP: That extra water --

19 MR. ALGOTS: Say, California, besides,  
20 could take 300,000 acre feet less than the  
21 4.4 million. Is that in a bank for them, or is  
22 it, just goes to the system?

23 MR. FULP: In this case I think maybe  
24 I've made it not very clear. Because we're up  
25 here. It's actually 300,000 in addition to the

1 seven and a half million. And so California share  
2 that, which is the bulk of 300,000. They have  
3 said, no, we won't take it. So, they would still  
4 be at the center of, forefront. It's, this is  
5 surplus. So, it's over and above the seven and a  
6 half.

7 Now, what we're talking about, what we do  
8 when it's less than the seven and a half --

9 MR. ALGOTS: On your second level there,  
10 domestic plus, what is it, banking?

11 MR. FULP: This is water that would be  
12 allowed to be taken off the system and banked off  
13 stream for future domestic use.

14 MR. ALGOTS: Okay.

15 MR. FULP: That's what that piece of  
16 banking is. And these guidelines had some  
17 regulations, if you can use that term, in terms of  
18 how much it could be banked and who gets the bank  
19 and that --

20 MR. ALGOTS: Something sufficient as the  
21 Arizona water.

22 MR. FULP: Yes. Exactly. That's a  
23 great --

24 MR. BUMA: If future domestic use, is it  
25 just domestic use or all bank water?

1 MR. FULP: These are domestic uses that  
2 were going to be met before non-agricultural. So,  
3 it was for domestic use only. Non-agricultural  
4 surplus, the way these work is you don't get  
5 agricultural surplus until you get to the higher  
6 levels. Higher level of Lake Mead, the top two  
7 levels provide a surplus to agriculture.

8 MR. ARTHUR: Did I hear you clear that  
9 this is in addition to the 7.5?

10 MR. FULP: Yes. That's really what this  
11 idea of surplus in the lower division means, yes.

12 MR. ARTHUR: So, coming off of some of  
13 his discussion in reference to California,  
14 California would be entitled to 4.4. And having  
15 been enjoying beyond 4.4 and they being told now  
16 come within the 4.4, I mean, how do they fall, or  
17 how do they play into the circle surplus?

18 MR. FULP: That's a very good question.  
19 Really the way this worked out was, if I could use  
20 the term deal. The idea was to give California a  
21 soft landing. If, I don't know if you've heard  
22 that term, but because their historical use was  
23 600 to 800,000 above the 4.4, because Arizona  
24 wasn't using their apportionment. That was a  
25 legal use. But the issue -- and I think you were

1 alluding to that even before -- was that, that  
2 then when it came down and Arizona took their full  
3 apportionment, California was overusing. And, of  
4 course, they have built cities on, based on that  
5 overuse. So, the idea was, was to give them a  
6 period of time to get their use down to 4.4, and  
7 that period of time is the period that these  
8 surplus guidelines are in effect for out to 2016.  
9 And this is complicated. So, I don't want to  
10 complicate it.

11 So, the idea was again to get them to  
12 4.4, give them time to get there. The way they  
13 get there is essentially transfer water from their  
14 high priority ag to their low priority domestic  
15 uses, and then during that period we would make  
16 some additional water available to help them get  
17 there. That was the idea of the, quote, soft  
18 landing. That tied the, what was called the  
19 qualification settlement agreement, QSA -- you  
20 heard of that many times -- to the surplus. Those  
21 were tied together. And California has to meet  
22 certain benchmarks reducing their use throughout  
23 this 15-year period, or these guidelines get  
24 suspended. And if you recall, that's what  
25 happened in 2003.

1 Does that answer --

2 MR. BUMA: Just a quick question with  
3 regard to material where, where they're not using  
4 a lot of material water for domestic use rather  
5 than ag, is that, does that raise the priority  
6 for, on your chart as far as use goes or not?

7 MR. FULP: Their use is their, their use  
8 is their priority for what their use was for. I  
9 mean, yes. If they're using it some for domestic,  
10 it's their, they still have their priority in the  
11 California -- I think that's what you're asking  
12 me. That didn't change that.

13 MR. BUMA: Relative to what you have  
14 discussed.

15 MR. FULP: Relative to here, can they get  
16 domestic here? No. No. They don't, they don't  
17 get domestic surplus.

18 MS. CONDON: So, the states have not been  
19 able to come up with an alternative, right?  
20 You're hopeful that they will come up with an  
21 agreement with some sort of proposed alternative  
22 for these shortages guidelines, correct?

23 MR. FULP: Correct.

24 MS. CONDON: So, where do they have to  
25 fit into this process to the point where you can't



1 really consider their proposal, or how much weight  
2 will their proposal have in this process? I  
3 guess, are you waiting for them or, you know.

4 MR. FULP: No. I want to say, Rick is,  
5 stretching my neck out here. We're definitely not  
6 waiting for them. We're moving forward in our  
7 process. We've been very clear to them what our  
8 time frame is, what our time line is and, and when  
9 they need to, to give us input.

10 MR. GOLD: Yeah. The thing that I would  
11 add is, our message to them is that they need to  
12 provide us this consensus decision, if they have  
13 one, by the end of January.

14 MS. CONDON: Okay.

15 MR. GOLD: And we're going to move on.  
16 We're going to develop an alternative report, and  
17 we are going to draft an environmental impact  
18 statement that will have alternatives in it. If  
19 they choose not to send us one, then we won't have  
20 one from them.

21 MR. BUMA: This January?

22 MR. GOLD: Yes, in a few days.

23 MR. FULP: Way few days.

24 Any other questions or comments?

25 (Slide presentation by Mr. Fulp.)

1 MR. FULP: You can send comments, if you  
2 have, to either of the regional directors. You  
3 can fax them to, these are all in your handout.  
4 You can also e-mail us with any additional  
5 comments.

6 I know we've received letters from some  
7 of you already at this point. So, at any time you  
8 could continue to, to let us know what you're  
9 thinking. But I think the other thing I want to  
10 really do is make sure that we communicate  
11 directly with you. If you want to set up  
12 something on a periodic basis or however you want  
13 to do it, I would say just, just call us, and  
14 we'll, we'll work on setting something up.

15 MR. ALGOTS: We have, I guess, sets, two  
16 sets of comments. I was, no point in going over  
17 them again, but respective for the -- Indian  
18 tribe, yes, water is important. Power is  
19 important. But also the river itself is  
20 important. And it's pretty vital to our  
21 operations there that we actually have a river.  
22 And other than that, I guess we're pretty much in  
23 the same boat as many others are.

24 But we, we assume that our priorities are  
25 intact and that we have, will have the ability to

1 withdraw the water that we need. We would just  
2 like to see some water in that river, because we  
3 don't get it through a pipeline or CAP or  
4 something.

5 We had a little experience with a little  
6 water this year. It was pretty, pretty hurtful.  
7 And I, I don't criticize the releases of water,  
8 all that local water available in California and  
9 Arizona. I mean, I'm, in response to Reclamation <sup>11</sup>  
10 made to reduce the flow of river between Davis and  
11 Lake Havasu absolutely made sense. But it did, it  
12 did cause us million of dollars worth of damage,  
13 about 200,000 direct pump damage and another  
14 800,000 in lost opportunities. It is important to  
15 us.

16 MR. FULP: Since we're the operators down  
17 there, were you fully informed of when it was  
18 happening and all that?

19 MR. ALGOTS: We, we were, we absolutely  
20 were, and we appreciate that.

21 MR. FULP: Good. We hadn't not done what  
22 we should have done but --

23 MR. ALGOTS: No, you did.

24 MR. FULP: Good.

25 MR. ALGOTS: But still the situation was

1 there.

2 MR. FULP: Okay. And I think the last  
3 thing, there is a website, and this will be where  
4 lots of stuff is posted, like the original set of  
5 comments, the comments we got from the original  
6 scoping period are all published there. The  
7 report will be published there, the scoping  
8 report. And we'll, but we'll make sure you know  
9 that, too, if you have communication, whether  
10 things are posted and that sort of stuff.

11 So, again any other questions or  
12 comments? Okay. Please contact us as you think  
13 about how you want to proceed with us and, and  
14 government-to-government consultations. Contact  
15 us directly. We'll, we'll set it up. If it's  
16 through the 10 tribes, that's fine. But whatever  
17 it is you all think works best, that's what we  
18 will want to do. Okay?

19 Any additional last-minute --

20 MR. GOLD: No? Thanks for coming.  
21 Thanks for participating with us and, and sharing  
22 your views.

23 MR. FULP: Thank you very much.

24 (Meeting concluded at 11:25 a.m.)

25

REPORTER'S CERTIFICATE

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STATE OF NEVADA )

) ss.

COUNTY OF CLARK )

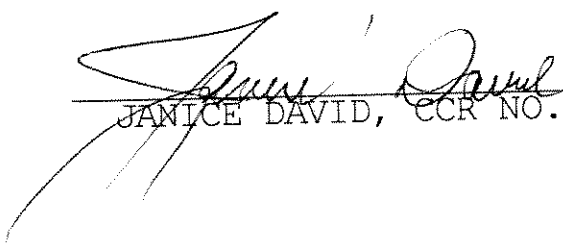
I, Janice David, a duly commissioned Notary Public, Clark County, State of Nevada, do hereby certify:

That I reported the foregoing proceedings on Thursday, January 19, 2006, at the hour of 10:00 a.m.

That I thereafter transcribed my said shorthand notes into typewriting and that the typewritten transcript is a complete, true, and accurate transcription of my said shorthand notes.

I further certify that I am not a relative or employee of the parties involved in said action, nor a person financially interested in said action.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal in my office in the County of Clark, State of Nevada, this 9th day of February, 2006.

  
\_\_\_\_\_  
JANICE DAVID, CCR NO. 405

# **Appendix N**

## **January 27, 2006, Phoenix, Arizona Tribal Consultation Meeting Documents**

### **N.1 Request to Initiate Consultation**



# United States Department of the Interior



BUREAU OF RECLAMATION  
Lower Colorado Regional Office  
P.O. Box 61470  
Boulder City, NV 89006-1470

IN REPLY REFER TO:  
BCOO-1000  
ENV-6.00

**DEC 23 2005**

Honorable Raphael Bear  
President, Ft. McDowell Yavapai Nation  
P.O. Box 17779  
Fountain Hills, AZ 85269

Subject: Request to Initiate Consultation on the Development of Lower Colorado River Basin  
(Lower Basin) Shortage Guidelines and Coordinated Management Strategies

Dear President Bear:

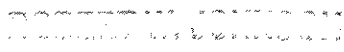
The Secretary of the Department of the Interior has recently directed the Bureau of Reclamation to develop Lower Basin shortage guidelines and coordinated management strategies for Lake Powell and Lake Mead under low reservoir conditions. Reclamation, in accordance with National Environmental Policy Act (NEPA) and Council on Environmental Quality regulations, has begun to prepare an Environmental Impact Statement (EIS) to address the proposed guidelines and strategies. A notice was published in the Federal Register on September 30, 2005, that announced the start of the scoping process and the intent to prepare an EIS (70 Federal Register 57322).

On behalf of the Department, we would like to initiate government-to-government consultation with the Ft. McDowell Yavapai Nation, in concert with the initiation of our NEPA process for this proposed action, to identify and consider potential impacts to any tribal trust resources as a result of the proposed action.

Mr. Rick Gold, Regional Director, Upper Colorado Region, and I respectfully request an opportunity to consult with you on these planned actions and discuss your interest and involvement in the NEPA process for this proposed action. To that end, we have arranged a meeting at Two Arizona Center, 400 North 5<sup>th</sup> Street, 12<sup>th</sup> Floor Conference Room A & B in Phoenix, Arizona, on January 27, 2006, from 10:00 a.m. to 12:00 noon.

Our staff will call your office during the next few weeks regarding this request. You may call Ms. Nan Yoder at 702-293-8495 or contact her by email at [nyoder@lc.usbr.gov](mailto:nyoder@lc.usbr.gov) to discuss the consultation process or to confirm your availability for the meeting.

Sincerely,

  
Robert W. Johnson  
Regional Director

Identical Letter Sent To:

Continued on next page.

Identical Letter Sent To:

Honorable Terry O. Enos  
 Chairperson, Ak-Chin Indian Community  
 42507 West Peters and Nall Road  
 Maricopa, AZ 85239-3940

Honorable Richard P. Narcia  
 Governor, Gila River Indian Community  
 P.O. Box 97  
 Sacaton, AZ 85247

Honorable Robert Valencia  
 Chairman, Pascua Yaqui Tribe  
 7474 South Camino de Oeste  
 Tucson, AZ 85746

Honorable Joni M. Ramos  
 President, Salt River Pima-Maricopa Indian Community  
 10005 E. Osborn Rd.  
 Scottsdale, AZ 85256

Honorable Kathleen Wesley-Kitcheyan  
 Chairwoman, San Carlos Apache Indian Tribe  
 P.O. Box "0"  
 San Carlos, AZ 85550

Honorable Vivian Juan-Saunders  
 Chairwoman, Tohono O'odham Nation  
 P.O. Box 837  
 Sells, AZ 85634-0837

Honorable Ivan Smith  
 Chairman, Tonto Apache Tribal Council  
 Tonto Apache Reservation No. 30  
 Payson, AZ 85541

Honorable Jamie Fullmer  
 Chairman, Yavapai-Apache Nation  
 2400 W. Datsi Street  
 Camp Verde, AZ 86322

bc: Mr. Bryan Bowker  
 Acting Regional Director  
 Bureau of Indian Affairs  
 P.O. Box 10  
 Phoenix, AZ 85001

LC-1000, LC-1100, BCOO-1000, BCOO-1003, PXAO-1000, NAOO-1100, UC-100,  
 UC-105, UC-402, UC-438, UC-700, UC-720

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# **Appendix N**

## **January 27, 2006, Phoenix, Arizona Tribal Consultation Meeting Documents**

### **N.2 Sign-In Sheet (1)**



# **Appendix N**

## **January 27, 2006, Phoenix, Arizona Tribal Consultation Meeting Documents**

### **N.3 Sign-In Sheet (2)**



# **Appendix N**

## **January 27, 2006, Phoenix, Arizona Tribal Consultation Meeting Documents**

### **N.4 Sign-In Sheet (3)**



# **Appendix N**

## **January 27, 2006, Phoenix, Arizona Tribal Consultation Meeting Documents**

### **N.5 Transcript**

DEVELOPMENT OF LOWER BASIN SHORTAGE GUIDELINES  
AND COORDINATED MANAGEMENT STRATEGIES FOR LAKE POWELL  
AND LAKE MEAD UNDER LOW RESERVOIR CONDITIONS

**PUBLIC MEETING**

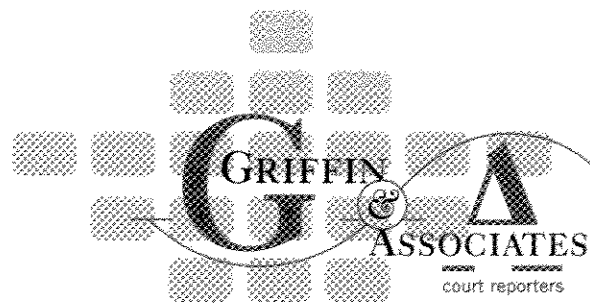
Phoenix, Arizona

January 27, 2006  
10:00 a.m.

**REPORTED BY:**  
DIANE DONOHO, RPR  
Certified Reporter  
Certificate No. 50691

**PREPARED FOR:**  
BUREAU OF RECLAMATION

ORIGINAL



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Phoenix, Arizona 85012

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1           A PUBLIC MEETING was taken at 10:00 a.m. on  
2           Friday, January 27, 2006, at 400 North Fifth Street,  
3           Conference Rooms A and B, Phoenix, Arizona, before Diane  
4           Donoho, a Certified Reporter, Certificate No. 50691, in and  
5           for the State of Arizona.

6  
7           APPEARING:

8                           Nan Yoder and Larry Walkoviak  
9                           U.S. Bureau of Reclamation  
10                          P.O. Box 61470  
11                          Boulder City, Nevada 89006-1470

1 MS. YODER: So that's all I have for my  
2 presentation. And so we come back to those fundamental  
3 questions of that's the federal action. That's what we're  
4 planning to do, and we're here to talk to you about how  
5 you'd like to engage in that process with us. Okay. And  
6 since I wasn't done, I'll give you this really good piece of  
7 news.

8 We're at 107 percent of average for the inflow.  
9 That means we're normal this year. That's good, another  
10 normal year. And I believe, when I was talking to people  
11 from the Front Range, they said the snowpack was 120 percent  
12 of average. I'm not sure if that's accurate because I've  
13 seen here more like 110 if it's 120. That's all I have.

14 MR. WALKOVIK: Thank you. And let me also  
15 acknowledge that several of the tribal entities had sent  
16 letters to Reclamation either last summer in August when we  
17 were doing what we were calling the public process or last  
18 fall when we had a bit more formal request under kind of a  
19 NEPA process. And I'm not sure if I have all the letters  
20 with me. I saw letters from Fort Mojave tribe back in both  
21 August and November. San Carlos Apache sent us a letter in  
22 August; Tonto Apache in August as well. So I know we've  
23 gotten written documents from all those entities. There may  
24 be others. I just might not have grabbed everything out of  
25 the files.

1           And so certainly the reason for bringing that up  
2 is you don't have to repeat it if you've already told us,  
3 and you don't have to repeat all that. We've got that  
4 information in hand, and certainly we'll make full use of  
5 that as we go through our process. But certainly if you  
6 have new thoughts, new ideas, new questions, whatever,  
7 please don't hesitate, as Nan said, to get a hold of us  
8 either formally in writing, call us and set up any visits,  
9 anything of that nature.

10           MS. INTERPRETER: Robin Interpreter, for several  
11 tribes. As you did mention, we submitted comments on behalf  
12 of San Carlos, Apache, Yavapai, in three separate letters  
13 each for the different tribes. And we submitted those on  
14 August 31 pursuant to the first federal registered notice  
15 that came out. We were requested to be the mailing list for  
16 any further communications recording this. We were not put  
17 on the mailing list. So please put us on the mailing list. 1  
18 Read the letters. We always ask, and we almost never get on  
19 the mailing list. So we would really appreciate it, as  
20 special counsel for this matter, we would be communicated  
21 directly on this as well.

22           Number two is the chairperson of Pasqua-Yaqui  
23 tribe, her name is a Herminia Frias, so you should change 2  
24 your address to the chairwoman.

25           Couple of other comments just as a quick review,

1 on our August 31 letter is -- well, another matter. I  
2 followed, you know, a lot of the discussions that was going  
3 on between the dates that they've been having all these  
4 meetings. And what my understanding was the secretary said,  
5 "Please, States, get together, go out and work on this."  
6 Where were the tribes here? We have a direct relationship  
7 with Bureau of Reclamation. Why can't the secretary say, 3  
8 you know, States and tribes work together on this. But I've  
9 gotten this impression over the course of the last year and  
10 a half that the states are out there coming up with a plan,  
11 they're going to present to the secretary and she's just  
12 going to say, okay, you know, finally we've got these big  
13 players together and they've agreed on a plan. So therefore  
14 that's what I'm going to do.

15 I've been very uncomfortable that none of the  
16 tribes have been really consulted until now. I do  
17 understand the states are doing their own thing too and  
18 inviting you. But the secretary's communication to the big  
19 players, i.e., the states that she perceives is, without  
20 even talking with the tribes about this in the very  
21 beginning, is a little frustrating.

22 One of the things I also noticed the other day, I  
23 knew she probably wasn't getting notices, every year the  
24 secretary comes out with her annual operating plan for the  
25 Colorado River Reservoir. Her mailing list is to all the

1 states. It's never to any of the tribes who are affected by  
2 how she operates the Colorado River. So I think the tribes,  
3 those tribes that are affected by the operations of the  
4 Colorado River should be noticed when she publishes this, 4  
5 that it's available. So that's another matter that's been  
6 of concern to me.

7 In terms of practical issues here, the tribes  
8 understand the secretary has that discretion to adopt the  
9 shortage guidelines. We appreciate that you're consulting  
10 with us at this point in time at least and beginning that  
11 process although it just feels like it's kind of far down  
12 the road already. The shortage impact to the tribes from my  
13 four tribes are, you know, with the regard to the CAP  
14 deliveries. Those four tribes at CAP Indian priority water  
15 which is a decent priority up there with M&I, and I would  
16 suspect that with regard to that water that the State of  
17 Arizona would kind of be on the same page with the tribes  
18 with regard to it because, if they get shortages on M&I,  
19 it's going to be pretty bad.

20 But with regard to the Arizona Water Settlements  
21 Act Water that's nonIndian ag water that's allocated for  
22 Indian water settlement in the future. This really impacts  
23 that water. It's about 67,000-acre feet of nonIndian ag  
24 water in the CAP. That's got the lowest priority in CAP.  
25 If you're going to have a shortage, that's the first to go.

1 That's where the State of Arizona and the tribes in the  
2 State, if they were to accept any of that water in an Indian  
3 settlement, would be completely -- probably would come down  
4 in different places on how shortages might be borne.

5 Also this -- the adoption of this management  
6 strategy, the secretary needs to pay attention and say look, 5  
7 how is this going to impact that 67,000-acre feet of water  
8 in terms of offering it to a tribe in an Indian water  
9 settlement? Is it going to be very valuable to a tribe at  
10 that point. And the Gila River Indian Community also has  
11 this concern. So that's going to be of real concern because  
12 it's not great water anymore. It's useless water. It's not  
13 good enough to provide for permanent tribal home life in the  
14 bottom of the rung. So that's how the shortage sharing  
15 guidelines impacts us.

16 Just a quick note on the surplus guideline, they  
17 impact us as well. It's not that easy because, when you  
18 have a surplus, you're providing water to California, who's  
19 completely water-thirsty, and when you do that, you might be 6  
20 lowering the elevation of the water in the reservoirs at  
21 that point in time. So in the future, if you had more  
22 shortages in the future, then there really isn't as much  
23 water. So those surplus guidelines also do impact the  
24 tribes.

25 So those are just a few of my comments at this

1 point in time, and we just haven't been able to be involved  
2 it doesn't seem. So you know, the states are getting  
3 technical assistance. Is there something that the secretary  
4 would like to do with the tribes to put them into the --  
5 that process with the states, or is there something that the  
6 secretary can do to work with the tribes on developing ideas  
7 or evaluating ideas that come across the table because these  
8 issues really are important to the tribes. That's what I  
9 have to say.

10 MR. WALKOVIK: Thank you.

11 MS. YODER: There's a few things there, and I  
12 just want to touch on one or two and the concept that what  
13 the states are doing is -- I was focused on it -- is  
14 certainly not the secretary's thought although it may have  
15 come across different than that the states go negotiate  
16 something and that becomes the action. It will be  
17 considered along with other alternatives that would maximize  
18 the resources, the value. And so it is not the only thing  
19 that we would look at certainly under our evaluation.

20 And I'm sorry that we came across like that. It  
21 seemed to be the impact that it was going Robin.

22 MS. INTERPRETER: I think it's the practical  
23 effect. It's practically what usually happens. Politically  
24 that's what happened and so that we haven't been involved  
25 from the start could lead to that conclusion.

1 MS. YODER: Certainly we are here today to talk  
2 to you about how you would like to be involved. So when or  
3 how or when we started that, I'm going to have that -- let  
4 that go. But we are here, and we do want to engage with you  
5 on this topic. And so there is a desire to do that, and  
6 we'd like your feedback on how to do that. Possibly would  
7 you like to do it say in a group? Individually? How would  
8 you like to proceed? We want to give you avenues to have  
9 input into the process into the development of alternatives.  
10 That's why we're here before we resolve our issues and how  
11 they affect everything, everyone, and also that we haven't  
12 just rubber-stamped someone's idea that they're presenting  
13 to us. So that is what we're intending to do here today.

14 The contacts, the mailing list, we are currently  
15 developing that, and we actually do have your name on there  
16 because I was seeing it yesterday, looking for everyone to  
17 see, make sure we had information. And you will get that  
18 direct information both as a result of the NEPA process that  
19 goes forward, the public involvement, and also because of  
20 your unique relationship that leads to consultation, you  
21 would get that in those forums.

22 The annual operating plan, yes, there's a cover  
23 letter that went out. There is also a mass mailing that we  
24 do as well, posted on our website. So you should be seeing  
25 that document shortly. It was not finalized until late



1 November, and so it hasn't really been out there that long.  
2 But we will get that out to everyone. Certainly if anyone  
3 here wants it today, we'll make certain you get ahold of it.

4 At the very end of your presentation handout  
5 there's a web site. It's our operations page for the lower  
6 Colorado River, and the annual operating plan is posted on  
7 that website. If you don't like electronics, tell us.  
8 We'll mail it to you. Okay. I did want to touch on that  
9 one piece about the states. I'm sure I didn't answer all  
10 your comments but try to pick out a few there.

11 MR. WALKOVIK: Is there a way that, as a tribal  
12 group, we could meet to work with Reclamation with technical  
13 assistance on some of the alternatives, have those  
14 alternatives set here, provide it to us, and we can work  
15 through those kinds of alternatives. We have no -- we don't  
16 have the technical assistance that we need. We, you know,  
17 we don't know what all the alternatives are that are out  
18 there. We don't know what to say about it when we don't  
19 have all the information. So --

20 MS. YODER: The simple answer to that is yes and,  
21 we'd like to know how you'd like to approach it. When the  
22 states settle, they struggled a bit too until they can  
23 figure out what assistance they wanted from us in their  
24 forum. And certainly we can get and offer to you some  
25 information what they've done. And we can sit and try to

1 help you through a process too and help you understand what  
2 alternatives that you would like to --

3 MR. WALKOVIK: Nan, let me make say a little bit  
4 about the modeling, and please help me fill in because you  
5 know the details a lot better than I do. Maybe this will  
6 kind of help in your request on the technical assistance,  
7 and yes, we will certainly do what we could to try to fill  
8 in the gaps for you. If we need to do a separate meeting or  
9 whatever, let us know.

10 But the modeling that's typically done and is  
11 being done is fairly what I would call broadscale. We don't  
12 identify specific water rights holders and things of that  
13 nature in this modeling. It's typically looking at Powell  
14 and Mead and sort of a large, you know, like a 30,000 feet  
15 elevation, if you will. And so you're looking at the  
16 likelihood of a shortage being 4- or 500,000-acre feet for  
17 the whole system. And then you have to figure out how do  
18 you distribute that shortage.

19 So it's not at a microlevel where you can  
20 identify 10- or 20,000-acre feet to some particular water  
21 rights holder or user. So that's kind of the level of the  
22 modeling, and it's not down at that real small detail level.  
23 And so we'll be happy to share and work with you on that. I  
24 just want to make sure there weren't any expectations that  
25 there was sort of a detailed water accounting-type model

1 that you can identify specific amounts and track that  
2 through the systems. That not the level of the modeling.  
3 We're not doing that. Is that a fair summary, Nan?

4 MS. YODER: That's correct. What we're looking  
5 at is the large scale operations of the two reserves, how  
6 they work together, and how we deliver both quantities of  
7 water out of their systems. So we're looking at the  
8 likelihood or the probability of certain elevations being  
9 achieved or not and what that would mean to downstream  
10 deliveries.

11 MR. CHANDLER: Randy Chandler with the Bureau of  
12 Reclamation. As you know, CAP reserves once, they've  
13 identified this bigger shortage for CAP, then it gets spread  
14 by shortage criteria. So you got to kind of take their  
15 shortage that they're starting with on those and break it  
16 down and see if it impacts individually to users. But  
17 that's not part of the reasonable process in developing the  
18 guidelines. They're looking at the block shortages to  
19 Arizona and others areas. It certainly can be broken down,  
20 and most of us here probably are familiar with how that  
21 breakdown occurs.

22 MS. INTERPRETER: Well, I think the tribes need  
23 to have this breakdown for their own purposes to take a look  
24 at, you know, how it's going to impact and you know -- I  
25 mean I don't think any of us here want to have, you know,

1 extreme problems on Indian operation of the reservoir. We  
2 want it to be operated fairly and systematically. We just  
3 want to make sure our interests are protected just like the  
4 states are. You know we understand.

5 MR. CODER: My name is Chris Hogan, and I would  
6 just like to reiterate with Robin that particularly in  
7 respect to the Yavapai, Apache people that we're always  
8 concerned that these issues don't become completely  
9 rhetorical. And we have concerns that it's unspoken  
10 policy -- the current administration when President Bush was  
11 campaigning in 1999, he -- somebody asked about water rights  
12 and association with the casino and the water. That's not  
13 even the federal purview. The Indians are the state's  
14 problem or concern. Our concern is that massive use of  
15 water by the states will trump concerns of the little  
16 people, namely smaller tribes. And you know, you have  
17 Indian cultures that have lived here for a millennium on a  
18 frugal water budget and that also the people moving here  
19 from Pennsylvania and Ohio and Illinois, the needs of those  
20 people are shower requirements and coffee requirements and  
21 backyard cactus gardens are also going to be trumped.  
22 Indian people who have always been a traditionally  
23 completely downstream in the allocation of resources. You  
24 guys are looking at the people, the big picture in your  
25 concern, not if the tribal people necessarily get those

1 little amounts of water. But sometimes when you look at  
2 things on the big scale, Indian people and their resources 9  
3 requirements, as small as they might be, just get completely  
4 lost.

5 That's why we would prefer, regardless of what  
6 happens in the future with water, that tribal concerns are  
7 not just thrown off by having meetings, that there's  
8 somebody there. We talked with the tribal counselor quite a  
9 bit and our lawyers and two or three weeks ago, and it boils  
10 down to this. This is very tribal, you know, mentality. We  
11 want to make sure that 40 years from now the grandchildren  
12 of the people currently there will turn on the faucet and  
13 water comes out. That's really the only concern. That's  
14 what it boils down to. I don't expect any big answers, but  
15 I just wanted to have those comments on the record.

16 MS. YODER: And I would point out, as we pursue  
17 this process, no one is intending to end the law of the  
18 river, that big body of law guiding agriculture, trees,  
19 obligations, reserved rights that everyone has in front of  
20 them. That is their right. We're not meaning to do that.  
21 And so I'm not sure that we assured you, but certainly this  
22 process is not intended to overshadow that but rather to fit  
23 into that.

24 MR. PARKER: I'm Gary Parker with Gila River  
25 Indian Irrigation and Drainage District. As I understand

1 it, the modeling and everything is going to be considered in  
2 terms of the criteria and the guidelines. What you  
3 presented here today is primarily with Lake Powell and Lake  
4 Mead. Is there any other underlying modeling that's going  
5 to tie into the Gila system that we need to be aware of and  
6 that we need to address as part of the guidelines because  
7 it's a very different nature in terms of how we would look  
8 at, you know, the process if we go further than the actual  
9 Colorado.

10 MS. YODER: Certainly as we do the modeling and  
11 on the larger scale and taken into consideration inflows. I  
12 don't think that's actually answering your full question,  
13 but we do take that into consideration. I don't believe we  
14 take into consideration the storage in those systems. And  
15 I'm not sure if I'm answering your question.

16 MR. CHANDLER: The integration of local supplies,  
17 project supplies in context are kind of separate. So we're  
18 really looking at shortage on the main stem of the river  
19 which is considered CAP. It's interventions from how the  
20 CAP diversions then tie to local supplies is really not part  
21 of this process. We're really looking at when their  
22 reservoirs are coming down and who implements shortage on  
23 the river and how that integrates with it. At the same time  
24 the Salt River Project or Gila System, then you're  
25 double-impacted. Sometimes there's a relationship, and

1 sometimes there's not. Right now there's a shortage in the  
2 lower basin, but in the upper basin supplies, Colorado is  
3 above normal. So it's not always correlated one to one, but  
4 we haven't, as part of this process, tried to correlate  
5 those two.

6 MR. PARKER: That's what I wanted to make sure  
7 that there are two separate issues.

8 MS. INTERPRETER: Noncorrelation is a good thing.

9 MR. CODER: Actually I do have a question. Maybe  
10 it's something you guys don't want to talk about kind of  
11 strategic things. We always have these averages. But my  
12 degree's actually in science. So I understand the average  
13 is actually you have peaks and lows for the time. The  
14 average is whatever the average is. If you look at the  
15 history of the last thousand years, we've had two, possibly  
16 three generational droughts where the average is what is  
17 today the low out of 25 out of say 30 years. Is there any  
18 thinking about that strategy, as population and use grows 10  
19 and potentially, you know, we might be in the tip of  
20 long-term drought here and have peak years in the next 30.  
21 Are there any contingency plans for that kind of thing, or  
22 don't we even want to think about that kind of stuff?

23 MS. YODER: Well, the lovely thing about the  
24 system right now is 60 million-acre storage. Now, it was  
25 authorized and built under certain constraints. It's what

1 we have. If we had 50 years excess drought, we will have a  
2 problem, yes. Could we have a plan for that or build?  
3 Probably not. Are we looking at those types of events as  
4 they happen in the past? Yes. We are trying to understand  
5 the body of science that's out there right now and pulling  
6 it forward. And as we can recognize it as valid into our  
7 models, we're doing so.

8           Everyone always here's about tree ring studies.  
9 That's the buzzword we usually hear it related to climate  
10 variability. So yes, the reclamation is looking at that  
11 area of study, and it's trying to actually pull into our  
12 modeling as best we can as we move forward that state of the  
13 art is at a certain place and moving along. We can't create  
14 something that doesn't exist yet. As we have valuable  
15 information, we will pull into the process and help it  
16 inform us. And we're quite aware of those postulations  
17 about some considerably longer droughts or what they  
18 would -- what was normal back in 1980. There was X amount  
19 of water available for a system might not have been true a  
20 couple of hundred years ago. But we looking at those  
21 factors.

22           MR. PARKER: And I don't bring it up to be  
23 alarming. Simply to address the facts of the long-term  
24 changes in the region.

25           MS. YODER: And those forums are out there, and



1 we are definitely paying attention to them.

2 MR. PALMQUIST: My name is Robert Palmquist. I'm  
3 with the law firm of Strickland and Strickland in Tucson.  
4 We're general counsel to the Ak-Chin Indian Community, and I  
5 think chairman Carlisle, who is also here with me can  
6 correct me if I'm wrong, but I think Ak-Chin shares some of  
7 the concerns that Ms. Interpreter and the other speakers  
8 have made about the participation of tribes in this process  
9 and also the State process. We kind of found out through  
10 the back door about some of the State meetings and have  
11 attended several of them. Now I understand there's a  
12 smaller group that has a couple days ago convened to put  
13 together some final recommendations to the secretary. And  
14 we welcome the opportunity to be here and be part of the  
15 process. But as far as the noticing requirements and/or --  
16 not requirements but as far as notice to the tribes and  
17 participation of the tribes, I echo what Ms. interpreter  
18 said about more tribal involvement being I think imperative.

19 Ak-Chin, of course, based its water entitlements  
20 on its water settlement legislation which in fact has a  
21 provision about the secretarial declaration of shortage and  
22 what happens to the community's water entitlement once that  
23 declaration is made. And we'll, of course, stand on that,  
24 but we certainly want to be a part of larger tribal  
25 discussions and especially those discussions with the

11

1 federal government with which the tribes have a trust  
2 relationship.

11

3 MS. CARLYLE: You're correct on that. If notices  
4 were not being sent out, I really don't know that. I was  
5 currently the vice chairman until last week. So a lot of  
6 these issues went to the chairman. So we haven't switched  
7 offices. So we're kind of coordinating them but we were, as  
8 Bob said, able to get to some of the State meetings which  
9 was real interesting. And I want to say I like the idea  
10 that at least notes are taken where in the past, not on this  
11 issue, but other issues, they call a meeting, they call a  
12 consultation, there's no -- there are no notes taken. So  
13 it's basically we're just talking to ourselves with no  
14 follow-up. And I appreciate that something is being written  
15 down.

16 As for consultation with the tribes, this is just  
17 a starting point. Then I think there are other ways of  
18 bringing in tribal leaders, and it's what we call the direct  
19 consultation where in a group setting, individual, it  
20 depends on the tribe on how they want to conduct that, how  
21 they want to define consultation. So I appreciate the  
22 opportunity to be here, and I apologize for being late. I  
23 went to the wrong address. I think I went to the building  
24 where we had the State water meetings which is no longer  
25 open either. But I got here. So again, I stated before,

1 water is such a precious resource in our area with all the  
2 developments around us. All we have is our farming. We --  
3 yes, we have a casino. We don't want to focus solely on the  
4 casino because our farming operations are doing pretty good.  
5 However, we have already spoken with federal officials as  
6 well as county officials as to all these 100-year guaranteed  
7 certificates, and there must be a dozen-plus different  
8 developments surrounding our reservation.

9           So we just wanted to make sure, as with any  
10 tribe, that it does not impact our farming or the water that  
11 we have Senator McCain, and we point blank asked him once  
12 about our water settlement. And he said I don't think --  
13 what was his quote -- I don't think the Supreme Court would  
14 hear that because of the statutory wording. I said, But the  
15 way government's been running lately, I know. Could you  
16 please put that writing somewhere. Lately I've been saying  
17 "Can we get it in blood?" You know you may have a document  
18 but the recent trend of the current administration is a lot  
19 of loopholes are being found. So what we thought were 12  
20 concrete documents that we were safe with, contracts,  
21 agreements, what have you, is proven otherwise.

22           So we welcome the opportunity again, just like  
23 any of the tribes, to be able to participate. Again I want  
24 to express my appreciation of the notes being taken because  
25 it's not happening in the other consultation meetings.

1 Thank you.

2 MS. YODER: Well, and I apologize that we started  
3 before you could arrive. And I certainly do appreciate that  
4 you took time out of your day to join us. Thank you.

5 I would point out for everyone that a copy of  
6 that transcript will be available, and we can email it or  
7 mail it to you. So this is not just a document for my  
8 information for follow-up. It also is available to you as  
9 documentation of the meeting. Okay.

10 MR. PARKER: One of things that I am wondering  
11 about is in terms of the consultation and basically the law  
12 of the river and everything else that's there, do we really  
13 have much to discuss, you know, from the standpoint that  
14 there are certainly indications that have already been made  
15 to the states and the tribes unfortunately fall within those  
16 allocations to the states. There aren't the independent  
17 allocations. It's very, very limited what tribes have, if  
18 any, in the lower basin. It's outside the state's  
19 allocation. So I'm really wondering what kind of voice do  
20 we have in the process.

21 MR. CHANDLER: I guess, Gary, I look at it a  
22 couple different ways, depending upon the criteria. The  
23 secretary adopts, you know, we can wait until shortages are  
24 really drastic and CAP goes to zero. If that's the process,  
25 Indian tribe that has an allocation, leases that water

13

1 supply. The way that we're looking at it in different  
2 alternatives, as the reservoirs are coming down, we shortage  
3 the smaller amounts and maybe the nonIndian ag supplies  
4 enter an earlier shortage.

5 MR. WALKOVIK: So different ways in which we can  
6 operate under the shortage criteria, that will determine how  
7 deeply it goes to the CAP shortage. And that's really a  
8 critical nature to the tribes' supplies.

9 Now, the State is probably going to protect, try  
10 and protect their M&I supplies as much as they can. Where  
11 they share priority that helps the tribe get protected as  
12 well because you have that shared priority. So just being  
13 aware of the different strategies and how often you can get  
14 hit with shortage, you either take a lot of shortages all  
15 the time or you wait and take a big shortage and take  
16 blocks. So you need to be aware of that type of provision,  
17 how it might impact the longevity of the water supply.

18 MS. INTERPRETER: Gila River Indian Community  
19 original allocation had a 10 percent irrigation allocation  
20 that would have been reduced as well. Kind of informative,  
21 but not Indian ag. So that's the piece of that puzzle and  
22 is a concern as well.

23 MR. JAMROG: I just wanted to state that what Nan  
24 already mentioned today was one of the main points was to  
25 find out how we wanted to continue consultation with the

1 tribes. And of course, Robin, you stated that, you know,  
2 you definitely wanted the Fort Apache tribes.

3 MS. INTERPRETER: Three Apache, two Apache  
4 tribes, one Yavapai --

5 MR. WALKOVIK: The tribes that you represent, if  
6 you would want us to provide technical assistance to you and  
7 then we heard Delia say that Ak-Chin perhaps would want to  
8 consult tribal -- one tribal nation with a Bureau of  
9 Reclamation. One of the things we would like to get out of  
10 this is for logistics purposes to know how the tribes want  
11 to operate so that we can respond well and whether groups  
12 of, you know, three or five various individuals, shared  
13 presentations, or discussions are necessary. So we would  
14 really want to encourage you to tell us that through the  
15 contacts that were presented. Or if you'd like, you can,  
16 you know, talk to Debbie or Randy and get the information  
17 who to contact.

18 MS. INTERPRETER: Well, I can suggest right now  
19 perhaps, if any of the tribes are interested, we can have  
20 more of these group meetings where Reclamation helps us  
21 gather that information on certain alternatives that have  
22 been developed by the different states or together or  
23 anything Reclamation is thinking about, and we can really  
24 kind of work on it through a technical perspective. At the  
25 same time at the next meeting, if there was a need that a

14

1 tribe felt to break out and spend some alone time with  
2 Reclamation, I think that would be appropriate as well.

3 So maybe you can accomplish some of the  
4 generalized goals of a group of us. It's a little easier if  
5 tribes say we really need to talk to you specifically alone,  
6 then we can do that as well.

7 MS. CARLYLE: That has been a format used in the  
8 past where you bring them in and bring tribes together and  
9 then, if there's specific issues outside of what you just  
10 mentioned about the general consensus, then you do that  
11 again. I'm only one. You have in Arizona, what, you have  
12 22 different tribes.

13 MS. INTERPRETER: Because I think the concerns  
14 for the main stem Colorado River tribes may be different.

15 MR. JAMROG: We met with them last week in a  
16 similar forum. My understanding what came out of that is  
17 that one of the tribes has taken the lead to coordinate with  
18 the group. And so -- and then of course, we can still offer  
19 the same opportunity for individual tribes if they request  
20 that. I don't know if that's something you want to do or  
21 not. I'm not trying to influence that, but that's one way  
22 they are, and we'll probably operate with them as a group  
23 and then see a few tribes as a group. And then we also have  
24 the additional concern what consultation resources impacts  
25 would come down the line which may include other tribes as

1 well. But I hear you. So as far as for this sounds like  
2 this is a good way to contact.

3 MS. INTERPRETER: Who in Reclamation does the  
4 kind of technical processing, reviewing all the different  
5 alternatives? Who is going to be responsible for that? Is  
6 that kind of a person that we could have available to us at  
7 these meetings?

8 MS. YODER: Well, that's me. I am one of that.  
9 There's a team. Obviously, it's not a single individual.  
10 Unfortunately Terry Fulp couldn't be here with us today.  
11 He's the area manager here for the Boulder Canyon office.  
12 That's where the operating plan is issued out of the --  
13 under the signature of the secretary, and of course, the  
14 oversight of the regional director. He was unable to be  
15 here today, and I am his representative. And so it is that  
16 office that will be doing the technical evaluations on the  
17 modeling and also that will be coordinating with John's  
18 office when we get into the other impacts of the  
19 environmental resources, et cetera. So it is a team effort.

20 We are also undertaking this project in  
21 coordination with the Upper Colorado Regional Office to  
22 Randy Peterson, would be Terry Fulp's counterpart in that  
23 region, and we'll do everything in coordination because we  
24 are, of course, looking at Powell. And so that's within  
25 their territory. And so we'll run this project in



1 cooperation with that region. So it's a team, and you can  
2 always get to us through any of those contacts or  
3 individually as well.

4 MR. WALKOVIK: Let me add also a little bit  
5 about where we are in the process. Maybe expanding a little  
6 bit on some of the stuff that Nan had in her slides. We  
7 have had these couple of public processes back last summer  
8 and then in the fall that several of you responded to. And  
9 this study team that Nan talked about is really just getting  
10 under way. And so we have gathered up all this public  
11 input. We're still gathering this through these meetings  
12 and others, and we will put together what we call a scoping  
13 report which will summarize what we've heard from all the  
14 different entities that have given us comments. And we've  
15 still yet to formulate alternatives that we're going to take  
16 forward into the EIS process.

17 We're in the process of starting to develop that  
18 as we assess all the information we have. So my sense is I  
19 needed to say that because I didn't want anybody to assume  
20 that we already got X number of alternatives and we got them  
21 nailed right down and we're just charging along. We're  
22 still formulating all that based on the input that we  
23 receive. And this year, this calendar year, will be all  
24 about formulating those alternatives and then studying and  
25 analyzing those alternatives and developing a draft EIS.

1 Our target date is late this calendar year.

2 MS. YODER: It's December.

3 MR. WALKOVIK: And then the end process, after  
4 getting review and comments and so forth, is December 2007,  
5 as Nan showed on the slides, to try to come to the end of  
6 that process with a final document and a record of decision  
7 on what the Secretary will decide. This is the right time  
8 to be getting input. We're still early in that process,  
9 formulating alternatives, and then analyzing them. And  
10 there will continue to be interaction between us and whoever  
11 is interested as we go through.

12 MS. INTERPRETER: I think it would be probably  
13 most useful then in terms of, as the alternatives are being 16  
14 developed at somewhere midway, before you get the draft A of  
15 EIS and those alternatives set, we would like to meet, have  
16 a little bit of time take a look at those things and talk a  
17 little bit more about it before you put it in stone in the  
18 EIS.

19 MR. CODER: This has nothing to do with water,  
20 but it might be of interest to you Reclamation folks just  
21 for your own knowledge. I'll give you a 90-second history  
22 on how this thing started out.

23 During the wars of conquest in Arizona Territory,  
24 Western Apache People were rounded up and taken to the  
25 concentration camp at San Carlos, east of Phoenix. This

1 included Apache People from all over; the Verde Valley,  
2 White Mountains, Payson, the Pinals, the country around  
3 Flagstaff, from Cibecue through Payson and south wards to  
4 Globe and the Superstitions. The net that was cast not only  
5 caught up the various Athapaskan speaking Apache's, but also  
6 the Yuman speaking Yavapai. The Yavapai were in no way  
7 related linguistically or culturally to Apaches, but  
8 nonetheless they were rounded up and taken to San Carlos  
9 just the same. The government did not differentiate between  
10 Apaches tribes much, and the nuance between separate tribal  
11 groups was often overlooked within the greater focus of the  
12 conquest.

13 Be that as it may, after a generation at San  
14 Carlos the military system began to break down  
15 institutionally as well as financially. As enforcement and  
16 regimentation on the military reserves waned, the People  
17 began to walk back home in small groups to the country their  
18 Parents and Grandparents had been removed from during the  
19 1870's. Some Apaches went to the country around Payson, and  
20 some walked back to the Verde Valley. Some Yavapai families  
21 went back to the country along the Hassayampa northwards to  
22 Prescott and also into the Upper Verde. Another generation  
23 passes by then.

24 In 1934 the federal government passed the Indian  
25 Reorganization Act, which gave many groups the go ahead to

1 write a constitution and be recognized by the federal  
2 government as a sovereign entity. This was what led to the  
3 Yavapai Prescott Tribe being formed. It also led to the  
4 formation of the modern Yavapai-Apache Nation, which was the  
5 convenient amalgamation of Dilzhe'e Apaches and Yavapai  
6 People from the Upper Verde east of Mingus Mountain into a  
7 single political entity despite the two distinct cultural  
8 origins of these two Peoples.

9           The Tonto Apache Tribe of Payson was not  
10 enfranchised until 1972 by the federal government, and they  
11 are derived from Apache families that left San Carlos around  
12 1900. These are related to the same Apache families who  
13 comprise the "Apache" in Yavapai-Apache Nation, but now they  
14 are separated as a distinct political unit. Same  
15 culture/same People/completely different government.

16           Fort McDowell is a Yavapai political entity  
17 distinct from Prescott and Camp Verde in the same fashion as  
18 is Payson. These are just examples of the cultural  
19 consequences of conquest and the repercussions they result  
20 in. For the people on the short end of that stick, in this  
21 case Native Americans, the winners determine the political  
22 future, resource allocation, and cultural geography  
23 regardless of cultural context prior to the disruption.

24           So anyway, sometimes that's helpful to know that.

25           MR. WALKOVIK: Thank you.

1 MR. PARKER: I have one last one that's just on  
2 your presentation. Can you read your email addresses.  
3 They're in colors that some people can't see. I know  
4 there's got to be a word.

5 MS. YODER: It literally is the word strategies,  
6 S-T-R-A-T-E-G-I-E-S, strategies@lc.usbr.gov. And if you  
7 rather correspond with the upper Colorado regions, just say  
8 at UC, or you can send them to both of us which is  
9 applicable as well.

10 MS. WILSON: We are at the Sif-Oidak District of  
11 the Tohono O'Odham, but not directly involved with the  
12 nation government activities. So my question to you is has  
13 there been a comment submitted from the nation?

14 MS. YODER: I do not recall one. Ones that you  
15 read are the ones I have from our record this past summer  
16 and fall. So I do not see one from that. And you are most  
17 welcome to submit one still.

18 MS. WILSON: We're the most northern part of the  
19 main reservation, and we have been involved in, you know,  
20 the district's level of water activities. And I guess we're  
21 kind of getting involved, you know, kind of after the fact  
22 kinds of thing. But I was wondering if it was possible if  
23 we would get a copy of the June 2005 and September 2005  
24 federal registers. 17

25 MS. YODER: Certainly. If we have your name and

1 mailing address, we'll mail those to you or email them to  
2 you. Would you rather email?

3 MS. WILSON: Yes.

4 MS. YODER: We certainly will do that, not a  
5 problem. We can make those available to everyone, of  
6 course, not excluding anyone here. So if anyone would like  
7 copies of those notices, we can email it and also mail it to  
8 you.

9 MS. CARLYLE: Okay. And just can you expand a  
10 little bit on the Arizona public sharing discussions you  
11 talked about or is that the one that we came about it, bob  
12 had mentioned in a roundabout way. So we had him go through  
13 the meetings. I think you attended three of them, and forum  
14 board chairman Leona Caker and I were able to make one. So  
15 we have been kind of -- that's how we started getting more  
16 involvement with that. But we didn't find out directly,  
17 just found out in a roundabout way about it.

18 MR. WALKOVIK: We didn't, Nan, that was not our  
19 process. So we probably don't know as much about it as  
20 those of you that went to all the meetings. I believe that  
21 was that Arizona Department of Water Resources leading that.

22 MS. CARLYLE: Yes.

23 MR. WALKOVIK: And I think we had someone from  
24 our office that went to a few of those. I don't know how  
25 many we attended or not, but I think probably you need to

1 get ahold of them to find out exactly what that process led  
2 to and where they got -- are they done? I'm not even sure.

3 MS. YODER: They're not. Probably one of the  
4 easier ways to find out about it would be to go to their  
5 website ADWR. Those are publicly noticed meetings, and they  
6 said they will post them on their website and I do believe  
7 they have a page, because I went searching for it yesterday,  
8 that gives you a record of the meetings they had. And I  
9 believe there are some notes or outlines posted from it. So  
10 you might be able to pull down information directly.

11 MS. CARLYLE: Thank you.

12 MR. CHANDLER: Also at one point we had actually  
13 considered bringing the State into this meeting and let them  
14 kind of give a lowdown as to where they're at at least for  
15 this time. We decided to not confuse the State process and  
16 the federal process. But I think I may be speaking out of  
17 turn. I think we could facilitate having the State give us  
18 similar presentation for what they've been doing in their  
19 process to a group of the tribes. If that's something you  
20 would like I think we can facilitate that.

21 MS. YODER: And certainly their process is not  
22 complete, and I do understand they'll still meeting.

23 MS. INTERPRETER: Perhaps but I might want to  
24 hear the federal perspective on the State's idea too, maybe  
25 privately with the Feds.

18

1 MR. WALKOVIAK: On Arizona's --

2 MS. INTERPRETER: Yeah, possibly maybe a meeting  
3 to hear from them. I think we would like to hear your  
4 perspective on this.

5 MR. WALKOVIAK: I don't think they finished their  
6 process yet. They're in kind of the final stages. We have  
7 attended -- someone from my staff has attended the majority  
8 of those meetings. But so we don't have their final product  
9 I don't think.

10 MS. YODER: No. And what I attempted to say  
11 briefly to you earlier in my presentation was the key  
12 elevations at which they thought they were discussing taking  
13 shortages from the State of Arizona, loosely speaking,  
14 that's the information we have from them right now in that  
15 process. And so there is called a step shortage strategy.  
16 There is much more to it I'm sure, but that's the piece of  
17 information that I currently have available until such time  
18 they bring out of their process something they want to  
19 advance to us for consideration. And it would be like  
20 anyone else, you know, input into our process a comment that  
21 we will use as information as we go forward to develop  
22 alternatives. As Larry pointed out, they aren't developed  
23 they are still in the process. We are at the beginning.

24 MS. INTERPRETER: Is your representative  
25 attending those meetings as a listener or to provide



1 technical advice or input on?

2 MS. YODER: We solely sit there to listen. And  
3 it's not always been the same person. Whoever we have  
4 available.

5 MS. CARLYLE: Just referring back to all who was  
6 cc'd, I was just curious as to you mentioned you met with  
7 the Colorado River -- we call them the Colorado River  
8 tribes. And then was there a different -- so were they sent  
9 a similar letter to this to meet only with them? And then I  
10 don't see any other tribes on here that again I'm not sure  
11 if they have a listing.

12 But I thought it was kind of curious again about  
13 consultation, and you only list -- I mean there's only some  
14 tribes on here versus notice given to all Arizona, what, now  
15 has 22 tribes. So I didn't know if there was a distinction  
16 between, like I say, just going back to a previous  
17 initiative we have. It started breaking into the river  
18 tribes, the metro tribes, rural tribes, they even had an  
19 Apache coalition. And then we joke. We said we were going  
20 to start up an -- but all in all it was still one. So I was  
21 just curious, didn't even think about til right now, why  
22 this particular listing and not all, say, 22 tribes.

23 MS. YODER: Our initial contact was with the CAP  
24 tribes down here and with the ten Indian tribes. You  
25 literally received the same letter. It's just that we had

19

1 it go out that we organized a meeting at McKeron to make it  
2 easier for people to get there versus one down here. We  
3 didn't think there would probably be a lot of interest in  
4 the meeting initially until you knew what we were doing.  
5 Now that we have established some contact, we will, of  
6 course, be sending out a broader letter to all the tribes  
7 talking about why we're here to initiate consultation and to  
8 identify interest at all levels.

9           But initially we wanted to get some of the key  
10 players that we'd had come to us before, you know, to see if  
11 they would be interested in engaging with about us, sort of  
12 that first step. And now there was a few people I talked  
13 with here in the room where I was like, "Do you think so and  
14 so would be interested? Would you call them sometime." I'm  
15 getting much better at finding someone through a chain of  
16 phone calls than through a letter. So it was a bit of a  
17 struggle at first. So there is every intent that we will  
18 shortly issue a letter to all tribes and engaging them,  
19 seeing what interests they have. But initially we really  
20 didn't want to see tribes that had talked to us already in  
21 process, if you will would be willing to come and sit down.

22           MS. INTERPRETER: And I know you told me that we  
23 were on the mailing list, but I would expect you maintain a  
24 separate mailing list for, like, those letters that go out  
25 to the tribes. We need to be on that list as well.

1 MS. YODER: Okay.

2 MS. INTERPRETER: Because, when the chairs of the  
3 tribes, presidents of the tribe delegate that job to us,  
4 they expect that, when they get another notice in the mail,  
5 that it's being dealt with by their attorneys and, when  
6 their attorneys don't get the notice of it, it's a problem.  
7 So it needs to say cc, you know, to the tribal attorney or  
8 whatever it is that has been designated as the person 20  
9 responsible.

10 MS. YODER: And that is duly noted and probably  
11 been an oversight in making that connection. If there's any  
12 other types of connections we need to make for you or  
13 organizations that you want to also be noticed at the same  
14 time we notice you, please tell us so that we know and we  
15 don't overlook something.

16 MR. WALKOVIK: That's true.

17 MR. JAMROG: Is that true with folks that work on  
18 the -- for the next mailout, we have a lot of connections  
19 for the cultural impact levels and the National Historic  
20 Preservation Act in consideration. You know, we have  
21 culture resources or natural resources division contacts. I  
22 don't know if we have all the water.

23 MS. SAINT: My suggestion would be these tribes  
24 let us know who they want us to notice. This is really in a  
25 consultation process, that's helpful to the tribe. If you

1 could let us know who you would like us to notify, we will  
2 do that.

3 MS. YODER: Thank you, Debbie.

4 MR. DUNCAN: Sonny Duncan, Apache Tribe, back to  
5 the strategies. On the little newsletter in the back  
6 corner, right-hand corner, it is also there in the corner,  
7 if it helps any. So there is LCN and UCN. Thank you.

8 MS. YODER: Thank you. I'm sorry. Well, we'll  
9 be more sensitive next time around for that.

10 MR. WALKOVIK: If you, as we said earlier, if  
11 you have other thoughts as you think about any of this  
12 stuff, get back to us and any other thoughts or questions  
13 today. We don't want to keep you longer than you need to  
14 be.

15 MS. INTERPRETER: So we'll await maybe a letter  
16 coming from you that says we'd like to talk to you about  
17 these alternatives or something?

18 MR. WALKOVIK: We certainly can do that. I  
19 think we've heard individually from some of you. We want to  
20 be as respectful and do whatever is going to be useful to  
21 you.

22 MS. SAINT: I guess maybe we could other among  
23 this group that you wanted to say tentatively before we did  
24 alternatives, we would meet with them again before we  
25 determine the final alternatives, at least how that was

1 going to be.

2           The other piece I'd like to say is for some of  
3 the tribes that have water settlements, you might be  
4 impacted differently than just kind of the straight CAP  
5 contract tribes, and I'd be happy to, if I've got the  
6 responsibility for your tribe -- well, for all of them, to  
7 arrange for that we could talk to you about how the specific  
8 provisions of your settlement might be impacted differently  
9 by these. For instance, Ak-Chin community is impacted  
10 whenever the shortage is declared. That takes you to a  
11 specific point. Gila River is impacted differently, all  
12 those are impacted differently under the Southern Arizona  
13 Water Rights Act, also San Carlos Apache, how that all plays  
14 together.

15           MR. JAMROG: When Robin mentioned that she would  
16 like to meet at least between when we initially formulate  
17 the alternatives and between the draft, technically you know  
18 alternatives are never finalized until the final. But  
19 before the draft would be technically probably when we would  
20 look down. So any time before the draft.

21           MS. INTERPRETER: I understand that. A lot of  
22 times we know where we are going. We'd just like that that  
23 opportunity before the draft is --

24           MR. WALKOVIK: Sure. Any other thoughts? Let  
25 me thank you again for being here. It's my honor to have a

1 chance to meet you today. So thank you for your thoughts  
2 and your input and please continue to share with us. Thank  
3 you very much.

4 (WHEREUPON the meeting concluded at 12:00 p.m.)  
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STATE OF ARIZONA        )  
                                  )    ss.  
COUNTY OF MARICOPA    )

BE IT KNOWN that the foregoing meeting was taken before me, DIANE DONOHO, Certified Reporter, Certificate No. 50691, in and for the State of Arizona; that the foregoing pages are a true and correct transcript of all proceedings had upon the taking of said meeting, all done to the best of my skill and ability.

I FURTHER CERTIFY that I am in no way related to any of the parties hereto, nor am I in any way interested in the outcome thereof.

DATED at Phoenix, Arizona, this 8<sup>th</sup> day of February, 2006.

*Diane Donoho*  
Diane Donoho, RPR  
Arizona Certified Reporter  
Certificate No. 50691

# **Appendix O**

**February 16, 2006, Phoenix, Arizona  
Tribal Consultation Meeting Transcript**



DEVELOPMENT OF LOWER BASIN SHORTAGE GUIDELINES  
AND COORDINATED RESERVOIR OPERATIONS STRATEGIES PROJECT

TEN TRIBES PARTNERSHIP AND U.S. BUREAU OF RECLAMATION  
CONSULTATION MEETING - EXCERPTS

Phoenix, Arizona  
February 16, 2006  
9:34 a.m.

REPORTED BY:  
RABIN' MONROE, RMR, CR  
CERTIFIED REPORTER  
CR #50653

PREPARED FOR:

(COPY)

1 THE TEN TRIBES PARTNERSHIP AND U.S. BUREAU OF RECLAMATION  
2 CONSULTATION MEETING  
3

4 BE IT REMEMBERED that the Ten Tribes Partnership  
5 and U.S. Bureau of Reclamation Consultation Meeting was  
6 taken before RABIN' MONROE, RMR, CR, a Certified Reporter,  
7 in and for the County of Maricopa, State of Arizona, on  
8 February 16, 2006, commencing at 9:34 a.m., at the  
9 COURTYARD MARRIOTT, 2101 East Camelback Road, Phoenix,  
10 Arizona.  
11

12 APPEARANCES  
13

14 BUREAU OF RECLAMATION:

15 BOB JOHNSON, Regional Director  
16 TERRY FULP, EIS Team  
17 NAN YODER, EIS Team  
18 NANCY COULAM, EIS Team  
19 JOHN JAMROG, EIS Team  
20 DEBBY SAINT, Lower Colorado Region

21 TRIBAL REPRESENTATIVES:

22 GEORGE ARTHUR, Navajo Nation  
23 BRENNNA CLANI, Navajo Nation  
24 STANLEY POLLOCK, Navajo Nation  
25 GARY HANSON, Colorado Indian Tribes  
CATHERINE CONDEN, Southern Ute Indian Tribe  
JIM NEWTON, Southern Ute Indian Tribe  
PETER ORTEGO, Ute Mountain Ute Tribe  
KATHERINE VERBURG, Department of Interior

## 1 P R O C E E D I N G S

2

3 BOB JOHNSON: Good morning, everybody. Thanks for  
4 coming. My name is Bob Johnson. I'm the regional director  
5 for the Bureau of Reclamation in Boulder City, Nevada. And  
6 we're here representing both the Upper and the Lower  
7 Colorado regions. We have Nancy here from Salt Lake City.

8 And this is a joint effort, basin-wide effort,  
9 between both regions of Reclamation and Secretary of the  
10 Interior to develop a whole series of, you know, operational  
11 guidelines. We really expanded what we're doing from what  
12 we originally anticipated into a much broader range of  
13 management -- Colorado River Management activities.

14 And this is the third government-to-government  
15 consultation that we've held with Tribes. We had one in  
16 Salt Lake, another one in Phoenix, and this is the third  
17 here in Phoenix.

18 And we really appreciate everybody's coming.  
19 We're very interested in continuing a dialogue with the  
20 Tribes in a government-to-government fashion. We're hoping  
21 to meet, you know, at the Tribes' desires, and certainly as  
22 developments begin to occur in terms of making progress and  
23 moving forward.

24 I think the significant thing that's happened  
25 since the first meeting that we had, or the first two

1 meetings that we've had, is we've gotten a fairly specific  
2 proposal from the seven Colorado River Basin states, and I  
3 think it would be good to be able to talk and give you some  
4 background on exactly what's in that alternative.

5           So welcome. And -- and may we go around the room  
6 and introduce ourselves. But maybe I'd ask George Arthur if  
7 there's anything that he'd like to say. I think he's been  
8 instrumental in pulling this meeting together today.

9           And I don't want to put you on the spot. So you  
10 don't have to say anything if you don't want to.

11           GEORGE ARTHUR: No. I'd just like to express my  
12 appreciation for this opportunity to meet again. We are  
13 interested in maintaining open dialogue with all the  
14 participants.

15           In one of our meetings earlier we were -- I know  
16 the Tribes were concerned that there was ongoing meetings  
17 with the State, and I think that was the meeting -- the main  
18 concern as to a question of why the Tribes were not part of  
19 that discussion. And there might be a time in the future if  
20 there's more talks with the State that the Tribes should be  
21 notified. I think that was basically the concern.

22           But other than that, I really appreciate this  
23 opportunity to -- thank you for your time. So ...

24           BOB JOHNSON: Okay. Good. Thank you.

25           Why don't we go around the room and just -- Gary?

1                   GARY HANSON: Gary Hanson with Colorado River  
2 Indian Tribes.

3                   PETER ORTEGO: My name is Peter Ortego. That's  
4 O-R-T-E-G-O. And I'm the general counsel for the Ute  
5 Mountain Ute Tribe.

6                   JIM NEWTON: Good morning, everybody. My name is  
7 Jim Newton, Junior, Southern Ute Tribal Councilmember.

8                   CATHERINE CONDEN: Catherine Conden representing  
9 Southern Ute Tribe.

10                  JOHN JAMROG: John Jamrog. I'm with the  
11 Boulder City office.

12                  NANCY COULAM: Nancy Coulam. Upper Colorado  
13 Region, and I'm on the EIS team.

14                  TERRY FULP: Terry Fulp. I'm with Boulder Canyon  
15 Operations in the Lower Region, and also on the EIS team.

16                  NAN YODER: Nan Yoder. I'm Bureau of Reclamation  
17 in Boulder City, and also on the project team.

18                  STANLEY POLLOCK: Stanley Pollock with the Navajo  
19 Nation Department of Justice.

20                  BRENNNA CLANI: I'm Brenna Clani. I'm also with  
21 the Navajo Nation Department of Justice.

22                  GEORGE ARTHUR: Good morning. I'm George Arthur.  
23 I'm with the Navajo Nation Council, presently filling in as  
24 president of the Ten Tribes.

25                  KATHERINE VERBURG: I'm Katherine Verburg. I'm

1 with the Department of Interior Solicitor's Office.

2 DEBBY SAINT: I'm Debbie Saint. I'm the Lower  
3 Colorado Region's Native American program manager.

4 BOB JOHNSON: Okay. Very good. Well, thanks for  
5 being here.

6 We -- we do have a reporter here, and we are, you  
7 know, taking notes. We're going to make sure that we have a  
8 record of, you know, what's said and what your concerns are  
9 so that we can maintain that, you know, for -- for our  
10 records and make sure that we're not missing anything.

11 George, in response to your comment about the  
12 Tribes -- or I mean about the States in -- and participating  
13 with them, all that the States have done to date, all --  
14 those have been the States' meetings. They're not --  
15 they're not meetings of the Bureau of Reclamation. They  
16 held a number of meetings without us. And then there --  
17 they also held a number of meetings where they invited us to  
18 come and participate.

19 Our role with them has primarily been as a  
20 technical resource. We provided technical data and  
21 information to them. But those have not been Bureau of  
22 Reclamation meetings. They were State meetings. They were  
23 scheduled and called by them, and we attended at their  
24 invitation.

25 And I would just say that we're open to meeting

1 with any interest group as it relates to this process.  
2 We've had a number of meetings with environmental groups.  
3 We've done similar kinds of technical and provided similar  
4 kinds of technical support and information to environmental  
5 groups.

6 The non- -- the NGO's have submitted a similar  
7 proposal on shortage guidelines formally to the Secretary  
8 that they developed out of the meetings that they had with  
9 us.

10 And similarly, the power users have -- we've had  
11 some separate meetings with some of the power users, as  
12 well, who've been interested in what's going on. And I  
13 think this is kind of our effort to have similar kinds of  
14 meetings and consultations with the Tribes, and we're very  
15 open to continuing this dialogue that way that -- that  
16 meets, you know, your needs. So ...

17 And with that, I am going to turn it over to  
18 Terry Fulp, who's our -- one of the team leaders, along with  
19 Randy Peterson, in our Salt Lake City office. But he's the  
20 team leader in terms of trying to put together this overall  
21 program.

22 And I'll turn it over to Terry.

23 (A presentation by Terry Fulp was commenced.)

24 CATHERINE CONDEN: I had a quick question. You  
25 mentioned you had a meeting in Salt Lake, and so this was

1 the third meeting?

2 TERRY FULP: It was in Vegas, I think.

3 BOB JOHNSON: You're right.

4 CATHERINE CONDEN: Because he said three meetings.

5 He said Salt Lake, Salt --

6 TERRY FULP: It was a slip of the tongue, yes.

7 CATHERINE CONDEN: So this is just the second  
8 meeting?

9 TERRY FULP: This is the second -- we had -- with  
10 the Ten Tribes this is the second meeting. We have met with  
11 other Tribes --

12 CATHERINE CONDEN: Okay. Okay.

13 TERRY FULP: -- in another meeting. But this is  
14 the second meeting with the Ten Tribes part.

15 CATHERINE CONDEN: I just wanted to make sure  
16 that -- okay.

17 TERRY FULP: Great.

18 BOB JOHNSON: Yeah, we met separately with the  
19 Central Arizona Project Tribes.

20 CATHERINE CONDEN: Okay.

21 TERRY FULP: Correct.

22 BOB JOHNSON: And they're kind of really in a  
23 unique position in -- I mean, most of the tribes on the main  
24 stem have federal reserve rights that are very high in  
25 priority, probably won't be affected by shortages on the



1 Colorado River.

2 CAP tribes have rights associated with Central  
3 Arizona Project, and so shortages have a much higher  
4 likelihood of having impacts on them. And so we've  
5 consulted with them separately in government-to-government  
6 consultation.

7 But, I mean, as far as I'm concerned, in -- any of  
8 the government-to-government consultations is open to  
9 whoever -- you know, whatever Tribes would like to attend.  
10 I think the -- these have been focused on the Ten Tribal  
11 Partnerships on the main stems of the river. And we're  
12 comfortable with doing it in any way that you all are  
13 comfortable in doing it.

14 TERRY FULP: Okay. With that, we'll dive in.

15 (The presentation by Terry Fulp was resumed.)

16 STANLEY POLLOCK: On the previous line I had a  
17 question about the way you look at allocation.

18 Where it says 16.5 million acre feet allocated  
19 annually, that doesn't include the million acre feet  
20 allocated to the lower basin above the 7.5?

21 TERRY FULP: It doesn't. That doesn't. Just --

22 STANLEY POLLOCK: Okay. So --

23 TERRY FULP: We could. We could and call it 17  
24 and a half, absolutely.

25 BOB JOHNSON: But the 15.1 does not include the

1 lower basin inflows --

2 STANLEY POLLOCK: Into Mead.

3 BOB JOHNSON: -- if you're going to compare it.

4 TERRY FULP: That's correct. And that's correct.

5 STANLEY POLLOCK: Right. I was just curious  
6 how -- on both of those how that all sort of fit into the  
7 equation. Okay.

8 (The presentation by Terry Fulp was resumed.)

9 CATHERINE CONDEN: Terry, can you explain how the  
10 State's agreement is going to fit into the whole NEPA  
11 process?

12 TERRY FULP: That's a great question. I should  
13 have already.

14 It's public input just like anyone's input in our  
15 process. We certainly -- it'll appear in our scoping report  
16 as the other input has, and we will look at this in great  
17 detail and for -- as we formulate our alternatives.

18 Certainly pieces of this will appear in  
19 alternatives. We feel fairly confident about that. Many of  
20 the things that are being proposed in here are things that  
21 we've been discussing for maybe 15, 20 years that would be  
22 good things to do to the system.

23 But again, it's just a part of the public process  
24 or input to our process just as anyone else.

25 CATHERINE CONDEN: So you're not just going to

1 take this and --

2 TERRY FULP: Not at all.

3 CATHERINE CONDEN: -- and pick this as your  
4 preferred alternative --

5 TERRY FULP: Preferred, no, ma'am.

6 CATHERINE CONDEN: Okay.

7 TERRY FULP: Not at all.

8 NANCY COULAM: Maybe mention the conservation one,  
9 as well.

10 TERRY FULP: That is a good point. Thanks, Nancy.

11 We've -- we've really received during this period  
12 up to kind of the scoping report time, which is now, two  
13 al- -- two proposed alternatives, if I could use that term  
14 loosely, but proposed recommendations; this one, and one  
15 from a group of environmentalists led by Pacific Institute  
16 and Environmental Defense, I would say, and it's called  
17 Conservation Before Shortage. And that one's also available  
18 on our Web site. You can download that one if you'd like  
19 it.

20 The concept there was they didn't focus -- they  
21 focused on the operation of Lake Mead only, and their idea  
22 was to have a more market-driven mechanism so that you could  
23 conserve water prior to taking shortages, and that way delay  
24 the onset and potentially the magnitude of future shortages.

25 And as Nancy pointed out, that's also input into

1 our process, and we're analyzing all of those ideas now as  
2 we start to formulate these alternatives that'll appear in  
3 the draft.

4 Thank you. That's a good point.

5 GARY HANSON: Now, you -- we've talked -- you're  
6 talking about the States' proposal and the environment  
7 group's proposal.

8 Does Reclamation have a proposal?

9 TERRY FULP: We -- not yet, but we will. I --

10 GARY HANSON: That will be -- that would be  
11 developed separately from these?

12 TERRY FULP: Well, what I'd like to point out is  
13 this: I don't know that it's one proposal. But I think  
14 what we as a project team and -- and internal Reclamation  
15 need to do is assess all this comment -- these comments and  
16 formulate a set of alternatives that really broadly  
17 encompass what might happen on a system and what we might  
18 need to do on the system.

19 So our -- I don't want to imply we would be coming  
20 up with a preferred alternative on our end, but we've  
21 certainly got to come up with some alternatives that again  
22 encompass kind of the spectrum of what we need to cover with  
23 this NEPA analysis.

24 BOB JOHNSON: But Terry, we might very well in  
25 November and December when we put out our draft EIS we -- at

1 that point in time there -- there might very well be a  
2 Reclamation-proposed alternative.

3 TERRY FULP: That's right.

4 BOB JOHNSON: So we don't yet have one. And when  
5 we put out the scoping report, all we're going to do is  
6 identify ranges of alternatives, and maybe even ranges of  
7 concepts.

8 TERRY FULP: Right.

9 BOB JOHNSON: And then the EIS will have  
10 alternatives defined and analyzed and presented to the  
11 public with public comment. I don't think a draft EIS has  
12 to have a proposed alternative.

13 Help me out, Nancy.

14 NANCY COULAM: It doesn't have to, but it's  
15 extremely unusual --

16 BOB JOHNSON: It's unusual not to have one.

17 NANCY COULAM: -- if you don't --

18 BOB JOHNSON: I would expect that our EIS, our  
19 draft EIS, will have a proposed alternative. But probably  
20 won't have anything until then would be my guess.

21 GARY HANSON: I was just wondering, because it  
22 seemed like the Secretary put -- sort of put the weight on  
23 the States' shoulders to -- to come up with these -- with an  
24 alternative. And, I mean, that was the initial position.  
25 And then as the States has difficulty doing that, then sort

1 of the backup position was, "Well, if you don't do it, we  
2 will."

3 So that would sort of imply that -- that the  
4 States' proposal is going to be the lead for -- for the  
5 solving of the shortage criteria, shortage guidelines.

6 BOB JOHNSON: I -- I think that's a good point. I  
7 don't think there's any question that the States play a  
8 unique role in Colorado River management. In fact, the  
9 Basin Project at -- that directs the Secretary to consult  
10 with the States as it relates to making river management  
11 decisions.

12 That doesn't mean that the Secretary has to agree  
13 with the States, but she has an obligation to consult. And  
14 I think that's what she's done.

15 I -- I think the States get focused on because  
16 they always have this -- I don't know how to -- there --  
17 there's usually differences of opinion. It's usually  
18 difficult for the seven States to develop a single view to  
19 present to the Secretary.

20 I think the Secretary doesn't like the idea of  
21 finding herself in having to split the baby and prefers to  
22 have the States make a recommendation. But it's not  
23 necessarily a requirement that the Secretary adopt what the  
24 States say.

25 In the case of the surplus guidelines, the States

1 made a recommendation, and we did not in fact do every --  
2 everything that the States recommended. We did most of the  
3 what the States recommended, but everything that they did  
4 were not actually done in the surplus guidelines.

5 So -- anyway. I -- I understand what you're  
6 saying. But they -- they kind of play a unique role. But  
7 we don't necessarily adopt exactly what they say. And we do  
8 take other concern -- you know, other perspectives into  
9 consideration as we move ahead.

10 TERRY FULP: Absolutely. Okay.

11 (The presentation by Terry Fulp was resumed.)

12 GARY HANSON: Well, you know, I would think that,  
13 you know, one of the upper basin's main concerns was the  
14 fact that, you know, they've been over -- they've been  
15 delivering more -- a lot of water over the last -- well, you  
16 know, just the hypothetical is that they've -- their --  
17 their releases are based on a ten-year average of releases.  
18 If they overdeliver in the front half, then -- then their  
19 claim initially was that they could underdeliver in -- in  
20 the second half of the ten-year period to -- to, you know,  
21 keep water in Powell.

22 How does that work out with this -- with their  
23 calculations on this?

24 TERRY FULP: That's a really good question.

25 This particular scenario in the technical analysis

1 that we did for them always meets that compact or that --  
2 let me just say it this way. Always meets the  
3 75-million-over-ten-year average -- period regulation or  
4 guideline or whatever you want to call that. These always  
5 made it under the hydrologies we've currently studied.

6 And I always throw that caveat in, because you  
7 could concoct perhaps some other input into the system that  
8 might violate that.

9 GARY HANSON: Well, last year, for example -- like  
10 last year for example when a huge amount of water went into  
11 Mead but not very much into Powell, and this -- did you  
12 include that -- that kind of -- you probably didn't. I  
13 mean, you probably went off your --

14 TERRY FULP: Yeah, that current year wasn't in our  
15 records yet by the time we were doing the studies. But we  
16 did include other -- there were some other pretty high  
17 lower-basin years. Not quite as high as that one, of  
18 course. That was the best in a hundred years we've seen.

19 By the way we do the future projections, we do  
20 look at all the historical data. So there was some years of  
21 high lower-basin hydrology in the analysis.

22 GARY HANSON: All right.

23 TERRY FULP: Similarly, in those years have  
24 combined really low years as we saw in 2002. That is part  
25 of this analysis. So --



1           But to answer your question, I think their goal  
2 was to find an operation that obviously doesn't violate the  
3 delivery obligation between the upper and lower basin. That  
4 was kind of a fundamental tenant, in my opinion, of as they,  
5 you know, tried to come up with this set of parameters, they  
6 wanted to make sure that was always satisfied; okay?

7           BOB JOHNSON: Doesn't the -- the 7.48, which  
8 would -- be well, no. You actually go down to 7 --

9           TERRY FULP: Yeah, when you're down here and  
10 balancing low, or even balancing here, Powell can go as low  
11 as 7 million acre foot per year of release.

12           It's the trade-off you just pointed out. You --  
13 to get the ten-year period to be 75 million, you can play  
14 around a little bit with given years; right? Doesn't have  
15 to be constant every year. And that's your point.

16           GARY HANSON: Right.

17           TERRY FULP: Yeah. Okay. Well, that's a lot. I  
18 know it is. And again, I think as Bob mentioned, you know,  
19 what we're up to internally now is to really look at what  
20 makes sense as the water managers on the system to see if,  
21 first of all, is the concept sound, and secondly, what --  
22 what sets of parameters might make even more sense than  
23 this.

24           STANLEY POLLOCK: Terry, I have a really -- I  
25 think it's kind of a dumb question.

1           TERRY FULP:  It's okay.

2           STANLEY POLLOCK:  I've never really quite  
3 understood the equalization requirement.  And what --  
4 what -- one thing that seems a little counterintuitive to me  
5 is that in many respects you would want to, it seems to me,  
6 to maximize your Powell storage over Mead on the assumption  
7 that you'd have a lower evaporation rate out of -- out of  
8 Powell.

9           I mean, I -- I see what's happening here when  
10 you -- as you approach more shortage conditions, then  
11 equalization requirement tends to go away, and I think  
12 perhaps that concept is built into that.

13           But, I mean, has anybody explored the idea of not  
14 visiting the equalization requirements and trying to  
15 maximize Powell's storage of a way to trying to increase the  
16 overall supply?

17           TERRY FULP:  Yes.  Through this technical work we  
18 did for the States at their request, we did look at that.  I  
19 didn't bring the evaporation rate numbers with me, so I  
20 probably won't be able to quote you the exact numbers.

21           But you are correct that Powell has lower rates of  
22 evaporation, but not substantially lower.  And so the kinds  
23 of analysis we did show that unless you can keep that water  
24 in there a really -- a fairly long period of time, your net  
25 gain in evaporational losses are not significant.

1           And we could provide you actual data, if you're  
2 interested, to show you that analysis.

3           STANLEY POLLOCK: I'm just curious -- you probably  
4 have --

5           TERRY FULP: It's a fundamental question we get.  
6 I think it's a very good question. But it was definitely  
7 looked at, because it was an idea that was definitely  
8 flowing around on the table.

9           Clearly if you had all that kind of storage way up  
10 high in the system where the evaporation rates are really  
11 low, it makes much more sense. Right.

12           And of course that was even a -- kind of a joke  
13 that's thrown around occasionally in the States' technical  
14 meeting was -- was just keep it all in Wyoming and we'll  
15 save it all.

16           BOB JOHNSON: That was the Wyoming proposal.

17           TERRY FULP: That was the Wyoming proposal, right.

18           But it's a very good, logical question. And  
19 again, we'd be glad to give you some real data on that.

20           STANLEY POLLOCK: Yeah, I'd like to see that  
21 because I'm curious, but ...

22           TERRY FULP: It's a very good question.

23           (The presentation by Terry Fulp was resumed.)

24           GARY HANSON: What's the -- has there been  
25 negotiation as far as Arizona taking the lowest -- their

1 lowest priority for the CAP? Have they negotiated any  
2 changes in that policy? Them --

3 TERRY FULP: Any changes between them and the  
4 other States, you mean?

5 GARY HANSON: Right.

6 TERRY FULP: No. What they did do, though, and I  
7 make sure that you all know, there was a public process held  
8 within Arizona, essentially by the Arizona Department of  
9 Water Resources, with their stakeholders to try to figure  
10 out what made sense in terms of this kind of what we've  
11 termed stepped shortage, but they didn't go past their  
12 state.

13 GARY HANSON: Okay. So their --

14 TERRY FULP: It was internal to their state.

15 GARY HANSON: They're doing a step shortage to try  
16 to mitigate the abrupt shortage that they would take.

17 TERRY FULP: You bet. To try to not, for  
18 instance, get into the M&I users where they would have to be  
19 sharing in the shortages. Minimize those chances of getting  
20 to those larger shortages.

21 We're saying the same thing, I think; right?

22 Yeah.

23 That's what they were trying to do with this idea.

24 BOB JOHNSON: It -- there -- there will not be any  
25 change in the CAP priority. That's just not going to

1 happen. I mean, I think Arizona has pushed pretty hard for  
2 that, but I think they've come to the realization that it's  
3 just not going to happen. California would never give that  
4 up.

5 I would just speculate that what the -- that these  
6 are fairly favorable shortage criteria for Arizona because  
7 they don't impose big shortages that can't be managed within  
8 the framework of the priorities of the Central Arizona  
9 Project. And I think that's one of the things that that's  
10 part of what Arizona's getting here I think out of this is  
11 some shortage criteria that's not Draconian in terms of its  
12 impacts.

13 TERRY FULP: Right.

14 BOB JOHNSON: Because they have to bear most of  
15 those impacts.

16 TERRY FULP: This particular step shortage came  
17 out of Arizona's public process. Essentially this was their  
18 recommendation to the States that this be the shortage. And  
19 Bob's right. I mean, these are what they think are  
20 manageable shortages.

21 BOB JOHNSON: The -- the -- some of the other  
22 States would probably prefer to see more significant  
23 shortages, you know, because the sooner you declare  
24 shortages the higher levels you hold the reservoir, the  
25 higher likelihood that the reservoirs will recover quickly,

1 and then they'll --

2 GARY HANSON: Well, I mean, the -- the other side  
3 of that is the fact that the Phoenix area has a lot of  
4 ground-water potential, has a lot of wells that they can  
5 turn on. And they -- they are in perhaps one of the best  
6 positions of all, the big cities, to have that mitigating  
7 alternative water source. So -- you know, that's definitely  
8 something to think about.

9 TERRY FULP: You bet. Yes, it is.

10 BOB JOHNSON: And that's very much central to the  
11 Arizona plan. I mean, they've actually -- that's a really  
12 central part of what Arizona has done over the last 10 or 15  
13 years, and that's developed a ground-water management  
14 strategy that assumes that when shortages occur, they've got  
15 that water source to fall back on.

16 And -- and, I mean, you understand that probably  
17 better than I do.

18 GARY HANSON: Not only just the banking, but the  
19 fact that they've got a whole lot of ground-water wells, and  
20 they had historically used a lot of ground water, and a lot  
21 of those wells are, you know, moth -- maybe "moth balled" is  
22 kind of a -- is too far over to the -- to the shutdown. But  
23 they could easily turn them back on.

24 BOB JOHNSON: Oh, absolutely. And that's their  
25 plan. Yeah.

1           TERRY FULP: Right.

2           STANLEY POLLOCK: Bob, when you say that under  
3 the -- under these criteria it's not likely that Arizona  
4 would basically have a -- a shortage on the municipal side,  
5 the one thing that I'm concerned about on that is in the  
6 pool of water that's available to the Secretary for  
7 settlement Indian water rights, that pool is with  
8 nonIndian-AG priority water.

9           And I'm just curious to what extent has Arizona  
10 and obviously Interior will have to look at the effect of  
11 these criteria on -- on those supplies, which are intended  
12 to be largely municipal water supplies but have a  
13 lower-than-municipal priority with CAP. And I was just  
14 curious whether anybody's looked at that particular issue  
15 yet.

16           BOB JOHNSON: Yes. Absolutely. That'll have to  
17 be something that's analyzed and considered, you know, into  
18 the EIS on what categories of CAP water.

19           There is a plan for dealing with that in the  
20 context of the Arizona settlement, and that is to do what  
21 the cities are doing and what the rest of Arizona is doing  
22 and put water in ground-water storage so that when that  
23 happens there's a source to fall back on to meet the Tribal  
24 needs that are part of their settlement. So we call it  
25 firming of the nonIndian.

1                   And that's actually provided for in the Arizona  
2 Settlement Act, and State's actually going to do some  
3 firming for the Tribes under that Act, and --

4                   STANLEY POLLOCK: Yeah, but I think in the Act not  
5 all water is firm; right?

6                   BOB JOHNSON: No, that's true. But it's still a  
7 tool there's there, you know, if you decided to do that, so  
8 I think it's still a tool that's there. But you're right.  
9 There is a chunk -- big chunk of that water is that the  
10 nonIndian AG priority you asked about. And it's, you know,  
11 a matter of concern. Something will have to be considered.

12                   TERRY FULP: Okay. Good. Other questions?

13                   At this point I'm going to try to fill in that  
14 in-between part of Lake Mead for you, and --

15                   GARY HANSON: Okay. You might be -- you're going  
16 to be talking about it, but that would be my question about  
17 Lake -- what do they do when they hit that 400,000 acre feet  
18 shortage? I mean, is there -- are there -- do they take  
19 ac- -- are there other actions that -- that -- that sort of  
20 open up the -- the supply of the -- you know, the -- the  
21 options for managing Mead, I guess.

22                   BOB JOHNSON: But in Arizona the AG use just  
23 doesn't take their share of the CAP water. That's what  
24 happens with -- at 400 and 600. 400 and 500 and 600.

25                   DEBBY SAINT: The 400 is pretty close to the



1 amount of Indian AG water available.

2 GARY HANSON: So you shut down the agriculture.

3 BOB JOHNSON: Right. That's actually provided for  
4 in the CAP contracts, the AG water supply.

5 GARY HANSON: Like I said, they got a lot of  
6 ground water. They can pump the ground water.

7 BOB JOHNSON: AG users will fall back on ground  
8 water and shortages go all the way to M&I, then urban waters  
9 would fall back on ground water. And I think ultimately the  
10 urban areas in Arizona, depending on the magnitude of  
11 shortage, would probably go to buying agricultural water.

12 GARY HANSON: Okay. So -- but is there any  
13 component that would be related to the conservation  
14 alternative that the -- that the conservation groups  
15 proposed?

16 TERRY FULP: Let me explain that real quick and  
17 see how -- and I think that's one of the things we will  
18 definitely study, and that is that the conservation groups,  
19 the environmental groups that proposed, what they said was  
20 they defined a couple levels above this shortage the onset  
21 of shortage and said at this level there would be 200,000  
22 acre feet of conservation applied to forestall you getting  
23 to the 1075 or whatever the shortage boundary is.

24 Now, their me- -- they went as far as to propose a  
25 mechanism for how to pay for that. And I'm not trying to

1 say we would -- we know what we'd do about anything like  
2 that. But this idea of putting in some mechanisms to  
3 promote conservation prior to getting to shortage sounds  
4 like a pretty good management idea.

5 And so we'll certainly be studying that -- that.  
6 Now, how you do it, again the mechanisms, we don't know, but  
7 forbearance certainly comes to mind. You know, people pay  
8 willing sellers to essentially rent the water for some  
9 period of time.

10 GARY HANSON: You know, if AG's going to take the  
11 hit for the -- for the -- for the shortage in Arizona, I  
12 would think that, you know, I mean, what you gotta do is you  
13 gotta figure out, "Okay. How much is it going to cost AG to  
14 turn on their pumps and switch to ground water? And what's  
15 it worth to users to try to forestall that shortage with  
16 some alternate payback method?"

17 I mean, that would seem to me -- I mean, because  
18 that's really what you're talking about here, how much is  
19 the alternative going to cost, whether it's -- is it going  
20 to cost -- you know, it's going to be more expensive to  
21 store water in Mead than to turn on the ground-water pumps.  
22 It's kind of the bottom line.

23 TERRY FULP: Right. Exactly. Okay. So now, what  
24 happens in --

25 BOB JOHNSON: So does the price.

10

11

1 (The presentation by Terry Fulp was resumed.)

2 GARY HANSON: Would that water be earmarked for  
3 the provider?

4 TERRY FULP: It would be. Under their proposal it  
5 would be earmarked for the provider, or the payer or  
6 whatever, yes.

7 GARY HANSON: Right. The payer.

8 TERRY FULP: Yes.

9 (The presentation by Terry Fulp was resumed.)

10 GARY HANSON: You know, I -- just off the top of  
11 my head I would think that augmentation is a real iffy deal  
12 compared to demand management, which is what you're talking  
13 about, you know. Because the demand management, you know  
14 the water's there and you just kind of make sure you don't  
15 use it this fast.

16 Augmentation's a -- you know, maybe the -- it's  
17 going to rain. We're cloud seating. Maybe not.

18 BOB JOHNSON: But on the ground-water piece, that  
19 would be very specific. But you know there's not going to  
20 be that much nonsystem supplies out there to go. They're  
21 going to be fairly small in terms of what you can get from  
22 the beginning --

23 GARY HANSON: But ground water's not really new  
24 water. They know it's there and they know that they can tap  
25 into it.

1                   BOB JOHNSON: It's new to the Colorado River  
2 System if it's introduced.

3                   GARY HANSON: Well, sure, if you put in the river.

4                   BOB JOHNSON: Which is part of what they're asking  
5 for.

6                   TERRY FULP: So again --

7                   BOB JOHNSON: I agree with your demand management  
8 is by far the biggest piece.

9                   TERRY FULP: What's Bob saying is this -- what  
10 they've proposed to us is put some flexible -- these  
11 mechanisms in -- a place that allow this to happen. And a  
12 lot of it makes good sense, as we can say, in terms of being  
13 prudent water managers and best balancing what you have in  
14 addition to perhaps auditing the supply.

15                   It's a much better way to operate if we don't have  
16 to wait till the reservoirs get low just to kick in  
17 guidelines at that point. You've got a lot better chance of  
18 doing the right thing if you can balance things prior to  
19 when the crisis hits.

20                   Okay. Any other -- can we answer some other  
21 questions at this point? I know it's a lot. And as you  
22 read this recommendation, you'll have lots of that -- more  
23 questions, I'm sure, of which we might or might not be able  
24 to answer them all at this stage. It's a fairly early  
25 proposal, I believe, in some sense. We're very pleased to

1 have received it. We do think there's some good input  
2 there. But as Bob pointed out, just as the NGO's and their  
3 conservation input, that was very valuable, as well, and  
4 ties in some sense very closely to this one.

5 (The presentation by Terry Fulp was resumed.)

6 CATHERINE CONDEN: So are you wanting additional  
7 comments from us before the scoping report comes out?

8 NAN YODER: We would --

9 CATHERINE CONDEN: It's gotta be pretty close  
10 to --

11 BOB JOHNSON: Not necessarily.

12 TERRY FULP: Thanks, Bob. Not necessarily .

13 BOB JOHNSON: If you want to, okay.

14 TERRY FULP: If you have them and can get them to  
15 us quick.

16 JOHN JAMROG: It would be problematic for us to  
17 get it tied into this scoping report at this time. But as  
18 Nan says, the initials ones are, so ...

19 NAN YODER: And that was our reason for having  
20 court reporters at the prior meetings, to actually capture  
21 anything that you could relay to us.

22 TERRY FULP: And just one further thing. I think  
23 you know it. We will accept your input at any time in the  
24 process. It's just that we have to at some point cut -- cut  
25 it off and say that's what's in the scoping report so we get

1 it out on the street. So --

2 BOB JOHNSON: You know when it might be really  
3 meaningful to meet with you would be once we've got  
4 alternatives formulated. Because the scoping report is  
5 probably not going to tell you -- not going to add a lot.

6 Now, you could -- what you could do is you could  
7 look at the scoping report and decide if you want a meeting  
8 at that time. But once we get alternatives formulated that  
9 we're going to do analysis on, I mean, that might be a time  
10 when there would be some real substance to talk about.

11 GEORGE ARTHUR: What was the time frame on the  
12 alternative?

13 BOB JOHNSON: We didn't give a specific.

14 TERRY FULP: We're saying it's two to three months  
15 out from now. So --

16 CATHERINE CONDEN: May?

17 TERRY FULP: May/June time frame, I think. And we  
18 could certainly as we get closer give you a much firmer date  
19 of when that will be. But it's that kind of time frame.

20 GEORGE ARTHUR: I don't know if there's any  
21 significant discussions happening that -- with the States as  
22 far as these type of dialogues are concerned, but we have a  
23 mid-year board meeting the first part of May, I think it  
24 was, with the Colorado River Water users, association  
25 meeting. So I don't know if that means anything as far

1 as -- anything as far as the time frame is concerned.

2 TERRY FULP: When was that again, did you say?

3 GEORGE ARTHUR: I think it's the first week of  
4 May.

5 TERRY FULP: Of May. You know, I -- we're a  
6 little hesitant to know we have all the alternatives really  
7 ready by then just because there's so much work. We can't  
8 quite define --

9 GEORGE ARTHUR: I don't know if the States -- I  
10 don't know if the States are going to put this on their  
11 mid-year calendar or not. I just don't.

12 GARY HANSON: They haven't so far. Pretty much  
13 kept it to, you know, within the -- behind-closed-door kind  
14 of deal.

15 TERRY FULP: We could certainly as we get closer  
16 to the development of alternatives interface with you, give  
17 you a date of when certain -- when they'll be ready. And I  
18 think Bob's got a pretty good idea there in that at that  
19 point it would be a for sure good time to sit down and  
20 explain them to you and answer any questions you have and  
21 get additional input from you in terms of those.

22 Was that -- would that make sense?

23 And again, when the scoping report comes out, if  
24 you have questions, please call us. And if we -- if you  
25 think we need anything at that point, we're willing to --

1 we'll welcome that and willing to do that.

2 GEORGE ARTHUR: Okay.

3 STANLEY POLLOCK: Let me try to describe from the  
4 Navajo perspective.

5 When any of the alternatives that we would look at  
6 that you would develop, I mean, our -- at the risk of  
7 sounding like a broken record, I'm -- we are very concerned  
8 that Reclamation needs to analyze how any of these  
9 alternatives fit within the concept of meeting Navajo needs  
10 of water from the California River and potential claims that  
11 Navajo would have.

16

12 And there's a couple of issues here. I mean,  
13 earlier Bob was talking about how with respect to the  
14 main-stem Tribes that have allocations of -- of main-stem  
15 water. Certainly Navajo's in that class with respect to the  
16 upper basin. But even in the upper basin we have water that  
17 is relatively junior, from both NIT (phonetic) and from ALP.  
18 And I know that Southern Ute is kind of in the same  
19 situation.

17

20 But an even bigger issue is in the lower basin  
21 where we don't have a quantified water right. The  
22 Reclamation study that Senator Kyle basically sponsored  
23 concluded that to meet Navajo municipal needs, it would be  
24 necessary to bring in Colorado River water, and virtually  
25 every study that they ever looked at it sort of acknowledges

18



1 this need.

2           What I'm concerned about is that each time we take  
3 one of these actions dealing with Colorado River management,  
4 we sort of -- the ability to meet those needs get narrower  
5 and narrower.

6           And when I look at the States' proposal here,  
7 there's a lot of extraordinary measures that are being  
8 proposed that in essence are narrowing the limits of the  
9 flexibility that is currently in the system. And as those  
10 limits become even more and more narrow, it's going to be  
11 even harder, I think, in the future to address the needs of  
12 Navajo.

13           And so in the -- Bob, in the initial letter we  
14 sent you, which I think was back in August -- yeah,  
15 August 31st, we were talking about needing to account for  
16 the outstanding needs and the outstanding claims.

17           And so that's something that -- that you're going  
18 to continue to hear from Navajo on, because we're concerned  
19 that as -- as these operations and the regulations develop,  
20 there will be even greater political pressure and  
21 institutional pressure to -- to in a sense assume that  
22 Navajo doesn't have these needs or Navajo doesn't have these  
23 claims, because those claims certainly put additional stress  
24 on the system.

25           And what we pointed out in our letter was when

19

20

1 we're talking about shortage criteria and ways of  
2 ameliorating the impact of shortages on the state, one of  
3 the great risks of shortage is the existence of those  
4 Navajo -- the very existence of those claims in a sense puts  
5 the States at risk of shortage.

21

6 So we think that it's really necessary to -- to  
7 come to some reconciliation with respect to what these  
8 claims and what those needs are. And we're not sure when  
9 that's going to happen. You know, we are in discussions  
10 with the United States and the State of Arizona concerning  
11 the main-stem claims. I don't -- I don't know what the --  
12 the long-range outlook looks for those negotiations.

22

13 But there again, when the State is talking to us  
14 about settling those claims, they are also talking about,  
15 you know, CAP water, and that's why I was asking the  
16 questions earlier about the CAP supplies and the priorities  
17 on that Indian AG --

18 So basically at Navajo you've got the full range  
19 of -- you've got claims, and the claims would be essentially  
20 prior perfected rights that would be like the other Tribes,  
21 and they would be senior water. You have settlement  
22 possibilities, and the settlement possibilities possibly  
23 include some mainstream water and possibly include some of  
24 that CAP allocation, which, again, we're concerned about how  
25 the shortage implicates that.

23

1           And then further upstream, like the other  
2 upper-basin tribes, we have concerns about protecting our  
3 water supplies in the event that there is curtailment in the  
4 upper basin to meet the past term Compact obligations.

5           So those are the types of things we'd like  
6 Reclamation to look at.

7           DEBBY SAINT: And you have that existing earmark  
8 of some of that water for --

9           STANLEY POLLOCK: That's true, as well.

10          DEBBY SAINT: -- for the Window Rock area. 6411.

11          STANLEY POLLOCK: Navajo Gallop. Right. And that  
12 is also part of the nonIndian AG supply pool, the 6411,  
13 so ...

14          So that's -- you know, that's where we're headed  
15 in terms of how we -- how we want to participate here in  
16 looking at all the alternatives and seeing -- hoping that  
17 there would be some assessment of those needs and how these  
18 needs can be protected in the development of any shortage  
19 criteria.

20          BOB JOHNSON: Understood. Expect there will be  
21 lots of others with similar kinds of concerns, and, you  
22 know, we want to hear them and make sure we're considering  
23 them.

24          GEORGE ARTHUR: Thanks.

25          BOB JOHNSON: Good. Well, thank you all. Thanks

1 for coming.

2 TERRY FULP: Yes. Thank you. We'll stay in close  
3 contact. And again, I referred you to our Web site. If you  
4 have access to that, you can at least track the progress.

5 We'll be putting information out there at all  
6 times, but we will definitely let you know as we get closer  
7 to the alternatives and when they'll be available, and we'll  
8 expect potentially to have a meeting at that point with --

9 BOB JOHNSON: Is that okay? We'll plan on one for  
10 sure, then. And if there's a desire in the interim after we  
11 put out the scoping report or something, then we'll open for  
12 that, too.

13 NAN YODER: If you've signed in on any of our  
14 public meeting sheets are here and the various things,  
15 you're on our mailing list. You'll get paper from us  
16 whether you want it or not.

17 STANLEY POLLOCK: That's fine.

18 NAN YODER: And also, if you gave us email  
19 addresses, you'll get email notices, as well.

20 STANLEY POLLOCK: Terrific.

21 CATHERINE CONDEN: So explain one more time.

22 What exactly is in the scoping report? Is it just  
23 the comments, basically, that you've received?

24 TERRY FULP: Yes. It's an analysis, the comments,  
25 categorize --

1           CATHERINE CONDEN: Oh, there's an analysis of it.

2           TERRY FULP: An analysis, categorize. It's not  
3 just the comment letter. It's a real analysis of it and  
4 some conclusions drawn, and particularly this conclusion  
5 that essentially our scope is a bit broader than what we  
6 initially thought it would be based on the input we've  
7 received. So it will be a -- an analysis and a conclusion  
8 of what that goal is to do.

9           CATHERINE CONDEN: Okay.

10          TERRY FULP: Okay. Great. Thank you all for  
11 coming.

12          GARY HANSON: Great. Thank you.

13          BOB JOHNSON: Good job, Terry. Thank you.

14          (Whereupon the presentation and meeting was  
15 concluded at 11:05 a.m.)

16

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25

1 STATE OF ARIZONA )  
 ) ss.  
2 COUNTY OF MARICOPA )

3 BE IT KNOWN that the foregoing Ten Tribes  
4 Partnership and U.S. Bureau of Reclamation Consultation  
5 Meeting was taken before me, RABIN' MONROE, RMR, CR, a  
6 Certified Reporter, No. 50653, in and for the County of  
7 Maricopa, State of Arizona; that the proceedings were taken  
8 down by me in machine shorthand and thereafter transcribed  
9 by computer-aided transcription under my supervision and  
10 direction; that the foregoing pages, numbered from 1 to 37,  
11 inclusive, constitute a true and accurate excerpt of all the  
12 proceedings had upon the taking of said meeting, all done to  
13 the best of my skill and ability.

14 I FURTHER CERTIFY that I am in no way related to  
15 any of the parties hereto, nor am I in any way interested in  
16 the outcome hereof.

17 DATED in Laveen, Arizona, this 2nd day of March,  
18 2006.

19  
20  
21  
22  
23  
24  
25

RABIN' MONROE, RMR, CR  
CR #50653

## **Appendix P**

### **Tribal Consultation Meeting Presentation**

# RECLAMATION

*Managing Water in the West*

## **Development of Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions**

Government-to-Government Meeting



U.S. Department of Interior  
Bureau of Reclamation

## **Shortage Guidelines and Management Strategies Government-to-Government Meeting**

- Welcome and Introductions
- Purpose of Meeting
- Background, Need, Setting
- Process
- Key Concepts
- Questions and Comments

RECLAMATION



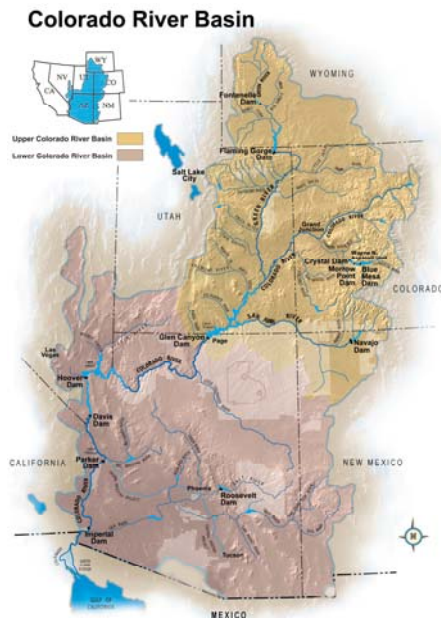
## Purpose of this Meeting

- Solicit comments on the formulation of alternatives for the development of:
  - Shortage guidelines for the Lower Basin (circumstances under which less than 7.5 million acre-feet would be delivered annually to the Lower Division States (Arizona, California, and Nevada))
  - Coordinated management strategies for the operations of Lake Powell and Lake Mead under low reservoir conditions
- Identify potential impacts to tribal trust resources as a result of the proposed action

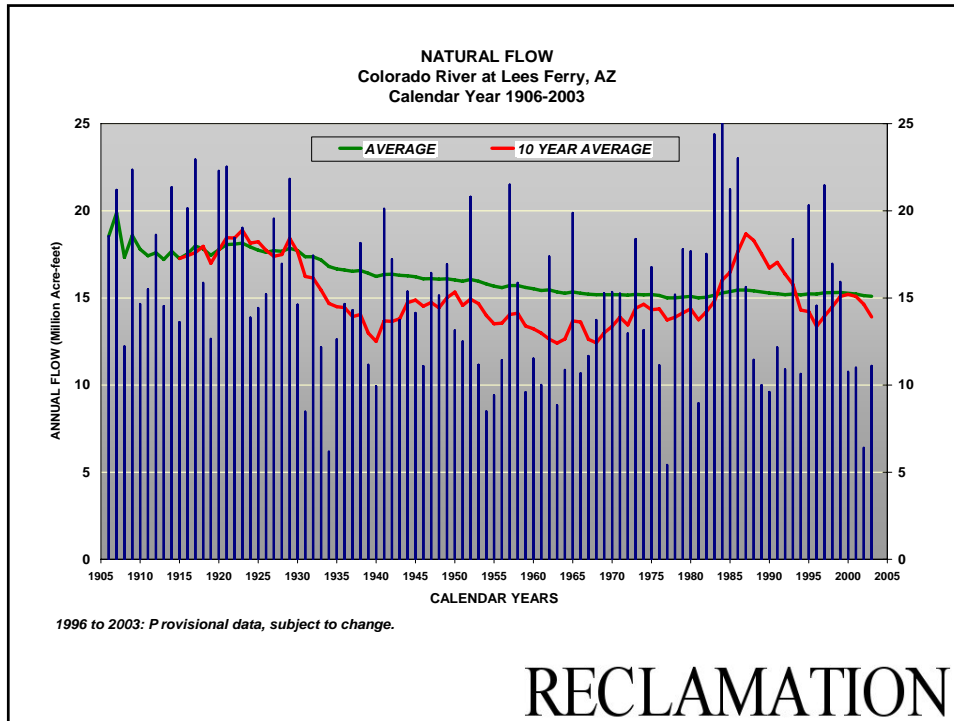
RECLAMATION

## Colorado River Basin Hydrology

- 16.5 million acre-feet (maf) allocated annually
- 13 to 14.5 maf of consumptive use annually
- 60 maf of storage
- 15.1 maf average annual “natural” inflow into Lake Powell over past 100 years
- Inflows are highly variable year-to-year



RECLAMATION



### Colorado River Basin Drought Water Year Unregulated Inflow to Lake Powell, 1999-2005

- 1999                    109 % of average
- 2000                    62 % of average
- 2001                    59 % of average
- 2002                    25 % of average
- 2003                    51 % of average
- 2004                    49 % of average
- 2005                    105 % of average

RECLAMATION

## Colorado River Basin Drought

- Inflows from 2000 through 2004 were the lowest in any five-year period in our 100-year historical record
- Inflows in 2005:
  - 105% of average in Upper Basin
  - Over 200% of average in Lower Basin
- System is now 59% full (was over 90% full in 1999)
- 2005 “rolled back” one year of the drought
- It is not unusual to have a few years of above average inflow during a sustained drought (e.g., the 1950’s)

RECLAMATION

## Setting and Need

- **Drought conditions have impacted storage in the Colorado River system**
- **Water use continues to increase**
- **The Secretary of the Interior may declare a shortage condition in the Lower Basin**
  - Delivery of less than 7.5 maf to Arizona, California, and Nevada
- **To date, there has never been a shortage in the Lower Basin and there are no shortage guidelines**
- **Guidelines will:**
  - Inform the Secretary’s decision in the Annual Operating Plan process
  - Provide a degree of certainty to the water users in the Lower Basin

RECLAMATION

## **Process**

- In 2004, the Secretary challenged the Basin States to develop a drought mitigation plan for the Colorado River Basin
- Basin States have been studying potential operational scenarios to lessen the impacts of drought conditions using Reclamation as a technical resource
- In May 2005, the Secretary directed Reclamation to engage in a process to develop guidelines for Lower Basin shortages and the operation of Lakes Powell and Mead under low reservoir conditions
- The process must be completed by December 2007

**RECLAMATION**

## **Process (cont.)**

- **Public Consultation** (June 15 – August 30, 2005)
  - Solicited comments on content, format, mechanisms and analysis to be considered to address drought and other management challenges
  - Comments received:
    - 149 unique comments (posted on Reclamation web site)
    - Considering these comments in our project planning efforts

**RECLAMATION**

### **Process (cont.)**

- Public Scoping Period (September 30 – November 30, 2005)
  - Initiating environmental review pursuant to NEPA
  - Holding public scoping meetings
  - Soliciting comments on the development of alternatives for guidelines and strategies
  - Comments that are received will:
    - Advise alternatives development and analysis
    - Be summarized in a report made available in February, 2006

RECLAMATION

### **Process (cont.)**

- Initiate government-to-government consultation
- Discuss how consultation should proceed
- Identify potential impact to tribal trust resources
- Identify issues of tribal concern

RECLAMATION

## **Schedule**

- **JUN 2005** – FR notice initiating public process
- **SEP 2005** – FR notice to initiate NEPA and scoping of issues and alternatives
  - 60-day comment period
  - Public meetings
- **JAN 2006** – Govt-to-Govt Consultation initiated
- **FEB 2006** – Scoping report
- **DEC 2006** – DEIS available to public
- **OCT 2007** – FEIS available to public
- **DEC 2007** – Record of Decision

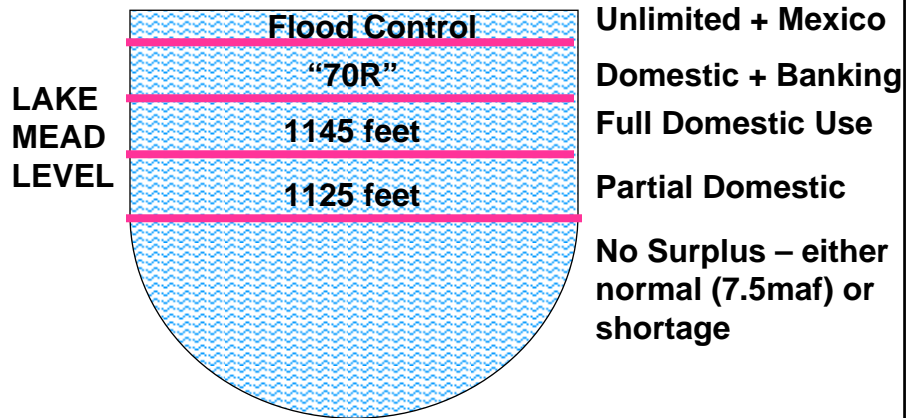
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## **Key Concepts**

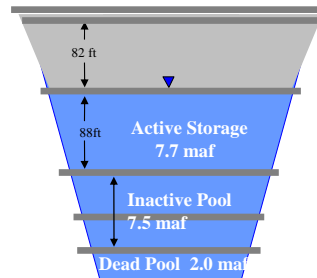
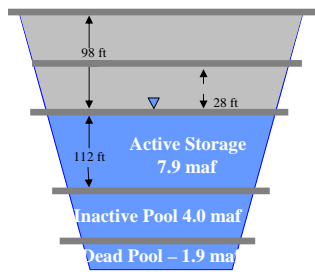
- Operating Guidelines
- Coordinated Reservoir Management
- Shortage in the Lower Basin

RECLAMATION

**Interim Surplus Guidelines**  
(example of operating guidelines)

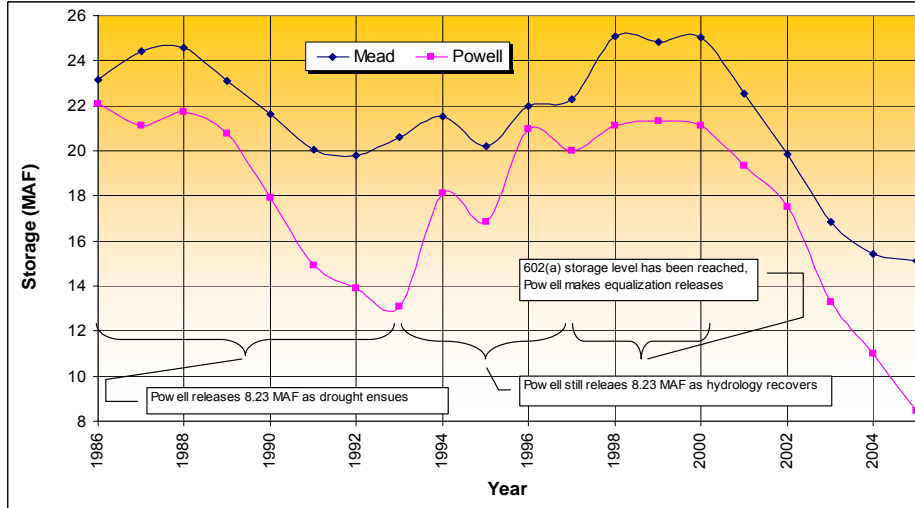


RECLAMATION



RECLAMATION

## Coordinated Operations Example



RECLAMATION

## Mass Balance at Lake Mead

- Given current demands in the Lower Basin (including Mexico), and minimum objective release from Lake Powell, Lake Mead storage will continue to decline
  - Inflow (release from Powell + side inflows) = 9.0 maf
  - Outflow (LB and Mexico apportionments + downstream regulation, gains and losses) = - 9.5 maf
  - Mead evaporation loss = - 0.8 maf
  - Balance = - 1.3 maf

RECLAMATION



### **Shortage in the Lower Basin**

- In the Lower Basin, the Secretary as Watermaster, may declare a shortage – delivery of less than 7.5 maf to the Lower Division States (Arizona, California, and Nevada)
- To date, there has never been a shortage in the Lower Basin and there are currently no shortage guidelines
- Trade-offs when a shortage exists:
  - Magnitude
  - Duration

**RECLAMATION**

**Questions?**

**RECLAMATION**

## Comments

- Submit comments/suggestions on:
  - Formulation of alternatives for the development of:
    - Shortage guidelines for the Lower Basin (circumstances under which less than 7.5 maf would be delivered annually to the Lower Division States (Arizona, California, and Nevada))
    - Coordinated management strategies for the operations of Lake Powell and Lake Mead under low reservoir conditions
  - Potential impacts to tribal trust resources
  - Other issues or factors that need to be considered in study

RECLAMATION

## Comments

- submit by mail, faxogram or e-mail

**Regional Director**  
**Bureau of Reclamation**  
**Lower Colorado Region**  
**Attention: BCOO-1000**  
**P.O. Box 61470**  
**Boulder City, Nevada**  
**89006-1470**  
fax number 702-293-8156  
e-mail: [strategies@lc.usbr.gov](mailto:strategies@lc.usbr.gov)

**Regional Director**  
**Bureau of Reclamation**  
**Upper Colorado Region**  
**Attention: UC-402**  
**125 South State Street**  
**Salt Lake City, Utah**  
**84318-1147**  
fax number 801-524-3858  
e-mail: [strategies@uc.usbr.gov](mailto:strategies@uc.usbr.gov)

RECLAMATION



**Development of Lower Basin Shortage  
Guidelines and Coordinated Management  
Strategies for Lake Powell and Lake Mead  
Under Low Reservoir Conditions**

**Project website: <http://www.usbr.gov/lc/riverops.html>**



**RECLAMATION**

# **Appendix Q**

## **February 3, 2006, Proposal from Colorado River Basin States**

### **Q.1 Letter to the Secretary of the Interior**

**The States of Arizona, California, Colorado, Nevada,  
New Mexico, Utah and Wyoming  
Governor's Representatives on Colorado River Operations**

February 3, 2006

Honorable Gale A. Norton, Secretary  
Department of the Interior  
1849 C. Street, NW  
Washington, D.C. 20240

Re: Development of Lower Basin Shortage Guidelines and Coordinated Management Strategies for the Operation of Lake Mead and Lake Powell Under Low Reservoir Conditions

Dear Secretary Norton:

The materials attached to this letter contain descriptions of the programs that the seven Colorado River Basin States suggest be included within the scope of the environmental impact statement (EIS) for the proposed *Colorado River Reservoir Operations: Development of Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions* (70 Fed. Reg. 57322) (Sept. 30, 2005).

The Basin States, Bureau of Reclamation and others have consulted regularly since our previous correspondence on August 25, 2005 to further discuss and refine recommended management strategies for the Colorado River system. Subsequently, individual entities within the seven Basin States submitted oral and written comments to the Bureau of Reclamation on the above-referenced EIS process. Attachment A, "Seven Basin States' Preliminary Proposal Regarding Colorado River Interim Operations," is submitted as a consensus document on behalf of the seven Basin States. Please recognize that the States are still actively working on the matters addressed in this submission and anticipate further refinement.

Our recommendation is designed to provide input for the Department's consideration as it develops additional operational and water accounting procedures to: 1) delay the onset and minimize the extent and duration of shortages in the Lower Division States; 2) maximize the protection afforded the Upper Division States by storage in Lake Powell against possible curtailment of Upper Basin uses; 3) provide for more efficient, flexible, responsive and reliable operation of the system reservoirs for the benefit of both the Upper and Lower Basins by developing additional system water supplies through extraordinary conservation, system efficiency and augmentation projects; 4) allow the continued development and use of the Colorado River resource in both the Upper and Lower Basins; and 5) allow for development of dedicated water supplies through participation in improvements to system efficiency and clarification of how to proceed with development of non-system water reaching the Lower Basin

The Honorable Gale A. Norton

February 3, 2006

Page 2 of 3

mainstream. It is our position that implementation of these operational and accounting procedures can be accomplished without modification of the Long Range Operating Criteria or other elements of the law of the river. 2

The States' attached proposal incorporates an approach to shortage management. Additionally, the proposal includes modification and extension of the Department's Interim Surplus Guidelines to incorporate operations for all reservoir conditions.

The attached proposal also addresses the States' recommended approach to implementation of shortages pursuant to the U.S.-Mexico Treaty of 1944. We request that the Department of the Interior initiate, at the earliest appropriate time, consultation with the U.S. Section of the International Boundary and Water Commission and the U.S. Department of State on implementation of Treaty shortages. We further request the opportunity to consult with Interior and State Department officials on this issue as the federal government formulates its approach to any bi-national consultation with Mexico. 3

An agreement between Basin State water managers and users will be necessary to put in place additional terms upon which they have reached common understanding. We intend that this agreement be finalized while Reclamation is preparing the draft EIS, and be executed as soon as practicable. We are including with this letter a draft version of the agreement (Attachment B), to memorialize our current understandings and to provide you the benefits of our thoughts at this time. As with Attachment A, please recognize that the parties are still actively working on the matters addressed in Attachment B, and contemplate additional development and refinement of the agreement. We recognize that timely execution of our agreement is necessary in order to allow funding of certain efficiency projects to go forward.


During the time Reclamation is preparing the draft EIS, the States will move forward with a package of other actions that include implementation of a demonstration program for extraordinary conservation in 2006, system efficiency projects, preparation of an action plan for system augmentation through weather modification, execution of a memorandum of understanding for preparing a Lower Division States interstate drought management plan, development of forbearance agreements among the Lower Division States and the initiation of a study for long-term augmentation of Colorado River system water supplies. The States have already begun the consultant procurement process to support the long-term augmentation study, and intend to complete a weather modification action plan and a memorandum of understanding for interstate drought planning as soon as practicable. The Basin States recognize that Reclamation is undertaking NEPA compliance separately to determine whether to construct a regulating reservoir near Drop 2 of the All-American Canal and urge swift completion of that process. 4

We appreciate the opportunity you have provided for the Colorado River Basin States to recommend to you a program of reservoir management that considers all their respective concerns and interests. The Basin States look forward to working with you and Reclamation in analyzing and addressing these matters.

Sincerely,



Herb Guenther  
Director  
Arizona Department of Water Resources



Gerald R. Zimmerman  
Executive Director  
Colorado River Board of California



Scott Balcomb  
Governor's Representative  
State of Colorado



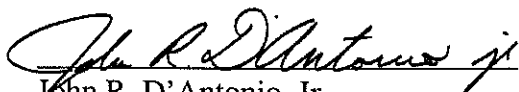
Rod Kuharich  
Director  
Colorado Water Conservation Board



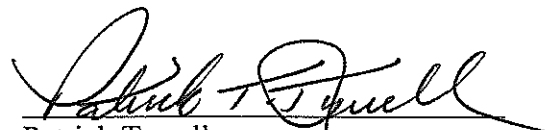
Richard Bunker  
Chairman  
Colorado River Commission of Nevada



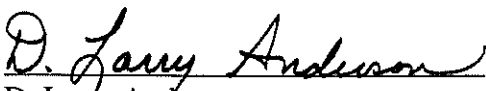
Patricia Mulroy  
General Manager  
Southern Nevada Water Authority



John R. D'Antonio, Jr.  
Governor's Representative  
State of New Mexico



Patrick Tyrrell  
State Engineer  
State of Wyoming



D. Larry Anderson  
Director  
Utah Division of Water Resources

List of Attachments:

Attachment A: Seven Basin States' Preliminary Proposal Regarding Colorado River Interim Operations

Attachment B: Draft Agreement

# **Appendix Q**

## **February 3, 2006, Proposal from Colorado River Basin States**

### **Q.2 Attachment A – Preliminary Proposal**



**ATTACHMENT A**  
**Seven Basin States' Preliminary Proposa Regarding Colorado River Interim Operations**

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The Seven Basin States (States) have worked together to recommend interim operations to the Secretary that should minimize shortages in the Lower Basin and avoid the risk of curtailment in the Upper Basin through conservation, more efficient reservoir operations, and long-term alternatives to bring additional water into the Colorado River community.

The States' recommendation has three key elements. First, the States propose to manage the reservoirs to minimize shortages and avoid curtailments. Second, the States have identified actions in the Lower Basin to conserve water. Third, the States recommend a specific proposal for implementing shortages in the Lower Basin. Finally, the States recognize the need for additional water supplies to meet the current and future needs in the Basin.

**Section 1. Allocation of Unused Basic Apportionment Water under Article II(B)(6)**

A. Introduction

Article II(B)(6) of the 1964 Decree in *Arizona v. California* (Decree) allows the Secretary to allocate water that is apportioned to one Lower Division State, but is for any reason unused in that State, to another Lower Division State. This determination is made for one year only and no rights to recurrent use of the water accrue to the State that receives the allocated water.

B. Application of Unused Basic Apportionment

Before making a determination of a surplus condition under this proposal, the Secretary will determine the quantity of apportioned but unused water under Article II (B)(6), and will allocate such water in the following order of priority.

1. Meet the direct delivery domestic use requirements of the Metropolitan Water District of Southern California, (MWD) and the Southern Nevada Water Authority (SNWA), as allocated between them by agreement.
2. Meet the needs of off stream banking activities by MWD in California and SNWA in Nevada, as allocated between them by agreement.
3. Meet the other needs for water in California in accordance with the California Seven-Party Agreement as supplemented by the Quantification Settlement Agreement.

**Section 2. Coordinated Operation of Lakes Powell and Mead**

Figure 1 describes the operating strategy that has been agreed to by the Colorado River Basin States.

5

6

**ATTACHMENT A**  
**Seven Basin States' Preliminary Proposa Regarding Colorado River Interim Operations**

<b>Powell Elevation (feet)</b>	<b>Powell Operation</b>	<b>Powell Live Storage (maf)</b>
<b>3700</b>	Equalize or 8.23 maf	<b>24.32</b>
<b>3636 - 3664</b> (see table below)	8.23 maf; if Mead < 1075 feet, balance contents with a min/max release of 7.0 and 9.0 maf	<b>15.54- 19.02</b> (2008 - 2025)
<b>3575</b>	7.48 maf	<b>9.52</b>
<b>3525</b>	8.23 maf if Mead < 1025 f	<b>5.93</b>
<b>3370</b>	Balance contents with a min/max release of 7.0 and 9.5 maf	<b>0</b>

6

Lake Powell Equalization Elevation Table

In each of the following years, the Lake Powell Equalization Elevation will be as follows:

Year	Elevation (feet)
2008	3636
2009	3639
2010	3642
2011	3643
2012	3645
2013	3646
2014	3648
2015	3649
2016	3651
2017	3652
2018	3654
2019	3655
2020	3657
2021	3659
2022	3660
2023	3662
2024	3663
2025	3664

**ATTACHMENT A**  
**Seven Basin States' Preliminary Proposa Regarding Colorado River Interim Operations**

---

1. Equalization: In years when Lake Powell content is projected on January 1 to be at or above the elevation stated in the Lake Powell Equalization Elevation Table, an amount of water will be released from Lake Powell to Lake Mead at a rate greater than 8,230,000 acre-feet per year to the extent necessary to equalize storage in the two reservoirs, or otherwise to release 8,230,000 acre-feet from Lake Powell.
2. Upper Elevation Balancing: In years when Lake Powell content is projected on January 1 to be below the elevation stated in the Lake Powell Equalization Elevation Table and at or above 3575 ft., the Secretary shall release 8,230,000 acre-feet from Lake Powell if the projected elevation of Lake Mead is at or above 1075 ft. If the projected elevation of Lake Mead is below 1075 ft., the Secretary shall balance the contents of Lake Mead and Lake Powell, but shall release no more than 9,000,000 acre-feet and no less than 7,000,000 acre-feet from Lake Powell.
3. Mid-Elevation Releases: In years when Lake Powell content is projected on January 1 to be below 3575 ft. and at or above 3525 ft., the Secretary shall release 7,480,000 acre-feet from Lake Powell if the projected elevation of Lake Mead is at or above 1025 ft. If the projected elevation of Lake Mead is below 1025 ft., the Secretary shall release 8,230,000 acre-feet from Lake Powell.
4. Lower Elevation Balancing: In years when Lake Powell content is projected on January 1 to be below 3525 ft., the Secretary shall balance the contents of Lake Mead and Lake Powell, but shall release no more than 9,500,000 acre-feet and no less than 7,000,000 acre-feet from Lake Powell.

6

Coordinated Operation of Lakes Powell and Mead as described herein will be presumed to be consistent with the Section 602(a) storage requirement contained in the Colorado River Basin Project Act.

The objective of the operation of Lakes Powell and Mead as described herein is to avoid curtailment of uses in the Upper Basin, minimize shortages in the Lower Basin and not adversely affect the yield for development available in the Upper Basin.

The August 24-month study projections for the January 1 system storage and reservoir water surface elevations, for the following year, would be used to determine the applicability of the coordinated operation of Lakes Powell and Mead.

**Section 3. Determination of Lake Mead Operation during the Interim Period**

- A. Interim Surplus Guidelines

7

**ATTACHMENT A**  
**Seven Basin States' Preliminary Proposa Regarding Colorado River Interim Operations**

---

1. The Basin States recommend that the Secretary continue to implement the Interim Surplus Guidelines (ISG) except as modified by this proposal, including the following:
  - a. Partial Domestic Surplus would be discontinued upon issuance of the Record Of Decision (“ROD”); and
  - b. The ISG effective period would be extended through December 31, 2025.
  
2. During the years 2017 through 2025 the Secretary shall distribute Domestic Surplus water:
  - a. For use by MWD, 250,000 acre-feet per year in addition to the amount of California’s basic apportionment available to MWD.
  - b. For use by SNWA, 100,000 acre-feet per year in addition to the amount of Nevada’s basic apportionment available to SNWA.
  - c. For use in Arizona, 100,000 acre-feet per year in addition to the amount of Arizona’s basic apportionment available to Arizona contractors.

7

**B. Flood Control Surplus**

In years in which the Secretary makes space building or flood control releases pursuant to the Field Working Agreement, the Secretary shall determine a Flood Control Surplus for the remainder of that year or the subsequent year as specified in Section 7 of the ISG. In such years, releases will be made to satisfy all beneficial uses within the United States, including unlimited off-stream banking. Intentionally Created Surplus credits, as defined herein, would be reduced by the amount of any flood control release, if necessary until no credits are remaining. Under current practice, surplus declarations under the Treaty for Mexico are declared when flood control releases are made. Operation under a Flood Control Surplus does not establish any determination relating to implementation of the Treaty, including any potential changes in approach relating to surplus declarations under the Treaty. Such determinations must be addressed in a bilateral fashion with the Republic of Mexico.

**C. Quantified Surplus  
(70R Strategy)**

In years when the Secretary determines that water should be released for beneficial consumptive use to reduce the risk of potential reservoir spills based on the 70R Strategy, the Secretary shall determine and allocate Quantified Surplus sequentially as follows:

1. Establish the volume of the Quantified Surplus. For the purpose of determining the existence, and establishing the volume, of Quantified

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Surplus, the Secretary would not consider the volume of Intentionally Created Surplus credits, as defined herein.

2. Allocate and distribute the Quantified Surplus 50% to California, 46% to Arizona and 4% to Nevada, subject to 3. through 5. that follow.
3. Distribute California's share first to meet basic apportionment demands and MWD's demands. Then distribute to California Priorities 6 and 7 and other surplus contracts. Distribute Nevada's share first to meet basic apportionment demands and SNWA's demands. Distribute Arizona's share to surplus demands in Arizona including off stream banking and interstate banking demands. Arizona, California and Nevada agree that Nevada would get first priority for interstate banking in Arizona.
4. Distribute any unused share of the Quantified Surplus in accordance with Section 1, Allocation of Unused Basic Apportionment Water Under Article II (B)(6).
5. Determine whether MWD, SNWA and Arizona have received the amount of water they would have received under Section 3 D of this proposal, Domestic Surplus, if a Quantified Surplus had not been declared. If they have not, then determine and meet all demands provided for in Section 3 D, Domestic Surplus.

**D. Domestic Surplus**

In years when Lake Mead elevation is projected on January 1 to be above 1145 ft and below 70R Strategy elevation determination, the Secretary would determine a Domestic Surplus in accordance with Section 2(B)(2) of the ISG between the effective date of the ROD and December 31, 2016 and in accordance with Section 3(A) (2) of this proposal between January 1, 2017 and December 31, 2025.

**E. Normal Conditions**

In years when Lake Mead elevation is projected on January 1 to be above elevation 1075 ft. and below 1145 ft., the Secretary would determine a normal operating condition. In any year when Lake Mead elevations are in this range, the Secretary may determine that Intentionally Created Surplus ("ICS") as described in Section 4 of this proposal is available. ICS credits may then be delivered pursuant to the provisions of Section 4.

**F. Shortage Conditions**

Shortages would be implemented in the Lower Division States and Mexico under the following conditions and in the following manner:

1. 400,000 acre foot shortage: In years when Lake Mead content is projected on January 1 to be at or below elevation 1075 ft. and at or above 1050 ft.,

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a quantity of 400,000 acre-feet shall not be released or delivered in the Lower Division States and Mexico.

2. 500,000 acre foot shortage: In years when Lake Mead content is projected on January 1 to be below elevation 1050 ft. and at or above 1025 ft. a quantity of 500,000 acre-feet shall not be released or delivered in the Lower Division States and Mexico.
3. 600,000 acre foot shortage: In years when Lake Mead content is projected on January 1 to be below 1025 ft., a quantity of 600,000 acre-feet shall not be released or delivered in the Lower Division States and Mexico.
4. The three conditions described above are illustrated in Figure 2.

Figure 2

Lake Mead Step Shortage		
Mead Elevation (ft)	Stepped Shortage	Mead Live Storage
1075 to 1050	400 kaf	9.37 to 7.47 maf
<1050 to 1025	500 kaf	7.47 to 5.80 maf
<1025 to 1000	600 kaf	5.80 to 4.33 maf
<1000	Increased reductions to be consistent with consultation(s)	<4.33 maf

5. The United States, through the appropriate mechanisms, should implement a shortage pursuant to Article 10 of the 1944 Treaty in any year in which the Secretary has declared that a shortage condition exists pursuant to Art. II(B)(3) of the Decree. The total quantity of water that will not be released or delivered to Mexico shall be based on Lower Basin water deliveries during normal water supply conditions. The proportion of the shortage that shall be borne by Mexico will be 17% ( $1.5 \text{ maf} / 9 \text{ maf} \times 100\% = 17\%$ ).
6. Arizona and Nevada will share shortages based on a shortage sharing agreement. In the event that no agreement has been reached, Arizona and Nevada will share shortages in accordance with the 1968 Colorado River Basin Project Act, the Decree, other existing law as applicable, and the Interstate Banking Agreement between Arizona and Nevada parties.
7. Whenever Lake Mead reaches elevation 1025 ft., the Secretary will consult with the States to determine whether Colorado River hydrologic conditions, together with the delivery of 8.4 million acre-feet of Colorado River water to Lower Basin users and Mexico, will cause the elevation of Lake Mead to fall below 1000 ft. Upon such a determination, the

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Secretary shall consult with the states to discuss further measures that may be undertaken to avoid or reduce further increases in shortage determinations. If increased reductions are required, the Secretary shall implement the reductions consistent with the law of the river.

8. The States will evaluate factors at critical elevations that may avoid shortage determinations as reservoir elevations approach critical thresholds. The States may provide operational recommendations surrounding the critical elevations at some later date.

**Section 4. System Efficiency, Extraordinary Conservation and Augmentation Projects**

The States propose that the Secretary develop a policy and accounting procedure concerning augmentation, extraordinary conservation, and system efficiency projects, including specific extraordinary conservation projects, tributary conservation projects, introduction of non-Colorado River System water, system efficiency improvements and exchange of non-Colorado River System water. The accounting and recovery process would be referred to as “Intentionally Created Surplus” consistent with the concept that the States will take actions to augment storage of water in the Lower Colorado River Basin. The water would be distributed pursuant to Section II(B)(2) of the Decree and forbearance agreements between the States. The ICS credits may not be created or released without such forbearance agreements.

- A. The purposes of the Lake Mead Intentionally Created Surplus (“ICS”) program are to:
  1. Help avoid shortages to the Lower Basin. For the purposes of determining calendar year declarations of Domestic Surplus, Normal and Shortage conditions, any ICS credits would be considered system water;
  2. Benefit both Lake Mead and Lake Powell; and
  3. Increase the surface elevations of both Lakes Powell and Mead to higher levels than would have otherwise occurred.
- B. Extraordinary Conservation Storage Credits
  1. Users of Colorado River water may create ICS credits through extraordinary conservation under the following conditions:
    - a. A Boulder Canyon Project Act Section 5 Contractor (“Contractor”) shall repay all outstanding system payback obligations before it can create ICS credits.
    - b. ICS credits can only be created if such water could have otherwise been beneficially used.

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- c. A Contractor notifies Reclamation by September 15 of the amount of ICS credits it wishes to create for the subsequent year.
2. ICS credits may be created only through extraordinary conservation activities. These activities include:
  - a. Fallowing of land that currently is, historically was, and otherwise would have been in the next year, irrigated.
  - b. Canal lining programs
  - c. Desalination programs
  - d. Extraordinary conservation programs existing as of January 1, 2006
  - e. Other extraordinary conservation measures as agreed upon by the States
3. If conditions during the year change due to weather or other unforeseen circumstances, a Contractor may request a mid-year modification of its water order to reduce the amount of ICS credits created during that year. A Contractor cannot increase the amount of ICS credits it had previously scheduled to create during the year.
4. Any ICS credits would be used first to offset any overrun for that year or future year(s).
5. The maximum amount of ICS credits that can be created during any year through extraordinary conservation is limited to each state as listed below.
  - a. California: 400,000 acre-feet per year
  - b. Nevada: 125,000 acre-feet per year
  - c. Arizona: 100,000 acre-feet per year
6. The maximum cumulative amount of ICS credits created through extraordinary conservation that would be available at any one time is:
  - a. 1,500,000 acre-feet for California;
  - b. 300,000 acre-feet for Nevada; and
  - c. 300,000 acre-feet for Arizona.
7. No category of surplus water can be used to create ICS credits.



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8. At the time the ICS credits are created by extraordinary conservation, the Contractor will dedicate 5% of the ICS credits to the system on a one-time basis to provide a water supply benefit to the system. Additionally, ICS credits will be subject to annual evaporation loss (estimated to be no more than 3% annually) during each year in which no shortage has been declared. The Secretary will not assess any other charge for creating ICS credits.
9. Contractors that have created ICS credits may recover them under the following conditions:
  - a. A Contractor may request delivery of ICS credits it has created at the time it submits its annual water order for the following year. The ICS credits would be added to the Contractor's approved water order for that year upon approval by Reclamation.
  - b. The amount of ICS credits that may be recovered by California in any one year is limited to 400,000 acre-feet, by Nevada 300,000 acre-feet and Arizona 300,000 acre-feet; provided that the May 1, 24-month study for that year does not indicate that a shortage condition would be declared in the current or succeeding year.
  - c. If extraordinary weather conditions or water emergencies occur, a Contractor may request that Reclamation increase its use of ICS credits for that year.
  - d. A Contractor may request to reduce its use of ICS credits during the year for any reason, including reduction in water demands.
  - e. If Reclamation releases water for flood control purposes, ICS credits shall be reduced on a pro-rata basis among all holders of ICS credits-- if necessary until no credits remain. In determining the amount of Quantified Surplus, Reclamation shall not consider the volume of ICS credits that will be available.
10. Contractors may begin to create ICS through extraordinary conservation 1) beginning in 2006 as a pilot program (which may be lost if the Secretary does not adopt an extraordinary conservation program as part of the Coordinated Operation of Lakes Powell and Mead) or 2) after adoption of the Coordinated Operation for Lakes Powell and Mead until 2025. Any ICS credits under this program remaining at the end of the program would remain available for recovery for up to 10 years following termination of the Program.

**C. Tributary Conservation**

The Secretary should develop procedures in consultation with the States that would permit Contractors to purchase and fallow annual or permanent water rights on tributaries

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within the Lower Division States that have been used for a significant period of years and were created prior to Congress' adoption of the Boulder Canyon Project Act that, when retired, and verified by the Secretary, contribute water to the Colorado River mainstream for diversion by the Contractor. The water recovered by the Contractor may be used for municipal and industrial purposes only. This water would be in addition to the State's basic apportionment and would be available during declared shortages.

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It is intended that the water would be taken on a real-time basis and that not more than 95% of such water will be recovered; however, if storage were required, such stored water would be subject to all provisions applicable to ICS credits created through extraordinary conservation.

**D. System Efficiency Projects**

A Contractor may make contributions of capital to the Secretary for use in Secretarial projects designed to realize efficiencies that save water that would otherwise be lost from the Colorado River System in the United States. The Secretary in consultation with the States will identify system efficiency projects, terms for capital participation in such projects, and types and amounts of benefits the Secretary would provide in consideration of non-federal capital contributions to system efficiency projects, including a portion of the water saved by the project. Water made available to Contractors by the Secretary would be considered Intentionally Created Surplus. System efficiency projects are only intended to provide temporary water supplies and would not be available for permanent use.

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Benefits to the total water available within the Colorado River System in the United States should be substantial, taking into account any benefit provided to any non-federal capital contributor. In those cases in which benefits are provided to a non-federal capital contributor in the form of a portion of the water saved by the system efficiency project, the water provided to the capital contributor should be characterized as Colorado River surplus water intentionally created by the system efficiency project. The ICS credits should be provided to the capital contributor pursuant to its BCPA § 5 surplus contract. The Secretary should first obtain the waiver or forbearance of any other BCPA § 5 surplus contractor(s) that may possess any right to the delivery of the same water, so that the Secretary may deliver it to the capital contributor pursuant to Article II (B)(6) of the Decree. The ICS credits should be provided to the capital contributor on a predetermined schedule of annual deliveries for a period of years as agreed by the Secretary and Contractor. The ICS credits would not be stored, and therefore would not spill from system reservoirs. Delivery of ICS credits during shortage conditions will be determined on a project-by-project basis.

**E. Introduction and Recovery of Non-Colorado River System Water**

The Secretary should develop procedures, in consultation with the States, that would prospectively allow non-Colorado River System water in a Lower Division State to be introduced into, conveyed through, and diverted from system reservoirs, or otherwise through the Colorado River System. The non-Colorado River System water may be

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introduced either (1) directly from the non-Colorado River System source, or (2) as effluent resulting from use of the non-Colorado River System water in the introducing entity's service area, assuming water quality concerns are adequately addressed by the Contractor introducing the water. This water is in addition to a state's basic apportionment and may be used during declared shortages.

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Contractors proposing to introduce, convey and recover such non-Colorado River System water should make sufficient arrangements, contractual or otherwise, with the Secretary so as to guarantee that any such action causes no harm to the Secretary's management of the Colorado River System. Such arrangements would provide that the introduction, conveyance and recovery of such water be done pursuant to appropriate permits or other authorizations as required by state law, that the actual amount of water introduced, conveyed and recovered would be reported to the Secretary on an annual basis, and that no more than 95% of such water introduced will be recovered. The non-Colorado River System water would be intended to be taken on a real-time basis, and hence would not spill from system reservoirs. However, if storage were required such stored water would be subject to all provisions applicable to ICS created through extraordinary conservation. Any agreements made with the Secretary to introduce and recover this water will survive the termination of the Coordinated Operations of Lakes Powell and Mead.

Weather modification projects should be pursued as a means of augmenting Colorado River System water supplies. However, increases in water supply that result from weather modification projects are not included within the projects defined in this Section and would not create any additional supply for a Contractor or State that engages in a weather modification project.

**Section 5. Non-Colorado River System Water Exchanges**

Contractors in Arizona, California, or Nevada may secure an additional water supply by funding the development of a non-Colorado River System water supply in one Lower Division State for use in another State by exchange. The new water supply developed would be consumptively used in the State in which it was developed by a Contractor and that Contractor would intentionally reduce its consumptive use of Colorado River water. This would allow the Contractor(s) in the other Lower Division State(s) that provided the funding to consumptively use the Colorado River water that was intentionally unused through an agreement with the Secretary of the Interior. Through the cooperation of the International Boundary and Water Commission, United States and Mexico, similar agreements could be established by which non-Colorado River System water supplies in Mexico could be developed for use in the United States by exchange.

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It could be necessary for a State or other lower priority Contractors in the State in which consumptive use was intentionally reduced to agree to forebear their use of such water depending on the then-existing priority system to use of Colorado River water, to avoid a claim against the water being delivered to the Contractor that funded the new water supply. As an alternative to forbearance, an offer by the Contractor developing the non-Colorado River System water to allow the lower priority Contractor to pay the cost of developing a portion or all of the non-

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Colorado River System water supplies to be developed, would be utilized to protect such a lower priority Contractor's position in the then-existing priority system. A refusal of an offer to pay the cost of developing a portion or all of the non-Colorado River System water supplies to be developed would constitute the lower-priority Contractor's waiver of a right to challenge the exchange.

**Section 6. Accounting Mechanisms**

The operating alternatives discussed in Sections 4 and 5 will require new or modified Colorado River accounting mechanisms. No specific accounting mechanism to allow these types of operations is proposed for evaluation in Reclamation's current NEPA process. However, the description and evaluation of such accounting mechanisms would provide Contractors with the assurance that if such accounting mechanism were adopted in the Record of Decision, funds spent to propose such an arrangement in the future would not be spent in vain.

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**Section 7. Effective Period**

The proposed interim operations will be in effect 30 days from the publication of the Secretary's Record of Decision in the Federal Register. The proposed interim operations will, unless subsequently modified, remain in effect through December 31, 2025 (through preparation of the 2026 AOP), subject to a formal review of their effectiveness beginning no later than 2020.

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# **Appendix Q**

## **February 3, 2006, Proposal from Colorado River Basin States**

### **Q.3 Attachment B – Draft Agreement**

**AGREEMENT**

The [name parties] hereby enter into this Agreement effective as of \_\_\_\_\_.

**RECITALS**A. Parties.

## 1. Arizona

- a. The Arizona Department of Water Resources, through its Director, is the successor to the signatory agency of the State for the 1922 Colorado River Compact, and the 1944 Contract for Delivery of Water with the United States, both authorized and ratified by the Arizona Legislature, A.R.S. §§ 45-1301 and 1311. Pursuant to A.R.S. §§ 45-107, the Director is authorized and directed, subject to the limitations in A.R.S. §§ 45-106, for and on behalf of the State of Arizona, to consult, advise and cooperate with the Secretary of the Interior of the United States with respect to the exercise by the Secretary of Congressionally authorized authority relative to the waters of the Colorado River (including but not limited to the Boulder Canyon Project Act, 43 U.S.C. § 617, and the 1968 Colorado River Basin Project Act, 43 U.S.C. § 1501) and with respect to the development, negotiation and execution of interstate agreements. Additionally, under A.R.S. § 45-105(A)(9), the Director is authorized to "prosecute and defend all rights, claims and privileges of this state respecting interstate streams."
- b. Under A.R.S. § 11-951 *et. seq.*, the Director is authorized to enter into Intergovernmental Agreements with other public agencies, which includes another state; departments, agencies, boards and commissions of another state; and political subdivisions of another state.

2. California. The chairman of the Colorado River Board of California, acting as the Colorado River Commissioner pursuant to California Water Code section 12525, has the authority to exercise on behalf of California every right and power granted to California by the Boulder Canyon Project Act, and to do and perform all other things necessary or expedient to carry out the purposes of the Colorado River Board.

## 3. Colorado

- a. Section 24-1-109, Colorado Revised Statutes (2005) provides that "Interstate compacts authorized by law shall be administered under the direction of the office of the governor." This includes the Colorado River Compact and the Upper Colorado River Basin Compact. Section 37-60-109 provides that "the governor from time to time, with approval of the

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board, shall appoint a commissioner, who shall represent the state of Colorado upon joint commissions to be composed of commissioners representing the state of Colorado and another state or other states for the purpose of negotiating and entering into compacts or agreements between said states..." By Executive Order \_\_\_\_\_, issued \_\_\_\_\_, 2006, attached hereto as Exhibit \_\_\_\_\_ and incorporated herein by reference, the Governor appointed Upper Colorado River Commissioner Scott Balcomb to represent the State of Colorado.

- b. Section 37-60-106, subsections (e) and (i), C.R.S. (2005), authorize the Colorado Water Conservation Board to "cooperate with the United States and the agencies thereof, and with other states for the purpose of bringing about the greater utilization of the water of the state of Colorado and the prevention of flood damages," and "to confer with and appear before the officers, representatives, boards, bureaus, committees, commissions, or other agencies of other states, or of the federal government, for the purpose of protecting and asserting the authority, interests, and rights of the state of Colorado and its citizens with respect to the waters of the interstate streams in this state." By resolution dated \_\_\_\_\_, attached hereto as Exhibit \_\_\_, and incorporated herein by reference, the Colorado Water Conservation Board authorized and directed its Director to negotiate with and enter into agreements with other state entities within the Colorado River Basin.

#### 4. Nevada

- a. The Colorado River Commission of the State of Nevada (CRCN) is an agency of the State of Nevada, authorized generally by N.R.S. §§ 538.041 and 538.251. CRCN is authorized by N.R.S. § 538.161 (6), (7) to enter into this Agreement. The CRCN, in furtherance of the State of Nevada's responsibility to promote the health and welfare of its people in Colorado River matters, makes this Agreement to supplement the supply of water in the Colorado River which is available for use in Nevada, augment the waters of the Colorado River, and facilitate the more flexible operation of dams and facilities by the Secretary of the Interior of the United States. The Chairman of the Commission, signatory hereto, serves as one of the Governor's representatives as contemplated by Section 602(b) of the 1968 Colorado River Basin Project Act, 43 U.S.C. § 1552(b) and the Criteria for Coordinated Long-Range Operation of Colorado River Reservoirs Pursuant to the Colorado River Basin Project Act.
- b. The Southern Nevada Water Authority (SNWA) is a Nevada joint powers agency and political subdivision of the State of Nevada, created by agreement dated July 25, 1991, as amended November 17, 1994 and January 1, 1996, pursuant to N.R.S. §§ 277.074 and 277.120. SNWA is authorized by N.R.S. § 538.186 to enter into this Agreement and, pursuant

to its contract issued under section 5 of the Boulder Canyon Project Act of 1928, SNWA has the right to divert “supplemental water” as defined by NRS § 538.041 (6). The General Manager of the SNWA, signatory hereto, serves as one of the Governor’s Representatives as contemplated by Section 602(b) of the 1968 Colorado River Basin Project Act, 43 U.S.C. § 1552(b) and the Criteria for Coordinated Long-Range Operation of Colorado River Reservoirs Pursuant to the Colorado River Basin Project Act.

5. New Mexico. Pursuant to NMSA 1978, 72-14-3, the New Mexico Interstate Stream Commission is authorized to investigate water supply, to develop, to conserve, to protect and to do any and all other things necessary to protect, conserve and develop the waters and stream systems of the State of New Mexico, interstate or otherwise. The Interstate Stream Commission also is authorized to institute or cause to be instituted in the name of the state of New Mexico any and all negotiations and/or legal proceedings as in its judgment are necessary. By Resolution dated \_\_\_\_\_, the Interstate Stream Commission authorizes the execution of this Agreement.
6. Utah. The Division of Water Resources (DWR) is the water resource authority for the State of Utah. Utah Code Ann. § 73-10-18. The Utah Department of Natural Resources Executive Director (Department), with the concurrence of the Utah Board of Water Resources (Board), appoints the DWR Director (Director). § 63-34-6(1). The Board makes DWR policy. § 73-10-1.5. The Board develops, conserves, protects, and controls Utah waters, § 73-10-4(4),(5), and, in cooperation with the Department and Governor, supervises administration of interstate compacts, § 73-10-4, such as the Colorado River Compact, §§ 73-12a-1 through 3, and the Upper Colorado River Basin Compact, § 73-13-10. The Board, with Department and Gubernatorial approval, appoints a Utah Interstate Stream Commissioner, § 73-10-3, currently the DWR Director, to represent Utah in interstate conferences to administer interstate compacts. §§ 73-10-3 and 73-10-4. These delegations of authority authorize the Utah Interstate Stream Commissioner/DWR Director to sign this document. He acts pursuant to a Board resolution, acknowledged by the Department, dated \_\_\_\_\_, attached hereto as Exhibit \_\_, and incorporated herein by reference.
7. Wyoming. Water in Wyoming belongs to the state. WYO. CONST. Art. 8 ' 1. The Wyoming State Engineer is a constitutionally created office and is Wyoming’s chief water official with general supervisory authority over the waters of the state. WYO. CONST. Art. 8 ' 5. The Wyoming legislature conferred upon Wyoming officers the authority to cooperate with and assist like authorities and entities of other states in the performance of any lawful power, duty, or authority. WYO. STAT. ANN. ' 16-1-101 (LEXISNEXIS 2005). Wyoming and its State Engineer represent the rights and interests of all Wyoming appropriators with respect to other states. *Wyoming v. Colorado*,



286 U.S. 494 (1922). See *Hinderlider v. La Plata River & Cherry Creek Ditch Co.*, 304 U.S. 92 (1938). In signing this Agreement, the State Engineer intends that this Agreement be mutually and equally binding between the Parties.

## B. Background

1. Federal law and practice (including Section 602(b) of the 1968 Colorado River Basin Project Act, 43 U.S.C. § 1552(b), and the Criteria for Coordinated Long-Range Operation of Colorado River Reservoirs Pursuant to the Colorado River Basin Project Act), contemplate that in the operation of Lakes Powell and Mead, the Secretary of the Interior consults with the States through Governors' Representatives, who represent the Governors and their respective States. Through this law and practice, the Governors' Representatives have in the past reached agreements among themselves and with the Secretary on various aspects of Colorado River reservoir operation. This Agreement is entered into in furtherance of this law and practice.

2. On January 16, 2001, the Secretary adopted Colorado River Interim Surplus Guidelines (ISG) based on an alternative prepared by the Colorado River Basin States, for the purposes of determining annually the conditions under which the Secretary would declare the availability of surplus water for use within the states of Arizona, California and Nevada in accordance with and under the authority of the Boulder Canyon Project Act of 1928 (45 Stat. 1057) and the Decree of the United States Supreme Court in *Arizona v. California*, 376 U.S. 340 (1964). The ISG are effective through calendar year 2015 (through preparation of the 2016 Annual Operating Plan).

3. In the years following the adoption of the ISG, drought conditions in the Colorado River Basin caused a significant reduction in storage levels in Lakes Powell and Mead, and precipitated discussions by and among the Parties, and between the Parties and the United States through the Department of the Interior and the Bureau of Reclamation. The Parties recognize that the Upper Division States have not yet developed their full apportionment under the Colorado River Compact. Although the Secretary has not imposed any shortage in the Lower Basin, the Parties also recognize that with additional Upper Basin development and in drought conditions, the Lower Division States may be required to suffer shortages in deliveries of water from Lake Mead. Therefore, these discussions focused on ways to improve the management of water in Lakes Powell and Mead so as to enhance the protection afforded to the Upper Basin by Lake Powell, and to delay the onset and minimize the extent and duration of shortages in the Lower Basin.

4. Shortages in the Lower Basin will also trigger shortages in the delivery of water to Mexico pursuant to the Mexican Water Treaty of 1944, February 3, 1944, U.S.-Mex., 59 Stat. 1219, T.S. 994, 3 U.N.T.S. 313.

5. On May 2, 2005, the Secretary announced her intent to undertake a process to develop Lower Basin shortage guidelines and explore management options for the coordinated operation of Lakes Powell and Mead. On June 15, 2005, the Bureau of Reclamation published a notice in the *Federal Register*, announcing its intent to implement the Secretary's direction. The Bureau of Reclamation has proceeded to undertake scoping and develop alternatives pursuant to the National Environmental Policy Act (the NEPA Process), which the Parties anticipate will form the basis for a ROD to be issued by the Secretary by December 2007.

6. On August 25, 2005, the Governors' Representatives for the seven Colorado River Basin States wrote a letter to the Secretary expressing conceptual agreement in the development and implementation of three broad strategies for improved management and operation of the Colorado River: Coordinated Reservoir Management and Lower Basin Shortage Guidelines; System Efficiency and Management; and Augmentation of Supply.

7. On February 3, 2006, the Governors' Representatives transmitted to the Secretary their recommendation for the scope of the NEPA Process, which refined many of the elements outlined in the August 25, 2005 letter.

8. At the request of the Secretary, the Parties have continued their discussions relative to the areas of agreement outlined in the letters of August 25, 2005 and February 3, 2006.

9. In furtherance of the letters of August 25, 2005 and February 3, 2006, the Parties have reached agreement to take additional actions for their mutual benefit, which are designed to augment the supply of water available for use in the Colorado River System and improve the management of water in the Colorado River.

C. Purpose. The Parties intend that the actions by them contemplated in this Agreement will: improve cooperation and communication among them; provide additional security and certainty in the water supply of the Colorado River System for the benefit of the people served by water from the Colorado River System; and avoid circumstances which could otherwise form the basis for claims or controversies over interpretation or implementation of the Colorado River Compact and other applicable provisions of the law of the river.

## AGREEMENT

In consideration of the above recitals and the mutual covenants contained herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties agree as follows:

1. Recitals. The Recitals set forth above are material facts that are relevant to and form the basis for the agreements set forth herein.

2. Definitions. As used in this Agreement, the following terms have the following meanings:

- A. Colorado River System. This term shall have the meaning as defined in the Colorado River Compact.
- B. ISG. The Colorado River Interim Surplus Guidelines adopted by the Secretary on January 16, 2001.
- C. NEPA Process. The decision-making process pursuant to the National Environmental Policy Act, 42 U.S.C. §§ 4321 through 47, beginning with the Bureau of Reclamation's Notice to Solicit Comments and Hold Public Meetings, 70 Fed. Reg. 34794 (June 15, 2005) and culminating in a Record of Decision.
- D. Party or Parties. Any party or parties to this Agreement.
- E. Parties' Recommendation. The Seven Basin States' Preliminary Proposal Regarding Colorado River Interim Operations, a copy of which is attached hereto and incorporated herein by this reference, presented by the Parties to the Secretary in furtherance of the States' letters of August 25, 2005 and February 3, 2006, and any modification of the Parties' Recommendation adopted by the Parties pursuant to this Agreement.
- F. ROD. The Record of Decision anticipated to be issued by the Secretary after completion of NEPA Process, pursuant to her letter of May 2, 2005, and the Notice published in the Federal Register on September 30, 2005, 70 Fed. Reg. 57322.
- G. Secretary. The Secretary of the Interior or the Bureau of Reclamation, as applicable.
- H. State or States. Any of the states of Arizona, California, Colorado, Nevada, New Mexico, Utah or Wyoming, as context requires.

3. Support for Parties' Recommendation. After considering a number of alternatives, each Party has determined that the Parties' Recommendation is in the best interests of that Party, and promotes the health and welfare of that Party and of the Colorado River Basin States. In the NEPA Process, the Parties shall support the Secretary's adoption of the Parties' Recommendation in a ROD. If during the course of the NEPA Process any new information becomes available which causes any Party, in its sole and absolute discretion, to reassess any provision of the Parties' Recommendation, that Party shall immediately notify all other Parties in writing. The Parties shall jointly confer and, if they agree to any modification of the Parties' Recommendation, shall consult with the Secretary to advise her of such modification and request the adoption thereof in the ROD. If after such conference and consultation it is apparent there is an

irreconcilable conflict between the Parties as to such modification, then any Party may upon written notice to the other Parties withdraw from this Agreement, and in such event this Agreement shall no longer be effective or binding upon such withdrawing Party. All withdrawing Parties hereby reserve all rights upon withdrawal from this Agreement to take such actions, including support of or challenges to the ROD, as they in their sole and absolute discretion deem necessary or appropriate. In the event of the withdrawal of any one or more Parties from this Agreement, this Agreement shall continue in full force and effect as to the remaining Parties. The remaining Parties may confer to determine whether to continue this Agreement in effect, to amend this Agreement, or to terminate this Agreement. In the event of termination, all Parties shall be relieved from the terms hereof, and this Agreement shall be of no further force or effect.

4. ROD Consistent with the Parties' Recommendation. In the event the Secretary adopts a ROD in substantial conformance with the Parties' Recommendation, the Parties shall take all necessary actions to implement the terms of the ROD, including the approval and execution of agreements necessary for such implementation.

5. ROD Inconsistent with the Parties' Recommendation. In the event the Secretary adopts a ROD that any Party, in its sole and absolute discretion, determines is not in substantial conformance with the Parties' Recommendation, such Party shall immediately notify all other Parties of such determination in writing. The Parties shall jointly confer, and consult with the Secretary as necessary, in order to determine whether the ROD is in substantial conformance with this Agreement, or whether any action, including the amendment of this Agreement, may resolve such concern. If after such conference and consultation it is apparent there is an irreconcilable conflict between the ROD and the concerns of such Party, then such Party may upon written notice to the other Parties withdraw from this Agreement, and in such event this Agreement shall no longer be effective or binding upon such withdrawing Party. All withdrawing Parties hereby reserve all rights upon withdrawal from this Agreement to take such actions, including support of or challenges to the ROD, as they in their sole and absolute discretion deem necessary or appropriate. In the event of the withdrawal of any one or more Parties from this Agreement, this Agreement shall continue in full force and effect as to the remaining Parties. The remaining Parties may confer to determine whether to continue this Agreement in effect, to amend this Agreement, or to terminate this Agreement. In the event of termination, all Parties shall be relieved from the terms hereof, and this Agreement shall be of no further force or effect.

6. Additions to the ROD. The Parties hereby request that the Secretary recognize the specific provisions of this Agreement as part of the NEPA Process and, if appropriate, include in the ROD specific provisions that reference this Agreement as a basis for the ROD. The Parties also hereby request that the Secretary include in the ROD specific provision that the Secretary will first consult with all the States, through their designated Governor's Representatives, before making any substantive modification to the ROD. Finally, the Parties hereby request that the Secretary include in the ROD specific provision that upon a request by any State for modification of the ROD, or upon any request by any State to resolve any claim or controversy arising under this Agreement or

under the operations of Lakes Powell and Mead pursuant to the ROD, the ISG, or any other applicable provision of federal law, regulation, criteria, policy, rule or guideline, the Secretary shall invite all of the Governors, or their designated representatives, to consult with the Secretary in an attempt to resolve such claim or controversy by mutual agreement.

7. Consultation on Operations. After the Secretary commences operating Lakes Powell and Mead pursuant to the ROD, the Parties shall confer among themselves as necessary, but at least annually, to assess such operations. Any Party may request consultation with the other Parties on a proposed adjustment or modification of such operations, based on changed circumstances, unanticipated conditions, or other factors. Upon such request, the Parties shall in good faith confer to resolve any such issues, and based thereon may request consultation by the States with the Secretary on adjustments to or modifications of operations under the ROD. In any event, the Parties shall confer before December 31, 2020, to determine whether to extend this Agreement and recommend that the Secretary continue operations under the ROD for an additional period, or modify this Agreement and recommend that the Secretary modify operations under the ROD, or terminate this Agreement and recommend that the Secretary not continue operations under the ROD after the expiration thereof.

8. Development of System Augmentation. The Parties agree to diligently pursue system augmentation within the Colorado River System including but not limited to the determination of the feasibility of projects to increase precipitation in the basin or to augment available supplies through desalination. Additionally, the Parties agree to cooperatively pursue an interim water supply of at least a cumulative amount of 280,000 acre-feet for use in Nevada while long-term augmentation projects are being pursued. It is anticipated that this interim water supply will be made available in return for Nevada's funding of the Drop 2 Reservoir currently proposed for construction by the Bureau of Reclamation. Annual recovery of this interim water supply by Nevada will not exceed 40,000 acre-feet. All water available to Nevada in consideration for funding the Drop 2 Reservoir would remain available during all shortage conditions declared by the Secretary.

In consideration of the Parties' diligent pursuit of long-term augmentation and the availability of the interim water supply, the Southern Nevada Water Authority (SNWA) agrees that it will withdraw right-of-way Application No. N-79203 filed with the Bureau of Land Management on October 1, 2004 for the purpose of developing Permit No. 58591 issued by the Nevada State Engineer in Ruling No. 4151.

The SNWA will not re-file such right-of-way application or otherwise seek to divert the water rights available under Permit No. 58591 from the Virgin River prior to 2014 so long as Nevada is allowed to utilize its pre-Boulder Canyon Project Act Virgin and Muddy River rights in accordance with section 4(C) of the Parties' Recommendation in the form forwarded to the Secretary on February 3, 2006, and the interim water supply made available to Nevada is reasonably certain to remain available. The SNWA will not re-file such right-of-way application or otherwise seek to divert the water rights available

under Permit No. 58591 from the Virgin River after 2014 so long as diligent pursuit of system augmentation is proceeding to provide Nevada an annual supply of 75,000 acre-feet by the year 2020. Prior to re-filing any applications with the Bureau of Land Management, SNWA and Nevada will consult with the other Basin States.

This agreement is without prejudice to any Party's claims, rights or interests in the Virgin or Muddy River systems.

9. Consistency with Existing Law. The Parties' Recommendation is consistent with existing law. The Parties expressly agree that the storage of water in and release of water from Lakes Powell and Mead pursuant to a ROD issued by the Secretary in substantial conformance with the Parties' Recommendation and this Agreement, and any agreements, rules and regulations adopted by the Secretary or the parties to implement such ROD, shall not constitute a violation of Article III(a)-(e) inclusive of the Colorado River Compact, or Sections 601 and 602(a) of the Colorado River Basin Project Act of 1968 (43 U.S.C. §§ 1551 and 1552(a)), and all applicable rules and regulations promulgated thereunder.

10. Resolution of Claims or Controversies. The Parties recognize that litigation is not the preferred alternative to the resolution of claims or controversies concerning the law of the river. In furtherance of this Agreement, the Parties desire to avoid litigation, and agree to pursue a consultative approach to the resolution of any claim or controversy. In the event that any Party becomes concerned that there may be a claim or controversy under this Agreement, the ROD, Article III(a)-(e) inclusive of the Colorado River Compact, or Sections 601 and 602(a) of the Colorado River Basin Project Act of 1968 (43 U.S.C. §§ 1551 and 1552(a)), and all applicable rules and regulations promulgated thereunder, such Party shall notify all other Parties in writing, and the Parties shall in good faith meet in order to resolve such claim or controversy by mutual agreement prior to any litigation. No Party shall initiate any judicial or administrative proceeding against any other Party or against the Secretary under Article III(a)-(e) inclusive of the Colorado River Compact, or Sections 601 and 602(a) of the Colorado River Basin Project Act of 1968 (43 U.S.C. §§ 1551 and 1552(a)), or any other applicable provision of federal law, regulation, criteria, policy, rule or guideline, and no claim thereunder shall be ripe, until such conference has been completed. In addition, all States shall comply with any request by the Secretary for consultation in order to resolve any claim or controversy. In addition, any State may invoke the provisions of Article VI of the Colorado River Compact. Notwithstanding anything in this Agreement to the contrary, the terms of this Paragraph 10 shall survive for a period of five years following the termination or expiration of this Agreement, and shall apply to any withdrawing Party after withdrawal for such period.

11. Reservation of Rights. Notwithstanding the terms of this Agreement and the Parties' Recommendation, in the event that for any reason this Agreement is terminated, or that the term of this Agreement is not extended, or upon the withdrawal of any Party from this Agreement, the Parties reserve, and shall not be deemed to have waived, any and all rights, including any claims or defenses, they may have as of the date hereof or as

may accrue during the term hereof, under any existing federal or state law or administrative rule, regulation or guideline, including without limitation the Colorado River Compact, the Upper Colorado River Basin Compact, the Decree in *Arizona v. California*, the Colorado River Basin Project Act of 1968, and any other applicable provision of federal law, rule, regulation, or guideline.

12. No Third-Party Beneficiaries. This Agreement is made for the benefit of the Parties. No Party to this Agreement intends for this Agreement to confer any benefit upon any person or entity not a signatory upon a theory of third-party beneficiary or otherwise.

13. Joint Defense Against Third Party Claims. In the event the Secretary adopts a ROD in substantial conformance with the Parties' Recommendation as set forth herein, they will have certain common, closely parallel, or identical interests in supporting, preserving and defending the ROD and this Agreement. The nature of this interest and the relationship among the Parties present common legal and factual issues and a mutuality of interests. Because of these common interests, the Parties will mutually benefit from an exchange of information relating to the support, preservation and defense of the ROD and this Agreement, as well as from a coordinated investigation and preparation for discussion of such interests. In furtherance thereof, in the event of any challenge by a third party as to the ROD or this Agreement (including claims by any withdrawing Party), the Parties will cooperate to proceed with reasonable diligence and to use reasonable best efforts in the support, preservation and defense thereof, including any lawsuit or administrative proceeding challenging the legality, validity or enforceability of any term of the ROD or this Agreement, and will to the extent appropriate enter into such agreements, including joint defense or common interest agreements, as are necessary therefor. Each Party shall bear its own costs of participation and representation in any such defense.

14. Reaffirmation of Existing Law. Nothing in this Agreement or the Parties' Recommendation is intended to, nor shall this Agreement be construed so as to, diminish or modify the right of any Party under existing law, including without limitation the Colorado River Compact, the Upper Colorado River Basin Compact, or the Decree in *Arizona v. California*. The Parties hereby affirm the entitlement and right of each State under such existing law to use and develop the water of the Colorado River System.

15. Term. This Agreement shall be effective as of the date of the first two signatories hereto, and shall be effective as to any additional Party as of the date of execution by such Party. Unless earlier terminated, this Agreement shall be effective for so long as the ROD and the ISG are in effect, and shall terminate upon the termination of the ROD and the ISG.

16. Authority. The persons and entities executing this Agreement on behalf of the Parties are recognized by the Parties as representing the respective States in matters concerning the operation of Lakes Powell and Mead, and as those persons and entities authorized to bind the respective Parties to the terms hereof. Each person executing this

Agreement has the full power and authority to bind the respective Party to the terms of this Agreement. No Party shall challenge the authority of any person or Party to execute this Agreement and bind such Party to the terms hereof, and the Parties waive the right to challenge such authority.



# **Appendix R**

**February 1, 2006,  
Environmental Defense Letter**



**ENVIRONMENTAL DEFENSE**

finding the ways that work

February 1, 2006

Bob Johnson, Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
Attention: BCOO-1000  
PO Box 61470  
Boulder City, Nevada 89006-1470

via facsimile: (702) 293-8156

**Re: Development of Management Strategies for Lake Powell and Lake Mead under Low Reservoir Conditions**

Dear Mr. Johnson:

Environmental Defense has already submitted comments (along with several other organizations) regarding the development of Lower Colorado River Basin shortage guidelines, and this letter supplements our previous comments. Specifically, we are concerned that the Bureau of Reclamation is considering the initiation of multiple, independent NEPA analyses on numerous proposals for Colorado River management and mechanisms to develop "intentionally created surplus," including Development of Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions as well as Bypass Flow replacement, operation of the Yuma Desalting Plant, new regulatory storage facilities, forbearance agreements, and more, rather than evaluating these proposals collectively.

The language of the National Environmental Policy Act is clear. Proposals or parts of proposals which are related to each other closely enough to be, in effect, a single course of action shall be evaluated in a single impact statement (40 CFR 1502.4). To determine the scope of environmental impact statements, agencies shall consider... Actions (other than unconnected single actions) which may be:

- (1) Connected actions, which means that they are closely related and therefore should be discussed in the same Impact statement. Actions are connected if they:

(i) Automatically trigger other actions which may require environmental impact Statements. (ii) Cannot or will not proceed unless other actions are taken previously or simultaneously. (iii) Are interdependent parts of a larger action and depend on the larger action for their justification.

(2) Cumulative actions, which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement.

(3) Similar actions, which when viewed with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography. An agency may wish to analyze these actions in the same impact statement. It should do so when the best way to assess adequately the combined impacts of similar actions or reasonable alternatives to such actions is to treat them in a single impact statement. (40 CFR 1508.25)

In order to assess fully impacts of the numerous and varied approaches to managing the Colorado River system in times of limited water supply, analysis under NEPA needs to compare the impacts of all available options, including coordinated reservoir management, shortage trigger elevations, and any actions taken to generate intentionally created surplus. Not only will the different mechanisms for intentionally created surplus water have very different costs and environmental impacts (and thus must be compared against each other and not in independent environmental impact analyses), but they can be expected to result in "savings" of different volumes of water. The volume of intentionally created surplus water will bear on the probabilities that water in reservoir storage will be within defined "bands" or shortage trigger elevations.

We recognize that management of the Colorado River system is complex, perhaps never more so than in times of water shortage. However, the stakes in the development of management strategies for Lake Powell and Lake Mead under low reservoir conditions are high, not only for water users, but also for the environment. We encourage you to ensure that analysis of alternatives under the NEPA is complete.

Sincerely,



Jennifer Pitt

# **Appendix S**

**February 21, 2006,  
Defenders of Wildlife**

February 21, 2006

Regional Director  
Bureau of Reclamation, Lower Colorado Region  
Attn: BCOO-1000  
P.O. Box 61470  
Boulder City, NV 89006-1470

*Via E-Mail and Facsimile [strategies@lc.usbr.gov](mailto:strategies@lc.usbr.gov) and (702) 293-8156*

Regional Director  
Bureau of Reclamation, Upper Colorado Region  
Attn: UC-402  
125 South State Street  
Salt Lake City, UT 84318-1147

*Via E-Mail and Facsimile [strategies@uc.usbr.gov](mailto:strategies@uc.usbr.gov) and (801) 524-3858*

Re: Colorado River Reservoir Operations: Development of Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions

Dear Mr. Johnson and Mr. Gold:

The seven Colorado River Basin States recently submitted to the Department of the Interior a "Preliminary Proposal Regarding Colorado River Interim Operations." Before the Bureau of Reclamation (Reclamation) issues a scoping report in March, please consider these comments regarding the scope of NEPA analysis for Colorado River Reservoir Operations. Carrying all or part of the proposal forward as an alternative in the NEPA process will change the scope of Reclamation's proposed action as originally announced in the Federal Register. 70 Fed. Reg. 57322 (Sept. 30, 2005).

The Notice of Intent (NOI) stated that Reclamation was considering "(1) Specific guidelines that will identify those circumstances under which the Department of the Interior (Department) would reduce annual water deliveries from Lake Mead to the Lower Basin States below the 7.5 million acre-feet (maf) Lower Basin apportionment and the manner in which those deliveries would be reduced, and (2) coordinated management strategies for the operation of Lake Powell and Lake Mead." *Id.*

The Preliminary Proposal includes shortage guidelines and management strategies, but also includes recommendations regarding the Interim Surplus Guidelines and introduces new programs such as system efficiencies, extraordinary conservation and augmentation projects including tributary conservation, introduction of non-Colorado River System water and exchange

of non-Colorado River System water, and proposes the Intentionally Created Surplus program.

The scoping period is an “early and open” process for determining the scope of the issues to be addressed in the EIS and for identifying significant issues related to the action. 40 C.F.R. §§ 1501.7, 1508.25. Given the breadth and complexity of the Preliminary Proposal, Defenders urges Reclamation to reevaluate the scope of its proposed action to ensure that its environmental impact statement (EIS) encompasses the full suite of actions, alternatives and impacts. 2

“Agencies shall use the criteria for scope to determine which proposal(s) shall be the subject of a particular statement. Proposals or parts of proposals which are related to each other closely enough to be, in effect, a single course of action shall be evaluated in a single impact statement.” *Id.* § 1502.4(a). If all or part of the Preliminary Proposal are connected actions<sup>1</sup>, or if Reclamation carries forward parts of the Proposal that do not fall within the action proposed in the September NOI, Reclamation must prepare one EIS and must rescope. 3

We appreciate that Reclamation has set out a firm timeline for completing this NEPA process. Any delay caused by offering another opportunity for public input on significant issues and impacts triggered by the basin states’ proposal will be insignificant in comparison to delay triggered by introducing new actions or alternatives during the draft EIS comment period rather than the scoping period. Reclamation has put forth great effort in making its development of shortage guidelines an informative and open process – the very purpose of NEPA – and we encourage you to continue this effort. 4

Sincerely,

/s/

Kara Gillon  
Staff Attorney

---

<sup>1</sup> “To determine the scope of environmental impact statements, agencies shall consider 3 types of actions . . . They include: (a) Actions (other than unconnected single actions) which may be: (1) Connected actions, which means that they are closely related and therefore should be discussed in the same impact statement. Actions are connected if they: (i) Automatically trigger other actions which may require environmental impact statements. (ii) Cannot or will not proceed unless other actions are taken previously or simultaneously. (iii) Are interdependent parts of a larger action and depend on the larger action for their justification. (2) Cumulative actions . . . (3) Similar actions . . .” *Id.* § 1508.25(a).

# RECLAMATION

*Managing Water in the West*

## Scoping Summary Report

**Development of Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead, Particularly Under Low Reservoir Conditions**



**Volume II**  
**Appendices T - Y**



**U.S. Department of the Interior**  
**Bureau of Reclamation**  
**Upper and Lower Colorado Regions**

**March 2006**

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# **Appendix T**

## **T.1 List of Commentors Sorted by Commentor Type and Code**

**Table T-1  
List of Commentors Sorted By Commentor Type and Sequence Code**

Commenter Type and Sequence Code	Form Letter	Comment Group Number	Last Name	First Name	Middle Initial	Organization Name	Comments
<b>Business (B)</b>							
B - 0001	-	1	Schuett	Lynn		Colorado Plateau Guides	
B - 0002	-	1	Ruemmele	Werner	A.	WR Consultants Inc.	
B - 0004	-	1	Rusanowski	Paul	C	The Shipley Group	
B - 2000	-	2	Miller	Paul	F.	Watermasters	
B - 2001	-	2	Morgan	Craig		Avalex, Inc.	
<b>Federal Agency (F)</b>							
F - 0001	-	1	Warren	Bradley		Department of Energy	
F - 0002	-	1	Olague	Bernardino		USIBWC	
F - 0003	-	1	Roberts	Kitty	L.	National Park Service	
F - 0004	-	1	Spangle	Steven	L.	US Fish and Wildlife Service	
F - 0005	-	1	Henderson	Norm		National Park Service	
F - 0006	-	1	Givhan	Walter	D	Department of the Air Force	
F - 2000	-	2	Fujii	Laura		U.S. Environmental Protection Agency	
<b>Special Interest Group / Non-governmental Organization (G)</b>							
G - 0001	-	1	Living Rivers			Living Rivers Colorado Riverkeeper	
G - 0003	-	1	Gillon	Kara		Defenders of Wildlife, et al	
G - 0004	-	1	Silver	Dan		Endangered Habitats League	
G - 0005	-	1	Witzeman	Robert	A.	Maricopa Audubon Society	
G - 0007	-	1	Lippman	Robert		Rock the Earth	
G - 0008	-	1	Woodhouse	Connie		Colorado River Paleo Workgroup	
G - 0010	-	1	Hamilton	Lynn		Grand Canyon River Guides	
G - 0011	-	1	Hunt	Greg		Waterkeepers Australia	
G - 0012	-	1	Hamilton	Lynn		Grand Canyon River Guides	
G - 0013	-	1	Weisheit	John		Living Rivers Colorado Riverkeeper	
G - 0014	-	1	Gillon	Kara		Defenders of Wildlife, et al	
G - 0015	-	1	Weisheit	John		Living Rivers Colorado Riverkeeper	Duplicate to G-0013
G - 0016	-	1	Willms	David		Wyoming Farm Bureau Federation	
G - 0017	-	1	Wegner	David	L.	Glen Canyon Institute	
G - 0018	-	1	Udall	Bradley		University of Colorado / NOAA Western Water Assessment	
G - 2000	-	2	Wechsler	James		Sierra Club	
G - 2001	-	2	Pitt	Jennifer		Environmental Defense	
G - 2003	-	2	Ross	Marc	A.	Rock the Earth	
G - 2004	-	2	Weisheit	John		Living Rivers Colorado Riverkeeper	
G - 2005	-	2	Gillon	Kara		Defenders of Wildlife, et al.	
G - 2006	-	2	Carter	John	G.	Western Watersheds Project, Inc.	
G - 2008	-	2	Hiatt	John	E.	Red Rock Audubon Society	
G - 2009	-	2	Pitt	Jennifer		Environmental Defense	
G - 2010	-	2	Wechsler	Jim		Sierra Club	
G - 2012	-	2	Pitt	Jennifer		Environmental Defense	
G - 2013	-	2	Culp	Peter		Sonoran Institute	
G - 2014	-	2	Hiatt	John	E.	Red Rock Audubon Society	
G - 2015	-	2	Gillon	Kara		Defenders of Wildlife	
G - 2016	-	2	Ostapuk	Paul	M.	Friends of Lake Powell	
<b>Individual (I)</b>							
I - 0001	-	1	Belles	Mark			
I - 0002	-	1	Mapel	Tiffany	S.		
I - 0003	-	1	Parmelee	Steve			
I - 0004	-	1	Reuther	Sandra			
I - 0005	-	1	Reuther	Sandra			
I - 0006	-	1	Kelly II	Roy	A		
I - 0007	-	1	Baker	Diron			
I - 0008	A	1	Brower	Matt			Sample of Form Letter A
I - 0009	A	1	Malides	Paul			Form Letter A, see I-0008
I - 0010	A	1	Miller	D.	R.		Form Letter A, see I-0008
I - 0011	A	1	Nelson	Hal	T.		Form Letter A, see I-0008
I - 0012	-	1	Pepper	Mark	L.		
I - 0013	-	1	Riddle	Donna			
I - 0014	-	1	Rosenfield	Robert			
I - 0015	-	1	Rutkowski	Robert	E.		
I - 0016	A	1	Shumaker	Jason			Form Letter A, see I-0008
I - 0017	-	1	Skinner	Steve			
I - 0018	-	1	Spezia	John			
I - 0019	A	1	Trutt	Josh			Form Letter A, see I-0008
I - 0020	-	1	Call	Jesse	N.		
I - 0021	A	1	Good	Ron			Form Letter A, see I-0008
I - 0022	-	1	Harvey	Marcia			
I - 0023	-	1	Hegland	Jean			
I - 0024	-	1	Howe	Charles	W.	University of Colorado-Boulder	
I - 0025	-	1	Jackman	Jean			
I - 0026	-	1	Meeks	Alayne			
I - 0027	A	1	Nelson	Earl			Form Letter A, see I-0008
I - 0028	A	1	Sigetich	Andrea			Form Letter A, see I-0008
I - 0029	-	1	Walker	Ray			
I - 0030	-	1	Welles	Diane			
I - 0031	-	1	Wood	Corin			
I - 0032	A	1	Brunner	kurt			Form Letter A, see I-0008
I - 0033	-	1	Johnson	Kim			
I - 0034	-	1	Reis	Greg			
I - 0035	A	1	Harm	Richard			
I - 0036	-	1	Wolf	Barry			

**Table T-1**  
**List of Commentors Sorted By Commentor Type and Sequence Code**

Commenter Type and Sequence Code	Form Letter	Comment Group Number	Last Name	First Name	Middle Initial	Organization Name	Comments
I - 0037	-	1	Chetron	Avram			
I - 0038	A	1	East	Katherine	A.		Form Letter A, see I-0008
I - 0039	A	1	Bennett	Jean	M.		Form Letter A, see I-0008
I - 0040	-	1	Nutting	John			
I - 0041	A	1	Flynn	Patrick			Form Letter A, see I-0008
I - 0042	-	1	Cole	Stephen	R.		
I - 0043	-	1	Mueller	Andrew	J.		
I - 0044	-	1	Kozarsky	Dan			
I - 0045	-	1	Hill	Sean			
I - 0046	A	1	Reller	William	E.		Form Letter A, see I-0008
I - 0047	-	1	Maida	Susan			
I - 0048	-	1	Barr	Gracia			
I - 0049	-	1	Johnson	Kim			
I - 0050	-	1	Muehlmann	Shaylih			
I - 0051	-	1	Rutkowski	Robert	E.		
I - 0052	-	1	K	Tom			
I - 0053	-	1	Wellner	Pamela			
I - 0054	-	1	Worthy	Crista			
I - 0055	-	1	Arndorfer	Mary	E.		
I - 0056	-	1	Atwood	Carl			
I - 0057	-	1	Bennett	Scott			
I - 0058	-	1	Essler	Jim			
I - 0059	-	1	Evans	Chad		St. Ignatius College Preparatory	
I - 0060	-	1	Kapell	David			
I - 0061	-	1	LaMorte	Peter			
I - 0062	-	1	Lower	Jay	R.		
I - 0063	-	1	Needham	Sandra			
I - 0064	-	1	Parmelee	Steve			
I - 0065	-	1	Rader	Nancy			
I - 0066	-	1	Tim and Anna				
I - 0067	-	1	Vegas Billy				
I - 0068	-	1	Duba	Roger	L.		
I - 0069	-	1	Fretheim	Paul		Inyo Pro	
I - 0070	-	1	Hoch	David			
I - 0071	-	1	Nielson	D.			
I - 0072	-	1	Parmelee	Steve			
I - 0073	-	1	Turner	Tom			
I - 0074	-	1	Bird	Mark		CCSN	
I - 0075	-	1	Dazzling Dodads				
I - 0076	-	1	Blalack	Russell			
I - 0077	-	1	Daley	Iris			
I - 0078	-	1	Fred HF				
I - 0079	-	1	Gailey	Tom			
I - 0080	-	1	Hills	Richard	G.		
I - 0081	-	1	Portnoy	Dennis			
I - 0082	-	1	Crowl	Chris and Aileen			
I - 0083	-	1	Specht	Vince			
I - 0084	-	1	Warnick	Carol			
I - 0085	-	1	Rutkowski	Robert	E.		Duplicate to I-051
I - 0086	-	1	Bird	Mark		CCSN	
I - 0087	-	1	Rosenfield	Bob			
I - 0088	-	1	Young	Barbara			
I - 0089	-	1	Gliva	Steve			
I - 0090	-	1	Holladay	Dee			
I - 0091	-	1	Melissa	Melissa			
I - 0092	-	1	Runck	Todd			
I - 0093	-	1	Durante	Grant			
I - 0094	-	1	Bloebaum	Drake			
I - 0095	-	1	Grogan	Scott	A.		
I - 0096	-	1	Laitner	Larry			
I - 0097	-	1	DeWitt	Connie			
I - 0098	-	1	DeWitt	Rick			
I - 0099	-	1	Ferguson	Tom			
I - 0100	-	1	Cloutier	Guy			
I - 0101	-	1	Hurley	Cliff			
I - 0102	-	1	Robida	Jeremy			
I - 0103	-	1	Unknown				
I - 0104	-	1	Fergusom	Tom			
I - 0105	-	1	Strunk	Adam			
I - 0106	-	1	Kirsten	Edward	B.		
I - 0107	-	1	Miller	Jack	E		
I - 0108	-	1	Wolverton	William	H		
I - 0109	-	1	Bird	Mark			
I - 0110	-	1	Salley	Karen	L		
I - 0111	B	1	Hayes	Sara			Sample of Form Letter B
I - 0112	B	1	Fort-Strietzel	J	K		Form Letter B, see I-0111
I - 0113	B	1	Galvin	Peter			Form Letter B, see I-0111
I - 0114	B	1	Doll	Garry			Form Letter B, see I-0111
I - 0115	B	1	Lemkin	Mark			Form Letter B, see I-0111
I - 0116	B	1	Olsen	Lani			Form Letter B, see I-0111
I - 0117	B	1	Moss	SeEtta			Form Letter B, see I-0111
I - 0118	B	1	Petersen	John			Form Letter B, see I-0111
I - 0119	B	1	McClintock	Catherine			Form Letter B, see I-0111
I - 0120	B	1	Moss	Mikasa			Form Letter B, see I-0111
I - 0121	B	1	Kahn	Kathy			Form Letter B, see I-0111

**Table T-1  
List of Commentors Sorted By Commentor Type and Sequence Code**

Commenter Type and Sequence Code	Form Letter	Comment Group Number	Last Name	First Name	Middle Initial	Organization Name	Comments
I - 0122	B	1	Munro	Alan			Form Letter B, see I-0111
I - 0123	B	1	Johnson	Curtis			Form Letter B, see I-0111
I - 0124	B	1	Spencer	Gayle			Form Letter B, see I-0111
I - 0125	B	1	Hans	Devinder			Form Letter B, see I-0111
I - 0126	B	1	Sanderfer	Michael			Form Letter B, see I-0111
I - 0127	B	1	Newton	Peter			Form Letter B, see I-0111
I - 0128	B	1	Lilly	David			Form Letter B, see I-0111
I - 0129	B	1	Schwick	Keplin			Form Letter B, see I-0111
I - 0130	B	1	Thomson	Arran			Form Letter B, see I-0111
I - 0131	B	1	Leavitt	David			Form Letter B, see I-0111
I - 0132	B	1	Tepper	Carol			Form Letter B, see I-0111
I - 0133	B	1	Cantrell	Ann			Form Letter B, see I-0111
I - 0134	B	1	Anderson	Fred			Form Letter B, see I-0111
I - 0135	B	1	Tietzer	Daniel			Form Letter B, see I-0111
I - 0136	B	1	Brown	Michael			Form Letter B, see I-0111
I - 0137	B	1	Wolfson	Toni	A.		Form Letter B, see I-0111
I - 0138	B	1	Minde	Cindy			Form Letter B, see I-0111
I - 0139	B	1	Jacobson	Don			Form Letter B, see I-0111
I - 0140	B	1	Mauldin	Michael			Form Letter B, see I-0111
I - 0141	B	1	Bolo	Jumar			Form Letter B, see I-0111
I - 0142	B	1	Linder	Lorin			Form Letter B, see I-0111
I - 0143	B	1	Crawford	Richard			Form Letter B, see I-0111
I - 0144	B	1	Fieldman	Anita			Form Letter B, see I-0111
I - 0145	B	1	Buckner	Jocelyn			Form Letter B, see I-0111
I - 0146	B	1	Suzuki	Yusuke			Form Letter B, see I-0111
I - 0147	B	1	Tyler	Steve & Jill			Form Letter B, see I-0111
I - 0148	B	1	Gardner	Richard			Form Letter B, see I-0111
I - 0149	B	1	Miller	Cameron			Form Letter B, see I-0111
I - 0150	B	1	Barrows	Michael			Form Letter B, see I-0111
I - 0151	B	1	Montgomery	Stephen			Form Letter B, see I-0111
I - 0152	B	1	Marcus	Lynn			Form Letter B, see I-0111
I - 0153	B	1	Chester	Thomas			Form Letter B, see I-0111
I - 0154	B	1	Sever	Florian			Form Letter B, see I-0111
I - 0155	B	1	Tomczak	Eve			Form Letter B, see I-0111
I - 0156	B	1	Lynch	Dennis			Form Letter B, see I-0111
I - 0157	B	1	Clapp	Richard			Form Letter B, see I-0111
I - 0158	B	1	Fulham	Gerald			Form Letter B, see I-0111
I - 0159	B	1	Bolt	Mitchell			Form Letter B, see I-0111
I - 0160	B	1	Laffey	John	K		Form Letter B, see I-0111
I - 0161	B	1	Kucinski	Beata			Form Letter B, see I-0111
I - 0162	B	1	Onorato	John			Form Letter B, see I-0111
I - 0163	B	1	Kossack	David	S.		Form Letter B, see I-0111
I - 0164	B	1	Murray	Cristy			Form Letter B, see I-0111
I - 0165	B	1	Lopez	June			Form Letter B, see I-0111
I - 0166	B	1	Cornell	John			Form Letter B, see I-0111
I - 0167	B	1	Sorenson	John	F.		Form Letter B, see I-0111
I - 0168	B	1	Phillips	Charles			Form Letter B, see I-0111
I - 0169	B	1	Efross	Monnie	R.		Form Letter B, see I-0111
I - 0170	B	1	Koffler	Kaden			Form Letter B, see I-0111
I - 0171	B	1	Cohen	Howard			Form Letter B, see I-0111
I - 0172	B	1	Rosen	Tamara			Form Letter B, see I-0111
I - 0173	B	1	Ali-Akbarian	Leila			Form Letter B, see I-0111
I - 0174	B	1	Egger	Mark			Form Letter B, see I-0111
I - 0175	B	1	Burkey	Tormod			Form Letter B, see I-0111
I - 0176	B	1	Huggins	William			Form Letter B, see I-0111
I - 0177	B	1	Moss	Larry			Form Letter B, see I-0111
I - 0178	B	1	McLaren	Mike			Form Letter B, see I-0111
I - 0179	B	1	Suzuki	Masako			Form Letter B, see I-0111
I - 0180	B	1	Vaughan	Jennifer			Form Letter B, see I-0111
I - 0181	B	1	Poszig	Doerte			Form Letter B, see I-0111
I - 0182	B	1	Martin	Drew			Form Letter B, see I-0111
I - 0183	B	1	Lance	Barbara			Form Letter B, see I-0111
I - 0184	B	1	Shapira	Susan			Form Letter B, see I-0111
I - 0185	B	1	Campbell	Victoria			Form Letter B, see I-0111
I - 0186	B	1	Beam	Robert			Form Letter B, see I-0111
I - 0187	B	1	Egan	Thomas			Form Letter B, see I-0111
I - 0188	B	1	Flores	Nicholas	E.		Form Letter B, see I-0111
I - 0189	B	1	Siegele	Linda			Form Letter B, see I-0111
I - 0190	B	1	Salsburg	Eric			Form Letter B, see I-0111
I - 0191	B	1	Salsburg	Michele			Form Letter B, see I-0111
I - 0192	B	1	Driban	Bunny			Form Letter B, see I-0111
I - 0193	B	1	Meltzer	Richard			Form Letter B, see I-0111
I - 0194	B	1	Price	Lynn	B.		Form Letter B, see I-0111
I - 0195	B	1	Maddison	C.	J.		Form Letter B, see I-0111
I - 0196	B	1	Taranowski	Heath	A.		Form Letter B, see I-0111
I - 0197	B	1	Jensen	Nancy			Form Letter B, see I-0111
I - 0198	B	1	Jones	Diane			Form Letter B, see I-0111
I - 0199	B	1	Harris	Ed			Form Letter B, see I-0111
I - 0200	B	1	Kudo	Taiko			Form Letter B, see I-0111
I - 0201	B	1	Beard	Lara			Form Letter B, see I-0111
I - 0202	B	1	Stimson	Karen			Form Letter B, see I-0111
I - 0203	B	1	Schwartz	Sam & Jan			Form Letter B, see I-0111
I - 0204	B	1	Wittekind	Ray			Form Letter B, see I-0111
I - 0205	B	1	McAlpine	Paul			Form Letter B, see I-0111
I - 0206	B	1	Riley	Kelly			Form Letter B, see I-0111

**Table T-1  
List of Commentors Sorted By Commentor Type and Sequence Code**

Commenter Type and Sequence Code	Form Letter	Comment Group Number	Last Name	First Name	Middle Initial	Organization Name	Comments
I - 0207	-	1	Pihl	Eric			
I - 0208	B	1	Peterson	William			Form Letter B, see I-0111
I - 0209	B	1	Batchelder	Carol			Form Letter B, see I-0111
I - 0210	B	1	Reynolds	Toni			Form Letter B, see I-0111
I - 0211	B	1	Miller	Barry			Form Letter B, see I-0111
I - 0212	B	1	Silver	Ronald	H.		Form Letter B, see I-0111
I - 0213	B	1	Wichman	Michael			Form Letter B, see I-0111
I - 0214	B	1	Silver	Margaret			Form Letter B, see I-0111
I - 0215	B	1	Moss	Paul			Form Letter B, see I-0111
I - 0216	B	1	Austin	Shane			Form Letter B, see I-0111
I - 0217	B	1	Mann	Britney			Form Letter B, see I-0111
I - 0218	B	1	Green	Jason	J		Form Letter B, see I-0111
I - 0219	B	1	Lee	Richard			Form Letter B, see I-0111
I - 0220	B	1	Traub	Susan			Form Letter B, see I-0111
I - 0221	B	1	Mioduski	B.			Form Letter B, see I-0111
I - 0222	B	1	Minton	Joanne			Form Letter B, see I-0111
I - 0223	B	1	Sciacca	Barbara			Form Letter B, see I-0111
I - 0224	B	1	Wedow	Nancy			Form Letter B, see I-0111
I - 0225	B	1	Peters	Gene & Doris			Form Letter B, see I-0111
I - 0226	B	1	Heller	Joshua			Form Letter B, see I-0111
I - 0227	B	1	Oelrich	Frederick			Form Letter B, see I-0111
I - 0228	B	1	Tahany	Kevin			Form Letter B, see I-0111
I - 0229	B	1	Shapiro	Leo			Form Letter B, see I-0111
I - 0230	B	1	Spindler	Steve			Form Letter B, see I-0111
I - 0231	B	1	Burns	Matthew			Form Letter B, see I-0111
I - 0232	B	1	Shapiro	Richard			Form Letter B, see I-0111
I - 0233	B	1	Mankowski	Craig			Form Letter B, see I-0111
I - 0234	B	1	Jones	David			Form Letter B, see I-0111
I - 0235	B	1	Van Wicklen	Ed			Form Letter B, see I-0111
I - 0236	-	1	Sheathelm	Herbert			
I - 0237	B	1	Petricone	Ingrid			Form Letter B, see I-0111
I - 0238	B	1	Gidseg	Eric			Form Letter B, see I-0111
I - 0239	B	1	Howenstein	David			Form Letter B, see I-0111
I - 0240	B	1	Neerman	Deborah			Form Letter B, see I-0111
I - 0241	B	1	Pedersen	JoAnn			Form Letter B, see I-0111
I - 0242	-	1	Mahar	Suki			
I - 0243	B	1	Houseworth	Bradley			Form Letter B, see I-0111
I - 0244	B	1	Hurdich	Lauren			Form Letter B, see I-0111
I - 0245	B	1	Radcliffe	Shawn			Form Letter B, see I-0111
I - 0246	B	1	Lange	Marlena			Form Letter B, see I-0111
I - 0247	B	1	Evans	Dinda			Form Letter B, see I-0111
I - 0248	B	1	Ford	Julie	C.		Form Letter B, see I-0111
I - 0249	B	1	Henderson	Barbara			Form Letter B, see I-0111
I - 0250	B	1	Cravey	Suzanne			Form Letter B, see I-0111
I - 0251	B	1	Li	Jake			Form Letter B, see I-0111
I - 0252	B	1	Mohorich	Phillip			Form Letter B, see I-0111
I - 0253	B	1	Millett	Lydia			Form Letter B, see I-0111
I - 0254	B	1	Egan	Veronica			Form Letter B, see I-0111
I - 0255	B	1	Esra	Nijn			Form Letter B, see I-0111
I - 0256	B	1	Green	Suzanne			Form Letter B, see I-0111
I - 0257	B	1	Lovejoy	Bill			Form Letter B, see I-0111
I - 0258	B	1	Muhly	Ernest	JP		Form Letter B, see I-0111
I - 0259	B	1	Reid	Glenn			Form Letter B, see I-0111
I - 0260	B	1	Schneider	George			Form Letter B, see I-0111
I - 0261	B	1	Buttyn	Anne			Form Letter B, see I-0111
I - 0262	B	1	Lytle	Denise			Form Letter B, see I-0111
I - 0263	B	1	Tot	Steven			Form Letter B, see I-0111
I - 0264	B	1	Vermillion	Eliza			Form Letter B, see I-0111
I - 0265	B	1	Schnell	Michael			Form Letter B, see I-0111
I - 0266	B	1	Miller	Vivian			Form Letter B, see I-0111
I - 0267	B	1	Brady	Randall			Form Letter B, see I-0111
I - 0268	B	1	Brady	Randall			Form Letter B, see I-0111
I - 0269	B	1	Blais	Matt			Form Letter B, see I-0111
I - 0270	B	1	Derzon	Jim			Form Letter B, see I-0111
I - 0271	B	1	Hanlon	Colleen			Form Letter B, see I-0111
I - 0272	B	1	Cassidy	Virginia			Form Letter B, see I-0111
I - 0273	B	1	Schubert	Aaron			Form Letter B, see I-0111
I - 0274	B	1	Gabaldon	Marla			Form Letter B, see I-0111
I - 0275	B	1	Corcoran	James			Form Letter B, see I-0111
I - 0276	B	1	Sutton	Adrienne			Form Letter B, see I-0111
I - 0277	B	1	Shlackman	Mara			Form Letter B, see I-0111
I - 0278	B	1	Donnelly	Stephen			Form Letter B, see I-0111
I - 0279	B	1	Huesemann	Michael and Joyce			Form Letter B, see I-0111
I - 0280	B	1	Lopez	Anthony	G		Form Letter B, see I-0111
I - 0281	B	1	Ford	Chris			Form Letter B, see I-0111
I - 0282	B	1	Hebeisen	Julie			Form Letter B, see I-0111
I - 0283	B	1	Falc	Pete			Form Letter B, see I-0111
I - 0284	B	1	Binkelman	Amity			Form Letter B, see I-0111
I - 0285	B	1	Terbot	Lee and Charlotte			Form Letter B, see I-0111
I - 0286	B	1	Enderson	Erik			Form Letter B, see I-0111
I - 0287	B	1	Bordenave	Michael			Form Letter B, see I-0111
I - 0288	B	1	Grahn	Charlene			Form Letter B, see I-0111
I - 0289	B	1	Bradley	Stephanie			Form Letter B, see I-0111
I - 0290	B	1	Aide	Jason			Form Letter B, see I-0111
I - 0291	B	1	Daly	Maia			Form Letter B, see I-0111

**Table T-1  
List of Commentors Sorted By Commentor Type and Sequence Code**

Commenter Type and Sequence Code	Form Letter	Comment Group Number	Last Name	First Name	Middle Initial	Organization Name	Comments
I - 0292	B	1	Hitt	Kelly			Form Letter B, see I-0111
I - 0293	B	1	Kellett	Michael			Form Letter B, see I-0111
I - 0294	B	1	Button	Ed			Form Letter B, see I-0111
I - 0295	B	1	Boldt	Todd			Form Letter B, see I-0111
I - 0296	B	1	Jamieson	Ruth			Form Letter B, see I-0111
I - 0297	B	1	Dane	William			Form Letter B, see I-0111
I - 0298	B	1	Siegfried	Brad			Form Letter B, see I-0111
I - 0299	B	1	Bloomer	Jerry			Form Letter B, see I-0111
I - 0300	B	1	Jones	Leslie			Form Letter B, see I-0111
I - 0301	B	1	Wilkinson	Jon			Form Letter B, see I-0111
I - 0302	B	1	Pintilie	Elena			Form Letter B, see I-0111
I - 0303	B	1	Herzog	Kathryn			Form Letter B, see I-0111
I - 0304	B	1	Jenkins	Basil			Form Letter B, see I-0111
I - 0305	B	1	Seliger	Pat			Form Letter B, see I-0111
I - 0306	B	1	Weber	Deborah			Form Letter B, see I-0111
I - 0307	B	1	Shumate	Charlene			Form Letter B, see I-0111
I - 0308	B	1	Watson	Chris			Form Letter B, see I-0111
I - 0309	B	1	Hoch	Jeffrey			Form Letter B, see I-0111
I - 0310	B	1	Mahoney	Linda			Form Letter B, see I-0111
I - 0311	B	1	Sullivan	Kristin			Form Letter B, see I-0111
I - 0312	B	1	Dunne	Stephen			Form Letter B, see I-0111
I - 0313	B	1	Bradbury	David	E		Form Letter B, see I-0111
I - 0314	B	1	Greenwood	Karin and Richard			Form Letter B, see I-0111
I - 0315	B	1	Stokes	Susan			Form Letter B, see I-0111
I - 0316	B	1	Watson	Jennifer			Form Letter B, see I-0111
I - 0317	B	1	Kester	Lenore			Form Letter B, see I-0111
I - 0318	B	1	Morello	Phyl			Form Letter B, see I-0111
I - 0319	B	1	Delaney	D	D		Form Letter B, see I-0111
I - 0320	B	1	Watrous	Frank			Form Letter B, see I-0111
I - 0321	B	1	Rhoads	Kirk			Form Letter B, see I-0111
I - 0322	B	1	Conley	Jan			Form Letter B, see I-0111
I - 0323	-	1	Campion	Nick			
I - 0324	B	1	Wagner	Robert			Form Letter B, see I-0111
I - 0325	B	1	Sprague	Jennifer			Form Letter B, see I-0111
I - 0326	B	1	Van Manen	Dave and Helene			Form Letter B, see I-0111
I - 0327	B	1	McKemie	Sharon			Form Letter B, see I-0111
I - 0328	B	1	Garvin	Michael	J.		Form Letter B, see I-0111
I - 0329	B	1	Brussmann	Peter			Form Letter B, see I-0111
I - 0330	B	1	Marsh	Stephanie			Form Letter B, see I-0111
I - 0331	B	1	McFarland	Tracy			Form Letter B, see I-0111
I - 0332	B	1	Pejchar	Linda			Form Letter B, see I-0111
I - 0333	B	1	Teolis	Simon			Form Letter B, see I-0111
I - 0334	B	1	Bumpus	Nancy			Form Letter B, see I-0111
I - 0335	B	1	Steele	Todd	H.		Form Letter B, see I-0111
I - 0336	B	1	Ortman	Debby			Form Letter B, see I-0111
I - 0337	B	1	Peirce	Jeri			Form Letter B, see I-0111
I - 0338	B	1	Giovanni	Dianne			Form Letter B, see I-0111
I - 0339	B	1	O'Sullivan	Joseph			Form Letter B, see I-0111
I - 0340	B	1	Cashner	Frances & Robert			Form Letter B, see I-0111
I - 0341	B	1	Asselin	David			Form Letter B, see I-0111
I - 0342	B	1	Golden	Jerry			Form Letter B, see I-0111
I - 0343	B	1	Gerard	Kathleen			Form Letter B, see I-0111
I - 0344	B	1	Hokin	H.	L.		Form Letter B, see I-0111
I - 0345	B	1	Cox	Chadwick			Form Letter B, see I-0111
I - 0346	B	1	Weyer	Linda			Form Letter B, see I-0111
I - 0347	B	1	Fitzell	Anne	M.		Form Letter B, see I-0111
I - 0348	B	1	Turek	Gabriella			Form Letter B, see I-0111
I - 0349	B	1	Koehler	Anson			Form Letter B, see I-0111
I - 0350	B	1	Howell	Donna			Form Letter B, see I-0111
I - 0351	B	1	Bernstein	Jill			Form Letter B, see I-0111
I - 0352	B	1	Jones	Mitch			Form Letter B, see I-0111
I - 0353	B	1	Marshall	Lisa			Form Letter B, see I-0111
I - 0354	B	1	Burk	Joyce			Form Letter B, see I-0111
I - 0355	B	1	Gillespie	Sheryl			Form Letter B, see I-0111
I - 0356	B	1	Shaheen	Sean			Form Letter B, see I-0111
I - 0357	B	1	Cole	Michele			Form Letter B, see I-0111
I - 0358	B	1	Boudreaux	Greg			Form Letter B, see I-0111
I - 0359	B	1	Jones	Suzanne			Form Letter B, see I-0111
I - 0360	B	1	Saylor	Jared			Form Letter B, see I-0111
I - 0361	B	1	Martinez	Vincent			Form Letter B, see I-0111
I - 0362	B	1	Abbott	Doug & Susan			Form Letter B, see I-0111
I - 0363	B	1	Carter	Marian			Form Letter B, see I-0111
I - 0364	B	1	Warren	Kenneth			Form Letter B, see I-0111
I - 0365	B	1	Olson	Peter			Form Letter B, see I-0111
I - 0366	B	1	Klein	Stuart & Jeanne			Form Letter B, see I-0111
I - 0367	B	1	Jenks	Jean			Form Letter B, see I-0111
I - 0368	B	1	Watson	Mark			Form Letter B, see I-0111
I - 0369	B	1	Heinzig	Dennis			Form Letter B, see I-0111
I - 0370	B	1	Rutkowski	Robert			Form Letter B, see I-0111
I - 0371	B	1	Strobel	Jeanine			Form Letter B, see I-0111
I - 0372	B	1	Mathis	Rebecca			Form Letter B, see I-0111
I - 0373	B	1	Waupoose	David	L.		Form Letter B, see I-0111
I - 0374	B	1	Dremann	Craig			Form Letter B, see I-0111
I - 0375	B	1	Mendieta	Vince			Form Letter B, see I-0111
I - 0376	B	1	Whaley	Richard & Susan			Form Letter B, see I-0111

**Table T-1  
List of Commentors Sorted By Commentor Type and Sequence Code**

Commenter Type and Sequence Code	Form Letter	Comment Group Number	Last Name	First Name	Middle Initial	Organization Name	Comments
I - 0377	B	1	McQuinn	Donald	E.		Form Letter B, see I-0111
I - 0378	B	1	Griffith	Jennifer			Form Letter B, see I-0111
I - 0379	B	1	Whited	Kiley			Form Letter B, see I-0111
I - 0380	B	1	Davis	Mary			Form Letter B, see I-0111
I - 0381	B	1	Munoz	Axhel			Form Letter B, see I-0111
I - 0382	B	1	Mariotti	Lisa			Form Letter B, see I-0111
I - 0383	-	1	Richardson	Don			
I - 0384	B	1	Letendre	Donald			Form Letter B, see I-0111
I - 0385	B	1	Buss	Bill			Form Letter B, see I-0111
I - 0386	B	1	Deegan	James			Form Letter B, see I-0111
I - 0387	B	1	Breiding	Joan			Form Letter B, see I-0111
I - 0388	B	1	Samela	Michele			Form Letter B, see I-0111
I - 0389	B	1	Gaede	Marnie & Marc			Form Letter B, see I-0111
I - 0390	B	1	Stimpert	Jacqueline			Form Letter B, see I-0111
I - 0391	B	1	Sacerdote	Allison			Form Letter B, see I-0111
I - 0392	B	1	Hammett	Julia			Form Letter B, see I-0111
I - 0393	B	1	Van Dyke	Sara			Form Letter B, see I-0111
I - 0394	B	1	Means	Conner			Form Letter B, see I-0111
I - 0395	B	1	Rolfes	Kay			Form Letter B, see I-0111
I - 0396	B	1	Bonner	James			Form Letter B, see I-0111
I - 0397	B	1	Heineman	Robert	M.		Form Letter B, see I-0111
I - 0398	B	1	Mohr	T			Form Letter B, see I-0111
I - 0399	B	1	Hardy	Dian			Form Letter B, see I-0111
I - 0400	B	1	Behrakis	Deborah			Form Letter B, see I-0111
I - 0401	B	1	Carlson	Larry			Form Letter B, see I-0111
I - 0402	B	1	S	R			Form Letter B, see I-0111
I - 0403	B	1	Csoka	Barbara			Form Letter B, see I-0111
I - 0404	B	1	Hammer	Mark			Form Letter B, see I-0111
I - 0405	B	1	Kohler	John			Form Letter B, see I-0111
I - 0406	B	1	Davis	Paul			Form Letter B, see I-0111
I - 0407	B	1	Dees	Regina			Form Letter B, see I-0111
I - 0408	B	1	Fritzinger	Dennis			Form Letter B, see I-0111
I - 0409	B	1	Holmes Fatooh	Audrey	A.		Form Letter B, see I-0111
I - 0410	B	1	Britton	Melissa			Form Letter B, see I-0111
I - 0411	B	1	Allaback	Mark			Form Letter B, see I-0111
I - 0412	B	1	Salvo	Mark			Form Letter B, see I-0111
I - 0413	B	1	Starks	Lee			Form Letter B, see I-0111
I - 0414	B	1	Gunther	Donald & Alberta			Form Letter B, see I-0111
I - 0415	B	1	Baumgartner	W	M		Form Letter B, see I-0111
I - 0416	B	1	Blaise	Sharlane			Form Letter B, see I-0111
I - 0417	B	1	Janowitz-Price	Beverly			Form Letter B, see I-0111
I - 0418	B	1	Riker	Pat			Form Letter B, see I-0111
I - 0419	B	1	Carter	Michael			Form Letter B, see I-0111
I - 0420	-	1	Zakin	Susan			
I - 0421	B	1	Monsen	John			Form Letter B, see I-0111
I - 0422	B	1	Parry	Ronald			Form Letter B, see I-0111
I - 0423	B	1	Pierce	Marc			Form Letter B, see I-0111
I - 0424	B	1	Salazar	Joe			Form Letter B, see I-0111
I - 0425	B	1	Tax	Wienke			Form Letter B, see I-0111
I - 0426	B	1	Shepherd	Jennifer			Form Letter B, see I-0111
I - 0427	B	1	Carpio	Anthony			Form Letter B, see I-0111
I - 0428	B	1	Capps	Dan			Form Letter B, see I-0111
I - 0429	B	1	Cook	Mira			Form Letter B, see I-0111
I - 0430	B	1	Harding	Kevin			Form Letter B, see I-0111
I - 0431	B	1	Breen	Bob & Pam			Form Letter B, see I-0111
I - 0432	B	1	Cordeau	Stephanie			Form Letter B, see I-0111
I - 0433	B	1	Thomas	Kevin			Form Letter B, see I-0111
I - 0434	B	1	Falberg	Gregory			Form Letter B, see I-0111
I - 0435	B	1	Schubert	Jesse			Form Letter B, see I-0111
I - 0436	B	1	Norman	Greg			Form Letter B, see I-0111
I - 0437	B	1	Tobias	David			Form Letter B, see I-0111
I - 0438	B	1	Milliken	Gerry			Form Letter B, see I-0111
I - 0439	B	1	Simon	Philip			Form Letter B, see I-0111
I - 0440	B	1	Vogel	Karen			Form Letter B, see I-0111
I - 0441	B	1	Poulos	Bonnie	T.		Form Letter B, see I-0111
I - 0442	B	1	Colbert	Mike			Form Letter B, see I-0111
I - 0443	B	1	Lay	Kevin			Form Letter B, see I-0111
I - 0444	B	1	Previtali	Andrea			Form Letter B, see I-0111
I - 0445	B	1	Marugg	Cynthia			Form Letter B, see I-0111
I - 0446	B	1	McRee	Livia			Form Letter B, see I-0111
I - 0447	B	1	Wischmeyer	A	J		Form Letter B, see I-0111
I - 0448	B	1	Jasper	Marilyn			Form Letter B, see I-0111
I - 0449	B	1	Tasoff	Jack			Form Letter B, see I-0111
I - 0450	B	1	Metzler	Douglas			Form Letter B, see I-0111
I - 0451	B	1	Schneller	Ellen			Form Letter B, see I-0111
I - 0452	B	1	Eremita	Linda			Form Letter B, see I-0111
I - 0453	B	1	M	Jonelle			Form Letter B, see I-0111
I - 0454	B	1	Rosen	William			Form Letter B, see I-0111
I - 0455	B	1	Herner	Betty	J		Form Letter B, see I-0111
I - 0456	B	1	Wiens	Devon	H.		Form Letter B, see I-0111
I - 0457	B	1	Bennon	Natalie			Form Letter B, see I-0111
I - 0458	B	1	Ingram	Mike			Form Letter B, see I-0111
I - 0459	B	1	Yake	William	E.		Form Letter B, see I-0111
I - 0460	B	1	Jensen	Sandy			Form Letter B, see I-0111
I - 0461	B	1	Gartner	Connie & Ted			Form Letter B, see I-0111

**Table T-1  
List of Commentors Sorted By Commentor Type and Sequence Code**

Commenter Type and Sequence Code	Form Letter	Comment Group Number	Last Name	First Name	Middle Initial	Organization Name	Comments
I - 0462	B	1	Segovia	Sandra			Form Letter B, see I-0111
I - 0463	B	1	Presto	Steven			Form Letter B, see I-0111
I - 0464	B	1	Rings	Sally			Form Letter B, see I-0111
I - 0465	B	1	Schaub, Jr.	John			Form Letter B, see I-0111
I - 0466	B	1	Hadderman	Margaret			Form Letter B, see I-0111
I - 0467	B	1	Zarkowski	De Ann			Form Letter B, see I-0111
I - 0468	B	1	Steiner	John			Form Letter B, see I-0111
I - 0469	B	1	O	Nance			Form Letter B, see I-0111
I - 0470	B	1	Martinson-Bartlett	Ann			Form Letter B, see I-0111
I - 0471	B	1	Eberz	Noelle			Form Letter B, see I-0111
I - 0472	-	1	Savage	Melissa			
I - 0473	B	1	Stern	Billy			Form Letter B, see I-0111
I - 0474	B	1	Malmid	Wendy			Form Letter B, see I-0111
I - 0475	B	1	Schneider	Anna			Form Letter B, see I-0111
I - 0476	B	1	Ciamaritaro	Joseph			Form Letter B, see I-0111
I - 0477	B	1	Davlanges	Nancy			Form Letter B, see I-0111
I - 0478	B	1	Conklin	Erik			Form Letter B, see I-0111
I - 0479	B	1	Boone	Foster			Form Letter B, see I-0111
I - 0480	-	1	Imam	Bassam			
I - 0481	B	1	Dryer	James			Form Letter B, see I-0111
I - 0482	B	1	Baetz	Jacquelyn			Form Letter B, see I-0111
I - 0483	B	1	Marlow	Kimberly			Form Letter B, see I-0111
I - 0484	B	1	Jantz	Eric			Form Letter B, see I-0111
I - 0485	B	1	Ramos	Carlos			Form Letter B, see I-0111
I - 0486	B	1	Vassar	Kristen			Form Letter B, see I-0111
I - 0487	B	1	Gilstrap	Helen			Form Letter B, see I-0111
I - 0488	B	1	Hedstrom	Jonathan			Form Letter B, see I-0111
I - 0489	B	1	Ritter	Amy			Form Letter B, see I-0111
I - 0490	B	1	Jarocki	Martha			Form Letter B, see I-0111
I - 0491	B	1	Hagwood	Sheri			Form Letter B, see I-0111
I - 0492	B	1	Mack	Callie			Form Letter B, see I-0111
I - 0493	B	1	Mick	Dolly			Form Letter B, see I-0111
I - 0494	B	1	Johnson	Christina			Form Letter B, see I-0111
I - 0495	B	1	Warren	Gregory			Form Letter B, see I-0111
I - 0496	B	1	Gregory	Joe			Form Letter B, see I-0111
I - 0497	B	1	Wilson	Kendrick			Form Letter B, see I-0111
I - 0498	B	1	Killgore	John			Form Letter B, see I-0111
I - 0499	-	1	Decker	Allen			
I - 0500	B	1	Whalen	Lori			Form Letter B, see I-0111
I - 0501	B	1	Knapp	David			Form Letter B, see I-0111
I - 0502	-	1	Furlong	Kevin			
I - 0503	B	1	Prchal	Steve			Form Letter B, see I-0111
I - 0504	B	1	Adams	Evelyn			Form Letter B, see I-0111
I - 0505	B	1	Warner	Barbara			Form Letter B, see I-0111
I - 0506	B	1	Parker	Erika			Form Letter B, see I-0111
I - 0507	B	1	Crawford	David			Form Letter B, see I-0111
I - 0508	B	1	Markam	Thomas			Form Letter B, see I-0111
I - 0509	B	1	Bartl	Alan			Form Letter B, see I-0111
I - 0510	B	1	De Costanzo	Danielle			Form Letter B, see I-0111
I - 0511	B	1	Stephens	Josh			Form Letter B, see I-0111
I - 0512	B	1	Peterson	Gregory			Form Letter B, see I-0111
I - 0513	B	1	Pellicani	Andrea			Form Letter B, see I-0111
I - 0514	-	1	Collins	Jimbo			
I - 0515	B	1	Hopkins	Thomas			Form Letter B, see I-0111
I - 0516	B	1	Favilla	Christine			Form Letter B, see I-0111
I - 0517	B	1	Milinovitch	Maggie & Richard			Form Letter B, see I-0111
I - 0518	B	1	Berne	David			Form Letter B, see I-0111
I - 0519	-	1	Cuccio	Joe			
I - 0520	B	1	Vosburgh	Victoria			Form Letter B, see I-0111
I - 0521	B	1	Narayan	Anupam			Form Letter B, see I-0111
I - 0522	B	1	Smith	Diane			Form Letter B, see I-0111
I - 0523	B	1	Brooker	Catherine			Form Letter B, see I-0111
I - 0524	B	1	Yoder	Donna			Form Letter B, see I-0111
I - 0525	-	1	Riddle	Donna			
I - 0526	B	1	LeClair-Green	Keren			Form Letter B, see I-0111
I - 0527	B	1	Wilbur	David			Form Letter B, see I-0111
I - 0528	B	1	Salafsky	David			Form Letter B, see I-0111
I - 0529	B	1	Wolf	Rachel			Form Letter B, see I-0111
I - 0530	B	1	Mackey	Megan			Form Letter B, see I-0111
I - 0531	B	1	Solon	Brett			Form Letter B, see I-0111
I - 0532	B	1	Skowronski	Chad			Form Letter B, see I-0111
I - 0533	B	1	Dawson	Peggy			Form Letter B, see I-0111
I - 0534	B	1	Musy	Pierre			Form Letter B, see I-0111
I - 0535	B	1	Welsh	Deborah			Form Letter B, see I-0111
I - 0536	B	1	Hanson	Marilyn			Form Letter B, see I-0111
I - 0537	B	1	Gribelin	Edith			Form Letter B, see I-0111
I - 0538	B	1	Palm	Jessana			Form Letter B, see I-0111
I - 0539	B	1	Costeas	Elaine			Form Letter B, see I-0111
I - 0540	B	1	Johnson	Iver			Form Letter B, see I-0111
I - 0541	B	1	Largay	John			Form Letter B, see I-0111
I - 0542	B	1	Berger	Sherwin			Form Letter B, see I-0111
I - 0543	B	1	Browne	R	J		Form Letter B, see I-0111
I - 0544	B	1	Carroll	Hanna			Form Letter B, see I-0111
I - 0545	B	1	Wolfe	Gerry and Vicki			Form Letter B, see I-0111
I - 0546	B	1	Vargas	Todeo			Form Letter B, see I-0111



**Table T-1  
List of Commentors Sorted By Commentor Type and Sequence Code**

Commenter Type and Sequence Code	Form Letter	Comment Group Number	Last Name	First Name	Middle Initial	Organization Name	Comments
I - 0547	B	1	Keoppen	M			Form Letter B, see I-0111
I - 0548	B	1	Monohan	Elizabeth			Form Letter B, see I-0111
I - 0549	B	1	Lamb	Terence	R		Form Letter B, see I-0111
I - 0550	B	1	Callicott	Burton			Form Letter B, see I-0111
I - 0551	B	1	Monroe	Marilyn	L		Form Letter B, see I-0111
I - 0552	B	1	Loeff	Peter			Form Letter B, see I-0111
I - 0553	B	1	Senour	Jon	C		Form Letter B, see I-0111
I - 0554	B	1	Kinman	Crystal			Form Letter B, see I-0111
I - 0555	B	1	Cooke	Susan			Form Letter B, see I-0111
I - 0556	B	1	Woods	James	L		Form Letter B, see I-0111
I - 0557	B	1	Krudger	Jon			Form Letter B, see I-0111
I - 0578	B	1	Kozak	Allison			Form Letter B, see I-0111
I - 0579	B	1	Trautwein	Brian			Form Letter B, see I-0111
I - 0580	B	1	Provencio	Rick			Form Letter B, see I-0111
I - 0581	B	1	Orr	Joe			Form Letter B, see I-0111
I - 0582	B	1	Bernardi	Nancy			Form Letter B, see I-0111
I - 0583	-	1	Garton	Jan			
I - 0584	B	1	Rosenkrantz	Stewart			Form Letter B, see I-0111
I - 0585	B	1	Lowe	Kimberly			Form Letter B, see I-0111
I - 0586	B	1	Hewitt	Elizabeth	T.		Form Letter B, see I-0111
I - 0587	B	1	Anthony	Paul	RW		Form Letter B, see I-0111
I - 0588	B	1	Stablein	Angela			Form Letter B, see I-0111
I - 0589	B	1	Chrostowski	Lenny			Form Letter B, see I-0111
I - 0590	B	1	Mullarkey	Mike			Form Letter B, see I-0111
I - 0591	B	1	Juliani	Gerald			Form Letter B, see I-0111
I - 0592	-	1	Mackay	James			
I - 0593	B	1	Bragg Jr	Charles			Form Letter B, see I-0111
I - 0594	B	1	Alexakos	Irene			Form Letter B, see I-0111
I - 0595	B	1	Kozlowski	David			Form Letter B, see I-0111
I - 0596	B	1	Van Til	Evelyn			Form Letter B, see I-0111
I - 0597	B	1	Sonoquie	Mo			Form Letter B, see I-0111
I - 0598	B	1	Mabli	Samantha			Form Letter B, see I-0111
I - 0599	B	1	Abate	Andrew			Form Letter B, see I-0111
I - 0600	B	1	Denison	Lou Anna			Form Letter B, see I-0111
I - 0601	B	1	Spevak	Edward			Form Letter B, see I-0111
I - 0602	B	1	Borgmann	Kathi			Form Letter B, see I-0111
I - 0603	B	1	Stricks	Jessica			Form Letter B, see I-0111
I - 0604	B	1	Barrett	Jeffery			Form Letter B, see I-0111
I - 0605	B	1	Burnett	Brenda			Form Letter B, see I-0111
I - 0606	B	1	VanHook	Jessica			Form Letter B, see I-0111
I - 0607	B	1	Lynne	Marty			Form Letter B, see I-0111
I - 0608	B	1	Nordmark	Sandra			Form Letter B, see I-0111
I - 0609	B	1	Grubb	Rick			Form Letter B, see I-0111
I - 0610	B	1	Naurath	David			Form Letter B, see I-0111
I - 0611	B	1	Hedinger	Nicole			Form Letter B, see I-0111
I - 0612	B	1	Newton	Ilonka			Form Letter B, see I-0111
I - 0613	B	1	Russell	Laura			Form Letter B, see I-0111
I - 0614	B	1	Carter	June			Form Letter B, see I-0111
I - 0615	B	1	Butts	James			Form Letter B, see I-0111
I - 0616	B	1	Johnson	Carla			Form Letter B, see I-0111
I - 0617	B	1	Mckinney	Harold			Form Letter B, see I-0111
I - 0618	B	1	Cross	Jessie			Form Letter B, see I-0111
I - 0619	B	1	Liles	Sherry			Form Letter B, see I-0111
I - 0620	B	1	Harkey	Marylin & Warren			Form Letter B, see I-0111
I - 0621	B	1	Stewart	Glenn	R.		Form Letter B, see I-0111
I - 0622	B	1	Narayan	A			Form Letter B, see I-0111
I - 0623	B	1	Copeland	Mel			Form Letter B, see I-0111
I - 0624	B	1	Wingard	Michel			Form Letter B, see I-0111
I - 0625	B	1	Boegers	Kathleen			Form Letter B, see I-0111
I - 0626	B	1	Cherner	Beverly		Golden Gate National Recreation Area	Form Letter B, see I-0111
I - 0627	B	1	Robinson	Dvora			Form Letter B, see I-0111
I - 0628	B	1	Pearce	Farion			Form Letter B, see I-0111
I - 0629	B	1	Ricevuto	Chuck			Form Letter B, see I-0111
I - 0630	B	1	Johnston	Denver			Form Letter B, see I-0111
I - 0631	B	1	Fink	Brian			Form Letter B, see I-0111
I - 0632	B	1	Sawdon	Rosemarie			Form Letter B, see I-0111
I - 0633	B	1	McGinnis	Michael			Form Letter B, see I-0111
I - 0634	B	1	Miller	Joan			Form Letter B, see I-0111
I - 0635	B	1	Long	Nichole			Form Letter B, see I-0111
I - 0636	B	1	Mudd	Ned			Form Letter B, see I-0111
I - 0637	B	1	Winslett	Larry			Form Letter B, see I-0111
I - 0638	B	1	Gilland	James			Form Letter B, see I-0111
I - 0639	B	1	Stein	Herb			Form Letter B, see I-0111
I - 0640	-	1	Frank	B			
I - 0641	B	1	Hawley	Maureen			Form Letter B, see I-0111
I - 0642	B	1	Faulstich	Paul			Form Letter B, see I-0111
I - 0643	B	1	Belli	Joseph			Form Letter B, see I-0111
I - 0644	B	1	Ellison	George			Form Letter B, see I-0111
I - 0645	B	1	Hernandez	Tony			Form Letter B, see I-0111
I - 0646	B	1	Gaither-Banchoff	Kevin			Form Letter B, see I-0111
I - 0647	B	1	Patterson	Mary	E		Form Letter B, see I-0111
I - 0648	B	1	Difelici	Celeste			Form Letter B, see I-0111
I - 0649	-	1	Henry	Seth			
I - 0650	B	1	Patrizzi	Lee			Form Letter B, see I-0111
I - 0651	B	1	Johnson	Kim			Form Letter B, see I-0111

**Table T-1**  
**List of Commentors Sorted By Commentor Type and Sequence Code**

Commenter Type and Sequence Code	Form Letter	Comment Group Number	Last Name	First Name	Middle Initial	Organization Name	Comments
I - 0652	B	1	Schneider	Greg			Form Letter B, see I-0111
I - 0653	B	1	Mark	Marie			Form Letter B, see I-0111
I - 0654	B	1	Baer	Barbara			Form Letter B, see I-0111
I - 0655	B	1	Kochler	Drew			Form Letter B, see I-0111
I - 0656	B	1	Meyer	Robert			Form Letter B, see I-0111
I - 0657	B	1	Lotz	Jonathan			Form Letter B, see I-0111
I - 0658	B	1	Kosek	Shirley			Form Letter B, see I-0111
I - 0659	B	1	Bryant	Larry			Form Letter B, see I-0111
I - 0660	B	1	Hurley	Robert			Form Letter B, see I-0111
I - 0661	B	1	Hazlett	Jeanie			Form Letter B, see I-0111
I - 0662	B	1	Ledesma	Jerry			Form Letter B, see I-0111
I - 0663	B	1	Tabili	Laura			Form Letter B, see I-0111
I - 0664	B	1	Lockard	Don			Form Letter B, see I-0111
I - 0665	B	1	Pollock	James	W		Form Letter B, see I-0111
I - 0666	B	1	Mertx	Robert	A		Form Letter B, see I-0111
I - 0667	B	1	Linnerooth	Steve			Form Letter B, see I-0111
I - 0668	B	1	Clarke	Tim			Form Letter B, see I-0111
I - 0669	B	1	Cerling	Claire			Form Letter B, see I-0111
I - 0670	B	1	Futrell	Sherrill			Form Letter B, see I-0111
I - 0671	B	1	Centener	Randy			Form Letter B, see I-0111
I - 0672	B	1	Patton	Carol			Form Letter B, see I-0111
I - 0673	B	1	Blunt	Keith			Form Letter B, see I-0111
I - 0674	B	1	Rosenblatt	Richard			Form Letter B, see I-0111
I - 0675	B	1	Rubin	Michael			Form Letter B, see I-0111
I - 0676	-	1	Spotts	Richard			
I - 0677	-	1	Lokey	E			
I - 0678	B	1	Vilcins	Inger		Department of Biological Sciences	Form Letter B, see I-0111
I - 0679	B	1	Mildrexler	David			Form Letter B, see I-0111
I - 0680	B	1	Garvey	Lydia			Form Letter B, see I-0111
I - 0681	B	1	Reed	Mary	S		Form Letter B, see I-0111
I - 0682	B	1	Rabinowitz	Jeanine			Form Letter B, see I-0111
I - 0683	B	1	Greenwood	Carol			Form Letter B, see I-0111
I - 0684	B	1	Sprague	Karen			Form Letter B, see I-0111
I - 0685	B	1	Brown	Charles			Form Letter B, see I-0111
I - 0686	B	1	Reynolds	Nancy			Form Letter B, see I-0111
I - 0687	B	1	Parrish	Larry			Form Letter B, see I-0111
I - 0688	B	1	Hill	Cody			Form Letter B, see I-0111
I - 0689	B	1	Sogorka	Marcie			Form Letter B, see I-0111
I - 0690	B	1	Pedersen	John			Form Letter B, see I-0111
I - 0691	B	1	Warren	Aaron			Form Letter B, see I-0111
I - 0692	B	1	Taggart	Carol			Form Letter B, see I-0111
I - 0693	B	1	Lester	David			Form Letter B, see I-0111
I - 0694	B	1	Kluever	Bryan			Form Letter B, see I-0111
I - 0695	B	1	Walrafen	Barbara			Form Letter B, see I-0111
I - 0696	B	1	Hartman	Jerry			Form Letter B, see I-0111
I - 0697	B	1	Buazard	Sharon			Form Letter B, see I-0111
I - 0698	B	1	Soza	Jessica			Form Letter B, see I-0111
I - 0699	B	1	Bachand	Thomas			Form Letter B, see I-0111
I - 0700	B	1	Mayers	Mindy			Form Letter B, see I-0111
I - 0701	B	1	Bond	Alyssa			Form Letter B, see I-0111
I - 0702	B	1	Paik	Janice			Form Letter B, see I-0111
I - 0703	B	1	Fraser	Caroline			Form Letter B, see I-0111
I - 0704	B	1	Moon	Carolyn			Form Letter B, see I-0111
I - 0705	B	1	Neuendorf	Mary			Form Letter B, see I-0111
I - 0706	B	1	Callan	Ramana			Form Letter B, see I-0111
I - 0707	B	1	Hofman	Diana			Form Letter B, see I-0111
I - 0708	B	1	Swierkosz	Joe	W.		Form Letter B, see I-0111
I - 0709	B	1	Saggan	Laurie			Form Letter B, see I-0111
I - 0710	B	1	Monge	Ally			Form Letter B, see I-0111
I - 0711	B	1	Dunne	Loretta			Form Letter B, see I-0111
I - 0712	B	1	Gan	Monica			Form Letter B, see I-0111
I - 0713	B	1	McNulty	Mary	A.		Form Letter B, see I-0111
I - 0714	B	1	Steinbach	Simon			Form Letter B, see I-0111
I - 0715	B	1	Reynolds	Bryon			Form Letter B, see I-0111
I - 0716	B	1	Hernandez	Michael			Form Letter B, see I-0111
I - 0717	B	1	Sardo	Steven			Form Letter B, see I-0111
I - 0718	B	1	Alley	Doug			Form Letter B, see I-0111
I - 0719	B	1	Windjue	Sara			Form Letter B, see I-0111
I - 0720	B	1	York	Mark			Form Letter B, see I-0111
I - 0721	B	1	Cousins	Catharine			Form Letter B, see I-0111
I - 0722	B	1	Morse	Keir			Form Letter B, see I-0111
I - 0723	B	1	McCarthy	Melissa			Form Letter B, see I-0111
I - 0724	B	1	Worden	Donna			Form Letter B, see I-0111
I - 0725	B	1	Parker	Reece			Form Letter B, see I-0111
I - 0726	B	1	Dexter	Ken			Form Letter B, see I-0111
I - 0727	B	1	Davie	Dennis			Form Letter B, see I-0111
I - 0728	B	1	Casey	Dawn			Form Letter B, see I-0111
I - 0729	B	1	Acerro	Theresa			Form Letter B, see I-0111
I - 0730	B	1	Sharp	Donna			Form Letter B, see I-0111
I - 0731	B	1	Dills	Linda & Walt			Form Letter B, see I-0111
I - 0732	B	1	Berenson	Sara	B		Form Letter B, see I-0111
I - 0733	B	1	Stephenson	Jonathan			Form Letter B, see I-0111
I - 0734	B	1	Strauss	Howard			Form Letter B, see I-0111
I - 0735	B	1	Walters	Wendy			Form Letter B, see I-0111
I - 0736	B	1	Brinkman	John			Form Letter B, see I-0111

**Table T-1  
List of Commentors Sorted By Commentor Type and Sequence Code**

Commenter Type and Sequence Code	Form Letter	Comment Group Number	Last Name	First Name	Middle Initial	Organization Name	Comments
I - 0737	B	1	Judd	Floyd	E		Form Letter B, see I-0111
I - 0738	B	1	Poessel	Sharon			Form Letter B, see I-0111
I - 0739	B	1	Sweel	Greg			Form Letter B, see I-0111
I - 0740	B	1	Shaw	Janis			Form Letter B, see I-0111
I - 0741	B	1	Perlman	Janine			Form Letter B, see I-0111
I - 0742	B	1	Tillett	Geri			Form Letter B, see I-0111
I - 0743	B	1	Taylor	William			Form Letter B, see I-0111
I - 0744	B	1	Bubala	Louis			Form Letter B, see I-0111
I - 0745	B	1	Juck	Edna			Form Letter B, see I-0111
I - 0746	B	1	Jones	Brian			Form Letter B, see I-0111
I - 0747	B	1	Owens	Larry			Form Letter B, see I-0111
I - 0748	B	1	Silan	Sheila			Form Letter B, see I-0111
I - 0749	B	1	Thomas	Ursula			Form Letter B, see I-0111
I - 0750	B	1	Bambach	Dixie			Form Letter B, see I-0111
I - 0751	B	1	Marks	Elise			Form Letter B, see I-0111
I - 0752	B	1	Hirsh	Sidney & Marsha			Form Letter B, see I-0111
I - 0753	B	1	Lash	Calvin	E		Form Letter B, see I-0111
I - 0754	B	1	Branch	Steve			Form Letter B, see I-0111
I - 0755	B	1	Trapp	Gene	R		Form Letter B, see I-0111
I - 0756	B	1	Wernz	Celeste			Form Letter B, see I-0111
I - 0757	B	1	Schuett	Greg			Form Letter B, see I-0111
I - 0758	B	1	Wallace	Jonathan			Form Letter B, see I-0111
I - 0759	B	1	Thomson	Kurt			Form Letter B, see I-0111
I - 0760	B	1	Grenard	Mark	H		Form Letter B, see I-0111
I - 0761	B	1	Casey	Jena			Form Letter B, see I-0111
I - 0762	B	1	Ogella	Edith			Form Letter B, see I-0111
I - 0763	B	1	Esteve	Gregory			Form Letter B, see I-0111
I - 0764	B	1	Drumm	Darrin			Form Letter B, see I-0111
I - 0765	B	1	Hunt-Walter	Sandra			Form Letter B, see I-0111
I - 0766	B	1	Morrissey	Marie			Form Letter B, see I-0111
I - 0767	B	1	Lewis	Tryphena			Form Letter B, see I-0111
I - 0768	B	1	Bence	Gary			Form Letter B, see I-0111
I - 0769	B	1	Thomas	Bill			Form Letter B, see I-0111
I - 0770	B	1	Bennett	Angela			Form Letter B, see I-0111
I - 0771	B	1	Fischer	Aurelie			Form Letter B, see I-0111
I - 0772	-	1	Fischer	Cynthia			
I - 0773	B	1	Olafsson	Erik			Form Letter B, see I-0111
I - 0774	B	1	Thomas	Jon			Form Letter B, see I-0111
I - 0775	-	1	Artley	Richard			
I - 0776	B	1	Rose	Pandora			Form Letter B, see I-0111
I - 0777	B	1	Bolyai	Melani			Form Letter B, see I-0111
I - 0778	B	1	Lee	David			Form Letter B, see I-0111
I - 0779	B	1	Mechan	Erin			Form Letter B, see I-0111
I - 0780	B	1	Nosek	Ron			Form Letter B, see I-0111
I - 0781	B	1	Mertig	Angela			Form Letter B, see I-0111
I - 0782	B	1	Dolney	Rachel			Form Letter B, see I-0111
I - 0783	-	1	Grover	Ravi			
I - 0784	B	1	Thompson	David			Form Letter B, see I-0111
I - 0785	B	1	Rossi	Aviva			Form Letter B, see I-0111
I - 0786	B	1	Mallory	Kathy			Form Letter B, see I-0111
I - 0787	B	1	Verner	Alex			Form Letter B, see I-0111
I - 0788	B	1	Benedict	Thom			Form Letter B, see I-0111
I - 0789	B	1	Johnson	Helen			Form Letter B, see I-0111
I - 0790	B	1	Horowitz	Maureen			Form Letter B, see I-0111
I - 0791	B	1	Weatherman	John			Form Letter B, see I-0111
I - 0792	B	1	Potluru	Susan			Form Letter B, see I-0111
I - 0793	B	1	Fields	Nicole			Form Letter B, see I-0111
I - 0794	B	1	Cotter	Clu			Form Letter B, see I-0111
I - 0796	B	1	Mustain	Val			Form Letter B, see I-0111
I - 0797	B	1	Holz	Dennis			Form Letter B, see I-0111
I - 0798	B	1	Nickels	Jeanette			Form Letter B, see I-0111
I - 0799	B	1	Koonen	Joyce			Form Letter B, see I-0111
I - 0800	B	1	Carbonneau	Jean			Form Letter B, see I-0111
I - 0801	B	1	Pofelr	Gerrie			Form Letter B, see I-0111
I - 0802	B	1	Smith	Michelle			Form Letter B, see I-0111
I - 0803	B	1	Cuningham	Jory			Form Letter B, see I-0111
I - 0804	B	1	Cox	Pamela			Form Letter B, see I-0111
I - 0805	B	1	Johnson	Rex			Form Letter B, see I-0111
I - 0806	B	1	Ryan	Rich			Form Letter B, see I-0111
I - 0807	B	1	Nelson	Derek			Form Letter B, see I-0111
I - 0808	B	1	Floyd	Kim			Form Letter B, see I-0111
I - 0809	B	1	Munson	Jacob			Form Letter B, see I-0111
I - 0811	B	1	Duran	Jesus			Form Letter B, see I-0111
I - 0812	B	1	Buness	Cynthia			Form Letter B, see I-0111
I - 0813	B	1	Neff	Mark			Form Letter B, see I-0111
I - 0814	B	1	Allen Traun	Melanie			Form Letter B, see I-0111
I - 0815	B	1	Leeds	Lkeomichele			Form Letter B, see I-0111
I - 0816	B	1	Qualls	Mike			Form Letter B, see I-0111
I - 0817	B	1	Beer	Julie			Form Letter B, see I-0111
I - 0818	B	1	Rinaldi	Kay			Form Letter B, see I-0111
I - 0819	B	1	Hannum	Christine			Form Letter B, see I-0111
I - 0820	B	1	Erickson	Gerri			Form Letter B, see I-0111
I - 0821	B	1	Showalter	John			Form Letter B, see I-0111
I - 0822	B	1	Caylor	Julie			Form Letter B, see I-0111
I - 0823	B	1	Swan	Rebecca			Form Letter B, see I-0111

**Table T-1  
List of Commentors Sorted By Commentor Type and Sequence Code**

Commenter Type and Sequence Code	Form Letter	Comment Group Number	Last Name	First Name	Middle Initial	Organization Name	Comments
I - 0824	B	1	Griffith	Dian			Form Letter B, see I-0111
I - 0825	B	1	Lustig	Karen			Form Letter B, see I-0111
I - 0826	B	1	Talmo	Edward			Form Letter B, see I-0111
I - 0827	B	1	Smale	Mary	A.		Form Letter B, see I-0111
I - 0828	B	1	Lien	David			Form Letter B, see I-0111
I - 0829	B	1	Bhangoo	Jessie			Form Letter B, see I-0111
I - 0830	B	1	Kutcher	Celia			Form Letter B, see I-0111
I - 0831	B	1	Clark	Diane			Form Letter B, see I-0111
I - 0832	-	1	Costa	Demelza			
I - 0833	B	1	Kelly	Matthew			Form Letter B, see I-0111
I - 0834	B	1	Savett	Adam			Form Letter B, see I-0111
I - 0835	B	1	Hundt	Heather			Form Letter B, see I-0111
I - 0836	B	1	Pavlisca	Laura			Form Letter B, see I-0111
I - 0837	B	1	Cannon	John			Form Letter B, see I-0111
I - 0838	B	1	Sego	Barbara			Form Letter B, see I-0111
I - 0839	B	1	Moshel	David			Form Letter B, see I-0111
I - 0840	B	1	Winters	Drusilla			Form Letter B, see I-0111
I - 0841	B	1	Friesen	Debbie			Form Letter B, see I-0111
I - 0842	B	1	Lund	Sierra			Form Letter B, see I-0111
I - 0843	B	1	Harbeson	Charlotte			Form Letter B, see I-0111
I - 0844	B	1	Pewthers	Kara			Form Letter B, see I-0111
I - 0845	B	1	Torrence	Paul			Form Letter B, see I-0111
I - 0846	-	1	Falconer	Joan	O		
I - 0847	B	1	Hirose	Mary			Form Letter B, see I-0111
I - 0848	B	1	Prola	Jim & Diana			Form Letter B, see I-0111
I - 0849	B	1	Pappas	Sandy			Form Letter B, see I-0111
I - 0850	B	1	Glyshaw	Gina			Form Letter B, see I-0111
I - 0851	B	1	Gregerson	Gary			Form Letter B, see I-0111
I - 0852	B	1	Behrman	Jo			Form Letter B, see I-0111
I - 0853	B	1	Peters	Matt			Form Letter B, see I-0111
I - 0854	B	1	Kasik	Kristina			Form Letter B, see I-0111
I - 0855	B	1	Mei	Jennifer			Form Letter B, see I-0111
I - 0856	B	1	Penner	Marsha			Form Letter B, see I-0111
I - 0857	B	1	Wayne	Rachel			Form Letter B, see I-0111
I - 0858	B	1	Thorn	Roger			Form Letter B, see I-0111
I - 0859	B	1	Williamson	Nancy			Form Letter B, see I-0111
I - 0860	B	1	McCloskey	Elizabeth	S		Form Letter B, see I-0111
I - 0861	B	1	Enger	Stephen			Form Letter B, see I-0111
I - 0862	B	1	Henry	Lyle			Form Letter B, see I-0111
I - 0863	B	1	Clark	Loralee			Form Letter B, see I-0111
I - 0864	B	1	Garcia	Camilo	N		Form Letter B, see I-0111
I - 0865	B	1	Little	Eko			Form Letter B, see I-0111
I - 0866	B	1	Brister	Bob			Form Letter B, see I-0111
I - 0867	B	1	Davis	Augusta			Form Letter B, see I-0111
I - 0868	B	1	Petroski	Irene			Form Letter B, see I-0111
I - 0869	B	1	Jones	J	L		Form Letter B, see I-0111
I - 0870	B	1	Shumaker	John			Form Letter B, see I-0111
I - 0871	B	1	Bennett	Elizabeth			Form Letter B, see I-0111
I - 0872	-	1	Elliott	Thomas	R		
I - 0873	-	1	Brooke	Robin			
I - 0874	B	1	Cajko	Miso			Form Letter B, see I-0111
I - 0875	B	1	Fiore	Mark	J		Form Letter B, see I-0111
I - 0876	B	1	Karcher	Elisabeth			Form Letter B, see I-0111
I - 0877	B	1	Barthel	John			Form Letter B, see I-0111
I - 0878	B	1	Brown	Merlynn			Form Letter B, see I-0111
I - 0879	B	1	Lawrence	Rhett			Form Letter B, see I-0111
I - 0880	B	1	Welker	Michael			Form Letter B, see I-0111
I - 0881	B	1	Goggins	Alan			Form Letter B, see I-0111
I - 0882	-	1	O'Kane	Steve			
I - 0883	B	1	Malone	Anne			Form Letter B, see I-0111
I - 0884	B	1	Vandragt	Brady			Form Letter B, see I-0111
I - 0885	B	1	Wiley	Carol			Form Letter B, see I-0111
I - 0886	B	1	Iacob	Anca			Form Letter B, see I-0111
I - 0887	B	1	Moehlman	Bruce			Form Letter B, see I-0111
I - 0888	B	1	Meyers	M	S		Form Letter B, see I-0111
I - 0889	B	1	Faber	Jill			Form Letter B, see I-0111
I - 0890	B	1	Athenour	Lee & Marilyn			Form Letter B, see I-0111
I - 0891	B	1	Svabenik	J	P		Form Letter B, see I-0111
I - 0892	B	1	Lemon	Catherine			Form Letter B, see I-0111
I - 0893	B	1	Brooker	Jim			Form Letter B, see I-0111
I - 0894	B	1	Kroening	Nancy			Form Letter B, see I-0111
I - 0895	B	1	Brundage	Joan			Form Letter B, see I-0111
I - 0896	B	1	Dunn	John			Form Letter B, see I-0111
I - 0897	-	1	Haseltine	Michael			
I - 0898	B	1	Janda	Karen			Form Letter B, see I-0111
I - 0899	B	1	Novotny	Mark			Form Letter B, see I-0111
I - 0900	B	1	Schwartz	Norman			Form Letter B, see I-0111
I - 0901	B	1	Gaines	Virginia			Form Letter B, see I-0111
I - 0902	B	1	Kirschbaum	Saran & Norton			Form Letter B, see I-0111
I - 0903	B	1	Schaefer	Dieter			Form Letter B, see I-0111
I - 0904	B	1	Robinson	Dave			Form Letter B, see I-0111
I - 0905	B	1	Millett	Peg			Form Letter B, see I-0111
I - 0906	B	1	Booth	Howard	G.		Form Letter B, see I-0111
I - 0907	-	1	Dart	Erin			
I - 0908	B	1	Luepke	Karen			Form Letter B, see I-0111

**Table T-1**  
**List of Commentors Sorted By Commentor Type and Sequence Code**

Commenter Type and Sequence Code	Form Letter	Comment Group Number	Last Name	First Name	Middle Initial	Organization Name	Comments
I - 0909	B	1	Griffith	Jeremiah			Form Letter B, see I-0111
I - 0910	B	1	Jones	Brant			Form Letter B, see I-0111
I - 0911	B	1	Mazik	Kim			Form Letter B, see I-0111
I - 0912	B	1	Morris	Barbara			Form Letter B, see I-0111
I - 0913	B	1	Crimmins	Paul			Form Letter B, see I-0111
I - 0914	B	1	Diehl	Sarah			Form Letter B, see I-0111
I - 0915	B	1	Duncan	A			Form Letter B, see I-0111
I - 0916	B	1	Geikenjoyner	Mark			Form Letter B, see I-0111
I - 0917	B	1	Jones	Dayvid			Form Letter B, see I-0111
I - 0918	B	1	Brink	Kim	F		Form Letter B, see I-0111
I - 0919	B	1	MacPherson	M.R.	B		Form Letter B, see I-0111
I - 0920	B	1	Bogert	Reid			Form Letter B, see I-0111
I - 0921	B	1	Davis	Shirley			Form Letter B, see I-0111
I - 0922	B	1	Doswell	Carolyn			Form Letter B, see I-0111
I - 0923	B	1	White	Melissa			Form Letter B, see I-0111
I - 0924	B	1	Knop	Sandra			Form Letter B, see I-0111
I - 0925	B	1	Mueller	Sean			Form Letter B, see I-0111
I - 0926	B	1	Tamplin	Tom			Form Letter B, see I-0111
I - 0927	B	1	Dixon	Keri			Form Letter B, see I-0111
I - 0928	B	1	Mahdavi	Omid			Form Letter B, see I-0111
I - 0929	-	1	Ewing	Charles	M.		
I - 0931	B	1	Meleeske	Zsu			Form Letter B, see I-0111
I - 0932	B	1	Kritikos	Yiannis			Form Letter B, see I-0111
I - 0933	B	1	Oneill	Robert			Form Letter B, see I-0111
I - 0934	B	1	Bernard	Artis			Form Letter B, see I-0111
I - 0935	B	1	Noble	Tom			Form Letter B, see I-0111
I - 0936	B	1	Tiling	Christian			Form Letter B, see I-0111
I - 0937	B	1	Williams	Nicholas			Form Letter B, see I-0111
I - 0938	B	1	Steele	Volney			Form Letter B, see I-0111
I - 0939	B	1	Armstrong	Jack			Form Letter B, see I-0111
I - 0940	B	1	Bernstein Hyman	Ruth			Form Letter B, see I-0111
I - 0941	B	1	Cutting	Peter			Form Letter B, see I-0111
I - 0942	B	1	Ball	Laura			Form Letter B, see I-0111
I - 0943	B	1	Henderson	Lauren			Form Letter B, see I-0111
I - 0944	B	1	Lovehagen	Lina			Form Letter B, see I-0111
I - 0945	B	1	Crom	Nancy			Form Letter B, see I-0111
I - 0946	B	1	Mier	Wade			Form Letter B, see I-0111
I - 0947	B	1	Wolverton	Martha			Form Letter B, see I-0111
I - 0948	B	1	Reichert	Robyn			Form Letter B, see I-0111
I - 0949	B	1	Howard	Sarah			Form Letter B, see I-0111
I - 0950	B	1	Snow	Edward			Form Letter B, see I-0111
I - 0951	B	1	Wuhrmann	Karin			Form Letter B, see I-0111
I - 0952	B	1	Stauss	Carmen			Form Letter B, see I-0111
I - 0953	B	1	Butterworth	L			Form Letter B, see I-0111
I - 0954	B	1	Hohenberg	Adrienne			Form Letter B, see I-0111
I - 0955	B	1	Hitt	Sam			Form Letter B, see I-0111
I - 0956	B	1	Galli	William			Form Letter B, see I-0111
I - 0957	B	1	Wagner	Elissa			Form Letter B, see I-0111
I - 0958	B	1	Kurtz	William & Ellen			Form Letter B, see I-0111
I - 0959	B	1	Bodeman	Ruth	A		Form Letter B, see I-0111
I - 0960	B	1	Sandknop	Kathleen			Form Letter B, see I-0111
I - 0961	B	1	Beck	Amee			Form Letter B, see I-0111
I - 0962	B	1	Israel	Alberto	M		Form Letter B, see I-0111
I - 0963	B	1	Zimmerman	Carol			Form Letter B, see I-0111
I - 0964	B	1	Ehret	Hugo			Form Letter B, see I-0111
I - 0965	-	1	Burson	Robert			
I - 0966	B	1	Straumanis	Karra	K		Form Letter B, see I-0111
I - 0967	B	1	Dennis	Mitchell			Form Letter B, see I-0111
I - 0968	B	1	Kreide	Caroline			Form Letter B, see I-0111
I - 0969	B	1	Brechtel	Natalie			Form Letter B, see I-0111
I - 0970	B	1	Foster	Hilary			Form Letter B, see I-0111
I - 0971	B	1	Hanson	Kathy			Form Letter B, see I-0111
I - 0972	B	1	Wangsgard	Erica			Form Letter B, see I-0111
I - 0973	B	1	Morrisey	Jerry	L		Form Letter B, see I-0111
I - 0974	B	1	Laws	Miki			Form Letter B, see I-0111
I - 0975	B	1	Separk	Susan			Form Letter B, see I-0111
I - 0976	-	1	Bedford	Don			
I - 0977	-	1	Montgomery	Glenn			
I - 0978	B	1	Costa	Francisco			Form Letter B, see I-0111
I - 0979	B	1	Pellegrini	Dharm			Form Letter B, see I-0111
I - 0980	B	1	Martin	Angela			Form Letter B, see I-0111
I - 0981	B	1	Rex	Carrie			Form Letter B, see I-0111
I - 0982	B	1	Zellers	Rose			Form Letter B, see I-0111
I - 0983	B	1	Juszcak	Cecelia			Form Letter B, see I-0111
I - 0984	B	1	Emery	Douglas			Form Letter B, see I-0111
I - 0985	B	1	Nespoli	Donna			Form Letter B, see I-0111
I - 0986	B	1	Holton	Brandon			Form Letter B, see I-0111
I - 0987	B	1	Dunn	Karen			Form Letter B, see I-0111
I - 0988	B	1	Lucas	Steven			Form Letter B, see I-0111
I - 0989	B	1	Robinson	Debra	K		Form Letter B, see I-0111
I - 0990	B	1	Viola	Richard			Form Letter B, see I-0111
I - 0991	B	1	Alexander	Jim			Form Letter B, see I-0111
I - 0992	B	1	Patten	Sam			Form Letter B, see I-0111
I - 0993	B	1	Sloss	Jeff			Form Letter B, see I-0111
I - 0994	B	1	Brechtel	Felicia			Form Letter B, see I-0111

**Table T-1  
List of Commentors Sorted By Commentor Type and Sequence Code**

Commenter Type and Sequence Code	Form Letter	Comment Group Number	Last Name	First Name	Middle Initial	Organization Name	Comments
I - 0995	B	1	James	Karla			Form Letter B, see I-0111
I - 0996	B	1	Hamilton	Van & Lois			Form Letter B, see I-0111
I - 0997	B	1	Richman	Elise			Form Letter B, see I-0111
I - 0998	B	1	Robert	Claude			Form Letter B, see I-0111
I - 0999	B	1	Potter	Jacquelyn			Form Letter B, see I-0111
I - 1000	B	1	Pierce	Nuri	B		Form Letter B, see I-0111
I - 1001	B	1	Neils	Aletris			Form Letter B, see I-0111
I - 1002	B	1	Taylor	Lili			Form Letter B, see I-0111
I - 1003	B	1	McQuade	Julie			Form Letter B, see I-0111
I - 1004	B	1	Smith	Jennifer			Form Letter B, see I-0111
I - 1005	B	1	Flori	Robert			Form Letter B, see I-0111
I - 1006	B	1	Engelstein	Jennafer			Form Letter B, see I-0111
I - 1007	B	1	Duncan	Mike			Form Letter B, see I-0111
I - 1008	B	1	Craft	Randy			Form Letter B, see I-0111
I - 1009	B	1	Wolf	Shaye			Form Letter B, see I-0111
I - 1010	B	1	Johnson	Brock			Form Letter B, see I-0111
I - 1011	B	1	Havey	Maureen			Form Letter B, see I-0111
I - 1012	B	1	Meier	Robert			Form Letter B, see I-0111
I - 1013	B	1	Perlman	Frances			Form Letter B, see I-0111
I - 1014	B	1	Hall	Tessa			Form Letter B, see I-0111
I - 1015	B	1	Rankins	Melinda			Form Letter B, see I-0111
I - 1016	B	1	Granquist	Joel			Form Letter B, see I-0111
I - 1017	B	1	Hayes	Kimberly			Form Letter B, see I-0111
I - 1018	B	1	Bear	Charlotte			Form Letter B, see I-0111
I - 1019	B	1	Harbster	David			Form Letter B, see I-0111
I - 1020	B	1	Martin	Paul			Form Letter B, see I-0111
I - 1021	B	1	Youssefinia	Sam			Form Letter B, see I-0111
I - 1022	B	1	Kendall	Matthew			Form Letter B, see I-0111
I - 1023	B	1	Kroll	C			Form Letter B, see I-0111
I - 1024	B	1	Healy	Patricia			Form Letter B, see I-0111
I - 1025	B	1	Carroll	Jacqueline			Form Letter B, see I-0111
I - 1026	B	1	White	Carolynn			Form Letter B, see I-0111
I - 1027	B	1	Moser	Rick			Form Letter B, see I-0111
I - 1028	B	1	Leland	David			Form Letter B, see I-0111
I - 1029	B	1	Rodriguez	Allison			Form Letter B, see I-0111
I - 1030	B	1	Sweet	Rhiannon			Form Letter B, see I-0111
I - 1031	-	1	Grob	Lisa			
I - 1032	B	1	Cardoza	Jack			Form Letter B, see I-0111
I - 1033	B	1	Davidson	Kim			Form Letter B, see I-0111
I - 1034	B	1	Henneberg	Alice			Form Letter B, see I-0111
I - 1035	B	1	Banniser	Julie			Form Letter B, see I-0111
I - 1037	B	1	Nasif	Maria			Form Letter B, see I-0111
I - 1038	B	1	Finley	Brent			Form Letter B, see I-0111
I - 1039	B	1	Jahanian	Lyn			Form Letter B, see I-0111
I - 1040	B	1	Watson	Roger	D		Form Letter B, see I-0111
I - 1041	B	1	Himpelmann	Debbi			Form Letter B, see I-0111
I - 1042	B	1	Sherman	Brenda and Ron			Form Letter B, see I-0111
I - 1043	B	1	Tracy	Steve			Form Letter B, see I-0111
I - 1044	B	1	Hammond	Teresa			Form Letter B, see I-0111
I - 1045	B	1	Palmer	John	T.		Form Letter B, see I-0111
I - 1046	B	1	Bond	Chris			Form Letter B, see I-0111
I - 1047	B	1	Patel	Alpa			Form Letter B, see I-0111
I - 1048	B	1	Piccirillo	Danny			Form Letter B, see I-0111
I - 1049	B	1	Moran	V			Form Letter B, see I-0111
I - 1050	B	1	Wishner	Robert			Form Letter B, see I-0111
I - 1051	-	1	Schwartz	Richard			
I - 1052	B	1	Cosgrove	Patrick			Form Letter B, see I-0111
I - 1053	B	1	Young	Gary			Form Letter B, see I-0111
I - 1054	B	1	Andes	John			Form Letter B, see I-0111
I - 1055	B	1	Lefler	Susan			Form Letter B, see I-0111
I - 1056	B	1	Eastman	Alice			Form Letter B, see I-0111
I - 1057	B	1	Zvosec	Deborah			Form Letter B, see I-0111
I - 1058	B	1	Mullins	Jef			Form Letter B, see I-0111
I - 1059	B	1	Hueneke	Edward			Form Letter B, see I-0111
I - 1060	B	1	Leidich	Kylie			Form Letter B, see I-0111
I - 1061	B	1	Hogg	Jeffrey			Form Letter B, see I-0111
I - 1062	B	1	Hesselbrock	Dolores			Form Letter B, see I-0111
I - 1063	B	1	Khanlian	Richard			Form Letter B, see I-0111
I - 1064	B	1	Zito	Vincent			Form Letter B, see I-0111
I - 1065	B	1	Linarez	Karen			Form Letter B, see I-0111
I - 1066	B	1	Garrett	John			Form Letter B, see I-0111
I - 1067	B	1	Tashjian	Randy			Form Letter B, see I-0111
I - 1068	B	1	Jones	Barbara			Form Letter B, see I-0111
I - 1069	B	1	Summer	Rebecca			Form Letter B, see I-0111
I - 1070	B	1	Whippo	Robert			Form Letter B, see I-0111
I - 1071	B	1	Shafer	Grace			Form Letter B, see I-0111
I - 1072	B	1	Quade	Harry			Form Letter B, see I-0111
I - 1073	-	1	Palmer	Patrick			
I - 1074	B	1	Byrd	Amy			Form Letter B, see I-0111
I - 1075	-	1	Enriquez	Armando			
I - 1076	-	1	Herschelman	Tom			
I - 1077	B	1	Graziosa	Sara			Form Letter B, see I-0111
I - 1078	B	1	Jordan	Sterling			Form Letter B, see I-0111
I - 1079	B	1	vonHoldt	Diana			Form Letter B, see I-0111
I - 1080	-	1	Wilde	Rebecca			

**Table T-1  
List of Commentors Sorted By Commentor Type and Sequence Code**

Commenter Type and Sequence Code	Form Letter	Comment Group Number	Last Name	First Name	Middle Initial	Organization Name	Comments
I - 2000	-	2	Miller	Paul	F.		
I - 2001	-	2	Meredyk	Angela			
I - 2002	-	2	DeMay	Jim			
I - 2003	-	2	Belles	Mark	W.		
I - 2004	-	2	Fayad	Jacob	M.		
I - 2005	-	2	Bollock	Steve			
I - 2006	-	2	Simon	Philip			
I - 2007	-	2	Keck	Robert			
I - 2008	-	2	Marion	George	H.		
I - 2009	-	2	Unknown				
I - 2010	-	2	Brown	Stephen			
I - 2011	-	2	Kostyniuk	Sophika			
I - 2012	-	2	Beals	Cassie			
I - 2013	-	2	Rothbart	Ron			
I - 2015	-	2	Hendrickson	Belinda			
I - 2016	-	2	Wolverton	William	H.		
I - 2017	-	2	Kozarsky	Daniel			
I - 2018	-	2	Pott	Richard			
I - 2019	-	2	French	Lynda			
I - 2020	-	2	Wegst	Walter	F.		
I - 2021	-	2	Unknown				
I - 2022	-	2	Vesperman	Gary			
I - 2023	-	2	Rupe	Bernie			
I - 2024	-	2	Simon	Philip			
I - 2025	-	2	Appleton	George			
I - 2026	-	2	Abrams	Thomas	L.		
<b>Local Agency (L)</b>							
L - 0001	-	1	Buschatzke	Thomas		City of Phoenix	
L - 0002	-	1	Pollack	Stanley	M	Navajo Nation	
L - 0004	-	1	Algots	John		Fort Mojave Indian Tribe	
L - 0005	-	1	Sparks	Joe	P	Tonto Apache Tribe	
L - 0006	-	1	Sparks	Joe	P	San Carlos Apache Tribe	
L - 0007	-	1	Sparks	Joe	P	Yavapai-Apache Nation	
L - 0008	-	1	Lynch	Robert	S	Irrigation & Electrical Districts Association of Arizona	
L - 0009	-	1	Morisset	Mason	D	Quechan Indian Tribe	
L - 2000	-	2	King	Michael	L.	Imperial Irrigation District	
L - 2001	-	2	Algots	John		Fort Mojave Indian Tribe	
L - 2002	-	2	Buschatzke	Thomas		City of Phoenix	
L - 2003	-	2	Mansfield	David	M.	City of Scottsdale	
L - 2004	-	2	Rall	Kathy		Town of Gilbert	
L - 2005	-	2	Kamienski	Eric	S.	City of Tempe	
L - 2006	-	2	Toy	Doug		City of Chandler	
L - 2007	-	2	Lynch	Robert	S.	Irrigation & Electrical Districts of Arizona	
L - 2008	-	2	James	Leslie		Colorado River Energy Distributors Association	
L - 2009	-	2	Mulholland	Joseph	W.	Arizona Power Authority	
L - 2010	-	2	Modeer	David	V.	City of Tuscon Water Department	
L - 2011	-	2	Olson	Steven	L.	Arizona Municipal Water Users Association	
L - 2012	-	2	Sorensen	Kathryn		City of Mesa	
L - 2014	-	2	Boyce	Harvey	W.	Arizona Power Authority	
L - 2015	-	2	Lynch	Bob	S.	Irrigation & Electrical Districts of Arizona	
L - 2016	-	2	James	Leslie		Colorado River Energy Distributors Association	
L - 2017	-	2	Caan	George		Colorado River Energy Distributors Association	
L - 2018	-	2	Mazour	David		Colorado River Energy Distributors Association	
<b>State Agency (S)</b>							
S - 0001	-	1	Basin States Representatives			Basin States Representatives	
S - 0002	-	1	Mulholland	Joseph	W	Arizona Power Authority	
S - 0004	-	1	Taubert	Bruce	D	The State of Arizona Game & Fish Department	
S - 0005	-	1	Basin States Representatives			Basin States Representatives	
S - 2001	-	2	Guenther	Herb		Arizona Department of Water Resources	
S - 2003	-	2				Upper Basin State Representatives	
S - 2004	-	2	Zimmerman	Gerald	R	Colorado River Board of California	
S - 2005	-	2	Mulroy	Patricia		Souther Nevada Water Authority	
S - 2006	-	2				Seven Colorado River Basin States	

# **Appendix T**

## **T.2 List of Commentors Sorted by Commentor Type and Name**



**Table T-2  
List of Commentors Sorted by Commentor Type and Name**

Note: Commenters other than Individual Commenters are sorted and listed alphabetically by their respective organization/affiliation.

Commenter Type and Sequence Code	Form Letter	Comment Group Number	Last Name	First Name	Middle Initial	Organization Name	Comments
<b>Business (B)</b>							
B - 2001	-	2	Morgan	Craig		Avalex, Inc.	
B - 0001	-	1	Schuett	Lynn		Colorado Plateau Guides	
B - 0004	-	1	Rusanowski	Paul	C	The Shipley Group	
B - 2000	-	2	Miller	Paul	F.	Watermasters	
B - 0002	-	1	Ruemmele	Werner	A.	WR Consultants Inc.	
<b>Federal Agency (F)</b>							
F - 0001	-	1	Warren	Bradley		Department of Energy	
F - 0006	-	1	Givhan	Walter	D	Department of the Air Force	
F - 2000	-	2	Fujii	Laura		Environmental Protection Agency	
F - 0005	-	1	Henderson	Norm		National Park Service	
F - 0003	-	1	Roberts	Kitty	L.	National Park Service	
F - 0004	-	1	Spangle	Steven	L.	US Fish and Wildlife Service	
F - 0002	-	1	Olague	Bernardino		USIBWC	
<b>Special Interest Group / Non-governmental Organization (G)</b>							
G - 0008	-	1	Woodhouse	Connie		Colorado River Paleo Workgroup	
G - 2015	-	2	Gillon	Kara		Defenders of Wildlife	
G - 0003	-	1	Gillon	Kara		Defenders of Wildlife, et al	
G - 0014	-	1	Gillon	Kara		Defenders of Wildlife, et al	
G - 2005	-	2	Gillon	Kara		Defenders of Wildlife, et al.	
G - 0004	-	1	Silver	Dan		Endangered Habitats League	
G - 2001	-	2	Pitt	Jennifer		Environmental Defense	
G - 2009	-	2	Pitt	Jennifer		Environmental Defense	
G - 2012	-	2	Pitt	Jennifer		Environmental Defense	
G - 2016	-	2	Ostapuk	Paul	M.	Friends of Lake Powell	
G - 0017	-	1	Wegner	David	L.	Glen Canyon Institute	
G - 0010	-	1	Hamilton	Lynn		Grand Canyon River Guides	
G - 0012	-	1	Hamilton	Lynn		Grand Canyon River Guides	
G - 0001	-	1	Living Rivers			Living Rivers Colorado Riverkeeper	
G - 0013	-	1	Weisheit	John		Living Rivers Colorado Riverkeeper	
G - 0015	-	1	Weisheit	John		Living Rivers Colorado Riverkeeper	Duplicate to G-0013
G - 2004	-	2	Weisheit	John		Living Rivers Colorado Riverkeeper	
G - 0005	-	1	Witzeman	Robert	A.	Maricopa Audubon Society	
G - 2008	-	2	Hiatt	John	E.	Red Rock Audubon Society	
G - 2014	-	2	Hiatt	John	E.	Red Rock Audubon Society	
G - 0007	-	1	Lippman	Robert		Rock the Earth	
G - 2003	-	2	Ross	Marc	A.	Rock the Earth	
G - 2000	-	2	Wechsler	James		Sierra Club	
G - 2010	-	2	Wechsler	Jim		Sierra Club	
G - 2013	-	2	Culp	Peter		Sonoran Institute	
G - 0018	-	1	Udall	Bradley		University of Colorado / NOAA Western Water Assessment	
G - 0011	-	1	Hunt	Greg		Waterkeepers Australia	
G - 2006	-	2	Carter	John	G.	Western Watersheds Project, Inc.	
G - 0016	-	1	Willms	David		Wyoming Farm Bureau Federation	
<b>Individual (I)</b>							
I - 0599	B	1	Abate	Andrew			Form Letter B, see I-0111
I - 0362	B	1	Abbott	Doug & Susan			Form Letter B, see I-0111
I - 2026	-	2	Abrams	Thomas	L.		
I - 0729	B	1	Acerro	Theresa			Form Letter B, see I-0111
I - 0504	B	1	Adams	Evelyn			Form Letter B, see I-0111
I - 0290	B	1	Aide	Jason			Form Letter B, see I-0111
I - 0594	B	1	Alexakos	Irene			Form Letter B, see I-0111
I - 0991	B	1	Alexander	Jim			Form Letter B, see I-0111
I - 0173	B	1	Ali-Akbarian	Leila			Form Letter B, see I-0111
I - 0411	B	1	Allaback	Mark			Form Letter B, see I-0111
I - 0814	B	1	Allen Traun	Melanie			Form Letter B, see I-0111
I - 0718	B	1	Alley	Doug			Form Letter B, see I-0111
I - 0134	B	1	Anderson	Fred			Form Letter B, see I-0111
I - 1054	B	1	Andes	John			Form Letter B, see I-0111
I - 0587	B	1	Anthony	Paul	RW		Form Letter B, see I-0111
I - 2025	-	2	Appleton	George			
I - 0939	B	1	Armstrong	Jack			Form Letter B, see I-0111
I - 0055	-	1	Arndorfer	Mary	E.		
I - 0775	-	1	Artley	Richard			
I - 0341	B	1	Asselin	David			Form Letter B, see I-0111
I - 0890	B	1	Athenour	Lee & Marilyn			Form Letter B, see I-0111
I - 0056	-	1	Atwood	Carl			
I - 0216	B	1	Austin	Shane			Form Letter B, see I-0111
I - 0699	B	1	Bachand	Thomas			Form Letter B, see I-0111
I - 0654	B	1	Baer	Barbara			Form Letter B, see I-0111
I - 0482	B	1	Baetz	Jacquelyn			Form Letter B, see I-0111
I - 0007	-	1	Baker	Diron			
I - 0942	B	1	Ball	Laura			Form Letter B, see I-0111
I - 0750	B	1	Bambach	Dixie			Form Letter B, see I-0111
I - 1035	B	1	Banniser	Julie			Form Letter B, see I-0111
I - 0048	-	1	Barr	Gracia			
I - 0604	B	1	Barrett	Jeffery			Form Letter B, see I-0111
I - 0150	B	1	Barrows	Michael			Form Letter B, see I-0111
I - 0877	B	1	Barthel	John			Form Letter B, see I-0111

**Table T-2  
List of Commentors Sorted by Commentor Type and Name**

Note: Commenters other than Individual Commenters are sorted and listed alphabetically by their respective organization/affiliation.

Commenter Type and Sequence Code	Form Letter	Comment Group Number	Last Name	First Name	Middle Initial	Organization Name	Comments
I - 0509	B	1	Bartl	Alan			Form Letter B, see I-0111
I - 0209	B	1	Batchelder	Carol			Form Letter B, see I-0111
I - 0415	B	1	Baumgartner	W	M		Form Letter B, see I-0111
I - 2012	-	2	Beals	Cassie			
I - 0186	B	1	Beam	Robert			Form Letter B, see I-0111
I - 1018	B	1	Bear	Charlotte			Form Letter B, see I-0111
I - 0201	B	1	Beard	Lara			Form Letter B, see I-0111
I - 0961	B	1	Beck	Amee			Form Letter B, see I-0111
I - 0976	-	1	Bedford	Don			
I - 0817	B	1	Beer	Julie			Form Letter B, see I-0111
I - 0400	B	1	Behrakis	Deborah			Form Letter B, see I-0111
I - 0852	B	1	Behrman	Jo			Form Letter B, see I-0111
I - 0001	-	1	Belles	Mark			
I - 2003	-	2	Belles	Mark	W.		
I - 0643	B	1	Belli	Joseph			Form Letter B, see I-0111
I - 0768	B	1	Bence	Gary			Form Letter B, see I-0111
I - 0788	B	1	Benedict	Thom			Form Letter B, see I-0111
I - 0770	B	1	Bennett	Angela			Form Letter B, see I-0111
I - 0871	B	1	Bennett	Elizabeth			Form Letter B, see I-0111
I - 0039	A	1	Bennett	Jean	M.		Form Letter A, see I-0008
I - 0057	-	1	Bennett	Scott			
I - 0457	B	1	Bennon	Natalie			Form Letter B, see I-0111
I - 0732	B	1	Berenson	Sara	B		Form Letter B, see I-0111
I - 0542	B	1	Berger	Sherwin			Form Letter B, see I-0111
I - 0934	B	1	Bernard	Artis			Form Letter B, see I-0111
I - 0582	B	1	Bernardi	Nancy			Form Letter B, see I-0111
I - 0518	B	1	Berne	David			Form Letter B, see I-0111
I - 0351	B	1	Bernstein	Jill			Form Letter B, see I-0111
I - 0940	B	1	Bernstein Hyman	Ruth			Form Letter B, see I-0111
I - 0829	B	1	Bhangoo	Jessie			Form Letter B, see I-0111
I - 0284	B	1	Binkelman	Amity			Form Letter B, see I-0111
I - 0074	-	1	Bird	Mark		CCSN	
I - 0086	-	1	Bird	Mark		CCSN	
I - 0109	-	1	Bird	Mark			
I - 0269	B	1	Blais	Matt			Form Letter B, see I-0111
I - 0416	B	1	Blaise	Sharlane			Form Letter B, see I-0111
I - 0076	-	1	Blalack	Russell			
I - 0094	-	1	Bloebaum	Drake			
I - 0299	B	1	Bloomer	Jerry			Form Letter B, see I-0111
I - 0673	B	1	Blunt	Keith			Form Letter B, see I-0111
I - 0959	B	1	Bodeman	Ruth	A		Form Letter B, see I-0111
I - 0625	B	1	Boegers	Kathleen			Form Letter B, see I-0111
I - 0920	B	1	Bogert	Reid			Form Letter B, see I-0111
I - 0295	B	1	Boldt	Todd			Form Letter B, see I-0111
I - 2005	-	2	Bollock	Steve			
I - 0141	B	1	Bolo	Jumar			Form Letter B, see I-0111
I - 0159	B	1	Bolt	Mitchell			Form Letter B, see I-0111
I - 0777	B	1	Bolyai	Melani			Form Letter B, see I-0111
I - 0701	B	1	Bond	Alyssa			Form Letter B, see I-0111
I - 1046	B	1	Bond	Chris			Form Letter B, see I-0111
I - 0396	B	1	Bonner	James			Form Letter B, see I-0111
I - 0479	B	1	Boone	Foster			Form Letter B, see I-0111
I - 0906	B	1	Booth	Howard	G.		Form Letter B, see I-0111
I - 0287	B	1	Bordeneave	Michael			Form Letter B, see I-0111
I - 0602	B	1	Borgmann	Kathi			Form Letter B, see I-0111
I - 0358	B	1	Boudreaux	Greg			Form Letter B, see I-0111
I - 0313	B	1	Bradbury	David	E		Form Letter B, see I-0111
I - 0289	B	1	Bradley	Stephanie			Form Letter B, see I-0111
I - 0267	B	1	Brady	Randall			Form Letter B, see I-0111
I - 0268	B	1	Brady	Randall			Form Letter B, see I-0111
I - 0593	B	1	Bragg Jr	Charles			Form Letter B, see I-0111
I - 0754	B	1	Branch	Steve			Form Letter B, see I-0111
I - 0994	B	1	Brechtel	Felicia			Form Letter B, see I-0111
I - 0969	B	1	Brechtel	Natalie			Form Letter B, see I-0111
I - 0431	B	1	Breen	Bob & Pam			Form Letter B, see I-0111
I - 0387	B	1	Breiding	Joan			Form Letter B, see I-0111
I - 0918	B	1	Brink	Kim	F		Form Letter B, see I-0111
I - 0736	B	1	Brinkman	John			Form Letter B, see I-0111
I - 0866	B	1	Brister	Bob			Form Letter B, see I-0111
I - 0410	B	1	Britton	Melissa			Form Letter B, see I-0111
I - 0873	-	1	Brooke	Robin			
I - 0523	B	1	Brooker	Catherine			Form Letter B, see I-0111
I - 0893	B	1	Brooker	Jim			Form Letter B, see I-0111
I - 0008	A	1	Brower	Matt			Sample of Form Letter A
I - 0685	B	1	Brown	Charles			Form Letter B, see I-0111
I - 0878	B	1	Brown	Merlynn			Form Letter B, see I-0111
I - 0136	B	1	Brown	Michael			Form Letter B, see I-0111
I - 2010	-	2	Brown	Stephen			
I - 0543	B	1	Browne	R	J		Form Letter B, see I-0111
I - 0895	B	1	Brundage	Joan			Form Letter B, see I-0111
I - 0032	A	1	Brunner	kurt			Form Letter A, see I-0008
I - 0329	B	1	Brussmann	Peter			Form Letter B, see I-0111
I - 0659	B	1	Bryant	Larry			Form Letter B, see I-0111

**Table T-2  
List of Commentors Sorted by Commentor Type and Name**

Note: Commentors other than Individual Commentors are sorted and listed alphabetically by their respective organization/affiliation.

Commenter Type and Sequence Code	Form Letter	Comment Group Number	Last Name	First Name	Middle Initial	Organization Name	Comments
I - 0697	B	1	Buazard	Sharon			Form Letter B, see I-0111
I - 0744	B	1	Bubala	Louis			Form Letter B, see I-0111
I - 0145	B	1	Buckner	Jocelyn			Form Letter B, see I-0111
I - 0334	B	1	Bumpus	Nancy			Form Letter B, see I-0111
I - 0812	B	1	Buness	Cynthia			Form Letter B, see I-0111
I - 0354	B	1	Burk	Joyce			Form Letter B, see I-0111
I - 0175	B	1	Burkey	Tormod			Form Letter B, see I-0111
I - 0605	B	1	Burnett	Brenda			Form Letter B, see I-0111
I - 0231	B	1	Burns	Matthew			Form Letter B, see I-0111
I - 0965	-	1	Burson	Robert			
I - 0385	B	1	Buss	Bill			Form Letter B, see I-0111
I - 0953	B	1	Butterworth	L			Form Letter B, see I-0111
I - 0294	B	1	Button	Ed			Form Letter B, see I-0111
I - 0615	B	1	Butts	James			Form Letter B, see I-0111
I - 0261	B	1	Buttyan	Anne			Form Letter B, see I-0111
I - 1074	B	1	Byrd	Amy			Form Letter B, see I-0111
I - 0874	B	1	Cajanko	Miso			Form Letter B, see I-0111
I - 0020	-	1	Call	Jesse	N.		
I - 0706	B	1	Callan	Ramana			Form Letter B, see I-0111
I - 0550	B	1	Callicott	Burton			Form Letter B, see I-0111
I - 0185	B	1	Campbell	Victoria			Form Letter B, see I-0111
I - 0323	-	1	Campion	Nick			
I - 0837	B	1	Cannon	John			Form Letter B, see I-0111
I - 0133	B	1	Cantrell	Ann			Form Letter B, see I-0111
I - 0428	B	1	Capps	Dan			Form Letter B, see I-0111
I - 0800	B	1	Carbonneau	Jean			Form Letter B, see I-0111
I - 1032	B	1	Cardoza	Jack			Form Letter B, see I-0111
I - 0401	B	1	Carlson	Larry			Form Letter B, see I-0111
I - 0427	B	1	Carpio	Anthony			Form Letter B, see I-0111
I - 0544	B	1	Carroll	Hanna			Form Letter B, see I-0111
I - 1025	B	1	Carroll	Jacqueline			Form Letter B, see I-0111
I - 0614	B	1	Carter	June			Form Letter B, see I-0111
I - 0363	B	1	Carter	Marian			Form Letter B, see I-0111
I - 0419	B	1	Carter	Michael			Form Letter B, see I-0111
I - 0728	B	1	Casey	Dawn			Form Letter B, see I-0111
I - 0761	B	1	Casey	Jena			Form Letter B, see I-0111
I - 0340	B	1	Cashner	Frances & Robert			Form Letter B, see I-0111
I - 0272	B	1	Cassidy	Virginia			Form Letter B, see I-0111
I - 0822	B	1	Caylor	Julie			Form Letter B, see I-0111
I - 0671	B	1	Centener	Randy			Form Letter B, see I-0111
I - 0669	B	1	Cerling	Claire			Form Letter B, see I-0111
I - 0626	B	1	Cherner	Beverly		Golden Gate National Recreation Area	Form Letter B, see I-0111
I - 0153	B	1	Chester	Thomas			Form Letter B, see I-0111
I - 0037	-	1	Chetron	Avram			
I - 0589	B	1	Chrostowski	Lenny			Form Letter B, see I-0111
I - 0476	B	1	Ciaramitaro	Joseph			Form Letter B, see I-0111
I - 0157	B	1	Clapp	Richard			Form Letter B, see I-0111
I - 0831	B	1	Clark	Diane			Form Letter B, see I-0111
I - 0863	B	1	Clark	Loralee			Form Letter B, see I-0111
I - 0668	B	1	Clarke	Tim			Form Letter B, see I-0111
I - 0100	-	1	Cloutier	Guy			
I - 0171	B	1	Cohen	Howard			Form Letter B, see I-0111
I - 0442	B	1	Colbert	Mike			Form Letter B, see I-0111
I - 0357	B	1	Cole	Michele			Form Letter B, see I-0111
I - 0042	-	1	Cole	Stephen	R.		
I - 0514	-	1	Collins	Jimbo			
I - 0478	B	1	Conklin	Erik			Form Letter B, see I-0111
I - 0322	B	1	Conley	Jan			Form Letter B, see I-0111
I - 0429	B	1	Cook	Mira			Form Letter B, see I-0111
I - 0555	B	1	Cooke	Susan			Form Letter B, see I-0111
I - 0623	B	1	Copeland	Mel			Form Letter B, see I-0111
I - 0275	B	1	Corcoran	James			Form Letter B, see I-0111
I - 0432	B	1	Cordeau	Stephanie			Form Letter B, see I-0111
I - 0166	B	1	Cornell	John			Form Letter B, see I-0111
I - 1052	B	1	Cosgrove	Patrick			Form Letter B, see I-0111
I - 0832	-	1	Costa	Demelza			
I - 0978	B	1	Costa	Francisco			Form Letter B, see I-0111
I - 0539	B	1	Costeas	Elaine			Form Letter B, see I-0111
I - 0794	B	1	Cotter	Clu			Form Letter B, see I-0111
I - 0721	B	1	Cousins	Catharine			Form Letter B, see I-0111
I - 0345	B	1	Cox	Chadwick			Form Letter B, see I-0111
I - 0804	B	1	Cox	Pamela			Form Letter B, see I-0111
I - 1008	B	1	Craft	Randy			Form Letter B, see I-0111
I - 0250	B	1	Cravey	Suzanne			Form Letter B, see I-0111
I - 0507	B	1	Crawford	David			Form Letter B, see I-0111
I - 0143	B	1	Crawford	Richard			Form Letter B, see I-0111
I - 0913	B	1	Crimmins	Paul			Form Letter B, see I-0111
I - 0945	B	1	Crom	Nancy			Form Letter B, see I-0111
I - 0618	B	1	Cross	Jessie			Form Letter B, see I-0111
I - 0082	-	1	Crowl	Chris and Aileen			
I - 0403	B	1	Csoka	Barbara			Form Letter B, see I-0111
I - 0519	-	1	Cuccio	Joe			
I - 0803	B	1	Cuningham	Jory			Form Letter B, see I-0111

**Table T-2  
List of Commentors Sorted by Commentor Type and Name**

Note: Commenters other than Individual Commenters are sorted and listed alphabetically by their respective organization/affiliation.

Commenter Type and Sequence Code	Form Letter	Comment Group Number	Last Name	First Name	Middle Initial	Organization Name	Comments
I - 0941	B	1	Cutting	Peter			Form Letter B, see I-0111
I - 0077	-	1	Daley	Iris			
I - 0291	B	1	Daly	Maia			Form Letter B, see I-0111
I - 0297	B	1	Dane	William			Form Letter B, see I-0111
I - 0907	-	1	Dart	Erin			
I - 1033	B	1	Davidson	Kim			Form Letter B, see I-0111
I - 0727	B	1	Davie	Dennis			Form Letter B, see I-0111
I - 0867	B	1	Davis	Augusta			Form Letter B, see I-0111
I - 0380	B	1	Davis	Mary			Form Letter B, see I-0111
I - 0406	B	1	Davis	Paul			Form Letter B, see I-0111
I - 0921	B	1	Davis	Shirley			Form Letter B, see I-0111
I - 0477	B	1	Davantes	Nancy			Form Letter B, see I-0111
I - 0533	B	1	Dawson	Peggy			Form Letter B, see I-0111
I - 0075	-	1	Dazzling Dodads				
I - 0510	B	1	De Costanzo	Danielle			Form Letter B, see I-0111
I - 0499	-	1	Decker	Allen			
I - 0386	B	1	Deegan	James			Form Letter B, see I-0111
I - 0407	B	1	Dees	Regina			Form Letter B, see I-0111
I - 0319	B	1	Delaney	D	D		Form Letter B, see I-0111
I - 2002	-	2	DeMay	Jim			
I - 0600	B	1	Denison	Lou Anna			Form Letter B, see I-0111
I - 0967	B	1	Dennis	Mitchell			Form Letter B, see I-0111
I - 0270	B	1	Derzon	Jim			Form Letter B, see I-0111
I - 0097	-	1	DeWitt	Connie			
I - 0098	-	1	DeWitt	Rick			
I - 0726	B	1	Dexter	Ken			Form Letter B, see I-0111
I - 0914	B	1	Diehl	Sarah			Form Letter B, see I-0111
I - 0648	B	1	Difelici	Celeste			Form Letter B, see I-0111
I - 0731	B	1	Dills	Linda & Walt			Form Letter B, see I-0111
I - 0927	B	1	Dixon	Keri			Form Letter B, see I-0111
I - 0114	B	1	Doll	Garry			Form Letter B, see I-0111
I - 0782	B	1	Dolney	Rachel			Form Letter B, see I-0111
I - 0278	B	1	Donnelly	Stephen			Form Letter B, see I-0111
I - 0922	B	1	Doswell	Carolyn			Form Letter B, see I-0111
I - 0374	B	1	Dremann	Craig			Form Letter B, see I-0111
I - 0192	B	1	Driban	Bunny			Form Letter B, see I-0111
I - 0764	B	1	Drumm	Darrin			Form Letter B, see I-0111
I - 0481	B	1	Dryer	James			Form Letter B, see I-0111
I - 0068	-	1	Duba	Roger	L.		
I - 0915	B	1	Duncan	A			Form Letter B, see I-0111
I - 1007	B	1	Duncan	Mike			Form Letter B, see I-0111
I - 0896	B	1	Dunn	John			Form Letter B, see I-0111
I - 0987	B	1	Dunn	Karen			Form Letter B, see I-0111
I - 0711	B	1	Dunne	Loretta			Form Letter B, see I-0111
I - 0312	B	1	Dunne	Stephen			Form Letter B, see I-0111
I - 0811	B	1	Duran	Jesus			Form Letter B, see I-0111
I - 0093	-	1	Durante	Grant			
I - 0038	A	1	East	Katherine	A.		Form Letter A, see I-0008
I - 1056	B	1	Eastman	Alice			Form Letter B, see I-0111
I - 0471	B	1	Eberz	Noelle			Form Letter B, see I-0111
I - 0169	B	1	Efross	Monnie	R.		Form Letter B, see I-0111
I - 0187	B	1	Egan	Thomas			Form Letter B, see I-0111
I - 0254	B	1	Egan	Veronica			Form Letter B, see I-0111
I - 0174	B	1	Egger	Mark			Form Letter B, see I-0111
I - 0964	B	1	Ehret	Hugo			Form Letter B, see I-0111
I - 0872	-	1	Elliott	Thomas	R		
I - 0644	B	1	Ellison	George			Form Letter B, see I-0111
I - 0984	B	1	Emery	Douglas			Form Letter B, see I-0111
I - 0286	B	1	Enderson	Erik			Form Letter B, see I-0111
I - 1006	B	1	Engelstein	Jennafer			Form Letter B, see I-0111
I - 0861	B	1	Enger	Stephen			Form Letter B, see I-0111
I - 1075	-	1	Enriquez	Armando			
I - 0452	B	1	Eremita	Linda			Form Letter B, see I-0111
I - 0820	B	1	Erickson	Gerri			Form Letter B, see I-0111
I - 0255	B	1	Esra	Nijn			Form Letter B, see I-0111
I - 0058	-	1	Essler	Jim			
I - 0763	B	1	Esteve	Gregory			Form Letter B, see I-0111
I - 0059	-	1	Evans	Chad		St. Ignatius College Preparatory	
I - 0247	B	1	Evans	Dinda			Form Letter B, see I-0111
I - 0929	-	1	Ewing	Charles	M.		
I - 0889	B	1	Faber	Jill			Form Letter B, see I-0111
I - 0434	B	1	Falberg	Gregory			Form Letter B, see I-0111
I - 0283	B	1	Falc	Pete			Form Letter B, see I-0111
I - 0846	-	1	Falconer	Joan	O		
I - 0642	B	1	Faulstich	Paul			Form Letter B, see I-0111
I - 0516	B	1	Favilla	Christine			Form Letter B, see I-0111
I - 2004	-	2	Fayad	Jacob	M.		
I - 0104	-	1	Fergusom	Tom			
I - 0099	-	1	Ferguson	Tom			
I - 0144	B	1	Fieldman	Anita			Form Letter B, see I-0111
I - 0793	B	1	Fields	Nicole			Form Letter B, see I-0111
I - 0631	B	1	Fink	Brian			Form Letter B, see I-0111
I - 1038	B	1	Finley	Brent			Form Letter B, see I-0111

**Table T-2  
List of Commentors Sorted by Commentor Type and Name**

Note: Commentors other than Individual Commentors are sorted and listed alphabetically by their respective organization/affiliation.

Commenter Type and Sequence Code	Form Letter	Comment Group Number	Last Name	First Name	Middle Initial	Organization Name	Comments
I - 0875	B	1	Fiore	Mark	J		Form Letter B, see I-0111
I - 0771	B	1	Fischer	Aurelie			Form Letter B, see I-0111
I - 0772	-	1	Fischer	Cynthia			
I - 0347	B	1	Fitzell	Anne	M.		Form Letter B, see I-0111
I - 0188	B	1	Flores	Nicholas	E.		Form Letter B, see I-0111
I - 1005	B	1	Flori	Robert			Form Letter B, see I-0111
I - 0808	B	1	Floyd	Kim			Form Letter B, see I-0111
I - 0041	A	1	Flynn	Patrick			Form Letter A, see I-0008
I - 0281	B	1	Ford	Chris			Form Letter B, see I-0111
I - 0248	B	1	Ford	Julie	C.		Form Letter B, see I-0111
I - 0112	B	1	Fort-Strietzel	J	K		Form Letter B, see I-0111
I - 0970	B	1	Foster	Hilary			Form Letter B, see I-0111
I - 0640	-	1	Frank	B			
I - 0703	B	1	Fraser	Caroline			Form Letter B, see I-0111
I - 0078	-	1	Fred HF				
I - 2019	-	2	French	Lynda			
I - 0069	-	1	Fretheim	Paul		Inyo Pro	
I - 0841	B	1	Friesen	Debbie			Form Letter B, see I-0111
I - 0408	B	1	Fritzinger	Dennis			Form Letter B, see I-0111
I - 0158	B	1	Fulham	Gerald			Form Letter B, see I-0111
I - 0502	-	1	Furlong	Kevin			
I - 0670	B	1	Futrell	Sherrill			Form Letter B, see I-0111
I - 0274	B	1	Gabalton	Marla			Form Letter B, see I-0111
I - 0389	B	1	Gaede	Marnie & Marc			Form Letter B, see I-0111
I - 0079	-	1	Gailey	Tom			
I - 0901	B	1	Gaines	Virginia			Form Letter B, see I-0111
I - 0646	B	1	Gaither-Banchoff	Kevin			Form Letter B, see I-0111
I - 0956	B	1	Galli	William			Form Letter B, see I-0111
I - 0113	B	1	Galvin	Peter			Form Letter B, see I-0111
I - 0712	B	1	Gan	Monica			Form Letter B, see I-0111
I - 0864	B	1	Garcia	Camilo	N		Form Letter B, see I-0111
I - 0148	B	1	Gardner	Richard			Form Letter B, see I-0111
I - 1066	B	1	Garrett	John			Form Letter B, see I-0111
I - 0461	B	1	Gartner	Connie & Ted			Form Letter B, see I-0111
I - 0583	-	1	Garton	Jan			
I - 0680	B	1	Garvey	Lydia			Form Letter B, see I-0111
I - 0328	B	1	Garvin	Michael	J.		Form Letter B, see I-0111
I - 0916	B	1	Geikenjoyner	Mark			Form Letter B, see I-0111
I - 0343	B	1	Gerard	Kathleen			Form Letter B, see I-0111
I - 0238	B	1	Gidseg	Eric			Form Letter B, see I-0111
I - 0638	B	1	Gilland	James			Form Letter B, see I-0111
I - 0355	B	1	Gillespie	Sheryl			Form Letter B, see I-0111
I - 0487	B	1	Gilstrap	Helen			Form Letter B, see I-0111
I - 0338	B	1	Giovanni	Dianne			Form Letter B, see I-0111
I - 0089	-	1	Gliva	Steve			
I - 0850	B	1	Glyshaw	Gina			Form Letter B, see I-0111
I - 0881	B	1	Goggins	Alan			Form Letter B, see I-0111
I - 0342	B	1	Golden	Jerry			Form Letter B, see I-0111
I - 0021	A	1	Good	Ron			Form Letter A, see I-0008
I - 0288	B	1	Grahn	Charlene			Form Letter B, see I-0111
I - 1016	B	1	Granquist	Joel			Form Letter B, see I-0111
I - 1077	B	1	Graziosa	Sara			Form Letter B, see I-0111
I - 0218	B	1	Green	Jason	J		Form Letter B, see I-0111
I - 0256	B	1	Green	Suzanne			Form Letter B, see I-0111
I - 0683	B	1	Greenwood	Carol			Form Letter B, see I-0111
I - 0314	B	1	Greenwood	Karin and Richard			Form Letter B, see I-0111
I - 0851	B	1	Gregerson	Gary			Form Letter B, see I-0111
I - 0496	B	1	Gregory	Joe			Form Letter B, see I-0111
I - 0760	B	1	Grenard	Mark	H		Form Letter B, see I-0111
I - 0537	B	1	Gribelin	Edith			Form Letter B, see I-0111
I - 0824	B	1	Griffith	Dian			Form Letter B, see I-0111
I - 0378	B	1	Griffith	Jennifer			Form Letter B, see I-0111
I - 0909	B	1	Griffith	Jeremiah			Form Letter B, see I-0111
I - 1031	-	1	Grob	Lisa			
I - 0095	-	1	Grogan	Scott	A.		
I - 0783	-	1	Grover	Ravi			
I - 0609	B	1	Grubb	Rick			Form Letter B, see I-0111
I - 0414	B	1	Gunther	Donald & Alberta			Form Letter B, see I-0111
I - 0466	B	1	Hadderman	Margaret			Form Letter B, see I-0111
I - 0491	B	1	Hagwood	Sheri			Form Letter B, see I-0111
I - 1014	B	1	Hall	Tessa			Form Letter B, see I-0111
I - 0996	B	1	Hamilton	Van & Lois			Form Letter B, see I-0111
I - 0404	B	1	Hammer	Mark			Form Letter B, see I-0111
I - 0392	B	1	Hammett	Julia			Form Letter B, see I-0111
I - 1044	B	1	Hammond	Teresa			Form Letter B, see I-0111
I - 0271	B	1	Hanlon	Colleen			Form Letter B, see I-0111
I - 0819	B	1	Hannum	Christine			Form Letter B, see I-0111
I - 0125	B	1	Hans	Devinder			Form Letter B, see I-0111
I - 0971	B	1	Hanson	Kathy			Form Letter B, see I-0111
I - 0536	B	1	Hanson	Marilyn			Form Letter B, see I-0111
I - 0843	B	1	Harbeson	Charlotte			Form Letter B, see I-0111
I - 1019	B	1	Harbster	David			Form Letter B, see I-0111
I - 0430	B	1	Harding	Kevin			Form Letter B, see I-0111

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Note: Commenters other than Individual Commenters are sorted and listed alphabetically by their respective organization/affiliation.

Commenter Type and Sequence Code	Form Letter	Comment Group Number	Last Name	First Name	Middle Initial	Organization Name	Comments
I - 0399	B	1	Hardy	Dian			Form Letter B, see I-0111
I - 0620	B	1	Harkey	Marylin & Warren			Form Letter B, see I-0111
I - 0035	A	1	Harm	Richard			
I - 0199	B	1	Harris	Ed			Form Letter B, see I-0111
I - 0696	B	1	Hartman	Jerry			Form Letter B, see I-0111
I - 0022	-	1	Harvey	Marcia			
I - 0897	-	1	Haseltine	Michael			
I - 1011	B	1	Havey	Maureen			Form Letter B, see I-0111
I - 0641	B	1	Hawley	Maureen			Form Letter B, see I-0111
I - 1017	B	1	Hayes	Kimberly			Form Letter B, see I-0111
I - 0111	B	1	Hayes	Sara			Sample of Form Letter B
I - 0661	B	1	Hazlett	Jeanie			Form Letter B, see I-0111
I - 1024	B	1	Healy	Patricia			Form Letter B, see I-0111
I - 0282	B	1	Hebeisen	Julie			Form Letter B, see I-0111
I - 0611	B	1	Hedinger	Nicole			Form Letter B, see I-0111
I - 0488	B	1	Hedstrom	Jonathan			Form Letter B, see I-0111
I - 0023	-	1	Hegland	Jean			
I - 0397	B	1	Heineman	Robert	M.		Form Letter B, see I-0111
I - 0369	B	1	Heinzig	Dennis			Form Letter B, see I-0111
I - 0226	B	1	Heller	Joshua			Form Letter B, see I-0111
I - 0249	B	1	Henderson	Barbara			Form Letter B, see I-0111
I - 0943	B	1	Henderson	Lauren			Form Letter B, see I-0111
I - 2015	-	2	Hendrickson	Belinda			
I - 1034	B	1	Henneberg	Alice			Form Letter B, see I-0111
I - 0862	B	1	Henry	Lyle			Form Letter B, see I-0111
I - 0649	-	1	Henry	Seth			
I - 0716	B	1	Hernandez	Michael			Form Letter B, see I-0111
I - 0645	B	1	Hernandez	Tony			Form Letter B, see I-0111
I - 0455	B	1	Herner	Betty	J		Form Letter B, see I-0111
I - 1076	-	1	Herschelman	Tom			
I - 0303	B	1	Herzog	Kathryn			Form Letter B, see I-0111
I - 1062	B	1	Hesselbrock	Dolores			Form Letter B, see I-0111
I - 0586	B	1	Hewitt	Elizabeth	T.		Form Letter B, see I-0111
I - 0688	B	1	Hill	Cody			Form Letter B, see I-0111
I - 0045	-	1	Hill	Sean			
I - 0080	-	1	Hills	Richard	G.		
I - 1041	B	1	Himpelmann	Debbi			Form Letter B, see I-0111
I - 0847	B	1	Hirose	Mary			Form Letter B, see I-0111
I - 0752	B	1	Hirsh	Sidney & Marsha			Form Letter B, see I-0111
I - 0292	B	1	Hitt	Kelly			Form Letter B, see I-0111
I - 0955	B	1	Hitt	Sam			Form Letter B, see I-0111
I - 0070	-	1	Hoch	David			
I - 0309	B	1	Hoch	Jeffrey			Form Letter B, see I-0111
I - 0707	B	1	Hofman	Diana			Form Letter B, see I-0111
I - 1061	B	1	Hogg	Jeffrey			Form Letter B, see I-0111
I - 0954	B	1	Hohenberg	Adrienne			Form Letter B, see I-0111
I - 0344	B	1	Hokin	H.	L.		Form Letter B, see I-0111
I - 0090	-	1	Holladay	Dee			
I - 0409	B	1	Holmes Fatooh	Audrey	A.		Form Letter B, see I-0111
I - 0986	B	1	Holton	Brandon			Form Letter B, see I-0111
I - 0797	B	1	Holz	Dennis			Form Letter B, see I-0111
I - 0515	B	1	Hopkins	Thomas			Form Letter B, see I-0111
I - 0790	B	1	Horowitz	Maureen			Form Letter B, see I-0111
I - 0243	B	1	Houseworth	Bradley			Form Letter B, see I-0111
I - 0949	B	1	Howard	Sarah			Form Letter B, see I-0111
I - 0024	-	1	Howe	Charles	W.	University of Colorado-Boulder	
I - 0350	B	1	Howell	Donna			Form Letter B, see I-0111
I - 0239	B	1	Howenstein	David			Form Letter B, see I-0111
I - 1059	B	1	Hueneke	Edward			Form Letter B, see I-0111
I - 0279	B	1	Hueseemann	Michael and Joyce			Form Letter B, see I-0111
I - 0176	B	1	Huggins	William			Form Letter B, see I-0111
I - 0835	B	1	Hundt	Heather			Form Letter B, see I-0111
I - 0765	B	1	Hunt-Walter	Sandra			Form Letter B, see I-0111
I - 0244	B	1	Hurdich	Lauren			Form Letter B, see I-0111
I - 0101	-	1	Hurley	Cliff			
I - 0660	B	1	Hurley	Robert			Form Letter B, see I-0111
I - 0886	B	1	Iacob	Anca			Form Letter B, see I-0111
I - 0480	-	1	Imam	Bassam			
I - 0458	B	1	Ingram	Mike			Form Letter B, see I-0111
I - 0962	B	1	Israel	Alberto	M		Form Letter B, see I-0111
I - 0025	-	1	Jackman	Jean			
I - 0139	B	1	Jacobson	Don			Form Letter B, see I-0111
I - 1039	B	1	Jahanian	Lyn			Form Letter B, see I-0111
I - 0995	B	1	James	Karla			Form Letter B, see I-0111
I - 0296	B	1	Jamieson	Ruth			Form Letter B, see I-0111
I - 0898	B	1	Janda	Karen			Form Letter B, see I-0111
I - 0417	B	1	Janowitz-Price	Beverly			Form Letter B, see I-0111
I - 0484	B	1	Jantz	Eric			Form Letter B, see I-0111
I - 0490	B	1	Jarocki	Martha			Form Letter B, see I-0111
I - 0448	B	1	Jasper	Marilyn			Form Letter B, see I-0111
I - 0304	B	1	Jenkins	Basil			Form Letter B, see I-0111
I - 0367	B	1	Jenks	Jean			Form Letter B, see I-0111
I - 0197	B	1	Jensen	Nancy			Form Letter B, see I-0111

**Table T-2  
List of Commentors Sorted by Commentor Type and Name**

Note: Commenters other than Individual Commenters are sorted and listed alphabetically by their respective organization/affiliation.

Commenter Type and Sequence Code	Form Letter	Comment Group Number	Last Name	First Name	Middle Initial	Organization Name	Comments
I - 0460	B	1	Jensen	Sandy			Form Letter B, see I-0111
I - 1010	B	1	Johnson	Brock			Form Letter B, see I-0111
I - 0616	B	1	Johnson	Carla			Form Letter B, see I-0111
I - 0494	B	1	Johnson	Christina			Form Letter B, see I-0111
I - 0123	B	1	Johnson	Curtis			Form Letter B, see I-0111
I - 0789	B	1	Johnson	Helen			Form Letter B, see I-0111
I - 0540	B	1	Johnson	Iver			Form Letter B, see I-0111
I - 0033	-	1	Johnson	Kim			
I - 0049	-	1	Johnson	Kim			
I - 0651	B	1	Johnson	Kim			Form Letter B, see I-0111
I - 0805	B	1	Johnson	Rex			Form Letter B, see I-0111
I - 0630	B	1	Johnston	Denver			Form Letter B, see I-0111
I - 1068	B	1	Jones	Barbara			Form Letter B, see I-0111
I - 0910	B	1	Jones	Brant			Form Letter B, see I-0111
I - 0746	B	1	Jones	Brian			Form Letter B, see I-0111
I - 0234	B	1	Jones	David			Form Letter B, see I-0111
I - 0917	B	1	Jones	Dayvid			Form Letter B, see I-0111
I - 0198	B	1	Jones	Diane			Form Letter B, see I-0111
I - 0869	B	1	Jones	J	L		Form Letter B, see I-0111
I - 0300	B	1	Jones	Leslie			Form Letter B, see I-0111
I - 0352	B	1	Jones	Mitch			Form Letter B, see I-0111
I - 0359	B	1	Jones	Suzanne			Form Letter B, see I-0111
I - 1078	B	1	Jordan	Sterling			Form Letter B, see I-0111
I - 0745	B	1	Juck	Edna			Form Letter B, see I-0111
I - 0737	B	1	Judd	Floyd	E		Form Letter B, see I-0111
I - 0591	B	1	Juliani	Gerald			Form Letter B, see I-0111
I - 0983	B	1	Juszczak	Cecelia			Form Letter B, see I-0111
I - 0052	-	1	K	Tom			
I - 0121	B	1	Kahn	Kathy			Form Letter B, see I-0111
I - 0060	-	1	Kapell	David			
I - 0876	B	1	Karcher	Elisabeth			Form Letter B, see I-0111
I - 0854	B	1	Kasik	Kristina			Form Letter B, see I-0111
I - 2007	-	2	Keck	Robert			
I - 0293	B	1	Kellett	Michael			Form Letter B, see I-0111
I - 0833	B	1	Kelly	Matthew			Form Letter B, see I-0111
I - 0006	-	1	Kelly II	Roy	A		
I - 1022	B	1	Kendall	Matthew			Form Letter B, see I-0111
I - 0547	B	1	Keoppen	M			Form Letter B, see I-0111
I - 0317	B	1	Kester	Lenore			Form Letter B, see I-0111
I - 1063	B	1	Khanlian	Richard			Form Letter B, see I-0111
I - 0498	B	1	Killgore	John			Form Letter B, see I-0111
I - 0554	B	1	Kinman	Crystal			Form Letter B, see I-0111
I - 0902	B	1	Kirschbaum	Saran & Norton			Form Letter B, see I-0111
I - 0106	-	1	Kirsten	Edward	B.		
I - 0366	B	1	Klein	Stuart & Jeanne			Form Letter B, see I-0111
I - 0694	B	1	Kluever	Bryan			Form Letter B, see I-0111
I - 0501	B	1	Knapp	David			Form Letter B, see I-0111
I - 0924	B	1	Knop	Sandra			Form Letter B, see I-0111
I - 0349	B	1	Koehler	Anson			Form Letter B, see I-0111
I - 0655	B	1	Koehler	Drew			Form Letter B, see I-0111
I - 0170	B	1	Koffler	Kaden			Form Letter B, see I-0111
I - 0405	B	1	Kohler	John			Form Letter B, see I-0111
I - 0799	B	1	Koonen	Joyce			Form Letter B, see I-0111
I - 0658	B	1	Kosek	Shirley			Form Letter B, see I-0111
I - 0163	B	1	Kossack	David	S.		Form Letter B, see I-0111
I - 2011	-	2	Kostyniuk	Sophika			
I - 0578	B	1	Kozak	Allison			Form Letter B, see I-0111
I - 0044	-	1	Kozarsky	Dan			
I - 2017	-	2	Kozarsky	Daniel			
I - 0595	B	1	Kozlowski	David			Form Letter B, see I-0111
I - 0968	B	1	Kreide	Caroline			Form Letter B, see I-0111
I - 0932	B	1	Kritikos	Yiannis			Form Letter B, see I-0111
I - 0894	B	1	Kroening	Nancy			Form Letter B, see I-0111
I - 1023	B	1	Kroll	C			Form Letter B, see I-0111
I - 0557	B	1	Krudger	Jon			Form Letter B, see I-0111
I - 0161	B	1	Kucinski	Beata			Form Letter B, see I-0111
I - 0200	B	1	Kudo	Taiko			Form Letter B, see I-0111
I - 0958	B	1	Kurtz	William & Ellen			Form Letter B, see I-0111
I - 0830	B	1	Kutcher	Celia			Form Letter B, see I-0111
I - 0160	B	1	Laffey	John	K		Form Letter B, see I-0111
I - 0096	-	1	Laitner	Larry			
I - 0549	B	1	Lamb	Terence	R		Form Letter B, see I-0111
I - 0061	-	1	LaMorte	Peter			
I - 0183	B	1	Lance	Barbara			Form Letter B, see I-0111
I - 0246	B	1	Lange	Marlena			Form Letter B, see I-0111
I - 0541	B	1	Largay	John			Form Letter B, see I-0111
I - 0753	B	1	Lash	Calvin	E		Form Letter B, see I-0111
I - 0879	B	1	Lawrence	Rhett			Form Letter B, see I-0111
I - 0974	B	1	Laws	Miki			Form Letter B, see I-0111
I - 0443	B	1	Lay	Kevin			Form Letter B, see I-0111
I - 0131	B	1	Leavitt	David			Form Letter B, see I-0111
I - 0526	B	1	LeClair-Green	Keren			Form Letter B, see I-0111
I - 0662	B	1	Ledesma	Jerry			Form Letter B, see I-0111

**Table T-2  
List of Commentors Sorted by Commentor Type and Name**

Note: Commentors other than Individual Commentors are sorted and listed alphabetically by their respective organization/affiliation.

Commenter Type and Sequence Code	Form Letter	Comment Group Number	Last Name	First Name	Middle Initial	Organization Name	Comments
I - 0778	B	1	Lee	David			Form Letter B, see I-0111
I - 0219	B	1	Lee	Richard			Form Letter B, see I-0111
I - 0815	B	1	Leeds	Lkeomichele			Form Letter B, see I-0111
I - 1055	B	1	Lefler	Susan			Form Letter B, see I-0111
I - 1060	B	1	Leidich	Kylie			Form Letter B, see I-0111
I - 1028	B	1	Leland	David			Form Letter B, see I-0111
I - 0115	B	1	Lemkin	Mark			Form Letter B, see I-0111
I - 0892	B	1	Lemon	Catherine			Form Letter B, see I-0111
I - 0693	B	1	Lester	David			Form Letter B, see I-0111
I - 0384	B	1	Letendre	Donald			Form Letter B, see I-0111
I - 0767	B	1	Lewis	Tryphena			Form Letter B, see I-0111
I - 0251	B	1	Li	Jake			Form Letter B, see I-0111
I - 0828	B	1	Lien	David			Form Letter B, see I-0111
I - 0619	B	1	Liles	Sherry			Form Letter B, see I-0111
I - 0128	B	1	Lilly	David			Form Letter B, see I-0111
I - 1065	B	1	Linarez	Karen			Form Letter B, see I-0111
I - 0142	B	1	Linder	Lorin			Form Letter B, see I-0111
I - 0667	B	1	Linnerooth	Steve			Form Letter B, see I-0111
I - 0865	B	1	Little	Eko			Form Letter B, see I-0111
I - 0664	B	1	Lockard	Don			Form Letter B, see I-0111
I - 0552	B	1	Loeff	Peter			Form Letter B, see I-0111
I - 0677	-	1	Lokey	E			
I - 0635	B	1	Long	Nichole			Form Letter B, see I-0111
I - 0280	B	1	Lopez	Anthony	G		Form Letter B, see I-0111
I - 0165	B	1	Lopez	June			Form Letter B, see I-0111
I - 0657	B	1	Lotz	Jonathan			Form Letter B, see I-0111
I - 0944	B	1	Lovehagen	Lina			Form Letter B, see I-0111
I - 0257	B	1	Lovejoy	Bill			Form Letter B, see I-0111
I - 0585	B	1	Lowe	Kimberly			Form Letter B, see I-0111
I - 0062	-	1	Lower	Jay	R.		
I - 0988	B	1	Lucas	Steven			Form Letter B, see I-0111
I - 0908	B	1	Luepke	Karen			Form Letter B, see I-0111
I - 0842	B	1	Lund	Sierra			Form Letter B, see I-0111
I - 0825	B	1	Lustig	Karen			Form Letter B, see I-0111
I - 0156	B	1	Lynch	Dennis			Form Letter B, see I-0111
I - 0607	B	1	Lynne	Marty			Form Letter B, see I-0111
I - 0262	B	1	Lytle	Denise			Form Letter B, see I-0111
I - 0453	B	1	M	Jonelle			Form Letter B, see I-0111
I - 0598	B	1	Mabli	Samantha			Form Letter B, see I-0111
I - 0492	B	1	Mack	Callie			Form Letter B, see I-0111
I - 0592	-	1	Mackay	James			
I - 0530	B	1	Mackey	Megan			Form Letter B, see I-0111
I - 0919	B	1	MacPherson	M.R.	B		Form Letter B, see I-0111
I - 0195	B	1	Maddison	C.	J.		Form Letter B, see I-0111
I - 0242	-	1	Mahar	Suki			
I - 0928	B	1	Mahdavi	Omid			Form Letter B, see I-0111
I - 0310	B	1	Mahoney	Linda			Form Letter B, see I-0111
I - 0047	-	1	Maida	Susan			
I - 0009	A	1	Malides	Paul			Form Letter A, see I-0008
I - 0786	B	1	Mallory	Kathy			Form Letter B, see I-0111
I - 0474	B	1	Malmid	Wendy			Form Letter B, see I-0111
I - 0883	B	1	Malone	Anne			Form Letter B, see I-0111
I - 0233	B	1	Mankowski	Craig			Form Letter B, see I-0111
I - 0217	B	1	Mann	Britney			Form Letter B, see I-0111
I - 0002	-	1	Mapel	Tiffany	S.		
I - 0152	B	1	Marcus	Lynn			Form Letter B, see I-0111
I - 2008	-	2	Marion	George	H.		
I - 0382	B	1	Mariotti	Lisa			Form Letter B, see I-0111
I - 0653	B	1	Mark	Marie			Form Letter B, see I-0111
I - 0508	B	1	Markam	Thomas			Form Letter B, see I-0111
I - 0751	B	1	Marks	Elise			Form Letter B, see I-0111
I - 0483	B	1	Marlow	Kimberly			Form Letter B, see I-0111
I - 0330	B	1	Marsh	Stephanie			Form Letter B, see I-0111
I - 0353	B	1	Marshall	Lisa			Form Letter B, see I-0111
I - 0980	B	1	Martin	Angela			Form Letter B, see I-0111
I - 0182	B	1	Martin	Drew			Form Letter B, see I-0111
I - 1020	B	1	Martin	Paul			Form Letter B, see I-0111
I - 0361	B	1	Martinez	Vincent			Form Letter B, see I-0111
I - 0470	B	1	Martinson-Bartlett	Ann			Form Letter B, see I-0111
I - 0445	B	1	Marugg	Cynthia			Form Letter B, see I-0111
I - 0372	B	1	Mathis	Rebecca			Form Letter B, see I-0111
I - 0140	B	1	Mauldin	Michael			Form Letter B, see I-0111
I - 0700	B	1	Mayers	Mindy			Form Letter B, see I-0111
I - 0911	B	1	Mazik	Kim			Form Letter B, see I-0111
I - 0205	B	1	McAlpine	Paul			Form Letter B, see I-0111
I - 0723	B	1	McCarthy	Melissa			Form Letter B, see I-0111
I - 0119	B	1	McClintock	Catherine			Form Letter B, see I-0111
I - 0860	B	1	McCloskey	Elizabeth	S		Form Letter B, see I-0111
I - 0331	B	1	McFarland	Tracy			Form Letter B, see I-0111
I - 0633	B	1	McGinnis	Michael			Form Letter B, see I-0111
I - 0327	B	1	McKemie	Sharon			Form Letter B, see I-0111
I - 0617	B	1	McKinney	Harold			Form Letter B, see I-0111
I - 0178	B	1	McLaren	Mike			Form Letter B, see I-0111



**Table T-2  
List of Commentors Sorted by Commentor Type and Name**

Note: Commenters other than Individual Commenters are sorted and listed alphabetically by their respective organization/affiliation.

Commenter Type and Sequence Code	Form Letter	Comment Group Number	Last Name	First Name	Middle Initial	Organization Name	Comments
I - 0713	B	1	McNulty	Mary	A.		Form Letter B, see I-0111
I - 1003	B	1	McQuade	Julie			Form Letter B, see I-0111
I - 0377	B	1	McQuinn	Donald	E.		Form Letter B, see I-0111
I - 0446	B	1	McRee	Livia			Form Letter B, see I-0111
I - 0394	B	1	Means	Conner			Form Letter B, see I-0111
I - 0779	B	1	Mechan	Erin			Form Letter B, see I-0111
I - 0026	-	1	Meeks	Alayne			
I - 0855	B	1	Mei	Jennifer			Form Letter B, see I-0111
I - 1012	B	1	Meier	Robert			Form Letter B, see I-0111
I - 0931	B	1	Melecske	Zsu			Form Letter B, see I-0111
I - 0091	-	1	Melissa	Melissa			
I - 0193	B	1	Meltzer	Richard			Form Letter B, see I-0111
I - 0375	B	1	Mendieta	Vince			Form Letter B, see I-0111
I - 2001	-	2	Meredyk	Angela			
I - 0781	B	1	Mertig	Angela			Form Letter B, see I-0111
I - 0666	B	1	Mertx	Robert	A		Form Letter B, see I-0111
I - 0450	B	1	Metzler	Douglas			Form Letter B, see I-0111
I - 0656	B	1	Meyer	Robert			Form Letter B, see I-0111
I - 0888	B	1	Meyers	M	S		Form Letter B, see I-0111
I - 0493	B	1	Mick	Dolly			Form Letter B, see I-0111
I - 0946	B	1	Mier	Wade			Form Letter B, see I-0111
I - 0679	B	1	Mildrexler	David			Form Letter B, see I-0111
I - 0517	B	1	Milnovitch	Maggie & Richard			Form Letter B, see I-0111
I - 0211	B	1	Miller	Barry			Form Letter B, see I-0111
I - 0149	B	1	Miller	Cameron			Form Letter B, see I-0111
I - 0010	A	1	Miller	D.	R.		Form Letter A, see I-0008
I - 0107	-	1	Miller	Jack	E		
I - 0634	B	1	Miller	Joan			Form Letter B, see I-0111
I - 2000	-	2	Miller	Paul	F.		
I - 0266	B	1	Miller	Vivian			Form Letter B, see I-0111
I - 0253	B	1	Millett	Lydia			Form Letter B, see I-0111
I - 0905	B	1	Millett	Peg			Form Letter B, see I-0111
I - 0438	B	1	Milliken	Gerry			Form Letter B, see I-0111
I - 0138	B	1	Minde	Cindy			Form Letter B, see I-0111
I - 0222	B	1	Minton	Joanne			Form Letter B, see I-0111
I - 0221	B	1	Mioduski	B.			Form Letter B, see I-0111
I - 0887	B	1	Moehlman	Bruce			Form Letter B, see I-0111
I - 0252	B	1	Mohorich	Phillip			Form Letter B, see I-0111
I - 0398	B	1	Mohr	T			Form Letter B, see I-0111
I - 0710	B	1	Monge	Ally			Form Letter B, see I-0111
I - 0548	B	1	Monohan	Elizabeth			Form Letter B, see I-0111
I - 0551	B	1	Monroe	Marilyn	L		Form Letter B, see I-0111
I - 0421	B	1	Monsen	John			Form Letter B, see I-0111
I - 0977	-	1	Montgomery	Glenn			
I - 0151	B	1	Montgomery	Stephen			Form Letter B, see I-0111
I - 0704	B	1	Moon	Carolyn			Form Letter B, see I-0111
I - 1049	B	1	Moran	V			Form Letter B, see I-0111
I - 0318	B	1	Morello	Phyl			Form Letter B, see I-0111
I - 0912	B	1	Morris	Barbara			Form Letter B, see I-0111
I - 0973	B	1	Morrissey	Jerry	L		Form Letter B, see I-0111
I - 0766	B	1	Morrissey	Marie			Form Letter B, see I-0111
I - 0722	B	1	Morse	Keir			Form Letter B, see I-0111
I - 1027	B	1	Moser	Rick			Form Letter B, see I-0111
I - 0839	B	1	Moshel	David			Form Letter B, see I-0111
I - 0177	B	1	Moss	Larry			Form Letter B, see I-0111
I - 0120	B	1	Moss	Mikasa			Form Letter B, see I-0111
I - 0215	B	1	Moss	Paul			Form Letter B, see I-0111
I - 0117	B	1	Moss	SeEtta			Form Letter B, see I-0111
I - 0636	B	1	Mudd	Ned			Form Letter B, see I-0111
I - 0050	-	1	Muehlmann	Shaylih			
I - 0043	-	1	Mueller	Andrew	J.		
I - 0925	B	1	Mueller	Sean			Form Letter B, see I-0111
I - 0258	B	1	Muhly	Ernest	JP		Form Letter B, see I-0111
I - 0590	B	1	Mullarkey	Mike			Form Letter B, see I-0111
I - 1058	B	1	Mullins	Jef			Form Letter B, see I-0111
I - 0381	B	1	Munoz	Axhel			Form Letter B, see I-0111
I - 0122	B	1	Munro	Alan			Form Letter B, see I-0111
I - 0809	B	1	Munson	Jacob			Form Letter B, see I-0111
I - 0164	B	1	Murray	Cristy			Form Letter B, see I-0111
I - 0796	B	1	Mustain	Val			Form Letter B, see I-0111
I - 0534	B	1	Musy	Pierre			Form Letter B, see I-0111
I - 0622	B	1	Narayan	A			Form Letter B, see I-0111
I - 0521	B	1	Narayan	Anupam			Form Letter B, see I-0111
I - 1037	B	1	Nasif	Maria			Form Letter B, see I-0111
I - 0610	B	1	Naurath	David			Form Letter B, see I-0111
I - 0063	-	1	Needham	Sandra			
I - 0240	B	1	Neerman	Deborah			Form Letter B, see I-0111
I - 0813	B	1	Neff	Mark			Form Letter B, see I-0111
I - 1001	B	1	Neils	Aletris			Form Letter B, see I-0111
I - 0807	B	1	Nelson	Derek			Form Letter B, see I-0111
I - 0027	A	1	Nelson	Earl			Form Letter A, see I-0008
I - 0011	A	1	Nelson	Hal	T.		Form Letter A, see I-0008
I - 0985	B	1	Nespoli	Donna			Form Letter B, see I-0111

**Table T-2  
List of Commentors Sorted by Commentor Type and Name**

Note: Commentors other than Individual Commentors are sorted and listed alphabetically by their respective organization/affiliation.

Commenter Type and Sequence Code	Form Letter	Comment Group Number	Last Name	First Name	Middle Initial	Organization Name	Comments
I - 0705	B	1	Neuendorf	Mary			Form Letter B, see I-0111
I - 0612	B	1	Newton	Ilonka			Form Letter B, see I-0111
I - 0127	B	1	Newton	Peter			Form Letter B, see I-0111
I - 0798	B	1	Nickels	Jeanette			Form Letter B, see I-0111
I - 0071	-	1	Nielson	D.			
I - 0935	B	1	Noble	Tom			Form Letter B, see I-0111
I - 0608	B	1	Nordmark	Sandra			Form Letter B, see I-0111
I - 0436	B	1	Norman	Greg			Form Letter B, see I-0111
I - 0780	B	1	Nosek	Ron			Form Letter B, see I-0111
I - 0899	B	1	Novotny	Mark			Form Letter B, see I-0111
I - 0040	-	1	Nutting	John			
I - 0469	B	1	O	Nance			Form Letter B, see I-0111
I - 0227	B	1	Oelrich	Frederick			Form Letter B, see I-0111
I - 0762	B	1	Ogella	Edith			Form Letter B, see I-0111
I - 0882	-	1	O'Kane	Steve			
I - 0773	B	1	Olafsson	Erik			Form Letter B, see I-0111
I - 0116	B	1	Olsen	Lani			Form Letter B, see I-0111
I - 0365	B	1	Olson	Peter			Form Letter B, see I-0111
I - 0933	B	1	Oncill	Robert			Form Letter B, see I-0111
I - 0162	B	1	Onorato	John			Form Letter B, see I-0111
I - 0581	B	1	Orr	Joe			Form Letter B, see I-0111
I - 0336	B	1	Ortman	Debby			Form Letter B, see I-0111
I - 0339	B	1	O'Sullivan	Joseph			Form Letter B, see I-0111
I - 0747	B	1	Owens	Larry			Form Letter B, see I-0111
I - 0702	B	1	Paik	Janice			Form Letter B, see I-0111
I - 0538	B	1	Palm	Jessana			Form Letter B, see I-0111
I - 1045	B	1	Palmer	John	T.		Form Letter B, see I-0111
I - 1073	-	1	Palmer	Patrick			
I - 0849	B	1	Pappas	Sandy			Form Letter B, see I-0111
I - 0506	B	1	Parker	Erika			Form Letter B, see I-0111
I - 0725	B	1	Parker	Reece			Form Letter B, see I-0111
I - 0003	-	1	Parmelee	Steve			
I - 0064	-	1	Parmelee	Steve			
I - 0072	-	1	Parmelee	Steve			
I - 0687	B	1	Parrish	Larry			Form Letter B, see I-0111
I - 0422	B	1	Parry	Ronald			Form Letter B, see I-0111
I - 1047	B	1	Patel	Alpa			Form Letter B, see I-0111
I - 0650	B	1	Patrizzi	Lee			Form Letter B, see I-0111
I - 0992	B	1	Patten	Sam			Form Letter B, see I-0111
I - 0647	B	1	Patterson	Mary	E		Form Letter B, see I-0111
I - 0672	B	1	Patton	Carol			Form Letter B, see I-0111
I - 0836	B	1	Pavlisca	Laura			Form Letter B, see I-0111
I - 0628	B	1	Pearce	Farion			Form Letter B, see I-0111
I - 0241	B	1	Pedersen	JoAnn			Form Letter B, see I-0111
I - 0690	B	1	Pedersen	John			Form Letter B, see I-0111
I - 0337	B	1	Peirce	Jeri			Form Letter B, see I-0111
I - 0332	B	1	Pejchar	Linda			Form Letter B, see I-0111
I - 0979	B	1	Pellegrini	Dharm			Form Letter B, see I-0111
I - 0513	B	1	Pellicani	Andrea			Form Letter B, see I-0111
I - 0856	B	1	Penner	Marsha			Form Letter B, see I-0111
I - 0012	-	1	Pepper	Mark	L.		
I - 1013	B	1	Perlman	Frances			Form Letter B, see I-0111
I - 0741	B	1	Perlman	Janine			Form Letter B, see I-0111
I - 0225	B	1	Peters	Gene & Doris			Form Letter B, see I-0111
I - 0853	B	1	Peters	Matt			Form Letter B, see I-0111
I - 0118	B	1	Petersen	John			Form Letter B, see I-0111
I - 0512	B	1	Peterson	Gregory			Form Letter B, see I-0111
I - 0208	B	1	Peterson	William			Form Letter B, see I-0111
I - 0237	B	1	Petricone	Ingrid			Form Letter B, see I-0111
I - 0868	B	1	Petroski	Irene			Form Letter B, see I-0111
I - 0844	B	1	Pewthers	Kara			Form Letter B, see I-0111
I - 0168	B	1	Phillips	Charles			Form Letter B, see I-0111
I - 1048	B	1	Piccirillo	Danny			Form Letter B, see I-0111
I - 0423	B	1	Pierce	Marc			Form Letter B, see I-0111
I - 1000	B	1	Pierce	Nuri	B		Form Letter B, see I-0111
I - 0207	-	1	Pihl	Eric			
I - 0302	B	1	Pintilie	Elena			Form Letter B, see I-0111
I - 0738	B	1	Poessel	Sharon			Form Letter B, see I-0111
I - 0801	B	1	Poferl	Gerrie			Form Letter B, see I-0111
I - 0665	B	1	Pollock	James	W		Form Letter B, see I-0111
I - 0081	-	1	Portnoy	Dennis			
I - 0181	B	1	Poszig	Doerte			Form Letter B, see I-0111
I - 0792	B	1	Potluru	Susan			Form Letter B, see I-0111
I - 2018	-	2	Pott	Richard			
I - 0999	B	1	Potter	Jacquelyn			Form Letter B, see I-0111
I - 0441	B	1	Poulos	Bonnie	T.		Form Letter B, see I-0111
I - 0503	B	1	Prchal	Steve			Form Letter B, see I-0111
I - 0463	B	1	Presto	Steven			Form Letter B, see I-0111
I - 0444	B	1	Previtali	Andrea			Form Letter B, see I-0111
I - 0194	B	1	Price	Lynn	B.		Form Letter B, see I-0111
I - 0848	B	1	Prola	Jim & Diana			Form Letter B, see I-0111
I - 0580	B	1	Provencio	Rick			Form Letter B, see I-0111
I - 1072	B	1	Quade	Harry			Form Letter B, see I-0111

**Table T-2  
List of Commentors Sorted by Commentor Type and Name**

Note: Commenters other than Individual Commenters are sorted and listed alphabetically by their respective organization/affiliation.

Commenter Type and Sequence Code	Form Letter	Comment Group Number	Last Name	First Name	Middle Initial	Organization Name	Comments
I - 0816	B	1	Qualls	Mike			Form Letter B, see I-0111
I - 0682	B	1	Rabinowitz	Jeannine			Form Letter B, see I-0111
I - 0245	B	1	Radcliffe	Shawn			Form Letter B, see I-0111
I - 0065	-	1	Rader	Nancy			
I - 0485	B	1	Ramos	Carlos			Form Letter B, see I-0111
I - 1015	B	1	Rankins	Melinda			Form Letter B, see I-0111
I - 0681	B	1	Reed	Mary	S		Form Letter B, see I-0111
I - 0948	B	1	Reichert	Robyn			Form Letter B, see I-0111
I - 0259	B	1	Reid	Glenn			Form Letter B, see I-0111
I - 0034	-	1	Reis	Greg			
I - 0046	A	1	Reller	William	E.		Form Letter A, see I-0008
I - 0004	-	1	Reuther	Sandra			
I - 0005	-	1	Reuther	Sandra			
I - 0981	B	1	Rex	Carrie			Form Letter B, see I-0111
I - 0715	B	1	Reynolds	Bryon			Form Letter B, see I-0111
I - 0686	B	1	Reynolds	Nancy			Form Letter B, see I-0111
I - 0210	B	1	Reynolds	Toni			Form Letter B, see I-0111
I - 0321	B	1	Rhoads	Kirk			Form Letter B, see I-0111
I - 0629	B	1	Ricevuto	Chuck			Form Letter B, see I-0111
I - 0383	-	1	Richardson	Don			
I - 0997	B	1	Richman	Elise			Form Letter B, see I-0111
I - 0013	-	1	Riddle	Donna			
I - 0525	-	1	Riddle	Donna			
I - 0418	B	1	Riker	Pat			Form Letter B, see I-0111
I - 0206	B	1	Riley	Kelly			Form Letter B, see I-0111
I - 0818	B	1	Rinaldi	Kay			Form Letter B, see I-0111
I - 0464	B	1	Rings	Sally			Form Letter B, see I-0111
I - 0489	B	1	Ritter	Amy			Form Letter B, see I-0111
I - 0998	B	1	Robert	Claude			Form Letter B, see I-0111
I - 0102	-	1	Robida	Jeremy			
I - 0904	B	1	Robinson	Dave			Form Letter B, see I-0111
I - 0989	B	1	Robinson	Debra	K		Form Letter B, see I-0111
I - 0627	B	1	Robinson	Dvora			Form Letter B, see I-0111
I - 1029	B	1	Rodriguez	Allison			Form Letter B, see I-0111
I - 0395	B	1	Rolfes	Kay			Form Letter B, see I-0111
I - 0776	B	1	Rose	Pandora			Form Letter B, see I-0111
I - 0172	B	1	Rosen	Tamara			Form Letter B, see I-0111
I - 0454	B	1	Rosen	William			Form Letter B, see I-0111
I - 0674	B	1	Rosenblatt	Richard			Form Letter B, see I-0111
I - 0087	-	1	Rosenfield	Bob			
I - 0014	-	1	Rosenfield	Robert			
I - 0584	B	1	Rosenkrantz	Stewart			Form Letter B, see I-0111
I - 0785	B	1	Rossi	Aviva			Form Letter B, see I-0111
I - 2013	-	2	Rothbart	Ron			
I - 0675	B	1	Rubin	Michael			Form Letter B, see I-0111
I - 0092	-	1	Runck	Todd			
I - 2023	-	2	Rupe	Bernie			
I - 0613	B	1	Russell	Laura			Form Letter B, see I-0111
I - 0015	-	1	Rutkowski	Robert	E.		
I - 0051	-	1	Rutkowski	Robert	E.		
I - 0085	-	1	Rutkowski	Robert	E.		Duplicate to I-051
I - 0370	B	1	Rutkowski	Robert			Form Letter B, see I-0111
I - 0806	B	1	Ryan	Rich			Form Letter B, see I-0111
I - 0402	B	1	S	R			Form Letter B, see I-0111
I - 0391	B	1	Sacerdote	Allison			Form Letter B, see I-0111
I - 0709	B	1	Saggan	Laurie			Form Letter B, see I-0111
I - 0528	B	1	Salafsky	David			Form Letter B, see I-0111
I - 0424	B	1	Salazar	Joe			Form Letter B, see I-0111
I - 0110	-	1	Salley	Karen	L		
I - 0190	B	1	Salsburg	Eric			Form Letter B, see I-0111
I - 0191	B	1	Salsburg	Michele			Form Letter B, see I-0111
I - 0412	B	1	Salvo	Mark			Form Letter B, see I-0111
I - 0388	B	1	Samela	Michele			Form Letter B, see I-0111
I - 0126	B	1	Sanderfer	Michael			Form Letter B, see I-0111
I - 0960	B	1	Sandknop	Kathleen			Form Letter B, see I-0111
I - 0717	B	1	Sardo	Steven			Form Letter B, see I-0111
I - 0472	-	1	Savage	Melissa			
I - 0834	B	1	Savett	Adam			Form Letter B, see I-0111
I - 0632	B	1	Sawdon	Rosemarie			Form Letter B, see I-0111
I - 0360	B	1	Saylor	Jared			Form Letter B, see I-0111
I - 0903	B	1	Schaefer	Dieter			Form Letter B, see I-0111
I - 0465	B	1	Schaub, Jr.	John			Form Letter B, see I-0111
I - 0475	B	1	Schneider	Anna			Form Letter B, see I-0111
I - 0260	B	1	Schneider	George			Form Letter B, see I-0111
I - 0652	B	1	Schneider	Greg			Form Letter B, see I-0111
I - 0265	B	1	Schnell	Michael			Form Letter B, see I-0111
I - 0451	B	1	Schneller	Ellen			Form Letter B, see I-0111
I - 0273	B	1	Schubert	Aaron			Form Letter B, see I-0111
I - 0435	B	1	Schubert	Jesse			Form Letter B, see I-0111
I - 0757	B	1	Schuett	Greg			Form Letter B, see I-0111
I - 0900	B	1	Schwartz	Norman			Form Letter B, see I-0111
I - 1051	-	1	Schwartz	Richard			
I - 0203	B	1	Schwartz	Sam & Jan			Form Letter B, see I-0111

**Table T-2  
List of Commentors Sorted by Commentor Type and Name**

Note: Commentors other than Individual Commentors are sorted and listed alphabetically by their respective organization/affiliation.

Commenter Type and Sequence Code	Form Letter	Comment Group Number	Last Name	First Name	Middle Initial	Organization Name	Comments
I - 0129	B	1	Schwick	Keplin			Form Letter B, see I-0111
I - 0223	B	1	Sciacca	Barbara			Form Letter B, see I-0111
I - 0838	B	1	Sego	Barbara			Form Letter B, see I-0111
I - 0462	B	1	Segovia	Sandra			Form Letter B, see I-0111
I - 0305	B	1	Seliger	Pat			Form Letter B, see I-0111
I - 0553	B	1	Senour	Jon	C		Form Letter B, see I-0111
I - 0975	B	1	Separk	Susan			Form Letter B, see I-0111
I - 0154	B	1	Sever	Florian			Form Letter B, see I-0111
I - 1071	B	1	Shafer	Grace			Form Letter B, see I-0111
I - 0356	B	1	Shaheen	Sean			Form Letter B, see I-0111
I - 0184	B	1	Shapira	Susan			Form Letter B, see I-0111
I - 0229	B	1	Shapiro	Leo			Form Letter B, see I-0111
I - 0232	B	1	Shapiro	Richard			Form Letter B, see I-0111
I - 0730	B	1	Sharp	Donna			Form Letter B, see I-0111
I - 0740	B	1	Shaw	Janis			Form Letter B, see I-0111
I - 0236	-	1	Sheathelm	Herbert			
I - 0426	B	1	Shepherd	Jennifer			Form Letter B, see I-0111
I - 1042	B	1	Sherman	Brenda and Ron			Form Letter B, see I-0111
I - 0277	B	1	Shlackman	Mara			Form Letter B, see I-0111
I - 0821	B	1	Showalter	John			Form Letter B, see I-0111
I - 0016	A	1	Shumaker	Jason			Form Letter A, see I-0008
I - 0870	B	1	Shumaker	John			Form Letter B, see I-0111
I - 0307	B	1	Shumate	Charlene			Form Letter B, see I-0111
I - 0189	B	1	Siegele	Linda			Form Letter B, see I-0111
I - 0298	B	1	Siegfried	Brad			Form Letter B, see I-0111
I - 0028	A	1	Sigetich	Andrea			Form Letter A, see I-0008
I - 0748	B	1	Silan	Sheila			Form Letter B, see I-0111
I - 0214	B	1	Silver	Margaret			Form Letter B, see I-0111
I - 0212	B	1	Silver	Ronald	H.		Form Letter B, see I-0111
I - 0439	B	1	Simon	Philip			Form Letter B, see I-0111
I - 2006	-	2	Simon	Philip			
I - 2024	-	2	Simon	Philip			
I - 0017	-	1	Skinner	Steve			
I - 0532	B	1	Skowronski	Chad			Form Letter B, see I-0111
I - 0993	B	1	Sloss	Jeff			Form Letter B, see I-0111
I - 0827	B	1	Smale	Mary	A.		Form Letter B, see I-0111
I - 0522	B	1	Smith	Diane			Form Letter B, see I-0111
I - 1004	B	1	Smith	Jennifer			Form Letter B, see I-0111
I - 0802	B	1	Smith	Michelle			Form Letter B, see I-0111
I - 0950	B	1	Snow	Edward			Form Letter B, see I-0111
I - 0689	B	1	Sogorka	Marcie			Form Letter B, see I-0111
I - 0531	B	1	Solon	Brett			Form Letter B, see I-0111
I - 0597	B	1	Sonoquie	Mo			Form Letter B, see I-0111
I - 0167	B	1	Sorenson	John	F.		Form Letter B, see I-0111
I - 0698	B	1	Soza	Jessica			Form Letter B, see I-0111
I - 0083	-	1	Specht	Vince			
I - 0124	B	1	Spencer	Gayle			Form Letter B, see I-0111
I - 0601	B	1	Spevak	Edward			Form Letter B, see I-0111
I - 0018	-	1	Spezia	John			
I - 0230	B	1	Spindler	Steve			Form Letter B, see I-0111
I - 0676	-	1	Spotts	Richard			
I - 0325	B	1	Sprague	Jennifer			Form Letter B, see I-0111
I - 0684	B	1	Sprague	Karen			Form Letter B, see I-0111
I - 0588	B	1	Stablein	Angela			Form Letter B, see I-0111
I - 0413	B	1	Starks	Lee			Form Letter B, see I-0111
I - 0952	B	1	Stauss	Carmen			Form Letter B, see I-0111
I - 0335	B	1	Steele	Todd	H.		Form Letter B, see I-0111
I - 0938	B	1	Steele	Volney			Form Letter B, see I-0111
I - 0639	B	1	Stein	Herb			Form Letter B, see I-0111
I - 0714	B	1	Steinbach	Simon			Form Letter B, see I-0111
I - 0468	B	1	Steiner	John			Form Letter B, see I-0111
I - 0511	B	1	Stephens	Josh			Form Letter B, see I-0111
I - 0733	B	1	Stephenson	Jonathan			Form Letter B, see I-0111
I - 0473	B	1	Stern	Billy			Form Letter B, see I-0111
I - 0621	B	1	Stewart	Glenn	R.		Form Letter B, see I-0111
I - 0390	B	1	Stimpert	Jacqueline			Form Letter B, see I-0111
I - 0202	B	1	Stimson	Karen			Form Letter B, see I-0111
I - 0315	B	1	Stokes	Susan			Form Letter B, see I-0111
I - 0966	B	1	Straumanis	Karra	K		Form Letter B, see I-0111
I - 0734	B	1	Strauss	Howard			Form Letter B, see I-0111
I - 0603	B	1	Stricks	Jessica			Form Letter B, see I-0111
I - 0371	B	1	Strobel	Jeanine			Form Letter B, see I-0111
I - 0105	-	1	Strunk	Adam			
I - 0311	B	1	Sullivan	Kristin			Form Letter B, see I-0111
I - 1069	B	1	Summer	Rebecca			Form Letter B, see I-0111
I - 0276	B	1	Sutton	Adrienne			Form Letter B, see I-0111
I - 0179	B	1	Suzuki	Masako			Form Letter B, see I-0111
I - 0146	B	1	Suzuki	Yusuke			Form Letter B, see I-0111
I - 0891	B	1	Svabenik	J	P		Form Letter B, see I-0111
I - 0823	B	1	Swan	Rebecca			Form Letter B, see I-0111
I - 0739	B	1	Sweel	Greg			Form Letter B, see I-0111
I - 1030	B	1	Sweet	Rhiannon			Form Letter B, see I-0111
I - 0708	B	1	Swierkosz	Joe	W.		Form Letter B, see I-0111

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List of Commentors Sorted by Commentor Type and Name**

Note: Commenters other than Individual Commenters are sorted and listed alphabetically by their respective organization/affiliation.

Commenter Type and Sequence Code	Form Letter	Comment Group Number	Last Name	First Name	Middle Initial	Organization Name	Comments
I - 0663	B	1	Tabili	Laura			Form Letter B, see I-0111
I - 0692	B	1	Taggart	Carol			Form Letter B, see I-0111
I - 0228	B	1	Tahany	Kevin			Form Letter B, see I-0111
I - 0826	B	1	Talmo	Edward			Form Letter B, see I-0111
I - 0926	B	1	Tamplin	Tom			Form Letter B, see I-0111
I - 0196	B	1	Taranowski	Heath	A.		Form Letter B, see I-0111
I - 1067	B	1	Tashjian	Randy			Form Letter B, see I-0111
I - 0449	B	1	Tasoff	Jack			Form Letter B, see I-0111
I - 0425	B	1	Tax	Wienke			Form Letter B, see I-0111
I - 1002	B	1	Taylor	Lili			Form Letter B, see I-0111
I - 0743	B	1	Taylor	William			Form Letter B, see I-0111
I - 0333	B	1	Teolis	Simon			Form Letter B, see I-0111
I - 0132	B	1	Tepper	Carol			Form Letter B, see I-0111
I - 0285	B	1	Terbot	Lee and Charlotte			Form Letter B, see I-0111
I - 0769	B	1	Thomas	Bill			Form Letter B, see I-0111
I - 0774	B	1	Thomas	Jon			Form Letter B, see I-0111
I - 0433	B	1	Thomas	Kevin			Form Letter B, see I-0111
I - 0749	B	1	Thomas	Ursula			Form Letter B, see I-0111
I - 0784	B	1	Thompson	David			Form Letter B, see I-0111
I - 0130	B	1	Thomson	Arran			Form Letter B, see I-0111
I - 0759	B	1	Thomson	Kurt			Form Letter B, see I-0111
I - 0858	B	1	Thorn	Roger			Form Letter B, see I-0111
I - 0135	B	1	Tietzer	Daniel			Form Letter B, see I-0111
I - 0936	B	1	Tiling	Christian			Form Letter B, see I-0111
I - 0742	B	1	Tillett	Geri			Form Letter B, see I-0111
I - 0066	-	1	Tim and Anna				
I - 0437	B	1	Tobias	David			Form Letter B, see I-0111
I - 0155	B	1	Tomczak	Eve			Form Letter B, see I-0111
I - 0845	B	1	Torrence	Paul			Form Letter B, see I-0111
I - 0263	B	1	Tot	Steven			Form Letter B, see I-0111
I - 1043	B	1	Tracy	Steve			Form Letter B, see I-0111
I - 0755	B	1	Trapp	Gene	R		Form Letter B, see I-0111
I - 0220	B	1	Traub	Susan			Form Letter B, see I-0111
I - 0579	B	1	Trautwein	Brian			Form Letter B, see I-0111
I - 0019	A	1	Trutt	Josh			Form Letter A, see I-0008
I - 0348	B	1	Turek	Gabriella			Form Letter B, see I-0111
I - 0073	-	1	Turner	Tom			
I - 0147	B	1	Tyler	Steve & Jill			Form Letter B, see I-0111
I - 0103	-	1	Unknown				
I - 2009	-	2	Unknown				
I - 2021	-	2	Unknown				
I - 0393	B	1	Van Dyke	Sara			Form Letter B, see I-0111
I - 0326	B	1	Van Manen	Dave and Helene			Form Letter B, see I-0111
I - 0596	B	1	Van Til	Evelyn			Form Letter B, see I-0111
I - 0235	B	1	Van Wicklen	Ed			Form Letter B, see I-0111
I - 0884	B	1	Vandragt	Brady			Form Letter B, see I-0111
I - 0606	B	1	VanHook	Jessica			Form Letter B, see I-0111
I - 0546	B	1	Vargas	Todeo			Form Letter B, see I-0111
I - 0486	B	1	Vassar	Kristen			Form Letter B, see I-0111
I - 0180	B	1	Vaughan	Jennifer			Form Letter B, see I-0111
I - 0067	-	1	Vegas Billy				
I - 0264	B	1	Vermillion	Eliza			Form Letter B, see I-0111
I - 0787	B	1	Verner	Alex			Form Letter B, see I-0111
I - 2022	-	2	Vesperman	Gary			
I - 0678	B	1	Vilcins	Inger		Department of Biological Sciences	Form Letter B, see I-0111
I - 0990	B	1	Viola	Richard			Form Letter B, see I-0111
I - 0440	B	1	Vogel	Karen			Form Letter B, see I-0111
I - 1079	B	1	vonHoldt	Diana			Form Letter B, see I-0111
I - 0520	B	1	Vosburgh	Victoria			Form Letter B, see I-0111
I - 0957	B	1	Wagner	Elissa			Form Letter B, see I-0111
I - 0324	B	1	Wagner	Robert			Form Letter B, see I-0111
I - 0029	-	1	Walker	Ray			
I - 0758	B	1	Wallace	Jonathan			Form Letter B, see I-0111
I - 0695	B	1	Walrafen	Barbara			Form Letter B, see I-0111
I - 0735	B	1	Walters	Wendy			Form Letter B, see I-0111
I - 0972	B	1	Wangsgard	Erica			Form Letter B, see I-0111
I - 0505	B	1	Warner	Barbara			Form Letter B, see I-0111
I - 0084	-	1	Warnick	Carol			
I - 0691	B	1	Warren	Aaron			Form Letter B, see I-0111
I - 0495	B	1	Warren	Gregory			Form Letter B, see I-0111
I - 0364	B	1	Warren	Kenneth			Form Letter B, see I-0111
I - 0320	B	1	Watrous	Frank			Form Letter B, see I-0111
I - 0308	B	1	Watson	Chris			Form Letter B, see I-0111
I - 0316	B	1	Watson	Jennifer			Form Letter B, see I-0111
I - 0368	B	1	Watson	Mark			Form Letter B, see I-0111
I - 1040	B	1	Watson	Roger	D		Form Letter B, see I-0111
I - 0373	B	1	Waupoose	David	L.		Form Letter B, see I-0111
I - 0857	B	1	Wayne	Rachel			Form Letter B, see I-0111
I - 0791	B	1	Weatherman	John			Form Letter B, see I-0111
I - 0306	B	1	Weber	Deborah			Form Letter B, see I-0111
I - 0224	B	1	Wedow	Nancy			Form Letter B, see I-0111
I - 2020	-	2	Wegst	Walter	F.		
I - 0880	B	1	Welker	Michael			Form Letter B, see I-0111

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List of Commentors Sorted by Commentor Type and Name**

Note: Commenters other than Individual Commenters are sorted and listed alphabetically by their respective organization/affiliation.

Commenter Type and Sequence Code	Form Letter	Comment Group Number	Last Name	First Name	Middle Initial	Organization Name	Comments
I - 0030	-	1	Welles	Diane			
I - 0053	-	1	Wellner	Pamela			
I - 0535	B	1	Welsh	Deborah			Form Letter B, see I-0111
I - 0756	B	1	Wernz	Celeste			Form Letter B, see I-0111
I - 0346	B	1	Weyer	Linda			Form Letter B, see I-0111
I - 0500	B	1	Whalen	Lori			Form Letter B, see I-0111
I - 0376	B	1	Whaley	Richard & Susan			Form Letter B, see I-0111
I - 1070	B	1	Whippo	Robert			Form Letter B, see I-0111
I - 1026	B	1	White	Carolynn			Form Letter B, see I-0111
I - 0923	B	1	White	Melissa			Form Letter B, see I-0111
I - 0379	B	1	Whited	Kiley			Form Letter B, see I-0111
I - 0213	B	1	Wichman	Michael			Form Letter B, see I-0111
I - 0456	B	1	Wiens	Devon	H.		Form Letter B, see I-0111
I - 0527	B	1	Wilbur	David			Form Letter B, see I-0111
I - 1080	-	1	Wilde	Rebecca			
I - 0885	B	1	Wiley	Carol			Form Letter B, see I-0111
I - 0301	B	1	Wilkinson	Jon			Form Letter B, see I-0111
I - 0937	B	1	Williams	Nicholas			Form Letter B, see I-0111
I - 0859	B	1	Williamson	Nancy			Form Letter B, see I-0111
I - 0497	B	1	Wilson	Kendrick			Form Letter B, see I-0111
I - 0719	B	1	Windjue	Sara			Form Letter B, see I-0111
I - 0624	B	1	Wingard	Michel			Form Letter B, see I-0111
I - 0637	B	1	Winslett	Larry			Form Letter B, see I-0111
I - 0840	B	1	Winters	Drusilla			Form Letter B, see I-0111
I - 0447	B	1	Wischmeyer	A	J		Form Letter B, see I-0111
I - 1050	B	1	Wishner	Robert			Form Letter B, see I-0111
I - 0204	B	1	Wittekind	Ray			Form Letter B, see I-0111
I - 0036	-	1	Wolf	Barry			
I - 0529	B	1	Wolf	Rachel			Form Letter B, see I-0111
I - 1009	B	1	Wolf	Shaye			Form Letter B, see I-0111
I - 0545	B	1	Wolfe	Gerry and Vicki			Form Letter B, see I-0111
I - 0137	B	1	Wolfson	Toni	A.		Form Letter B, see I-0111
I - 0947	B	1	Wolverton	Martha			Form Letter B, see I-0111
I - 0108	-	1	Wolverton	William	H		
I - 2016	-	2	Wolverton	William	H.		
I - 0031	-	1	Wood	Corin			
I - 0556	B	1	Woods	James	L.		Form Letter B, see I-0111
I - 0724	B	1	Worden	Donna			Form Letter B, see I-0111
I - 0054	-	1	Worthy	Crista			
I - 0951	B	1	Wuhrmann	Karin			Form Letter B, see I-0111
I - 0459	B	1	Yake	William	E.		Form Letter B, see I-0111
I - 0524	B	1	Yoder	Donna			Form Letter B, see I-0111
I - 0720	B	1	York	Mark			Form Letter B, see I-0111
I - 0088	-	1	Young	Barbara			
I - 1053	B	1	Young	Gary			Form Letter B, see I-0111
I - 1021	B	1	Youssefinia	Sam			Form Letter B, see I-0111
I - 0420	-	1	Zakin	Susan			
I - 0467	B	1	Zarkowski	De Ann			Form Letter B, see I-0111
I - 982	B	1	Zellers	Rose			Form Letter B, see I-0111
I - 0963	B	1	Zimmerman	Carol			Form Letter B, see I-0111
I - 1064	B	1	Zito	Vincent			Form Letter B, see I-0111
I - 1057	B	1	Zvosec	Deborah			Form Letter B, see I-0111
<b>Local Agency (L)</b>							
L - 2011	-	2	Olson	Steven	L.	Arizona Municipal Water Users Association	
L - 2014	-	2	Boyce	Harvey	W.	Arizona Power Authority	
L - 2009	-	2	Mulholland	Joseph	W.	Arizona Power Authority	
L - 2006	-	2	Toy	Doug		City of Chandler	
L - 2012	-	2	Sorensen	Kathryn		City of Mesa	
L - 2002	-	2	Buschatzke	Thomas		City of Phoenix	
L - 0001	-	1	Buschatzke	Thomas		City of Phoenix	
L - 2003	-	2	Mansfield	David	M.	City of Scottsdale	
L - 2005	-	2	Kamienski	Eric	S.	City of Tempe	
L - 2010	-	2	Modeer	David	V.	City of Tucson Water Department	
L - 2017	-	2	Caan	George		Colorado River Energy Distributors Association	
L - 2008	-	2	James	Leslie		Colorado River Energy Distributors Association	
L - 2016	-	2	James	Leslie		Colorado River Energy Distributors Association	
L - 2018	-	2	Mazour	David		Colorado River Energy Distributors Association	
L - 0004	-	1	Algots	John		Fort Mojave Indian Tribe	
L - 2001	-	2	Algots	John		Fort Mojave Indian Tribe	
L - 2000	-	2	King	Michael	L.	Imperial Irrigation District	
L - 0008	-	1	Lynch	Robert	S	Irrigation & Electrical Districts Association of Arizona	
L - 2015	-	2	Lynch	Bob	S.	Irrigation & Electrical Districts of Arizona	
L - 2007	-	2	Lynch	Robert	S.	Irrigation & Electrical Districts of Arizona	
L - 0002	-	1	Pollack	Stanley	M	Navajo Nation	
L - 0009	-	1	Morisset	Mason	D	Quechan Indian Tribe	
L - 0006	-	1	Sparks	Joe	P	San Carlos Apache Tribe	
L - 0005	-	1	Sparks	Joe	P	Tonto Apache Tribe	
L - 2004	-	2	Rall	Kathy		Town of Gilbert	
L - 0007	-	1	Sparks	Joe	P	Yavapai-Apache Nation	
<b>State Agency (S)</b>							
S - 2001	-	2	Guenther	Herb		Arizona Department of Water Resources	

**Table T-2  
List of Commentors Sorted by Commentor Type and Name**

Note: Commentors other than Individual Commentors are sorted and listed alphabetically by their respective organization/affiliation.

Commenter Type and Sequence Code	Form Letter	Comment Group Number	Last Name	First Name	Middle Initial	Organization Name	Comments
S - 0004	-	1	Taubert	Bruce	D	Arizona Game & Fish Department	
S - 0002	-	1	Mulholland	Joseph	W	Arizona Power Authority	
S - 2004	-	2	Zimmerman	Gerald	R	Colorado River Board of California	
S - 0001	-	1	Basin States Representatives			Seven Colorado River Basin States	
S - 0005	-	1	Basin States Representatives			Seven Colorado River Basin States	
S - 2006	-	2	Basin States Representatives			Seven Colorado River Basin States	
S - 2005	-	2	Mulroy	Patricia		Souther Nevada Water Authority	
S - 2003	-	2				Upper Basin State Representatives	

# **Appendix U**

## **Summary of Comments/ Comment Database**



**Appendix U  
Summary of Comments / Comment Database**

Group	Commenter Type	Sequence Code	Comment Number	Commenter	Form Letter	Formal / Mechanism	Content	Resource Area																			Comment Summary
								Agriculture Resources	Biological Resources	Cultural Resources	Energy / Power Production	Groundwater	Hydrology	Land Use / Planning	Mitigation/Monitoring	Population / Housing	Public Services	Recreation	Reservoir Management	Socio-economic	Transboundary Impacts	Transportation / Traffic	Water Supply / Quality	Water Quality	Water Rights	Alternatives	
1	B	001	01	Schuelter			1																		Update Compact to reflect the Colorado River's supply limitations and changing societal demands		
1	B	002	01	WR Consultants			1																		Consider/evaluate sustainable sediment management program for Lake Powell and Lake Mead.		
1	B	002	02	WR Consultants			1																1		Use process that weighs benefits against impacts		
1	B	004	01	Shipley Group			1																		Consider/evaluate return of treated wastewater to river to supplement supplies		
1	B	004	02	Shipley Group			1			1															Consider/evaluate storage of surplus supplies in groundwater aquifers, when available		
2	B	2000	01	Watermasters																				1	Provide information on public scoping meetings.		
2	B	2001	01	Avalex, Inc.																					Consider/evaluate effects that guidelines may have on the Law of the River		
2	B	2001	02	Avalex, Inc.			1																		Re-evaluate how determination of "normal" or "surplus" conditions are made		
2	B	2001	03	Avalex, Inc.						1							1								Consider/evaluate Lake Mead minimum storage elevation that optimizes water availability for all users & no other elevation protections		
2	B	2001	04	Avalex, Inc.						1							1								Consider/evaluate Lake Powell minimum storage elevation that optimizes water availability for all users & no other elevation protections		
2	B	2001	05	Avalex, Inc.			1										1		1						Evaluate both direct and indirect environmental and economic impacts to river and all water users		
2	B	2001	06	Avalex, Inc.			1																		Consider/evaluate water quality impacts below Lake Mead		
1	F	001	01	DOE-WAPA			1																		Develop and implement drought management solutions now to minimize impacts in future years		
1	F	001	02	DOE-WAPA			1																		Consider/develop of strategies that maximize power production		
1	F	001	03	DOE-WAPA			1																		Include Lake Powell in management strategies/shortage guidelines		
1	F	001	04	DOE-WAPA			1																		Interim strategies that end before 2017 may impact negotiation of Hoover Service Contracts		
1	F	001	05	DOE-WAPA			1																		Implementation of strategies/shortage guidelines may be beneficial		
1	F	001	06	DOE-WAPA			1																		Incorporate shortage criteria in the Lower Basin that recognizes water right priorities		
1	F	001	07	DOE-WAPA			1																		Incorporate shortage criteria in the Lower Basin that minimizes impacts to water quality of low reservoir conditions		
1	F	001	08	DOE-WAPA			1																		Incorporate shortage criteria in the Lower Basin that maintains power generation capacity to Lower Basin customers		
1	F	001	09	DOE-WAPA			1																		Consider Upper Basin releases that enhance storage in Lake Powell to maintain power generation at Glen Canyon		
1	F	002	01	US IBWC																					Management Strategies should address adverse impacts to water deliveries to Mexico		
1	F	002	02	US IBWC			1																		Include language in Management Strategies stating that IBWC Minute No. 242 will not be changed		
1	F	002	03	US IBWC																					Address potential salinity impacts to Mexico water deliveries		
1	F	002	04	US IBWC			1																		Request consultation with Mexico to explain NEPA process and potential impacts on water quantity and quality to Mexico deliveries		
1	F	002	05	US IBWC			1																		Update reference to drought or the allocation of waters between the U.S. and Mexico consistent with terminology used in 1944 Water Treaty		
1	F	003	01	Park Service			1																		Consider/evaluate critical water levels on lakes Powell and Mead below which many recreational services would be curtailed altogether		
1	F	003	02	Park Service			1																		Consider/evaluate conjunctive reservoir management strategies that optimize recreation on lakes Mead and Powell		
1	F	003	03	Park Service																					Consider/evaluate potential impacts to recreation on lakes Mead and Powell		
1	F	003	04	Park Service																					Consider/evaluate potential impacts to recreation on Grand Canyon National Park and Glen Canyon National Recreation Area		
1	F	003	05	Park Service																					Consider/evaluate impacts to local and regional economies along the Colorado River		
1	F	003	06	Park Service																					Consider/evaluate impacts on recreation and tourism along the Colorado River		
1	F	003	07	Park Service																					Consider/evaluate impacts on NPS units along Colorado River		
1	F	004	01	Fish & Wildlife Service			1																		Section 7 consultation needed if develop Glen Canyon Dam monthly or daily release patterns that differ from those specified in the 1995 ROD		
1	F	004	02	Fish & Wildlife Service			1																		Consider/evaluate Glen Canyon Dam Seasonally Adjusted Steady Flow water management strategies to provide warmer release water temperatures to enhance humpback chub conservation		
1	F	004	03	Fish & Wildlife Service																					Consider/evaluate effect of annual releases from Glen Canyon Dam on humpback chub		
1	F	004	04	Fish & Wildlife Service			1																		Section 7 consultation needed if projected Lake Mead elevations are lower than elevations in LCR MSCP BA/BO		
1	F	004	05	Fish & Wildlife Service			1																		Section 7 consultation needed if reduction in flows below Hoover Dam are more than 1.574 MAF as stated in LCR MSCP BA/BO		
1	F	004	06	Fish & Wildlife Service			1																		Consider/evaluate Lake Powell levels and flows thru Grand Canyon that benefit spawning and recruitment of razorback suckers as noted in BO for ISG		
1	F	004	07	Fish & Wildlife Service			1																		Consider/evaluate timing of flows into Lake Mead to allow for riparian management at its delta to provide habitat for the endangered southwestern willow flycatcher and other migratory bird species		
1	F	006	01	U.S. Air Force, Nellis AFB			1																		Consider/evaluate strategies that establish critical water levels at lakes Mead and Powell		
1	F	006	02	U.S. Air Force, Nellis AFB			1																		Consider/evaluate strategies that provide for equitable sharing of shortages between parties to international treaties		
1	F	006	03	U.S. Air Force, Nellis AFB			1																		Consider/evaluate strategies that protect Federal Reserved Water Rights		
1	F	006	04	U.S. Air Force, Nellis AFB			1																		Consider/evaluate strategies that protect federal mandates such as protect nation and preserve national sovereignty		
2	F	2000	01	U.S. Environmental Protection Agency			1																		Consider/evaluate specific measures that result in more efficient management of Colorado River water supplies		
2	F	2000	02	U.S. Environmental Protection Agency			1																		Evaluate both direct and indirect environmental and economic impacts to river and all water users		
2	F	2000	03	U.S. Environmental Protection Agency																					Evaluate effects on the Southern Nevada Water Authority's drinking water supply and its intakes		
2	F	2000	04	U.S. Environmental Protection Agency																					Evaluate effects on dilution of perchlorate entering Lake Mead from Henderson, Nevada via Las Vegas Wash		
2	F	2000	05	U.S. Environmental Protection Agency																					Evaluate effects on the timing and rate of lake turnover		
2	F	2000	06	U.S. Environmental Protection Agency			1																		Evaluate effects on lake water quality		
2	F	2000	07	U.S. Environmental Protection Agency																					Evaluate effects on the timing and rate of lake turnover		
2	F	2000	08	U.S. Environmental Protection Agency			1																		Evaluate effects on lake water quality		
2	F	2000	09	U.S. Environmental Protection Agency			1																		Evaluate effects on salinity, mercury, sediment, radioactive substances and other constituents of Lower Colorado River water		
2	F	2000	10	U.S. Environmental Protection Agency			1																		Evaluate effects on general water quality and end uses of water going to Arizona, California, Nevada, and Mexico		
2	F	2000	11	U.S. Environmental Protection Agency			1																		Evaluate effects on in-stream water quality and water reaching the Colorado River Delta, including water temperatures and flow fluctuations		
2	F	2000	12	U.S. Environmental Protection Agency																					Evaluate effects on water rights, including Tribal water rights		
2	F	2000	13	U.S. Environmental Protection Agency																					Evaluate effects on water supply diversion quantities and schedules		
2	F	2000	14	U.S. Environmental Protection Agency																					Evaluate effects on recreation, such as rafting in the Grand Canyon, fishing, and visual effects of reservoir draw-downs		
2	F	2000	15	U.S. Environmental Protection Agency			1																		Evaluate effects on sediment movement and impacts on beach replenishment in the Grand Canyon		
2	F	2000	16	U.S. Environmental Protection Agency			1																		Evaluate effects on hydroelectric generation and Lake Mead and Lake Powell equalization requirements		
2	F	2000	17	U.S. Environmental Protection Agency																					Evaluate effects on flood control		
2	F	2000	18	U.S. Environmental Protection Agency			1																		Evaluate effects on fisheries, threatened and endangered species, and the Lower Colorado River Multiple Species Habitat Conservation Strategy		
2	F	2000	19	U.S. Environmental Protection Agency			1																		Evaluate effects on Treaty obligations with Tribes and Mexico, Biological Opinions, discharge and diversion permits, and other agreements, such as those to restore the Colorado River Delta.		
2	F	2000	20	U.S. Environmental Protection Agency			1																		Evaluate effects on groundwater from potential transition from surface water use to groundwater use		
2	F	2000	21	U.S. Environmental Protection Agency																					Develop monitoring and accounting systems to evaluate impacts of shortages		
2	F	2000	22	U.S. Environmental Protection Agency			1																		Request regular consultations with tribes during development of alternatives		



**Appendix U**  
**Summary of Comments / Comment Database**

Group	Commenter Type	Sequence Code	Comment Number	Commenter	Form Letter	Format / Mechanism	Content	Resource Area																	Comment Summary	
								Agriculture Resources	Biological Resources	Cultural Resources	Energy / Power Production	Groundwater	Hydrology	Land Use / Planning	Mitigation/Monitoring	Population / Housing	Public Services	Recreation	Reservoir Management	Socio-economic	Transboundary Impacts	Transportation / Traffic	Water Supply / Quantity	Water Quality		Water Rights
2	G	2000	02	Sierra Club			1																			Guidelines should be permanent for use in managing water now and in future
2	G	2000	03	Sierra Club			1											1	1					1		Consider/evaluate submitted shortage criteria alternative - "Conservation Before Shortage"
2	G	2001	01	Environmental Defense			1																			Proposed process requires a full Environmental Impact Statement
2	G	2001	02	Environmental Defense			1																			Guidelines should be permanent for use in managing water now and in future
2	G	2001	03	Environmental Defense			1											1	1						1	Consider/evaluate submitted shortage criteria alternative - "Conservation Before Shortage"
2	G	2002	01	Defenders of Wildlife, et al.			1											1	1						1	Consider/evaluate submitted shortage criteria alternative - "Conservation Before Shortage"
2	G	2003	01	Rock the Earth			1																			Proposed process requires a full Environmental Impact Statement
2	G	2003	02	Rock the Earth			1											1	1	1					1	Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam
2	G	2003	03	Rock the Earth			1											1	1	1					1	Develop plan that maximizes storage at Lake Mead and minimizes storage at Lake Powell
2	G	2003	04	Rock the Earth			1											1	1						1	Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers
2	G	2003	05	Rock the Earth			1											1	1						1	Consider/evaluate aggressive water conservation now to minimize drought impacts in future years
2	G	2003	06	Rock the Earth			1											1	1						1	Update Compact to reflect the Colorado River's supply limitations and changing societal demands
2	G	2003	07	Rock the Earth			1											1	1						1	Consider/evaluate costs and benefits of restoring natural flows through Glen and Grand Canyons.
2	G	2003	08	Rock the Earth			1											1	1						1	Consider/evaluate sustainable sediment management program for Lake Powell and Lake Mead
2	G	2004	01	Living Rivers Colorado Riverkeeper			1											1	1						1	Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers
2	G	2004	02	Living Rivers Colorado Riverkeeper			1											1	1						1	Consider/evaluate sustainable sediment management program for Lake Powell and Lake Mead.
2	G	2004	03	Living Rivers Colorado Riverkeeper			1											1	1						1	Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam
2	G	2004	04	Living Rivers Colorado Riverkeeper			1											1	1	1					1	Consider/evaluate new water allocation guidelines that protect critical habitats in Grand Canyon and elsewhere.
2	G	2005	01	Defenders of Wildlife, et al.			1											1	1						1	Consider/evaluate submitted shortage criteria alternative - "Conservation Before Shortage"
2	G	2006	01	Western Watersheds Project, Inc.			1											1	1						1	Consider/evaluate role of watershed and soils disturbing activities on Colorado River system
2	G	2006	02	Western Watersheds Project, Inc.			1											1	1						1	Consider Colorado River Salinity Control Act in analysis
2	G	2006	03	Western Watersheds Project, Inc.			1											1	1						1	Evaluate effect of livestock and grazed areas on runoff and sediment
2	G	2008	01	Red Rock Audubon Society			1																			Use a basin wide approach for study and criteria implementation
2	G	2008	02	Red Rock Audubon Society			1																			Update Compact to reflect the Colorado River's supply limitations and changing societal demands
2	G	2008	03	Red Rock Audubon Society			1																			Consider/evaluate intra- and interstate sale, lease, transfer, trade or exchange of water within Basin
2	G	2008	04	Red Rock Audubon Society			1																			Consider/evaluate programs that can augment the available basin supplies, such as cloud seeding, ocean desalination, etc.
2	G	2008	05	Red Rock Audubon Society			1																			Develop basin-wide conjunction water supply management program that considers all sources of supply
2	G	2008	06	Red Rock Audubon Society			1																			Develop alternatives with participation of all legitimate stakeholders
2	G	2008	07	Red Rock Audubon Society			1																			Consider/evaluate strategies that manage Lake Powell and Mead water levels to protect Las Vegas' water supply
2	G	2009	01	Environmental Defense			1																			NEPA analysis needs to evaluate impacts of the guidelines and strategies collectively with other proposed projects such as bypass flow replacement, operation of YDP, new regulatory storage facilities, etc.
2	G	2010	01	Sierra Club			1																			Consider/evaluate submitted shortage criteria alternative - "Conservation Before Shortage"
2	G	2010	02	Sierra Club			1																			Proposed process requires a full Environmental Impact Statement
2	G	2010	03	Sierra Club			1																			Guidelines should be permanent for use in managing water now and in future
2	G	2012	01	Environmental Defense			1																			Proposed process requires a full Environmental Impact Statement
2	G	2012	02	Environmental Defense			1																			Guidelines should be permanent for use in managing water now and in future
2	G	2012	03	Environmental Defense			1																			Consider/evaluate submitted shortage criteria alternative - "Conservation Before Shortage"
2	G	2013	01	Sonoran Institute			1																			Proposed process requires a full Environmental Impact Statement
2	G	2013	02	Sonoran Institute			1																			Guidelines should be permanent for use in managing water now and in future
2	G	2013	03	Sonoran Institute			1																			Consider/evaluate submitted shortage criteria alternative - "Conservation Before Shortage"
2	G	2014	01	Red Rock Audubon Society			1																			Develop alternatives with participation of all legitimate stakeholders
2	G	2014	02	Red Rock Audubon Society			1																			Evaluate both direct and indirect environmental and economic impacts to river and all water users
2	G	2014	03	Red Rock Audubon Society			1																			Use a basin wide approach for study and criteria implementation
2	G	2014	04	Red Rock Audubon Society			1																			Consider/evaluate effect and impacts to water quality
2	G	2014	05	Red Rock Audubon Society			1																			Consider/evaluate intra- and interstate sale, lease, transfer, trade or exchange of water within Basin
2	G	2016	01	Friends of Lake Powell			1																			Consider/evaluate delivery reductions that are flexible and responsive to hydrologic conditions
2	G	2016	02	Friends of Lake Powell			1																			Consider/evaluate Upper Basin delivery schedules that allow releases less than 8.23 maf/year from Lake Powell
2	G	2016	03	Friends of Lake Powell			1																			Consider/evaluate criteria that requires equitable sharing of shortages between Upper and Lower basins
2	G	2016	04	Friends of Lake Powell			1																			Consider/evaluate guidelines that trigger drought conditions at Lake Powell when level drops below 3600 feet
2	G	2016	05	Friends of Lake Powell			1																			Consider/develop of strategies that protect critical water levels at Lake Powell to minimize impacts to stakeholders
1	I	001	01	Belles			1																			Develop plan consistent with international treaty obligations
1	I	001	02	Belles			1																			Develop plan that maximizes beneficial use of the available water for domestic municipal and agricultural in U.S.
1	I	001	03	Belles			1																			Develop plan that complies with Federal Laws such as the Endangered Species Act
1	I	001	04	Belles			1																			Develop plan that maximizes generation of electrical power
1	I	001	05	Belles			1																			Develop plan that accommodates recreational industry
1	I	001	06	Belles			1																			Develop plan that maximizes storage at Lake Mead and minimizes storage at Lake Powell
1	I	002	01	Mapel			1																			Consider/evaluate plan that minimizes releases from Lake Powell
1	I	003	01	Parmelee			1																			Consider/evaluate plan that limits releases from Lake Powell to 7.5 MAFY
1	I	004	01	Reuther			1																			Consider charging surcharge to agricultural deliveries to fund conservation projects such as converting ditches to pipelines
1	I	005	01	Reuther			1																			Consider/evaluate eliminating boating on Lake Mead to protect water quality from fuel spills
1	I	006	01	Kelly			1																			Consider/evaluate return of treated wastewater to river to supplement supplies
1	I	007	01	Baker			1																			Develop plan that maximizes storage at Lake Mead and minimizes storage at Lake Powell
1	I	008	01	15 Commenters, see database - Form Letter A			A																			Develop plan that maximizes storage at Lake Mead and minimizes storage at Lake Powell
1	I	008	02	15 Commenters, see database - Form Letter A			A																			Consider/evaluate protection of cultural resources in Glen Canyon
1	I	012	01	Pepper			1																			Develop plan that maximizes storage at Lake Mead and minimizes storage at Lake Powell
1	I	012	02	Pepper			1																			Consider/evaluate protection of cultural resources in Glen Canyon
1	I	013	01	Riddle			1																			Develop plan that maximizes storage at Lake Mead and minimizes storage at Lake Powell
1	I	014	01	Rosenfield			1																			Develop plan that maximizes storage at Lake Mead and minimizes storage at Lake Powell
1	I	015	01	Rutkowski			1																			Develop plan that maximizes storage at Lake Mead and minimizes storage at Lake Powell







**Appendix U**  
**Summary of Comments / Comment Database**

Group	Commenter Type	Sequence Code	Comment Number	Commenter	Form Letter	Format / Mechanism	Content	Resource Area															Comment Summary		
								Agriculture Resources	Biological Resources	Cultural Resources	Energy / Power Production	Groundwater	Hydrology	Land Use / Planning	Mitigation/Monitoring	Population / Housing	Public Services	Recreation	Reservoir Management	Socio-economic	Transboundary Impacts	Transportation / Traffic		Water Supply / Quality	Water Quality
1	I	093	01	Duranle	1																				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam
1	I	094	01	Bloebaum	1																				Develop plan that maximizes storage at Lake Mead and minimizes storage at Lake Powell
1	I	095	01	Grogan	1																				Opposes decommissioning of Glen Canyon Dam
1	I	095	02	Grogan	1		1																		Consider/evaluate requiring use of more efficient irrigation practices as means to conserve water
1	I	096	01	Laitner	1																				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam
1	I	097	01	DeWitt, C.	1																				Opposes decommissioning of Glen Canyon Dam
1	I	097	02	DeWitt, C.	1	1																			Does not believe full Environmental Impact Statement is needed, do not waste the money
1	I	098	01	DeWitt, R.	1																				Opposes decommissioning of Glen Canyon Dam
1	I	099	01	Ferguson	1																				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam
1	I	099	02	Ferguson	1																				Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers
1	I	099	03	Ferguson	1																				Consider/evaluate sustainable sediment management program for Lake Powell and Lake Mead
1	I	099	04	Ferguson	1																				Consider/evaluate costs and benefits of restoring natural flows through Glen and Grand Canyons
1	I	099	05	Ferguson	1	1																			Proposed process requires a full Environmental Impact Statement
1	I	100	01	Cloutier	1																				Develop plan that maximizes storage at Lake Mead and minimizes storage at Lake Powell
1	I	101	01	Hurley	1	1																			Request that criteria developed for determining "shortage flow status" clear and concise
1	I	101	02	Hurley	1	1	1																		Consider/evaluate criteria that include two levels of shortage determination, first affects CAP deliveries, and affects other Lower Basin State deliveries
1	I	101	03	Hurley	1																				Consider/evaluate development of contingency plans for equitable distribution of supplies under a shortage flow conditions
1	I	102	01	Robida	1																				Develop plan that maximizes storage at Lake Mead and minimizes storage at Lake Powell
1	I	102	02	Robida	1																				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam
1	I	102	03	Robida	1																				Consider/evaluate costs and benefits of restoring natural flows through Glen and Grand Canyons
1	I	103	01	Unknown	1																				Consider/evaluate reconstruction of Glen Canyon Dam to be made structurally safer
1	I	103	02	Unknown	1																				Consider/evaluate potential impacts of proposed Yucca Mountain waste disposal site on Colorado River and groundwater supplies
1	I	105	01	Strunk	1																				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam
1	I	105	02	Strunk	1																				Consider/evaluate costs and benefits of restoring natural flows through Glen and Grand Canyons
1	I	105	03	Strunk	1																				Consider/evaluate sustainable sediment management program for Lake Powell and Lake Mead
1	I	106	01	Ferguson	1																				Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers
1	I	106	02	Kirsten	1																				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam
1	I	106	03	Kirsten	1	1																			Proposed process requires a full Environmental Impact Statement
1	I	107	01	Miller	1																				Develop plan that maximizes storage at Lake Mead and minimizes storage at Lake Powell
1	I	108	01	Wolverton	1																				Consider/evaluate sustainable sediment management program for Lake Powell and Lake Mead
1	I	108	02	Wolverton	1																				Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers
1	I	108	03	Wolverton	1																				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam
1	I	109	01	909 Commenters, see database- Form Letter B	B		909																		Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers
1	I	109	02	909 Commenters, see database- Form Letter B	B		909																		Consider/evaluate sustainable sediment management program for Lake Powell and Lake Mead
1	I	109	03	909 Commenters, see database- Form Letter B	B		909																		Update Compact to reflect the Colorado River's supply limitations and changing societal demands
1	I	109	04	909 Commenters, see database- Form Letter B	B		909																		Proposed process requires a full Environmental Impact Statement
1	I	109	05	909 Commenters, see database- Form Letter B	B		909																		Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam
1	I	110	01	Salley	1																				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam
1	I	207	01	Phl	1																				Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers
1	I	207	02	Phl	1																				Consider/evaluate sustainable sediment management program for Lake Powell and Lake Mead
1	I	207	03	Phl	1																				Update Compact to reflect the Colorado River's supply limitations and changing societal demands
1	I	207	04	Phl	1	1																			Proposed process requires a full Environmental Impact Statement
1	I	207	05	Phl	1																				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam
1	I	236	01	Sheathelm	1																				Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers
1	I	236	02	Sheathelm	1																				Consider/evaluate sustainable sediment management program for Lake Powell and Lake Mead
1	I	236	03	Sheathelm	1																				Consider/evaluate aggressive water conservation now to minimize drought impacts in future years
1	I	236	04	Sheathelm	1																				Update Compact to reflect the Colorado River's supply limitations and changing societal demands
1	I	236	05	Sheathelm	1	1																			Proposed process requires a full Environmental Impact Statement
1	I	236	06	Sheathelm	1																				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam
1	I	242	01	Mahar	1																				Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers
1	I	242	02	Mahar	1																				Consider/evaluate sustainable sediment management program for Lake Powell and Lake Mead
1	I	242	03	Mahar	1																				Update Compact to reflect the Colorado River's supply limitations and changing societal demands
1	I	242	04	Mahar	1																				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam
1	I	242	05	Mahar	1	1																			Proposed process requires a full Environmental Impact Statement
1	I	323	01	Campion	1																				Opposes decommissioning of Glen Canyon Dam
1	I	383	01	Richardson	1																				Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers
1	I	383	02	Richardson	1																				Consider/evaluate sustainable sediment management program for Lake Powell and Lake Mead
1	I	383	03	Richardson	1																				Update Compact to reflect the Colorado River's supply limitations and changing societal demands
1	I	383	04	Richardson	1																				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam
1	I	383	05	Richardson	1	1																			Proposed process requires a full Environmental Impact Statement
1	I	420	01	Zakin	1																				Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers
1	I	420	02	Zakin	1																				Consider/evaluate sustainable sediment management program for Lake Powell and Lake Mead
1	I	420	03	Zakin	1																				Update Compact to reflect the Colorado River's supply limitations and changing societal demands
1	I	420	04	Zakin	1																				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam
1	I	420	05	Zakin	1																				Proposed process requires a full Environmental Impact Statement
1	I	472	01	Savage	1																				Proposed process requires a full Environmental Impact Statement
1	I	472	02	Savage	1																				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam
1	I	480	01	Imam	1																				Proposed process requires a full Environmental Impact Statement
1	I	480	02	Imam	1																				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam

**Appendix U**  
**Summary of Comments / Comment Database**

Group	Commenter Type	Sequence Code	Comment Number	Commenter	Resource Area															Comment Summary						
					Form Letter	Format / Mechanism	Content	Agriculture Resources	Biological Resources	Cultural Resources	Energy / Power Production	Groundwater	Hydrology	Land Use / Planning	Mitigation/Monitoring	Population / Housing	Public Services	Recreation	Reservoir Management		Socio-economic	Transboundary Impacts	Transportation / Traffic	Water Supply / Quality	Water Quality	Water Rights
1	I	499	01	Decker	1		1						1	1							1					Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers
1	I	499	02	Decker	1		1										1				1				Consider/evaluate sustainable sediment management program for Lake Powell and Lake Mead	
1	I	499	03	Decker	1	1	1						1								1				Update Compact to reflect the Colorado River's supply limitations and changing societal demands	
1	I	499	04	Decker	1		1				1										1				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam	
1	I	499	05	Decker	1	1																			Proposed process requires a full Environmental Impact Statement	
1	I	502	01	Furlong	1		1						1	1							1				Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers	
1	I	502	02	Furlong	1		1														1				Consider/evaluate sustainable sediment management program for Lake Powell and Lake Mead	
1	I	502	03	Furlong	1	1	1						1								1				Update Compact to reflect the Colorado River's supply limitations and changing societal demands	
1	I	502	04	Furlong	1		1						1								1				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam	
1	I	502	05	Furlong	1	1																			Proposed process requires a full Environmental Impact Statement	
1	I	514	01	Collins	1		1						1	1							1				Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers	
1	I	514	02	Collins	1		1														1				Consider/evaluate sustainable sediment management program for Lake Powell and Lake Mead	
1	I	514	03	Collins	1	1	1						1								1				Update Compact to reflect the Colorado River's supply limitations and changing societal demands	
1	I	514	04	Collins	1		1					1									1				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam	
1	I	514	05	Collins	1	1																			Proposed process requires a full Environmental Impact Statement	
1	I	519	01	Cuccio	1		1														1				Opposes decommissioning of Glen Canyon Dam	
1	I	525	01	Collins	1		1														1				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam	
1	I	525	02	Collins	1		1						1	1							1				Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers	
1	I	525	03	Collins	1	1																			Proposed process requires a full Environmental Impact Statement	
1	I	583	01	Garton	1		1						1	1							1				Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers	
1	I	583	02	Garton	1		1														1				Consider/evaluate sustainable sediment management program for Lake Powell and Lake Mead	
1	I	583	03	Garton	1	1	1						1								1				Update Compact to reflect the Colorado River's supply limitations and changing societal demands	
1	I	583	04	Garton	1		1						1								1				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam	
1	I	583	05	Garton	1	1																			Proposed process requires a full Environmental Impact Statement	
1	I	592	01	Mackay	1		1						1	1	1						1				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam	
1	I	592	02	Mackay	1		1						1	1							1				Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers	
1	I	592	03	Mackay	1		1														1				Consider/evaluate sustainable sediment management program for Lake Powell and Lake Mead	
1	I	592	04	Mackay	1	1	1														1				Update Compact to reflect the Colorado River's supply limitations and changing societal demands	
1	I	592	05	Mackay	1	1																			Proposed process requires a full Environmental Impact Statement	
1	I	592	06	Mackay	1		1						1	1	1						1				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam	
1	I	640	01	Frank	1		1						1	1							1				Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers	
1	I	640	02	Frank	1	1	1						1								1				Update Compact to reflect the Colorado River's supply limitations and changing societal demands	
1	I	640	03	Frank	1		1						1								1				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam	
1	I	640	04	Frank	1	1																			Proposed process requires a full Environmental Impact Statement	
1	I	649	01	Henry	1		1						1	1	1						1				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam	
1	I	649	02	Henry	1		1						1	1	1						1				Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers	
1	I	649	03	Henry	1		1																		Consider/evaluate sustainable sediment management program for Lake Powell and Lake Mead	
1	I	649	04	Henry	1	1																			Proposed process requires a full Environmental Impact Statement	
1	I	676	01	Spotts	1		1						1	1							1				Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers	
1	I	676	02	Spotts	1		1																		Consider/evaluate sustainable sediment management program for Lake Powell and Lake Mead	
1	I	676	03	Spotts	1	1	1														1				Update Compact to reflect the Colorado River's supply limitations and changing societal demands	
1	I	676	04	Spotts	1	1																			Proposed process requires a full Environmental Impact Statement	
1	I	676	05	Spotts	1		1						1								1				Consider/evaluate aggressive water conservation now to minimize drought impacts in future years	
1	I	676	06	Spotts	1		1														1				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam	
1	I	676	07	Spotts	1		1						1								1				Consider/evaluate aggressive tamarisk eradication efforts to conserve water	
1	I	677	01	Lokey	1		1														1				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam	
1	I	772	01	Fischer	1		1						1	1	1						1				Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers	
1	I	772	02	Fischer	1		1																		Consider/evaluate sustainable sediment management program for Lake Powell and Lake Mead	
1	I	772	03	Fischer	1	1	1														1				Update Compact to reflect the Colorado River's supply limitations and changing societal demands	
1	I	772	04	Fischer	1		1														1				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam	
1	I	772	05	Fischer	1	1																			Proposed process requires a full Environmental Impact Statement	
1	I	775	01	Artley	1		1						1	1							1				Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers	
1	I	775	02	Artley	1	1	1														1				Update Compact to reflect the Colorado River's supply limitations and changing societal demands	
1	I	775	03	Artley	1	1																			Proposed process requires a full Environmental Impact Statement	
1	I	775	04	Artley	1		1						1								1				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam	
1	I	783	01	Grover	1		1						1								1				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam	
1	I	783	02	Grover	1	1																			Proposed process requires a full Environmental Impact Statement	
1	I	832	01	Costa	1	1	1														1				Update Compact to reflect the Colorado River's supply limitations and changing societal demands	
1	I	832	02	Costa	1	1																			Proposed process requires a full Environmental Impact Statement	
1	I	832	03	Costa	1		1														1				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam	
1	I	846	01	Falconer	1		1						1	1	1						1				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam	
1	I	846	02	Falconer	1		1														1				Consider/evaluate aggressive tamarisk eradication efforts to conserve water	
1	I	846	03	Falconer	1		1						1	1							1				Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers	
1	I	872	01	Elliott	1		1														1				Opposes decommissioning of Glen Canyon Dam	
1	I	873	01	Brooke	1		1														1				Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam	
1	I	882	01	O'Kane	1		1						1								1				Consider/evaluate costs and benefits of restoring natural flows through Glen and Grand Canyons	
1	I	897	01	Haseltine	1		1						1	1							1				Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers	
1	I	897	02	Haseltine	1		1																		Consider/evaluate sustainable sediment management program for Lake Powell and Lake Mead	
1	I	897	03	Haseltine	1	1	1						1								1				Update Compact to reflect the Colorado River's supply limitations and changing societal demands	











**Appendix U  
Summary of Comments / Comment Database**

Group	Commenter Type	Sequence Code	Comment Number	Commenter	Form Letter	Formal / Mechanism	Content	Resource Area																Comment Summary				
								Agriculture Resources	Biological Resources	Cultural Resources	Energy / Power Production	Groundwater	Hydrology	Land Use / Planning	Mitigation/Monitoring	Population / Housing	Public Services	Recreation	Reservoir Management	Socio-economic	Transboundary Impacts	Transportation / Traffic	Water Supply / Quantity		Water Quality	Water Rights	Alternatives	Miscellaneous
2	S	2004	02	Colorado River Board of California			1																			Consider longer-term shortage guidelines if the Interim Surplus Guidelines are extended or modified to run concurrent		
2	S	2004	03	Colorado River Board of California			1																			Adoption of guidelines should be in form of guidelines as opposed to formal federal regulations		
2	S	2004	04	Colorado River Board of California			1																			Adopt guidelines in a manner that permits modification as new operational information is gained		
2	S	2004	05	Colorado River Board of California				1																		Shortage guidelines should cover only that group of entitlements that are post-September 30, 1968 in priority		
2	S	2004	06	Colorado River Board of California																						Clarify the post-1968 non-Central Arizona Project rights in Arizona and the post-1968 rights in Nevada in order to determine how shortages will be distributed among the post-1968 entitlements		
2	S	2004	07	Colorado River Board of California																						Consider/evaluate how higher magnitude shortages would affect the cut-back of rights in the 1929 to 1968 pool of entitlements		
2	S	2004	08	Colorado River Board of California			1																			Guidelines should be structured to give protection to senior entitlements as established in the 1968 Colorado River Basin Act and 1964 Supreme Court decree		
2	S	2004	09	Colorado River Board of California			1																			Development of shortage guidelines should consider protection of elevations that will allow SNWA intakes to function		
2	S	2004	10	Colorado River Board of California			1																			Consider/evaluate guidelines that require Mexico share in shortages		
2	S	2004	11	Colorado River Board of California			1																			Guidelines should not include programs that place involuntary taxes or user fees on water or power users		
2	S	2004	12	Colorado River Board of California			1	1																		Consider/evaluate value of voluntary intra-state following and other arrangements deemed necessary to mitigate impacts resulting from shortages		
2	S	2004	13	Colorado River Board of California			1																			Reservoir operating guidelines should benefit both Upper and Lower Basins		
2	S	2004	14	Colorado River Board of California																						Any new guidelines show help delay likelihood of a Compact Call on the Upper Basin states		
2	S	2004	15	Colorado River Board of California			1																			Guidelines should delay likelihood and reduce magnitude of declared shortages		
2	S	2004	16	Colorado River Board of California			1																			Consider/evaluate programs that augment the water supply to the system		
2	S	2005	01	Southern Nevada Water Authority			1																			Consider/evaluate criteria that includes conjunctive management of Lakes Powell and Mead		
2	S	2005	02	Southern Nevada Water Authority																						Evaluate effects that guidelines may have on urban areas		
2	S	2005	03	Southern Nevada Water Authority			1																			Consider/evaluate operating measures that consider the full range of reservoir operations, not just low reservoir conditions		
2	S	2005	04	Southern Nevada Water Authority			1																			Guidelines should be adopted in a timely manner to augment the water supplies and provide Nevada time to develop additional permanent supplies		
2	S	2006	01	Colorado River Commission of Nevada			1																			Request that Western Area Power Administration be included in process to help analyze potential impacts relating to power production		
Summary of Comments					n/a	1,996	4,189	50	1,077	24	42	970	3,150	49	9	20	54	1,060	3,151	3,203	78	11	3,217	1,002	3,078	17	33	Comments

# Appendix V

## Summary of Issues Raised in Comments Grouped by Resource/Issue Area

- V-1 All Comments Ranked by Frequency of Comment**
- V-2 Content Related Comments Ranked by Frequency of Comment**
- V-3 Format/Mechanism Related Comments Ranked by Frequency of Comment**
- V-4 Agriculture Resources Related Comments Ranked by Frequency of Comment**
- V-5 Biological Resources Related Comments Ranked by Frequency of Comment**
- V-6 Cultural Resources Related Comments Ranked by Frequency of Comment**
- V-7 Energy/Power Resources Related Comments Ranked by Frequency of Comment**
- V-8 Groundwater Resources Related Comments Ranked by Frequency of Comment**
- V-9 Hydrology Related Comments Ranked by Frequency of Comment**
- V-10 Land Use/Planning Related Comments Ranked by Frequency of Comment**
- V-11 Mitigation/Monitoring Related Comments Ranked by Frequency of Comment**
- V-12 Population/Housing Related Comments Ranked by Frequency of Comment**
- V-13 Public Services Related Comments Ranked by Frequency of Comment**
- V-14 Recreation Related Comments Ranked by Frequency of Comment**
- V-15 Reservoir Management Related Comments Ranked by Frequency of Comment**
- V-16 Socio-Economics Related Comments Ranked by Frequency of Comment**
- V-17 Transboundary Impacts Related Comment Ranked by Frequency of Comment**
- V-18 Transportation/Traffic Related Comments Ranked by Frequency of Comment**
- V-19 Water Supply/Quantity Related Comments Ranked by Frequency of Comment**
- V-20 Water Quality Related Comments Ranked by Frequency of Comment**
- V-21 Water Rights Related Comments Ranked by Frequency of Comment**
- V-22 Miscellaneous Related Comments Ranked by Frequency of Comment**
- V-23 Alternatives Related Comment Ranked by Frequency of Comment**

# **Appendix V**

## **Summary of Issues Raised in Comments Grouped by Resource/Issue Area**

**V-1 All Comments Ranked by Frequency of Comment**

**Table V-1  
All Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
1	Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam	975	6	981
2	Consider/evaluate sustainable sediment management program for Lake Powell and Lake Mead	947	9	956
3	Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers	952	4	956
4	Proposed process requires a full Environmental Impact Statement	949	6	955
5	Update Compact to reflect the Colorado River's supply limitations and changing societal demands	946	5	951
6	Develop plan that maximizes storage at Lake Mead and minimizes storage at Lake Powell	48	10	58
7	Consider/evaluate costs and benefits of restoring natural flows through Glen and Grand Canyons	29	8	37
8	Consider/evaluate protection of cultural resources in Glen Canyon	22	3	25
9	Opposes decommissioning of Glen Canyon Dam	14		14
10	Consider/evaluate aggressive water conservation now to minimize drought impacts in future years	9	2	11
11	Consider/evaluate submitted shortage criteria alternative - "Conservation Before Shortage"	1	7	8
12	Guidelines and strategies should provide priority to water supply over hydrogeneration		8	8
13	Consider /evaluate Arizona shortage and Lake Mead trigger proposal with 600 KAF delivery reduction		8	8
14	Consider/evaluate interim period for guidelines		7	7
15	Consider/evaluate guidelines that require Mexico and Nevada to share in shortages with Arizona		7	7
16	Consider/evaluate flexible criteria that would require consultation with Arizona for reductions in excess of 600 KAF		7	7
17	Consider/evaluate efficiency of storage system based on reality of increased demand and decreased supply	6		6
18	Shortage guidelines and management strategies should all include assumption that Yuma Desalting Plant will be operated at full capacity		6	6
19	Guidelines should be permanent for use in managing water now and in future		5	5
20	Use a basin wide approach for study and criteria implementation	2	2	4
21	Request regular consultations with tribe during development of alternatives	3	1	4
22	Consider/evaluate managing new housing development as means to manage water demands	4		4
23	Consider/evaluate aggressive tamarisk eradication efforts to conserve water	4		4
24	Operation of Lakes Powell and Mead must be consistent with the Law of the River		4	4
25	Evaluate the impacts to power production and power consumers of all alternatives		4	4
26	Evaluate requirement of minimum 8.23 maf/year objective release from Lake Powell		4	4
27	Consider/evaluate strategies that protect minimum power pool elevations at lakes Powell and Mead		4	4
28	Consider/evaluate guidelines that require Mexico share in shortages		4	4
29	Consider/evaluate apportioning shortages among Priority 4 water users consistent with Law of the River and respective contracts		4	4
30	Affected water users and respective State should be allowed to determine how to manage shortages within respective state		4	4
31	Request that Hoover power contractors be consulted on any changes or potential impacts relating to Hoover power production	1	2	3
32	Consider/evaluate effects that guidelines may have on the Law of the River	1	2	3
33	Consider/evaluate return of treated wastewater to river to supplement supplies	2	1	3
34	Request Secretary to assign representative to act as U.S.'s trustee for tribe and provide for direct participation in process	3		3
35	Consider/evaluate ocean desalination water to make up shortages	3		3
36	Consider/evaluate criteria that avoids impacts to reliability to Tribe's CAP water	3		3
37	Implement final management strategy through Record of Decision		3	3
38	Evaluate both direct and indirect environmental and economic impacts to river and all water users		3	3
39	Request to be added to mailing list, kept informed of progress, and provided with copies of study reports	1	1	2
40	Incorporate shortage criteria in the Lower Basin that maintains power generation capacity to Lower Basin customers	1	1	2
41	Develop strategies that facilitate transfer of water from senior water rights holder to more junior water users	1	1	2
42	Develop plan that complies with Federal Laws such as the Endangered Species Act	1	1	2
43	Consider/evaluate specific measures that result in more efficient management of Colorado River water supplies	1	1	2
44	Consider/evaluate restrictions on outdoor water features to conserve water	1	1	2
45	Consider/evaluate reduced but stable Lake Mead levels to minimize impacts to businesses such as Marinas and tour guides	1	1	2
46	Consider/evaluate programs that can augment the available basin supplies, such as cloud seeding, ocean desalination, etc.	1	1	2

**Table V-1  
All Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
47	Consider/evaluate new water allocation guidelines that protect critical habitats in Grand Canyon and elsewhere.	1	1	2
48	Consider/evaluate alternative pricing schedules for agricultural water that do not include subsidies and encourage conservation	1	1	2
49	Strategies should maximize the protection afforded to the Upper Basin by Lake Powell	2		2
50	Section 7 consultation needed if reduction in flows below Hoover Dam are more than 1.574 MAF as stated in LCR MSCP BA/BO	2		2
51	Guidelines should be premised upon proportionate sharing of shortages by Mexico	2		2
52	Guidelines should be designed to delay onset and minimize extent and duration of shortages	2		2
53	Guidelines should be coordinated with anticipated releases from Lake Powell during low reservoir conditions	2		2
54	Consider/evaluate shortage criteria that would be interim	2		2
55	Consider/evaluate requiring use of artificial grass to conserve water	2		2
56	Consider/evaluate plan that minimizes releases from Lake Powell	2		2
57	Consider/evaluate plan that limits releases from Lake Powell to 7.5 MAFY	2		2
58	Evaluate impacts on diversions to each Priority water user under varying shortage conditions		2	2
59	Evaluate effects on the timing and rate of lake turnover		2	2
60	Evaluate effects on lake water quality		2	2
61	Develop alternatives with participation of all legitimate stakeholders		2	2
62	Consider/evaluate Lake Mead minimum storage elevation that optimizes water availability for all users & no other elevation protections		2	2
63	Consider/evaluate intra- and interstate sale, lease, transfer, trade or exchange of water within Basin		2	2
64	Consider/evaluate benefits and effects of augmentation of Colorado River water supplies pursuant to 1968 Act		2	2
65	Address potential salinity impacts to Mexico water deliveries	1		1
66	Adjust the Colorado River System Simulation Model to properly calculate active storage in the Upper Basin		1	1
67	Adopt guidelines in a manner that permits modification as new operational information is gained		1	1
68	Adoption of guidelines should be in form of guidelines as opposed to formal federal regulations		1	1
69	All reasonable alternatives need to be analyzed and included in EIS to provide proper advisory document		1	1
70	Any new guidelines show help delay likelihood of a Compact Call on the Upper Basin states		1	1
71	Arizona Game & Fish Department will work with lower basin states to develop report to congress, if needed	1		1
72	Avoid guidelines and strategies that increase risk of shortage in Lower Basin that are not consistent with Law of the River		1	1
73	Avoid impacts to Glen Canyon Adaptive Management Program event-driven sediment experiments	1		1
74	Avoid impacts to river restoration efforts and endangered species	1		1
75	Balance water and electric needs against environmental requirements		1	1
76	Challenges claim that decreasing shortages will have positive impact on fish, wildlife or natural areas		1	1
77	Clarify the post-1968 non-Central Arizona Project rights in Arizona and the post-1968 rights in Nevada in order to determine how shortages will be distributed among the post-1968 entitlements		1	1
78	Conduct and accurate evaluation of long-term costs and socioeconomic impacts associated with land following		1	1
79	Consider charging surcharge to agricultural deliveries to fund conservation projects such as converting ditches to pipelines	1		1
80	Consider Colorado River Salinity Control Act in analysis		1	1
81	Consider conservation of water supply consistent with Lakes Mead and Powell authorization laws	1		1
82	Consider longer-term shortage guidelines if the Interim Surplus Guidelines are extended or modified to run concurrent		1	1
83	Consider market-based strategies		1	1
84	Consider the effect of not protecting power production at both lakes Mead and Powell		1	1
85	Consider Upper Basin releases that enhance storage in Lake Powell to maintain power generation at Glen Canyon	1		1
86	Consider use of paleohydrologic data in analysis to provided extended record of hydroclimatic variability	1		1
87	Consider using similar process used in ISG development	1		1
88	Consider/develop of strategies that maximize power production	1		1
89	Consider/develop of strategies that protect critical water levels at Lake Powell to minimize impacts to stakeholders	1		1



**Table V-1  
All Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
90	Consider/evaluate altering 602(a) storage parameters		1	1
91	Consider/evaluate alternatives that ensure sufficient flows for boat safety and navigation	1		1
92	Consider/evaluate Arizona's development of more local supplies to reduce reliance on Arizona project canals		1	1
93	Consider/evaluate benefits and effects of Lower Basin offstream storage		1	1
94	Consider/evaluate benefits and effects of operating Yuma Desalting Plant		1	1
95	Consider/evaluate both permanent and interim guidelines	1		1
96	Consider/evaluate conjunctive reservoir management strategies that optimize recreation on lakes Mead and Powell	1		1
97	Consider/evaluate consistency with and potential impacts to other established programs, i.e. LCRMSCP, Adaptive Mgmt, etc.	1		1
98	Consider/evaluate criteria incorporation into LROC	1		1
99	Consider/evaluate criteria incorporation into LROC and AOP processes	1		1
100	Consider/evaluate criteria that include two levels of shortage determination, first affects CAP deliveries, and affects other Lower Basin State deliveries	1		1
101	Consider/evaluate criteria that includes conjunctive management of Lakes Powell and Mead		1	1
102	Consider/evaluate criteria that limits population and housing growth and increases in-stream-flows	1		1
103	Consider/evaluate criteria that requires equitable sharing of shortages between Upper and Lower basins	1		1
104	Consider/evaluate criteria that restricts reservoir releases when reservoir storage is below 50 percent of capacity	1		1
105	Consider/evaluate criteria that would require proportional sharing of short-term shortages to minimize impacts to low priority right holders	1		1
106	Consider/evaluate critical water levels on lakes Powell and Mead below which many recreational services would be curtailed altogether	1		1
107	Consider/evaluate delivery or diversion restrictions that are imposed in reverse order of priority to protect the rights of holders of senior rights	1		1
108	Consider/evaluate delivery reductions based on actual hydrologic conditions		1	1
109	Consider/evaluate delivery reductions that are flexible and responsive to hydrologic conditions	1		1
110	Consider/evaluate development of contingency plans for equitable distribution of supplies under a shortage flow conditions	1		1
111	Consider/evaluate effect and impacts to water quality		1	1
112	Consider/evaluate effect of annual releases from Glen Canyon Dam on humpback chub	1		1
113	Consider/evaluate effects of the development of the Multi-Species Conservation Plan		1	1
114	Consider/evaluate effects on the ongoing litigation over water supply in the Gunnison River		1	1
115	Consider/evaluate effects that guidelines may have on recently adopted Interim Surplus Guidelines	1		1
116	Consider/evaluate eliminating boating on Lake Mead to protect water quality from fuel spills	1		1
117	Consider/evaluate elimination of 14.85 maf storage requirements set forth in Interim 602(a) Storage Guideline for Management of Colorado River		1	1
118	Consider/evaluate financial and economic feasibility of long-term following program		1	1
119	Consider/evaluate financial and economic impacts of maintaining elevation of Lake Mead at or above minimum power pool elevation		1	1
120	Consider/evaluate Glen Canyon Dam Seasonally Adjusted Steady Flow water management strategies to provide warmer release water temperatures to enhance humpback chub conservation	1		1
121	Consider/evaluate guidelines that trigger drought conditions at Lake Powell when level drops below 3600 feet	1		1
122	Consider/evaluate how higher magnitude shortages would affect the cut-back of rights in the 1929 to 1968 pool of entitlements		1	1
123	Consider/evaluate impacts on NPS units along Colorado River	1		1
124	Consider/evaluate impacts on recreation and tourism along the Colorado River	1		1
125	Consider/evaluate impacts to local and regional economies along the Colorado River	1		1
126	Consider/evaluate including effects of climate variability and long-term trends in climate in analysis and future operations	1		1
127	Consider/evaluate Lake Powell levels and flows thru Grand Canyon that benefit spawning and recruitment of razorback suckers as noted in BO for ISG	1		1
128	Consider/evaluate large-scale water lifters for hydroelectric production to increase turbine efficiency		1	1
129	Consider/evaluate legal and contractual requirements for protecting or not protecting minimum power pool elevations at lakes Powell and Mead		1	1
130	Consider/evaluate mechanism that permits suspension of shortage declaration if hydrologic conditions		1	1

**Table V-1  
All Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
	indicate that Lake Powell elevations may rise and reach equalization elevations			
131	Consider/evaluate minimum Grand Canyon flows of 8,000 cfs for protection of native fish	1		1
132	Consider/evaluate more stringent methods for determination of "normal" or "surplus" conditions	1		1
133	Consider/evaluate new source of supply that can provide 750,000 acre feet per year, source to be revealed only after commenter proposed contractual arrangements met	1		1
134	Consider/evaluate new water allocation guidelines that consider more accurate estimates of natural flow	1		1
135	Consider/evaluate operating measures that consider the full range of reservoir operations, not just low reservoir conditions		1	1
136	Consider/evaluate other complimentary programs such as tamarisk removal, cloud seeding, desalination, etc.	1		1
137	Consider/evaluate plan that augments supplies by constructing additional Upper Colorado River water storage capacity	1		1
138	Consider/evaluate plan that includes interstate water leasing consistent with Colorado River Board of California's 1991 proposal for water leasing	1		1
139	Consider/evaluate plan that includes interstate water leasing consistent with Governor Roy Romer's proposal for the 40 year non-development of part of Colorado's allotted water under the	1		1
140	Consider/evaluate plan that stores more water in Upper Basin reservoirs to reduce evaporation losses	1		1
141	Consider/evaluate potential impacts of proposed Yucca Mountain waste disposal site on Colorado River and groundwater supplies	1		1
142	Consider/evaluate potential impacts to boating and fishing	1		1
143	Consider/evaluate potential impacts to fish and wildlife resources from decreased in-stream flows	1		1
144	Consider/evaluate potential impacts to Mittry Lake Wildlife Area by changed river operations	1		1
145	Consider/evaluate potential impacts to operations of Flaming Gorge and Gunnison River	1		1
146	Consider/evaluate potential impacts to other off-stream reservoirs such as Alamo Dam and Lake Pleasant	1		1
147	Consider/evaluate potential impacts to recreation on Grand Canyon National Park and Glen Canyon National Recreation Area	1		1
148	Consider/evaluate potential impacts to recreation on lakes Mead and Powell	1		1
149	Consider/evaluate potential impacts to riparian vegetation from declining levels in reservoirs and river	1		1
150	Consider/evaluate potential impacts to sportfish reproduction within mainstem reservoirs	1		1
151	Consider/evaluate potential impacts to water supply intake pumps resulting from future reduced in-stream flows	1		1
152	Consider/evaluate potential impacts to Willow Beach National Fish Hatchery as a production facility	1		1
153	Consider/evaluate potential of new law suit opposing All-American Canal Lining Project	1		1
154	Consider/evaluate potential opportunities for improved fish & wildlife management	1		1
155	Consider/evaluate power conservation program to minimize hydro-peaking releases	1		1
156	Consider/evaluate proactive steps to prevent future shortages from occurring	1		1
157	Consider/evaluate programs that augment the water supply to the system		1	1
158	Consider/evaluate programs to allow use of mainstem water by forbearance, replacement, or exchange	1		1
159	Consider/evaluate reallocation of water between agricultural and municipal	1		1
160	Consider/evaluate Reclamation's ability to fund a long-term land following program		1	1
161	Consider/evaluate reconstruction of Glen Canyon Dam to be made structurally safer	1		1
162	Consider/evaluate reducing California's Colorado River water supply and replacing it with sustainable supplies such as ocean desalination		1	1
163	Consider/evaluate reducing federal subsidies to cotton and sugar cane farmers		1	1
164	Consider/evaluate replacing Southern California' Colorado River water supply with water from Northern California		1	1
165	Consider/evaluate requiring use of more efficient irrigation practices as means to conserve water	1		1
166	Consider/evaluate reservoir management strategy that would store water in headwater reservoirs as long as possible	1		1
167	Consider/evaluate role of watershed and soils disturbing activities on Colorado River system		1	1
168	Consider/evaluate shortage criteria that reduces deliveries to all users by same percentage amount	1		1
169	Consider/evaluate shortage criteria that reduces deliveries to all users, other than those with Present Perfected rights, by same percentage amount		1	1
170	Consider/evaluate socio-economic impact of low levels of lakes Mead and Powell		1	1
171	Consider/evaluate specific mandatory conservation strategies tied to hydrologic predictions	1		1
172	Consider/evaluate start-up and expanded Yuma Desalter Project operations	1		1
173	Consider/evaluate storage losses and required conservation volumes associated with long-term land following programs		1	1

**Table V-1  
All Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
174	Consider/evaluate storage of surplus supplies in groundwater aquifers, when available	1		1
175	Consider/evaluate storage options that maximize power production	1		1
176	Consider/evaluate storage options that minimize evaporation	1		1
177	Consider/evaluate strategies that establish critical water levels at lakes Mead and Powell	1		1
178	Consider/evaluate strategies that manage Lake Powell and Mead water levels to protect Las Vegas' water supply		1	1
179	Consider/evaluate strategies that protect federal mandates such as protect nation and preserve national sovereignty	1		1
180	Consider/evaluate strategies that protect Federal Reserved Water Rights	1		1
181	Consider/evaluate strategies that provide for equitable sharing of shortages between parties to international treaties	1		1
182	Consider/evaluate timing of flows into Lake Mead to allow for riparian management at its delta to provide habitat for the endangered southwestern willow flycatcher and other migratory bird species	1		1
183	Consider/evaluate top water storage of users unused entitlement as opposed to re-allocation to other users		1	1
184	Consider/evaluate Upper Basin delivery schedules that allow releases less than 8.23 maf/year from Lake Powell	1		1
185	Consider/evaluate use of Lake Mead as primary flood control facility in system	1		1
186	Consider/evaluate value of voluntary intra-state fallowing and other arrangements deemed necessary to mitigate impacts resulting from shortages		1	1
187	Consider/evaluate water conservation effect of alternative rebate programs to convert turf to desert landscape		1	1
188	Consider/evaluate water conservation effects if replace hydroelectric power with wind and solar generation		1	1
189	Consider/evaluate water quality impacts below Lake Mead		1	1
190	Consult with Hoover power contractors and brief them on proposed changes and proposed mitigation prior to adoption of new strategies and guidelines		1	1
191	Criteria should assure 7.5 maf delivery to the Lower Basin		1	1
192	Criteria should give priority to meeting domestic and agricultural demands over power generation		1	1
193	Criteria should maintain current apportionment to assure state's future development project needs	1		1
194	Develop and implement drought management solutions now to minimize impacts in future years	1		1
195	Develop and include in EIS a comprehensive overview of allocation and uses of water in Lower Colorado River Basin		1	1
196	Develop and use accurate Upper Basin depletions and projected new depletions for use in calculating 602(a) storage requirements		1	1
197	Develop basin-wide conjunction water supply management program that considers all sources of supply		1	1
198	Develop methods to minimize and fully mitigate any adverse impacts in and to the value of power that Hoover power contracts will receive		1	1
199	Develop monitoring and accounting systems to evaluate impacts of shortages		1	1
200	Develop plan consistent with international treaty obligations	1		1
201	Develop plan that accommodates recreational industry	1		1
202	Develop plan that maximizes beneficial use of the available water for domestic municipal and agricultural in U.S.	1		1
203	Develop plan that maximizes generation of electrical power	1		1
204	Development of shortage guidelines should consider protection of elevations that will allow SNWA intakes to function		1	1
205	Does not believe full Environmental Impact Statement is needed, do not waste the money	1		1
206	Evaluate current planned equalization triggers and criteria used to calculate upper basin storage		1	1
207	Evaluate effect of livestock and grazed areas on runoff and sediment		1	1
208	Evaluate effects on Treaty obligations with Tribes and Mexico, Biological Opinions, discharge and diversion permits, and other agreements, such as those to restore the Colorado River Delta.		1	1
209	Evaluate effects on dilution of perchlorate entering Lake Mead from Henderson, Nevada via Las Vegas Wash		1	1
210	Evaluate effects on fisheries, threatened and endangered species, and the Lower Colorado River Multiple Species Habitat Conservation Strategy		1	1
211	Evaluate effects on flood control		1	1
212	Evaluate effects on general water quality and end uses of water going to Arizona, California, Nevada, and Mexico		1	1
213	Evaluate effects on groundwater from potential transition from surface water use to groundwater use		1	1

**Table V-1**  
**All Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
214	Evaluate effects on hydroelectric generation and Lake Mead and Lake Powell equalization requirements		1	1
215	Evaluate effects on in-stream water quality and water reaching the Colorado River Delta, including water temperatures and flow fluctuations		1	1
216	Evaluate effects on recreation, such as rafting in the Grand Canyon, fishing, and visual effects of reservoir draw-downs		1	1
217	Evaluate effects on salinity, mercury, sediment, radioactive substances and other constituents of Lower Colorado River water		1	1
218	Evaluate effects on sediment movement and impacts on beach replenishment in the Grand Canyon		1	1
219	Evaluate effects on the Southern Nevada Water Authority's drinking water supply and its intakes		1	1
220	Evaluate effects on water rights, including Tribal water rights		1	1
221	Evaluate effects on water supply diversion quantities and schedules		1	1
222	Evaluate effects that guidelines may have on urban areas		1	1
223	Evaluate guidelines ability to restore river flows to pre-dam conditions		1	1
224	Evaluate methods to mitigate impacts on amount and value of power Hoover Contractors will receive	1		1
225	Evaluate/determine Secretary's authority to reduce annual releases from Lake Powell below 8.23 MAF		1	1
226	For all alternatives to be considered, evaluate potential impacts to Hoover power production	1		1
227	For all alternatives to be considered, evaluate potential impacts to power production	1		1
228	Guidelines should be adopted in a timely manner to augment the water supplies and provide Nevada time to develop additional permanent supplies		1	1
229	Guidelines should be interim and end in 2016		1	1
230	Guidelines should be structured to give protection to senior entitlements as established in the 1968 Colorado River Basin Act and 1964 Supreme Court decree		1	1
231	Guidelines should delay likelihood and reduce magnitude of declared shortages		1	1
232	Guidelines should not include programs that place involuntary taxes or user fees on water or power users		1	1
233	Implementation of strategies/shortage guidelines may be beneficial	1		1
234	Implementation should be through AOP	1		1
235	In the absence of a Consensus Plan, the Basin states would like the opportunity to submit specific alternatives for evaluation		1	1
236	Include Lake Powell in management strategies/shortage guidelines	1		1
237	Include language in Management Strategies stating that IBWC Minute No. 242 will not be changed	1		1
238	Incorporate shortage criteria in the Lower Basin that minimizes impacts to water quality of low reservoir conditions	1		1
239	Incorporate shortage criteria in the Lower Basin that recognizes water right priorities	1		1
240	Interim strategies that end before 2017 may impact negotiation of Hoover Service Contracts	1		1
241	Management Strategies should address adverse impacts to water deliveries to Mexico	1		1
242	Maximize storage at Lake Mead to maximize power production at Hoover Dam and make up lost power production capacity at Glen Canyon Dam	1		1
243	Need to consider effects of adopting both interim and permanent criteria		1	1
244	NEPA analysis needs to evaluate impacts of the guidelines and strategies collectively with other proposed projects such as bypass flow replacement, operation of YDP, new regulatory storage facilities, etc.		1	1
245	No Action Alternative must represent current conditions and current operational constraints		1	1
246	Opposes development of expensive and complex Reclamation-managed land following program as alternative to protect junior water users		1	1
247	Opposes inclusion of Conservation Before Shortage alternative in EIS		1	1
248	Opposes power surcharge to protect future marginal power production loss at Hoover Dam		1	1
249	Opposes use of any water and power surcharges to fund Reclamation-managed land following program		1	1
250	Please advise if there will be additional public meetings in Phoenix	1		1
251	Protect cultural resources in Glen and Grand canyons by discontinuing storage in Lake Powell	1		1
252	Provide information on public scoping meetings.		1	1
253	Provide results of public scoping meetings		1	1
254	Quechan Tribe requests to be listed as a party of interest and notified of additional opportunities to comment	1		1
255	Re-evaluate how determination of "normal" or "surplus" conditions are made		1	1
256	Request consultation with Mexico to explain NEPA process and potential impacts on water quantity and quality to Mexico deliveries	1		1
257	Request Reclamation consult with Basin States on development of any and all alternatives		1	1
258	Request that criteria developed for determining "shortage flow status" clear and concise	1		1
259	Request that oral comments presented in Public Scoping Meetings be incorporated in public comments		1	1

**Table V-1  
All Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
260	Request that power production be removed from the storage algorithm used to model and determine releases from Lake Powell under Section 602(a)		1	1
261	Request that Western Area Power Administration be included in process to help analyze potential impacts relating to power production		1	1
262	Require each lower division state to look at intrastate resources to mitigate shortage impacts before looking at resources of other states		1	1
263	Reservoir operating guidelines should benefit both Upper and Lower Basins		1	1
264	Secretary must account for needs and water rights of Navajo Nation	1		1
265	Section 7 consultation needed if develop Glen Canyon Dam monthly or daily release patterns that differ from those specified in the 1995 ROD	1		1
266	Section 7 consultation needed if projected conditions are different than stated in LCR MSCP BA/BO	1		1
267	Section 7 consultation needed if projected Lake Mead elevations are lower than elevations in LCR MSCP BA/BO	1		1
268	Shortage guidelines should cover only that group of entitlements that are post-September 30, 1968 in priority		1	1
269	Shortages should be first applied to users with post-1968 entitlements		1	1
270	Support the comments and recommendations submitted by the Arizona Department of Water Resources		1	1
271	Supports position and recommendations of Basin States	1		1
272	Supports position of Glen Canyon Institute for Glen Canyon Dam	1		1
273	The guidelines should be permanent for use in managing water now and in future	1		1
274	The preferred alternative should take the form of guidelines, similar to ISGs	1		1
275	Undertake a complete review of Section 602(a) of the Colorado River Basin Project Act of 1968		1	1
276	Undertake a complete review of the storage algorithm used to model and determine releases from Lake Powell under Section 602(a)		1	1
277	Update reference to drought or the allocation of waters between the U.S. and Mexico consistent with terminology used in 1944 Water Treaty	1		1
278	Use process that weighs benefits against impacts	1		1
<b>Total Comments</b>		<b>5,065</b>	<b>275</b>	<b>5,340</b>

# **Appendix V**

## **Summary of Issues Raised in Comments Grouped by Resource/Issue Area**

**V-2 Content Related Comments Ranked by Frequency of Comment**

**Table V-2**  
**Content Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
1	Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam	975	6	981
2	Consider/evaluate sustainable sediment management program for Lake Powell and Lake Mead	947	9	956
3	Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers	952	4	956
4	Update Compact to reflect the Colorado River's supply limitations and changing societal demands	946	5	951
5	Develop plan that maximizes storage at Lake Mead and minimizes storage at Lake Powell	48	10	58
6	Consider/evaluate costs and benefits of restoring natural flows through Glen and Grand Canyons	29	8	37
7	Consider/evaluate protection of cultural resources in Glen Canyon	22	3	25
8	Opposes decommissioning of Glen Canyon Dam	14		14
9	Consider/evaluate aggressive water conservation now to minimize drought impacts in future years	9	2	11
10	Consider/evaluate submitted shortage criteria alternative - "Conservation Before Shortage"	1	7	8
11	Guidelines and strategies should provide priority to water supply over hydrogeneration		8	8
12	Consider /evaluate Arizona shortage and Lake Mead trigger proposal with 600 KAF delivery reduction		8	8
13	Consider/evaluate guidelines that require Mexico and Nevada to share in shortages with Arizona		7	7
14	Consider/evaluate flexible criteria that would require consultation with Arizona for reductions in excess of 600 KAF		7	7
15	Shortage guidelines and management strategies should all include assumption that Yuma Desalting Plant will be operated at full capacity		6	6
16	Consider/evaluate managing new housing development as means to manage water demands	4		4
17	Consider/evaluate aggressive tamarisk eradication efforts to conserve water	4		4
18	Evaluate the impacts to power production and power consumers of all alternatives		4	4
19	Evaluate requirement of minimum 8.23 maf/year objective release from Lake Powell		4	4
20	Consider/evaluate strategies that protect minimum power pool elevations at lakes Powell and Mead		4	4
21	Consider/evaluate guidelines that require Mexico share in shortages		4	4
22	Consider/evaluate return of treated wastewater to river to supplement supplies	2	1	3
23	Consider/evaluate ocean desalination water to make up shortages	3		3
24	Incorporate shortage criteria in the Lower Basin that maintains power generation capacity to Lower Basin customers	1	1	2
25	Develop strategies that facilitate transfer of water from senior water rights holder to more junior water users	1	1	2
26	Consider/evaluate specific measures that result in more efficient management of Colorado River water supplies	1	1	2
27	Consider/evaluate restrictions on outdoor water features to conserve water	1	1	2
28	Consider/evaluate reduced but stable Lake Mead levels to minimize impacts to businesses such as Marinas and tour guides	1	1	2
29	Consider/evaluate programs that can augment the available basin supplies, such as cloud seeding, ocean desalination, etc.	1	1	2
30	Consider/evaluate new water allocation guidelines that protect critical habitats in Grand Canyon and elsewhere.	1	1	2
31	Consider/evaluate alternative pricing schedules for agricultural water that do not include subsidies and encourage conservation	1	1	2
32	Strategies should maximize the protection afforded to the Upper Basin by Lake Powell	2		2
33	Guidelines should be premised upon proportionate sharing of shortages by Mexico	2		2
34	Guidelines should be coordinated with anticipated releases from Lake Powell during low reservoir conditions	2		2
35	Consider/evaluate requiring use of artificial grass to conserve water	2		2
36	Consider/evaluate plan that minimizes releases from Lake Powell	2		2
37	Consider/evaluate plan that limits releases from Lake Powell to 7.5 MAFY	2		2
38	Evaluate effects on lake water quality		2	2
39	The guidelines should be permanent for use in managing water now and in future	1		1
40	Protect cultural resources in Glen and Grand canyons by discontinuing storage in Lake Powell	1		1
41	Maximize storage at Lake Mead to maximize power production at Hoover Dam and make up lost power production capacity at Glen Canyon Dam	1		1
42	Incorporate shortage criteria in the Lower Basin that recognizes water right priorities	1		1
43	Incorporate shortage criteria in the Lower Basin that minimizes impacts to water quality of low reservoir conditions	1		1
44	Include language in Management Strategies stating that IBWC Minute No. 242 will not be changed	1		1

**Table V-2  
Content Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
45	Include Lake Powell in management strategies/shortage guidelines	1		1
46	Evaluate methods to mitigate impacts on amount and value of power Hoover Contractors will receive	1		1
47	Develop plan that maximizes generation of electrical power	1		1
48	Develop plan that maximizes beneficial use of the available water for domestic municipal and agricultural in U.S.	1		1
49	Develop plan that accommodates recreational industry	1		1
50	Criteria should maintain current apportionment to assure state's future development project needs	1		1
51	Consider/evaluate use of Lake Mead as primary flood control facility in system	1		1
52	Consider/evaluate Upper Basin delivery schedules that allow releases less than 8.23 maf/year from Lake Powell	1		1
53	Consider/evaluate timing of flows into Lake Mead to allow for riparian management at its delta to provide habitat for the endangered southwestern willow flycatcher and other migratory bird species	1		1
54	Consider/evaluate strategies that provide for equitable sharing of shortages between parties to international treaties	1		1
55	Consider/evaluate strategies that protect Federal Reserved Water Rights	1		1
56	Consider/evaluate strategies that protect federal mandates such as protect nation and preserve national sovereignty	1		1
57	Consider/evaluate strategies that establish critical water levels at lakes Mead and Powell	1		1
58	Consider/evaluate storage options that minimize evaporation	1		1
59	Consider/evaluate storage options that maximize power production	1		1
60	Consider/evaluate storage of surplus supplies in groundwater aquifers, when available	1		1
61	Consider/evaluate start-up and expanded Yuma Desalter Project operations	1		1
62	Consider/evaluate specific mandatory conservation strategies tied to hydrologic predictions	1		1
63	Consider/evaluate shortage criteria that reduces deliveries to all users by same percentage amount	1		1
64	Consider/evaluate reservoir management strategy that would store water in headwater reservoirs as long as possible	1		1
65	Consider/evaluate requiring use of more efficient irrigation practices as means to conserve water	1		1
66	Consider/evaluate reconstruction of Glen Canyon Dam to be made structurally safer	1		1
67	Consider/evaluate reallocation of water between agricultural and municipal	1		1
68	Consider/evaluate programs to allow use of mainstem water by forbearance, replacement, or exchange	1		1
69	Consider/evaluate proactive steps to prevent future shortages from occurring	1		1
70	Consider/evaluate power conservation program to minimize hydro-peaking releases	1		1
71	Consider/evaluate plan that stores more water in Upper Basin reservoirs to reduce evaporation losses	1		1
72	Consider/evaluate plan that includes interstate water leasing consistent with Governor Roy Romer's proposal for the 40 year non-development of part of Colorado's allotted water under the	1		1
73	Consider/evaluate plan that includes interstate water leasing consistent with Colorado River Board of California's 1991 proposal for water leasing	1		1
74	Consider/evaluate plan that augments supplies by constructing additional Upper Colorado River water storage capacity	1		1
75	Consider/evaluate other complimentary programs such as tamarisk removal, cloud seeding, desalination, etc.	1		1
76	Consider/evaluate new water allocation guidelines that consider more accurate estimates of natural flow	1		1
77	Consider/evaluate new source of supply that can provide 750,000 acre feet per year, source to be revealed only after commenter proposed contractual arrangements met	1		1
78	Consider/evaluate minimum Grand Canyon flows of 8,000 cfs for protection of native fish	1		1
79	Consider/evaluate Lake Powel levels and flows thru Grand Canyon that benefit spawning and recruitment of razorback suckers as noted in BO for ISG	1		1
80	Consider/evaluate including effects of climate variability and long-term trends in climate in analysis and future operations	1		1
81	Consider/evaluate guidelines that trigger drought conditions at Lake Powell when level drops below 3600 feet	1		1
82	Consider/evaluate Glen Canyon Dam Seasonally Adjusted Steady Flow water management strategies to provide warmer release water temperatures to enhance humpback chub conservation	1		1
83	Consider/evaluate delivery reductions that are flexible and responsive to hydrologic conditions	1		1
84	Consider/evaluate delivery or diversion restrictions that are imposed in reverse order of priority to protect the rights of holders of senior rights	1		1
85	Consider/evaluate critical water levels on lakes Powell and Mead below which many recreational	1		1



**Table V-2**  
**Content Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
	services would be curtailed altogether			
86	Consider/evaluate criteria that would require proportional sharing of short-term shortages to minimize impacts to low priority right holders	1		1
87	Consider/evaluate criteria that restricts reservoir releases when reservoir storage is below 50 percent of capacity	1		1
88	Consider/evaluate criteria that requires equitable sharing of shortages between Upper and Lower basins	1		1
89	Consider/evaluate criteria that limits population and housing growth and increases in-stream-flows	1		1
90	Consider/evaluate criteria that include two levels of shortage determination, first affects CAP deliveries, and affects other Lower Basin State deliveries	1		1
91	Consider/evaluate conjunctive reservoir management strategies that optimize recreation on lakes Mead and Powell	1		1
92	Consider/evaluate alternatives that ensure sufficient flows for boat safety and navigation	1		1
93	Consider/develop of strategies that protect critical water levels at Lake Powell to minimize impacts to stakeholders	1		1
94	Consider/develop of strategies that maximize power production	1		1
95	Consider use of paleohydrologic data in analysis to provided extended record of hydroclimatic variability	1		1
96	Consider Upper Basin releases that enhance storage in Lake Powell to maintain power generation at Glen Canyon	1		1
97	Consider conservation of water supply consistent with Lakes Mead and Powell authorization laws	1		1
98	Consider charging surcharge to agricultural deliveries to fund conservation projects such as converting ditches to pipelines	1		1
99	Undertake a complete review of the storage algorithm used to model and determine releases from Lake Powell under Section 602(a)		1	1
100	Undertake a complete review of Section 602(a) of the Colorado River Basin Project Act of 1968		1	1
101	Shortages should be first applied to users with post-1968 entitlements		1	1
102	Shortage guidelines should cover only that group of entitlements that are post-September 30, 1968 in priority		1	1
103	Reservoir operating guidelines should benefit both Upper and Lower Basins		1	1
104	Require each lower division state to look at intrastate resources to mitigate shortage impacts before looking at resources of other states		1	1
105	Request that power production be removed from the storage algorithm used to model and determine releases from Lake Powell under Section 602(a)		1	1
106	Request that oral comments presented in Public Scoping Meetings be incorporated in public comments		1	1
107	Re-evaluate how determination of "normal" or "surplus" conditions are made		1	1
108	Opposes use of any water and power surcharges to fund Reclamation-managed land following program		1	1
109	Opposes power surcharge to protect future marginal power production loss at Hoover Dam		1	1
110	Opposes development of expensive and complex Reclamation-managed land following program as alternative to protect junior water users		1	1
111	No Action Alternative must represent current conditions and current operational constraints		1	1
112	NEPA analysis needs to evaluate impacts of the guidelines and strategies collectively with other proposed projects such as bypass flow replacement, operation of YDP, new regulatory storage facilities, etc.		1	1
113	Guidelines should not include programs that place involuntary taxes or user fees on water or power users		1	1
114	Guidelines should delay likelihood and reduce magnitude of declared shortages		1	1
115	Guidelines should be structured to give protection to senior entitlements as established in the 1968 Colorado River Basin Act and 1964 Supreme Court decree		1	1
116	Evaluate guidelines ability to restore river flows to pre-dam conditions		1	1
117	Evaluate effects on sediment movement and impacts on beach replenishment in the Grand Canyon		1	1
118	Evaluate effects on salinity, mercury, sediment, radioactive substances and other constituents of Lower Colorado River water		1	1
119	Evaluate effects on in-stream water quality and water reaching the Colorado River Delta, including water temperatures and flow fluctuations		1	1
120	Evaluate effects on hydroelectric generation and Lake Mead and Lake Powell equalization requirements		1	1
121	Evaluate effects on groundwater from potential transition from surface water use to groundwater use		1	1
122	Evaluate effects on general water quality and end uses of water going to Arizona, California, Nevada, and Mexico		1	1

**Table V-2  
Content Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
123	Evaluate effect of livestock and grazed areas on runoff and sediment		1	1
124	Evaluate current planned equalization triggers and criteria used to calculate upper basin storage		1	1
125	Development of shortage guidelines should consider protection of elevations that will allow SNWA intakes to function		1	1
126	Develop methods to minimize and fully mitigate any adverse impacts in and to the value of power that Hoover power contracts will receive		1	1
127	Develop basin-wide conjunction water supply management program that considers all sources of supply		1	1
128	Develop and use accurate Upper Basin depletions and projected new depletions for use in calculating 602(a) storage requirements		1	1
129	Develop and include in EIS a comprehensive overview of allocation and uses of water in Lower Colorado River Basin		1	1
130	Criteria should give priority to meeting domestic and agricultural demands over power generation		1	1
131	Criteria should assure 7.5 maf delivery to the Lower Basin		1	1
132	Consult with Hoover power contractors and brief them on proposed changes and proposed mitigation prior to adoption of new strategies and guidelines		1	1
133	Consider/evaluate water quality impacts below Lake Mead		1	1
134	Consider/evaluate water conservation effects if replace hydroelectric power with wind and solar generation		1	1
135	Consider/evaluate water conservation effect of alternative rebate programs to convert turf to desert landscape		1	1
136	Consider/evaluate value of voluntary intra-state fallowing and other arrangements deemed necessary to mitigate impacts resulting from shortages		1	1
137	Consider/evaluate top water storage of users unused entitlement as opposed to re-allocation to other users		1	1
138	Consider/evaluate strategies that manage Lake Powell and Mead water levels to protect Las Vegas' water supply		1	1
139	Consider/evaluate storage losses and required conservation volumes associated with long-term land fallowing programs		1	1
140	Consider/evaluate socio-economic impact of low levels of lakes Mead and Powell		1	1
141	Consider/evaluate reducing federal subsidies to cotton and sugar cane farmers		1	1
142	Consider/evaluate reducing California's Colorado River water supply and replacing it with sustainable supplies such as ocean desalination		1	1
143	Consider/evaluate Reclamation's ability to fund a long-term land fallowing program		1	1
144	Consider/evaluate programs that augment the water supply to the system		1	1
145	Consider/evaluate operating measures that consider the full range of reservoir operations, not just low reservoir conditions		1	1
146	Consider/evaluate legal and contractual requirements for protecting or not protecting minimum power pool elevations at lakes Powell and Mead		1	1
147	Consider/evaluate large-scale water lifters for hydroelectric production to increase turbine efficiency		1	1
148	Consider/evaluate financial and economic impacts of maintaining elevation of Lake Mead at or above minimum power pool elevation		1	1
149	Consider/evaluate financial and economic feasibility of long-term fallowing program		1	1
150	Consider/evaluate elimination of 14.85 maf storage requirements set forth in Interim 602(a) Storage Guideline for Management of Colorado River		1	1
151	Consider/evaluate effects of the development of the Multi-Species Conservation Plan		1	1
152	Consider/evaluate effect and impacts to water quality		1	1
153	Consider/evaluate delivery reductions based on actual hydrologic conditions		1	1
154	Consider/evaluate criteria that includes conjunctive management of Lakes Powell and Mead		1	1
155	Consider/evaluate benefits and effects of operating Yuma Desalting Plant		1	1
156	Consider/evaluate altering 602(a) storage parameters		1	1
157	Consider the effect of not protecting power production at both lakes Mead and Powell		1	1
158	Consider Colorado River Salinity Control Act in analysis		1	1
<b>Total Comments</b>		<b>4,036</b>	<b>177</b>	<b>4,213</b>

# **Appendix V**

## **Summary of Issues Raised in Comments Grouped by Resource/Issue Area**

**V-3 Format/Mechanism Related Comments Ranked by Frequency of Comment**

**Table V-3**  
**Format / Mechanism Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
1	Proposed process requires a full Environmental Impact Statement	949	6	955
2	Update Compact to reflect the Colorado River's supply limitations and changing societal demands	946	5	951
3	Consider/evaluate interim period for guidelines		7	7
4	Guidelines should be permanent for use in managing water now and in future		5	5
5	Operation of Lakes Powell and Mead must be consistent with the Law of the River		4	4
6	Request regular consultations with tribe during development of alternatives	3	1	4
7	Use a basin wide approach for study and criteria implementation	2	2	4
8	Evaluate both direct and indirect environmental and economic impacts to river and all water users		3	3
9	Implement final management strategy through Record of Decision		3	3
10	Request Secretary to assign representative to act as U.S.'s trustee for tribe and provide for direct participation in process	3		3
11	Request that Hoover power contractors be consulted on any changes or potential impacts relating to Hoover power production	1	2	3
12	Consider/evaluate shortage criteria that would be interim	2		2
13	Develop alternatives with participation of all legitimate stakeholders		2	2
14	Develop plan that complies with Federal Laws such as the Endangered Species Act	1	1	2
15	Guidelines should be designed to delay onset and minimize extent and duration of shortages	2		2
16	Guidelines should be premised upon proportionate sharing of shortages by Mexico	2		2
17	Section 7 consultation needed if reduction in flows below Hoover Dam are more than 1.574 MAF as stated in LCR MSCP BA/BO	2		2
18	Strategies should maximize the protection afforded to the Upper Basin by Lake Powell	2		2
19	Adopt guidelines in a manner that permits modification as new operational information is gained		1	1
20	Adoption of guidelines should be in form of guidelines as opposed to formal federal regulations		1	1
21	All reasonable alternatives need to be analyzed and included in EIS to provide proper advisory document		1	1
22	Arizona Game & Fish Department will work with lower basin states to develop report to congress, if needed	1		1
23	Consider conservation of water supply consistent with Lakes Mead and Powell authorization laws	1		1
24	Consider longer-term shortage guidelines if the Interim Surplus Guidelines are extended or modified to run concurrent		1	1
25	Consider using similar process used in ISG development	1		1
26	Consider/evaluate both permanent and interim guidelines	1		1
27	Consider/evaluate criteria incorporation into LROC	1		1
28	Consider/evaluate criteria incorporation into LROC and AOP processes	1		1
29	Consider/evaluate criteria that include two levels of shortage determination, first affects CAP deliveries, and affects other Lower Basin State deliveries	1		1
30	Consider/evaluate delivery or diversion restrictions that are imposed in reverse order of priority to protect the rights of holders of senior rights	1		1
31	Consider/evaluate mechanism that permits suspension of shortage declaration if hydrologic conditions indicate that Lake Powell elevations may rise and reach equalization elevations		1	1
32	Consider/evaluate new source of supply that can provide 750,000 acre feet per year, source to be revealed only after commenter proposed contractual arrangements met	1		1
33	Develop and implement drought management solutions now to minimize impacts in future years	1		1
34	Does not believe full Environmental Impact Statement is needed, do not waste the money	1		1
35	Evaluate effects on Treaty obligations with Tribes and Mexico, Biological Opinions, discharge and diversion permits, and other agreements, such as those to restore the Colorado River Delta.		1	1
36	Evaluate effects on fisheries, threatened and endangered species, and the Lower Colorado River Multiple Species Habitat Conservation Strategy		1	1
37	Evaluate/determine Secretary's authority to reduce annual releases from Lake Powell below 8.23 MAF		1	1
38	Guidelines should be adopted in a timely manner to augment the water supplies and provide Nevada time to develop additional permanent supplies		1	1
39	Guidelines should be interim and end in 2016		1	1
40	Implementation of strategies/shortage guidelines may be beneficial	1		1
41	Implementation should be through AOP	1		1
42	Include language in Management Strategies stating that IBWC Minute No. 242 will not be changed	1		1
43	Interim strategies that end before 2017 may impact negotiation of Hoover Service Contracts	1		1

**Table V-3**  
**Format / Mechanism Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
44	Need to consider effects of adopting both interim and permanent criteria		1	1
45	NEPA analysis needs to evaluate impacts of the guidelines and strategies collectively with other proposed projects such as bypass flow replacement, operation of YDP, new regulatory storage facilities, etc.		1	1
46	Quechan Tribe requests to be listed as a party of interest and notified of additional opportunities to comment	1		1
47	Request consultation with Mexico to explain NEPA process and potential impacts on water quantity and quality to Mexico deliveries	1		1
48	Request Reclamation consult with Basin States on development of any and all alternatives		1	1
49	Request that criteria developed for determining "shortage flow status" clear and concise	1		1
50	Request that Western Area Power Administration be included in process to help analyze potential impacts relating to power production		1	1
51	Secretary must account for needs and water rights of Navajo Nation	1		1
52	Section 7 consultation needed if develop Glen Canyon Dam monthly or daily release patterns that differ from those specified in the 1995 ROD	1		1
53	Section 7 consultation needed if projected conditions are different than stated in LCR MSCP BA/BO	1		1
54	Section 7 consultation needed if projected Lake Mead elevations are lower than elevations in LCR MSCP BA/BO	1		1
55	The guidelines should be permanent for use in managing water now and in future	1		1
56	The preferred alternative should take the form of guidelines, similar to ISGs	1		1
57	Update reference to drought or the allocation of waters between the U.S. and Mexico consistent with terminology used in 1944 Water Treaty	1		1
58	Use process that weighs benefits against impacts	1		1
<b>Total Comments</b>		<b>1,941</b>	<b>55</b>	<b>1,996</b>

# **Appendix V**

## **Summary of Issues Raised in Comments Grouped by Resource/Issue Area**

**V-4 Agriculture Resources Related Comments Ranked by Frequency of Comment**

**Table V-4  
Agriculture Resources Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
1	Consider/evaluate aggressive water conservation now to minimize drought impacts in future years	9	2	11
2	Consider /evaluate Arizona shortage and Lake Mead trigger proposal with 600 KAF delivery reduction		8	8
3	Consider/evaluate apportioning shortages among Priority 4 water users consistent with Law of the River and respective contracts		4	4
4	Consider/evaluate alternative pricing schedules for agricultural water that do not include subsidies and encourage conservation	1	1	2
5	Consider/evaluate benefits and effects of augmentation of Colorado River water supplies pursuant to 1968 Act		2	2
6	Consider/evaluate intra- and interstate sale, lease, transfer, trade or exchange of water within Basin		2	2
7	Consider/evaluate plan that limits releases from Lake Powell to 7.5 MAFY	2		2
8	Conduct and accurate evaluation of long-term costs and socioeconomic impacts associated with land fallowing		1	1
9	Consider charging surcharge to agricultural deliveries to fund conservation projects such as converting ditches to pipelines	1		1
10	Consider market-based strategies		1	1
11	Consider/evaluate Arizona's development of more local supplies to reduce reliance on Arizona project canals		1	1
12	Consider/evaluate criteria that would require proportional sharing of short-term shortages to minimize impacts to low priority right holders	1		1
13	Consider/evaluate financial and economic feasibility of long-term fallowing program		1	1
14	Consider/evaluate programs to allow use of mainstem water by forbearance, replacement, or exchange	1		1
15	Consider/evaluate reallocation of water between agricultural and municipal	1		1
16	Consider/evaluate Reclamation's ability to fund a long-term land fallowing program		1	1
17	Consider/evaluate reducing federal subsidies to cotton and sugar cane farmers		1	1
18	Consider/evaluate requiring use of more efficient irrigation practices as means to conserve water	1		1
19	Consider/evaluate shortage criteria that reduces deliveries to all users, other than those with Present Perfected rights, by same percentage amount		1	1
20	Consider/evaluate specific mandatory conservation strategies tied to hydrologic predictions	1		1
21	Consider/evaluate storage losses and required conservation volumes associated with long-term land fallowing programs		1	1
22	Consider/evaluate value of voluntary intra-state fallowing and other arrangements deemed necessary to mitigate impacts resulting from shortages		1	1
23	Evaluate effects on fisheries, threatened and endangered species, and the Lower Colorado River Multiple Species Habitat Conservation Strategy		1	1
24	Evaluate effects on water rights, including Tribal water rights		1	1
25	Opposes development of expensive and complex Reclamation-managed land fallowing program as alternative to protect junior water users		1	1
26	Opposes use of any water and power surcharges to fund Reclamation-managed land fallowing program		1	1
<b>Comments</b>		<b>18</b>	<b>32</b>	<b>50</b>

# **Appendix V**

## **Summary of Issues Raised in Comments Grouped by Resource/Issue Area**

**V-5 Biological Resources Related Comments Ranked by Frequency of Comment**



**Table V-5  
Biological Resources Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
1	Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam	975	6	981
2	Consider/evaluate costs and benefits of restoring natural flows through Glen and Grand Canyons	29	8	37
3	Consider/evaluate aggressive water conservation now to minimize drought impacts in future years	9	2	11
4	Shortage guidelines and management strategies should all include assumption that Yuma Desalting Plant will be operated at full capacity		6	6
5	Consider/evaluate aggressive tamarisk eradication efforts to conserve water	4		4
6	Consider/evaluate alternative pricing schedules for agricultural water that do not include subsidies and encourage conservation	1	1	2
7	Consider/evaluate intra- and interstate sale, lease, transfer, trade or exchange of water within Basin		2	2
8	Consider/evaluate Lake Mead minimum storage elevation that optimizes water availability for all users & no other elevation protections		2	2
9	Consider/evaluate new water allocation guidelines that protect critical habitats in Grand Canyon and elsewhere.	1	1	2
10	Evaluate effects on the timing and rate of lake turnover		2	2
11	Section 7 consultation needed if reduction in flows below Hoover Dam are more than 1.574 MAF as stated in LCR MSCP BA/BO	2		2
12	Avoid impacts to Glen Canyon Adaptive Management Program event-driven sediment experiments	1		1
13	Avoid impacts to river restoration efforts and endangered species	1		1
14	Challenges claim that decreasing shortages will have positive impact on fish, wildlife or natural areas		1	1
15	Consider market-based strategies		1	1
16	Consider/evaluate benefits and effects of operating Yuma Desalting Plant		1	1
17	Consider/evaluate consistency with and potential impacts to other established programs, i.e. LCRMSCP, Adaptive Mgmt, etc.	1		1
18	Consider/evaluate criteria that restricts reservoir releases when reservoir storage is below 50 percent of capacity	1		1
19	Consider/evaluate effect of annual releases from Glen Canyon Dam on humpback chub	1		1
20	Consider/evaluate effects of the development of the Multi-Species Conservation Plan		1	1
21	Consider/evaluate Glen Canyon Dam Seasonally Adjusted Steady Flow water management strategies to provide warmer release water temperatures to enhance humpback chub conservation	1		1
22	Consider/evaluate minimum Grand Canyon flows of 8,000 cfs for protection of native fish	1		1
23	Consider/evaluate new water allocation guidelines that consider more accurate estimates of natural flow	1		1
24	Consider/evaluate potential impacts to fish and wildlife resources from decreased in-stream flows	1		1
25	Consider/evaluate potential impacts to Mittry Lake Wildlife Area by changed river operations	1		1
26	Consider/evaluate potential impacts to riparian vegetation from declining levels in reservoirs and river	1		1
27	Consider/evaluate potential impacts to sportfish reproduction within mainstem reservoirs	1		1
28	Consider/evaluate potential impacts to Willow Beach National Fish Hatchery as a production facility	1		1
29	Consider/evaluate potential opportunities for improved fish & wildlife management	1		1
30	Consider/evaluate programs to allow use of mainstem water by forbearance, replacement, or exchange	1		1
31	Consider/evaluate role of watershed and soils disturbing activities on Colorado River system		1	1
32	Consider/evaluate start-up and expanded Yuma Desalter Project operations	1		1
33	Consider/evaluate timing of flows into Lake Mead to allow for riparian management at its delta to provide habitat for the endangered southwestern willow flycatcher and other migratory bird species	1		1
34	Consider/evaluate use of Lake Mead as primary flood control facility in system	1		1
35	Evaluate guidelines ability to restore river flows to pre-dam conditions		1	1
<b>Total Comments</b>		<b>1,039</b>	<b>36</b>	<b>1,075</b>

# **Appendix V**

## **Summary of Issues Raised in Comments Grouped by Resource/Issue Area**

**V-6 Cultural Resources Related Comments Ranked by Frequency of Comment**

**Table V-6**  
**Cultural Resources Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
1	Consider/evaluate protection of cultural resources in Glen Canyon	22	3	25
2	Evaluate effects on water rights, including Tribal water rights		1	1
3	Protect cultural resources in Glen and Grand canyons by discontinuing storage in Lake Powell	1		1
<b>Total Comments</b>		<b>23</b>	<b>4</b>	<b>27</b>

# **Appendix V**

## **Summary of Issues Raised in Comments Grouped by Resource/Issue Area**

**V-7 Energy/Power Resources Related Comments Ranked by Frequency of  
Comment**

**Table V-7**  
**Energy/Power Resources Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
1	Guidelines and strategies should provide priority to water supply over hydrogeneration		8	8
2	Consider/evaluate strategies that protect minimum power pool elevations at lakes Powell and Mead		4	4
3	Evaluate the impacts to power production and power consumers of all alternatives		4	4
4	Consider/evaluate Lake Mead minimum storage elevation that optimizes water availability for all users & no other elevation protections		2	2
5	Incorporate shortage criteria in the Lower Basin that maintains power generation capacity to Lower Basin customers	1	1	2
6	Balance water and electric needs against environmental requirements		1	1
7	Consider the effect of not protecting power production at both lakes Mead and Powell		1	1
8	Consider Upper Basin releases that enhance storage in Lake Powell to maintain power generation at Glen Canyon	1		1
9	Consider/develop of strategies that maximize power production	1		1
10	Consider/develop of strategies that protect critical water levels at Lake Powell to minimize impacts to stakeholders	1		1
11	Consider/evaluate financial and economic impacts of maintaining elevation of Lake Mead at or above minimum power pool elevation		1	1
12	Consider/evaluate large-scale water lifters for hydroelectric production to increase turbine efficiency		1	1
13	Consider/evaluate legal and contractual requirements for protecting or not protecting minimum power pool elevations at lakes Powell and Mead		1	1
14	Consider/evaluate power conservation program to minimize hydro-peaking releases	1		1
15	Consider/evaluate storage options that maximize power production	1		1
16	Consider/evaluate water conservation effects if replace hydroelectric power with wind and solar generation		1	1
17	Consult with Hoover power contractors and brief them on proposed changes and proposed mitigation prior to adoption of new strategies and guidelines		1	1
18	Criteria should give priority to meeting domestic and agricultural demands over power generation		1	1
19	Develop methods to minimize and fully mitigate any adverse impacts in and to the value of power that Hoover power contracts will receive		1	1
20	Develop plan that maximizes generation of electrical power	1		1
21	Evaluate effects on hydroelectric generation and Lake Mead and Lake Powell equalization requirements		1	1
22	Evaluate methods to mitigate impacts on amount and value of power Hoover Contractors will receive	1		1
23	For all alternatives to be considered, evaluate potential impacts to Hoover power production	1		1
24	For all alternatives to be considered, evaluate potential impacts to power production	1		1
25	Guidelines should not include programs that place involuntary taxes or user fees on water or power users		1	1
26	Opposes power surcharge to protect future marginal power production loss at Hoover Dam		1	1
27	Request that power production be removed from the storage algorithm used to model and determine releases from Lake Powell under Section 602(a)		1	1
<b>Total Comments</b>		<b>10</b>	<b>32</b>	<b>42</b>

# **Appendix V**

## **Summary of Issues Raised in Comments Grouped by Resource/Issue Area**

**V-8 Groundwater Resources Related Comments Ranked by Frequency of  
Comment**

**Table V-8**  
**Groundwater Resources Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
1	Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers	952	4	956
2	Consider/evaluate benefits and effects of augmentation of Colorado River water supplies pursuant to 1968 Act		2	2
3	Consider/evaluate programs that can augment the available basin supplies, such as cloud seeding, ocean desalination, etc.	1	1	2
4	Consider/evaluate Arizona's development of more local supplies to reduce reliance on Arizona project canals		1	1
5	Consider/evaluate benefits and effects of Lower Basin offstream storage		1	1
6	Consider/evaluate other complimentary programs such as tamarisk removal, cloud seeding, desalination, etc.	1		1
7	Consider/evaluate plan that augments supplies by constructing additional Upper Colorado River water storage capacity	1		1
8	Consider/evaluate programs that augment the water supply to the system		1	1
9	Consider/evaluate programs to allow use of mainstem water by forbearance, replacement, or exchange	1		1
10	Consider/evaluate reducing California's Colorado River water supply and replacing it with sustainable supplies such as ocean desalination		1	1
11	Consider/evaluate storage of surplus supplies in groundwater aquifers, when available	1		1
12	Consider/evaluate storage options that minimize evaporation	1		1
13	Evaluate effects on groundwater from potential transition from surface water use to groundwater use		1	1
<b>Total Comments</b>		<b>958</b>	<b>12</b>	<b>970</b>

# **Appendix V**

## **Summary of Issues Raised in Comments Grouped by Resource/Issue Area**

**V-9 Hydrology Related Comments Ranked by Frequency of Comment**



**Table V-9**  
**Hydrology Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
1	Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam	975	6	981
2	Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers	952	4	956
3	Update Compact to reflect the Colorado River's supply limitations and changing societal demands	946	5	951
4	Develop plan that maximizes storage at Lake Mead and minimizes storage at Lake Powell	48	10	58
5	Consider/evaluate costs and benefits of restoring natural flows through Glen and Grand Canyons	29	8	37
6	Consider/evaluate protection of cultural resources in Glen Canyon	22	3	25
7	Consider/evaluate aggressive water conservation now to minimize drought impacts in future years	9	2	11
8	Consider /evaluate Arizona shortage and Lake Mead trigger proposal with 600 KAF delivery reduction		8	8
9	Consider/evaluate flexible criteria that would require consultation with Arizona for reductions in excess of 600 KAF		7	7
10	Consider/evaluate guidelines that require Mexico and Nevada to share in shortages with Arizona		7	7
11	Shortage guidelines and management strategies should all include assumption that Yuma Desalting Plant will be operated at full capacity		6	6
12	Consider/evaluate apportioning shortages among Priority 4 water users consistent with Law of the River and respective contracts		4	4
13	Consider/evaluate guidelines that require Mexico share in shortages		4	4
14	Evaluate requirement of minimum 8.23 maf/year objective release from Lake Powell		4	4
15	Consider/evaluate return of treated wastewater to river to supplement supplies	2	1	3
16	Consider/evaluate alternative pricing schedules for agricultural water that do not include subsidies and encourage conservation	1	1	2
17	Consider/evaluate benefits and effects of augmentation of Colorado River water supplies pursuant to 1968 Act		2	2
18	Consider/evaluate intra- and interstate sale, lease, transfer, trade or exchange of water within Basin		2	2
19	Consider/evaluate Lake Mead minimum storage elevation that optimizes water availability for all users & no other elevation protections		2	2
20	Consider/evaluate new water allocation guidelines that protect critical habitats in Grand Canyon and elsewhere.	1	1	2
21	Consider/evaluate plan that limits releases from Lake Powell to 7.5 MAFY	2		2
22	Consider/evaluate plan that minimizes releases from Lake Powell	2		2
23	Consider/evaluate programs that can augment the available basin supplies, such as cloud seeding, ocean desalination, etc.	1	1	2
24	Consider/evaluate reduced but stable Lake Mead levels to minimize impacts to businesses such as Marinas and tour guides	1	1	2
25	Consider/evaluate specific measures that result in more efficient management of Colorado River water supplies	1	1	2
26	Develop strategies that facilitate transfer of water from senior water rights holder to more junior water users	1	1	2
27	Evaluate effects on the timing and rate of lake turnover		2	2
28	Evaluate impacts on diversions to each Priority water user under varying shortage conditions		2	2
29	Guidelines should be coordinated with anticipated releases from Lake Powell during low reservoir conditions	2		2
30	Adjust the Colorado River System Simulation Model to properly calculate active storage in the Upper Basin		1	1
31	Any new guidelines show help delay likelihood of a Compact Call on the Upper Basin states		1	1
32	Avoid guidelines and strategies that increase risk of shortage in Lower Basin that are not consistent with Law of the River		1	1
33	Avoid impacts to Glen Canyon Adaptive Management Program event-driven sediment experiments	1		1
34	Avoid impacts to river restoration efforts and endangered species	1		1
35	Challenges claim that decreasing shortages will have positive impact on fish, wildlife or natural areas		1	1
36	Consider market-based strategies		1	1
37	Consider use of paleohydrologic data in analysis to provided extended record of hydroclimatic variability	1		1
38	Consider/evaluate altering 602(a) storage parameters		1	1
39	Consider/evaluate alternatives that ensure sufficient flows for boat safety and navigation	1		1
40	Consider/evaluate Arizona's development of more local supplies to reduce reliance on Arizona project canals		1	1
41	Consider/evaluate benefits and effects of Lower Basin offstream storage		1	1
42	Consider/evaluate benefits and effects of operating Yuma Desalting Plant		1	1

**Table V-9**  
**Hydrology Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
43	Consider/evaluate conjunctive reservoir management strategies that optimize recreation on lakes Mead and Powell	1		1
44	Consider/evaluate consistency with and potential impacts to other established programs, i.e. LCRMSCP, Adaptive Mgmt, etc.	1		1
45	Consider/evaluate criteria that includes conjunctive management of Lakes Powell and Mead		1	1
46	Consider/evaluate criteria that requires equitable sharing of shortages between Upper and Lower basins	1		1
47	Consider/evaluate criteria that restricts reservoir releases when reservoir storage is below 50 percent of capacity	1		1
48	Consider/evaluate critical water levels on lakes Powell and Mead below which many recreational services would be curtailed altogether	1		1
49	Consider/evaluate delivery reductions that are flexible and responsive to hydrologic conditions	1		1
50	Consider/evaluate effects of the development of the Multi-Species Conservation Plan		1	1
51	Consider/evaluate effects on the ongoing litigation over water supply in the Gunnison River		1	1
52	Consider/evaluate elimination of 14.85 maf storage requirements set forth in Interim 602(a) Storage Guideline for Management of Colorado River		1	1
53	Consider/evaluate financial and economic feasibility of long-term following program		1	1
54	Consider/evaluate Glen Canyon Dam Seasonally Adjusted Steady Flow water management strategies to provide warmer release water temperatures to enhance humpback chub conservation	1		1
55	Consider/evaluate guidelines that trigger drought conditions at Lake Powell when level drops below 3600 feet	1		1
56	Consider/evaluate how higher magnitude shortages would affect the cut-back of rights in the 1929 to 1968 pool of entitlements		1	1
57	Consider/evaluate including effects of climate variability and long-term trends in climate in analysis and future operations	1		1
58	Consider/evaluate Lake Powell levels and flows thru Grand Canyon that benefit spawning and recruitment of razorback suckers as noted in BO for ISG	1		1
59	Consider/evaluate minimum Grand Canyon flows of 8,000 cfs for protection of native fish	1		1
60	Consider/evaluate more stringent methods for determination of "normal" or "surplus" conditions	1		1
61	Consider/evaluate new water allocation guidelines that consider more accurate estimates of natural flow	1		1
62	Consider/evaluate operating measures that consider the full range of reservoir operations, not just low reservoir conditions		1	1
63	Consider/evaluate other complimentary programs such as tamarisk removal, cloud seeding, desalination, etc.	1		1
64	Consider/evaluate plan that augments supplies by constructing additional Upper Colorado River water storage capacity	1		1
65	Consider/evaluate plan that includes interstate water leasing consistent with Colorado River Board of California's 1991 proposal for water leasing	1		1
66	Consider/evaluate plan that includes interstate water leasing consistent with Governor Roy Romer's proposal for the 40 year non-development of part of Colorado's allotted water under the	1		1
67	Consider/evaluate plan that stores more water in Upper Basin reservoirs to reduce evaporation losses	1		1
68	Consider/evaluate potential impacts to fish and wildlife resources from decreased in-stream flows	1		1
69	Consider/evaluate potential impacts to Mittry Lake Wildlife Area by changed river operations	1		1
70	Consider/evaluate potential impacts to operations of Flaming Gorge and Gunnison River	1		1
71	Consider/evaluate potential impacts to other off-stream reservoirs such as Alamo Dam and Lake Pleasant	1		1
72	Consider/evaluate potential impacts to water supply intake pumps resulting from future reduced in-stream flows	1		1
73	Consider/evaluate programs that augment the water supply to the system		1	1
74	Consider/evaluate programs to allow use of mainstem water by forbearance, replacement, or exchange	1		1
75	Consider/evaluate Reclamation's ability to fund a long-term land following program		1	1
76	Consider/evaluate reducing California's Colorado River water supply and replacing it with sustainable supplies such as ocean desalination		1	1
77	Consider/evaluate replacing Southern California's Colorado River water supply with water from Northern California		1	1
78	Consider/evaluate reservoir management strategy that would store water in headwater reservoirs as long as possible	1		1
79	Consider/evaluate role of watershed and soils disturbing activities on Colorado River system		1	1

**Table V-9**  
**Hydrology Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
80	Consider/evaluate shortage criteria that reduces deliveries to all users, other than those with Present Perfected rights, by same percentage amount		1	1
81	Consider/evaluate socio-economic impact of low levels of lakes Mead and Powell		1	1
82	Consider/evaluate specific mandatory conservation strategies tied to hydrologic predictions	1		1
83	Consider/evaluate start-up and expanded Yuma Desalter Project operations	1		1
84	Consider/evaluate storage losses and required conservation volumes associated with long-term land following programs		1	1
85	Consider/evaluate storage of surplus supplies in groundwater aquifers, when available	1		1
86	Consider/evaluate storage options that minimize evaporation	1		1
87	Consider/evaluate strategies that establish critical water levels at lakes Mead and Powell	1		1
88	Consider/evaluate strategies that manage Lake Powell and Mead water levels to protect Las Vegas' water supply		1	1
89	Consider/evaluate strategies that provide for equitable sharing of shortages between parties to international treaties	1		1
90	Consider/evaluate top water storage of users unused entitlement as opposed to re-allocation to other users		1	1
91	Consider/evaluate Upper Basin delivery schedules that allow releases less than 8.23 maf/year from Lake Powell	1		1
92	Consider/evaluate use of Lake Mead as primary flood control facility in system	1		1
93	Consider/evaluate value of voluntary intra-state following and other arrangements deemed necessary to mitigate impacts resulting from shortages		1	1
94	Criteria should assure 7.5 maf delivery to the Lower Basin		1	1
95	Develop and use accurate Upper Basin depletions and projected new depletions for use in calculating 602(a) storage requirements		1	1
96	Develop basin-wide conjunction water supply management program that considers all sources of supply		1	1
97	Development of shortage guidelines should consider protection of elevations that will allow SNWA intakes to function		1	1
98	Evaluate current planned equalization triggers and criteria used to calculate upper basin storage		1	1
99	Evaluate effects on dilution of perchlorate entering Lake Mead from Henderson, Nevada via Las Vegas Wash		1	1
100	Evaluate effects on flood control		1	1
101	Evaluate effects on groundwater from potential transition from surface water use to groundwater use		1	1
102	Evaluate effects on recreation, such as rafting in the Grand Canyon, fishing, and visual effects of reservoir draw-downs		1	1
103	Evaluate effects on the Southern Nevada Water Authority's drinking water supply and its intakes		1	1
104	Evaluate effects on water rights, including Tribal water rights		1	1
105	Evaluate effects on water supply diversion quantities and schedules		1	1
106	Evaluate effects that guidelines may have on urban areas		1	1
107	Evaluate guidelines ability to restore river flows to pre-dam conditions		1	1
108	Opposes development of expensive and complex Reclamation-managed land following program as alternative to protect junior water users		1	1
109	Opposes use of any water and power surcharges to fund Reclamation-managed land following program		1	1
110	Request that power production be removed from the storage algorithm used to model and determine releases from Lake Powell under Section 602(a)		1	1
111	Reservoir operating guidelines should benefit both Upper and Lower Basins		1	1
112	Undertake a complete review of Section 602(a) of the Colorado River Basin Project Act of 1968		1	1
113	Undertake a complete review of the storage algorithm used to model and determine releases from Lake Powell under Section 602(a)		1	1
<b>Total Comments</b>		<b>3,032</b>	<b>142</b>	<b>3,174</b>

# **Appendix V**

## **Summary of Issues Raised in Comments Grouped by Resource/Issue Area**

**V-10 Land Use/Planning Related Comments Ranked by Frequency of Comment**

**Table V-10**  
**Land Use / Planning Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
1	Consider/evaluate guidelines that require Mexico and Nevada to share in shortages with Arizona		7	7
2	Consider/evaluate apportioning shortages among Priority 4 water users consistent with Law of the River and respective contracts		4	4
3	Consider/evaluate guidelines that require Mexico share in shortages		4	4
4	Consider/evaluate managing new housing development as means to manage water demands	4		4
5	Consider/evaluate benefits and effects of augmentation of Colorado River water supplies pursuant to 1968 Act		2	2
6	Consider/evaluate intra- and interstate sale, lease, transfer, trade or exchange of water within Basin		2	2
7	Consider/evaluate requiring use of artificial grass to conserve water	2		2
8	Consider/evaluate restrictions on outdoor water features to conserve water	1	1	2
9	Develop strategies that facilitate transfer of water from senior water rights holder to more junior water users	1	1	2
10	Evaluate impacts on diversions to each Priority water user under varying shortage conditions		2	2
11	Conduct and accurate evaluation of long-term costs and socioeconomic impacts associated with land fallowing		1	1
12	Consider market-based strategies		1	1
13	Consider/evaluate Arizona's development of more local supplies to reduce reliance on Arizona project canals		1	1
14	Consider/evaluate benefits and effects of Lower Basin offstream storage		1	1
15	Consider/evaluate criteria that limits population and housing growth and increases in-stream-flows	1		1
16	Consider/evaluate financial and economic feasibility of long-term fallowing program		1	1
17	Consider/evaluate reallocation of water between agricultural and municipal	1		1
18	Consider/evaluate Reclamation's ability to fund a long-term land fallowing program		1	1
19	Consider/evaluate role of watershed and soils disturbing activities on Colorado River system		1	1
20	Consider/evaluate storage losses and required conservation volumes associated with long-term land fallowing programs		1	1
21	Consider/evaluate value of voluntary intra-state fallowing and other arrangements deemed necessary to mitigate impacts resulting from shortages		1	1
22	Consider/evaluate water conservation effect of alternative rebate programs to convert turf to desert landscape		1	1
23	Criteria should maintain current apportionment to assure state's future development project needs	1		1
24	Evaluate effect of livestock and grazed areas on runoff and sediment		1	1
25	Evaluate effects on water rights, including Tribal water rights		1	1
26	Evaluate effects that guidelines may have on urban areas		1	1
27	Opposes development of expensive and complex Reclamation-managed land fallowing program as alternative to protect junior water users		1	1
28	Opposes use of any water and power surcharges to fund Reclamation-managed land fallowing program		1	1
<b>Total Comments</b>		<b>11</b>	<b>38</b>	<b>49</b>

# **Appendix V**

## **Summary of Issues Raised in Comments Grouped by Resource/Issue Area**

**V-11 Mitigation/Monitoring Related Comments Ranked by Frequency of Comment**

**Table V-11**  
**Mitigation / Monitoring Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
1	Consider/evaluate benefits and effects of Lower Basin offstream storage		1	1
2	Consider/evaluate consistency with and potential impacts to other established programs, i.e. LCRMSCP, Adaptive Mgmt, etc.	1		1
3	Consider/evaluate financial and economic feasibility of long-term fallowing program		1	1
4	Consider/evaluate Reclamation's ability to fund a long-term land fallowing program		1	1
5	Consider/evaluate role of watershed and soils disturbing activities on Colorado River system		1	1
6	Consider/evaluate storage losses and required conservation volumes associated with long-term land fallowing programs		1	1
7	Consider/evaluate value of voluntary intra-state fallowing and other arrangements deemed necessary to mitigate impacts resulting from shortages		1	1
8	Develop monitoring and accounting systems to evaluate impacts of shortages		1	1
9	Evaluate effect of livestock and grazed areas on runoff and sediment		1	1
<b>Total Comments</b>		<b>1</b>	<b>8</b>	<b>9</b>

# **Appendix V**

## **Summary of Issues Raised in Comments Grouped by Resource/Issue Area**

**V-12 Population/Housing Related Comments Ranked by Frequency of Comment**



**Table V-12**  
**Population / Housing Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
1	Consider/evaluate managing new housing development as means to manage water demands	4		4
2	Consider/evaluate benefits and effects of augmentation of Colorado River water supplies pursuant to 1968 Act		2	2
3	Consider/evaluate intra- and interstate sale, lease, transfer, trade or exchange of water within Basin		2	2
4	Develop strategies that facilitate transfer of water from senior water rights holder to more junior water users	1	1	2
5	Conduct and accurate evaluation of long-term costs and socioeconomic impacts associated with land fallowing		1	1
6	Consider/evaluate Arizona's development of more local supplies to reduce reliance on Arizona project canals		1	1
7	Consider/evaluate criteria that limits population and housing growth and increases in-stream-flows	1		1
8	Consider/evaluate impacts to local and regional economies along the Colorado River	1		1
9	Consider/evaluate plan that includes interstate water leasing consistent with Colorado River Board of California's 1991 proposal for water leasing	1		1
10	Consider/evaluate plan that includes interstate water leasing consistent with Governor Roy Romer's proposal for the 40 year non-development of part of Colorado's allotted water under the	1		1
11	Consider/evaluate reallocation of water between agricultural and municipal	1		1
12	Criteria should maintain current apportionment to assure state's future development project needs	1		1
13	Evaluate effects on water rights, including Tribal water rights		1	1
14	Evaluate effects that guidelines may have on urban areas		1	1
<b>Total Comments</b>		<b>11</b>	<b>9</b>	<b>20</b>

# **Appendix V**

## **Summary of Issues Raised in Comments Grouped by Resource/Issue Area**

**V-13 Public Services Related Comments Ranked by Frequency of Comment**

**Table V-13  
Public Services Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
1	Guidelines and strategies should provide priority to water supply over hydrogeneration		8	8
2	Consider/evaluate strategies that protect minimum power pool elevations at lakes Powell and Mead		4	4
3	Evaluate the impacts to power production and power consumers of all alternatives		4	4
4	Consider/evaluate criteria that avoids impacts to reliability to Tribe's CAP water	3		3
5	Incorporate shortage criteria in the Lower Basin that maintains power generation capacity to Lower Basin customers	1	1	2
6	Consider/evaluate benefits and effects of augmentation of Colorado River water supplies pursuant to 1968 Act		2	2
7	Consider/evaluate intra- and interstate sale, lease, transfer, trade or exchange of water within Basin		2	2
8	Balance water and electric needs against environmental requirements		1	1
9	Clarify the post-1968 non-Central Arizona Project rights in Arizona and the post-1968 rights in Nevada in order to determine how shortages will be distributed among the post-1968 entitlements		1	1
10	Consider the effect of not protecting power production at both lakes Mead and Powell		1	1
11	Consider Upper Basin releases that enhance storage in Lake Powell to maintain power generation at Glen Canyon	1		1
12	Consider/develop of strategies that maximize power production	1		1
13	Consider/develop of strategies that protect critical water levels at Lake Powell to minimize impacts to stakeholders	1		1
14	Consider/evaluate Arizona's development of more local supplies to reduce reliance on Arizona project canals		1	1
15	Consider/evaluate criteria that include two levels of shortage determination, first affects CAP deliveries, and affects other Lower Basin State deliveries	1		1
16	Consider/evaluate financial and economic impacts of maintaining elevation of Lake Mead at or above minimum power pool elevation		1	1
17	Consider/evaluate impacts on NPS units along Colorado River	1		1
18	Consider/evaluate legal and contractual requirements for protecting or not protecting minimum power pool elevations at lakes Powell and Mead		1	1
19	Consider/evaluate potential impacts to boating and fishing	1		1
20	Consider/evaluate power conservation program to minimize hydro-peaking releases	1		1
21	Consider/evaluate storage options that maximize power production	1		1
22	Consider/evaluate value of voluntary intra-state fallowing and other arrangements deemed necessary to mitigate impacts resulting from shortages		1	1
23	Consider/evaluate water conservation effects if replace hydroelectric power with wind and solar generation		1	1
24	Consult with Hoover power contractors and brief them on proposed changes and proposed mitigation prior to adoption of new strategies and guidelines		1	1
25	Criteria should give priority to meeting domestic and agricultural demands over power generation		1	1
26	Develop methods to minimize and fully mitigate any adverse impacts in and to the value of power that Hoover power contracts will receive		1	1
27	Develop plan that accommodates recreational industry	1		1
28	Develop plan that maximizes generation of electrical power	1		1
29	Evaluate effects on hydroelectric generation and Lake Mead and Lake Powell equalization requirements		1	1
30	Evaluate methods to mitigate impacts on amount and value of power Hoover Contractors will receive	1		1
31	For all alternatives to be considered, evaluate potential impacts to Hoover power production	1		1
32	For all alternatives to be considered, evaluate potential impacts to power production	1		1
33	Guidelines should not include programs that place involuntary taxes or user fees on water or power users		1	1
34	Maximize storage at Lake Mead to maximize power production at Hoover Dam and make up lost power production capacity at Glen Canyon Dam	1		1
35	Opposes power surcharge to protect future marginal power production loss at Hoover Dam		1	1
36	Opposes use of any water and power surcharges to fund Reclamation-managed land fallowing program		1	1
<b>Total Comments</b>		<b>18</b>	<b>36</b>	<b>54</b>

# **Appendix V**

## **Summary of Issues Raised in Comments Grouped by Resource/Issue Area**

**V-14 Recreation Related Comments Ranked by Frequency of Comment**

**Table V-14**  
**Recreation Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
1	Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam	975	6	981
2	Develop plan that maximizes storage at Lake Mead and minimizes storage at Lake Powell	48	10	58
3	Evaluate both direct and indirect environmental and economic impacts to river and all water users		3	3
4	Consider/evaluate Lake Mead minimum storage elevation that optimizes water availability for all users & no other elevation protections		2	2
5	Consider/evaluate reduced but stable Lake Mead levels to minimize impacts to businesses such as Marinas and tour guides	1	1	2
6	Consider/evaluate alternatives that ensure sufficient flows for boat safety and navigation	1		1
7	Consider/evaluate conjunctive reservoir management strategies that optimize recreation on lakes Mead and Powell	1		1
8	Consider/evaluate critical water levels on lakes Powell and Mead below which many recreational services would be curtailed altogether	1		1
9	Consider/evaluate eliminating boating on Lake Mead to protect water quality from fuel spills	1		1
10	Consider/evaluate impacts on NPS units along Colorado River	1		1
11	Consider/evaluate impacts on recreation and tourism along the Colorado River	1		1
12	Consider/evaluate potential impacts to boating and fishing	1		1
13	Consider/evaluate potential impacts to recreation on Grand Canyon National Park and Glen Canyon National Recreation Area	1		1
14	Consider/evaluate potential impacts to recreation on lakes Mead and Powell	1		1
15	Consider/evaluate potential impacts to sport fish reproduction within mainstem reservoirs	1		1
16	Consider/evaluate socio-economic impact of low levels of lakes Mead and Powell		1	1
17	Develop plan that accommodates recreational industry	1		1
18	Evaluate effects on recreation, such as rafting in the Grand Canyon, fishing, and visual effects of reservoir draw-downs		1	1
19	Evaluate guidelines ability to restore river flows to pre-dam conditions		1	1
<b>Total Comments</b>		<b>1,035</b>	<b>25</b>	<b>1,060</b>

# **Appendix V**

## **Summary of Issues Raised in Comments Grouped by Resource/Issue Area**

**V-15 Reservoir Management Related Comments Ranked by Frequency of  
Comment**

**Table V-15**  
**Reservoir Management Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
1	Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam	975	6	981
2	Consider/evaluate sustainable sediment management program for Lake Powell and Lake Mead	947	9	956
3	Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers	952	4	956
4	Develop plan that maximizes storage at Lake Mead and minimizes storage at Lake Powell	48	10	58
5	Consider/evaluate costs and benefits of restoring natural flows through Glen and Grand Canyons	29	8	37
6	Consider/evaluate protection of cultural resources in Glen Canyon	22	3	25
7	Opposes decommissioning of Glen Canyon Dam	14		14
8	Consider /evaluate Arizona shortage and Lake Mead trigger proposal with 600 KAF delivery reduction		8	8
9	Guidelines and strategies should provide priority to water supply over hydrogeneration		8	8
10	Consider/evaluate flexible criteria that would require consultation with Arizona for reductions in excess of 600 KAF		7	7
11	Consider/evaluate efficiency of storage system based on reality of increased demand and decreased supply	6		6
12	Consider/evaluate strategies that protect minimum power pool elevations at lakes Powell and Mead		4	4
13	Evaluate requirement of minimum 8.23 maf/year objective release from Lake Powell		4	4
14	Operation of Lakes Powell and Mead must be consistent with the Law of the River		4	4
15	Consider/evaluate reduced but stable Lake Mead levels to minimize impacts to businesses such as Marinas and tour guides	1	1	2
16	Consider/evaluate specific measures that result in more efficient management of Colorado River water supplies	1	1	2
17	Incorporate shortage criteria in the Lower Basin that maintains power generation capacity to Lower Basin customers	1	1	2
18	Consider/evaluate plan that limits releases from Lake Powell to 7.5 MAFY	2		2
19	Consider/evaluate plan that minimizes releases from Lake Powell	2		2
20	Guidelines should be coordinated with anticipated releases from Lake Powell during low reservoir conditions	2		2
21	Section 7 consultation needed if reduction in flows below Hoover Dam are more than 1.574 MAF as stated in LCR MSCP BA/BO	2		2
22	Strategies should maximize the protection afforded to the Upper Basin by Lake Powell	2		2
23	Consider/evaluate Lake Mead minimum storage elevation that optimizes water availability for all users & no other elevation protections		2	2
24	Evaluate effects on lake water quality		2	2
25	Evaluate effects on the timing and rate of lake turnover		2	2
26	Adjust the Colorado River System Simulation Model to properly calculate active storage in the Upper Basin		1	1
27	Any new guidelines show help delay likelihood of a Compact Call on the Upper Basin states		1	1
28	Avoid impacts to Glen Canyon Adaptive Management Program event-driven sediment experiments	1		1
29	Consider the effect of not protecting power production at both lakes Mead and Powell		1	1
30	Consider Upper Basin releases that enhance storage in Lake Powell to maintain power generation at Glen Canyon	1		1
31	Consider/develop of strategies that maximize power production	1		1
32	Consider/develop of strategies that protect critical water levels at Lake Powell to minimize impacts to stakeholders	1		1
33	Consider/evaluate altering 602(a) storage parameters		1	1
34	Consider/evaluate alternatives that ensure sufficient flows for boat safety and navigation	1		1
35	Consider/evaluate benefits and effects of Lower Basin offstream storage		1	1
36	Consider/evaluate conjunctive reservoir management strategies that optimize recreation on lakes Mead and Powell	1		1
37	Consider/evaluate criteria that includes conjunctive management of Lakes Powell and Mead		1	1
38	Consider/evaluate criteria that requires equitable sharing of shortages between Upper and Lower basins	1		1
39	Consider/evaluate criteria that restricts reservoir releases when reservoir storage is below 50 percent of capacity	1		1
40	Consider/evaluate critical water levels on lakes Powell and Mead below which many recreational services would be curtailed altogether	1		1
41	Consider/evaluate delivery reductions that are flexible and responsive to hydrologic conditions	1		1

**Table V-15  
Reservoir Management Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
42	Consider/evaluate effect of annual releases from Glen Canyon Dam on humpback chub	1		1
43	Consider/evaluate eliminating boating on Lake Mead to protect water quality from fuel spills	1		1
44	Consider/evaluate elimination of 14.85 maf storage requirements set forth in Interim 602(a) Storage Guideline for Management of Colorado River		1	1
45	Consider/evaluate financial and economic impacts of maintaining elevation of Lake Mead at or above minimum power pool elevation		1	1
46	Consider/evaluate Glen Canyon Dam Seasonally Adjusted Steady Flow water management strategies to provide warmer release water temperatures to enhance humpback chub conservation	1		1
47	Consider/evaluate guidelines that trigger drought conditions at Lake Powell when level drops below 3600 feet	1		1
48	Consider/evaluate Lake Powel levels and flows thru Grand Canyon that benefit spawning and recruitment of razorback suckers as noted in BO for ISG	1		1
49	Consider/evaluate legal and contractual requirements for protecting or not protecting minimum power pool elevations at lakes Powell and Mead		1	1
50	Consider/evaluate mechanism that permits suspension of shortage declaration if hydrologic conditions indicate that Lake Powell elevations may rise and reach equalization elevations		1	1
51	Consider/evaluate minimum Grand Canyon flows of 8,000 cfs for protection of native fish	1		1
52	Consider/evaluate operating measures that consider the full range of reservoir operations, not just low reservoir conditions		1	1
53	Consider/evaluate plan that augments supplies by constructing additional Upper Colorado River water storage capacity	1		1
54	Consider/evaluate plan that stores more water in Upper Basin reservoirs to reduce evaporation losses	1		1
55	Consider/evaluate potential impacts to operations of Flaming Gorge and Gunnison River	1		1
56	Consider/evaluate potential impacts to other off-stream reservoirs such as Alamo Dam and Lake Pleasant	1		1
57	Consider/evaluate potential impacts to recreation on lakes Mead and Powell	1		1
58	Consider/evaluate potential impacts to riparian vegetation from declining levels in reservoirs and river	1		1
59	Consider/evaluate potential impacts to sport fish reproduction within mainstem reservoirs	1		1
60	Consider/evaluate potential opportunities for improved fish & wildlife management	1		1
61	Consider/evaluate reconstruction of Glen Canyon Dam to be made structurally safer	1		1
62	Consider/evaluate reservoir management strategy that would store water in headwater reservoirs as long as possible	1		1
63	Consider/evaluate socio-economic impact of low levels of lakes Mead and Powell		1	1
64	Consider/evaluate storage of surplus supplies in groundwater aquifers, when available	1		1
65	Consider/evaluate storage options that maximize power production	1		1
66	Consider/evaluate storage options that minimize evaporation	1		1
67	Consider/evaluate strategies that establish critical water levels at lakes Mead and Powell	1		1
68	Consider/evaluate strategies that manage Lake Powell and Mead water levels to protect Las Vegas' water supply		1	1
69	Consider/evaluate strategies that provide for equitable sharing of shortages between parties to international treaties	1		1
70	Consider/evaluate top water storage of users unused entitlement as opposed to re-allocation to other users		1	1
71	Consider/evaluate Upper Basin delivery schedules that allow releases less than 8.23 maf/year from Lake Powell	1		1
72	Consider/evaluate use of Lake Mead as primary flood control facility in system	1		1
	Criteria should assure 7.5 maf delivery to the Lower Basin		1	1
	Develop and use accurate Upper Basin depletions and projected new depletions for use in calculating 602(a) storage requirements		1	1
	Develop basin-wide conjunction water supply management program that considers all sources of supply		1	1
	Develop plan that accommodates recreational industry	1		1
	Develop plan that maximizes generation of electrical power	1		1
73	Development of shortage guidelines should consider protection of elevations that will allow SNWA intakes to function		1	1
74	Evaluate current planned equalization triggers and criteria used to calculate upper basin storage		1	1
75	Evaluate effects on dilution of perchlorate entering Lake Mead from Henderson, Nevada via Las		1	1



**Table V-15  
Reservoir Management Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
	Vegas Wash			
76	Evaluate effects on flood control		1	1
77	Evaluate effects on groundwater from potential transition from surface water use to groundwater use		1	1
78	Evaluate effects on hydroelectric generation and Lake Mead and Lake Powell equalization requirements		1	1
79	Evaluate effects on recreation, such as rafting in the Grand Canyon, fishing, and visual effects of reservoir draw-downs		1	1
80	Evaluate effects on salinity, mercury, sediment, radioactive substances and other constituents of Lower Colorado River water		1	1
81	Evaluate effects on sediment movement and impacts on beach replenishment in the Grand Canyon		1	1
82	Evaluate effects on the Southern Nevada Water Authority's drinking water supply and its intakes		1	1
83	Evaluate guidelines ability to restore river flows to pre-dam conditions		1	1
84	Include Lake Powell in management strategies/shortage guidelines	1		1
85	Incorporate shortage criteria in the Lower Basin that minimizes impacts to water quality of low reservoir conditions	1		1
86	Maximize storage at Lake Mead to maximize power production at Hoover Dam and make up lost power production capacity at Glen Canyon Dam	1		1
87	Opposes use of any water and power surcharges to fund Reclamation-managed land following program		1	1
88	Request that power production be removed from the storage algorithm used to model and determine releases from Lake Powell under Section 602(a)		1	1
89	Reservoir operating guidelines should benefit both Upper and Lower Basins		1	1
90	Section 7 consultation needed if develop Glen Canyon Dam monthly or daily release patterns that differ from those specified in the 1995 ROD	1		1
91	Section 7 consultation needed if projected conditions are different than stated in LCR MSCP BA/BO	1		1
92	Section 7 consultation needed if projected Lake Mead elevations are lower than elevations in LCR MSCP BA/BO	1		1
93	Undertake a complete review of Section 602(a) of the Colorado River Basin Project Act of 1968		1	1
94	Undertake a complete review of the storage algorithm used to model and determine releases from Lake Powell under Section 602(a)		1	1
<b>Total Comments</b>		<b>3,047</b>	<b>117</b>	<b>3,164</b>

# **Appendix V**

## **Summary of Issues Raised in Comments Grouped by Resource/Issue Area**

**V-16 Socio-Economics Related Comments Ranked by Frequency of Comment**

**Table V-16  
Socio-economics Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
1	Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam	975	6	981
2	Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers	952	4	956
3	Update Compact to reflect the Colorado River's supply limitations and changing societal demands	946	5	951
4	Develop plan that maximizes storage at Lake Mead and minimizes storage at Lake Powell	48	10	58
5	Consider/evaluate costs and benefits of restoring natural flows through Glen and Grand Canyons	29	8	37
6	Consider/evaluate aggressive water conservation now to minimize drought impacts in future years	9	2	11
7	Consider/evaluate submitted shortage criteria alternative - "Conservation Before Shortage"	1	7	8
8	Consider /evaluate Arizona shortage and Lake Mead trigger proposal with 600 KAF delivery reduction		8	8
9	Guidelines and strategies should provide priority to water supply over hydrogeneration		8	8
10	Consider/evaluate guidelines that require Mexico and Nevada to share in shortages with Arizona		7	7
11	Shortage guidelines and management strategies should all include assumption that Yuma Desalting Plant will be operated at full capacity		6	6
12	Consider/evaluate aggressive tamarisk eradication efforts to conserve water	4		4
13	Consider/evaluate managing new housing development as means to manage water demands	4		4
14	Consider/evaluate apportioning shortages among Priority 4 water users consistent with Law of the River and respective contracts		4	4
15	Consider/evaluate guidelines that require Mexico share in shortages		4	4
16	Consider/evaluate strategies that protect minimum power pool elevations at lakes Powell and Mead		4	4
17	Evaluate requirement of minimum 8.23 maf/year objective release from Lake Powell		4	4
18	Evaluate the impacts to power production and power consumers of all alternatives		4	4
19	Consider/evaluate criteria that avoids impacts to reliability to Tribe's CAP water	3		3
20	Consider/evaluate ocean desalination water to make up shortages	3		3
21	Consider/evaluate return of treated wastewater to river to supplement supplies	2	1	3
22	Evaluate both direct and indirect environmental and economic impacts to river and all water users		3	3
23	Consider/evaluate plan that limits releases from Lake Powell to 7.5 MAFY	2		2
24	Consider/evaluate plan that minimizes releases from Lake Powell	2		2
25	Consider/evaluate requiring use of artificial grass to conserve water	2		2
26	Guidelines should be premised upon proportionate sharing of shortages by Mexico	2		2
27	Consider/evaluate alternative pricing schedules for agricultural water that do not include subsidies and encourage conservation	1	1	2
28	Consider/evaluate new water allocation guidelines that protect critical habitats in Grand Canyon and elsewhere.	1	1	2
29	Consider/evaluate programs that can augment the available basin supplies, such as cloud seeding, ocean desalination, etc.	1	1	2
30	Consider/evaluate reduced but stable Lake Mead levels to minimize impacts to businesses such as Marinas and tour guides	1	1	2
31	Consider/evaluate restrictions on outdoor water features to conserve water	1	1	2
32	Develop strategies that facilitate transfer of water from senior water rights holder to more junior water users	1	1	2
33	Incorporate shortage criteria in the Lower Basin that maintains power generation capacity to Lower Basin customers	1	1	2
34	Consider/evaluate benefits and effects of augmentation of Colorado River water supplies pursuant to 1968 Act		2	2
35	Consider/evaluate intra- and interstate sale, lease, transfer, trade or exchange of water within Basin		2	2
36	Consider/evaluate Lake Mead minimum storage elevation that optimizes water availability for all users & no other elevation protections		2	2
37	Evaluate impacts on diversions to each Priority water user under varying shortage conditions		2	2
38	Address potential salinity impacts to Mexico water deliveries	1		1
39	All reasonable alternatives need to be analyzed and included in EIS to provide proper advisory document		1	1
40	Balance water and electric needs against environmental requirements		1	1
41	Conduct and accurate evaluation of long-term costs and socioeconomic impacts associated with land following		1	1
42	Consider charging surcharge to agricultural deliveries to fund conservation projects such as converting ditches to pipelines	1		1

**Table V-16**  
**Socio-economics Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
43	Consider Colorado River Salinity Control Act in analysis		1	1
44	Consider market-based strategies		1	1
45	Consider the effect of not protecting power production at both lakes Mead and Powell		1	1
46	Consider Upper Basin releases that enhance storage in Lake Powell to maintain power generation at Glen Canyon	1		1
47	Consider/develop of strategies that maximize power production	1		1
48	Consider/develop of strategies that protect critical water levels at Lake Powell to minimize impacts to stakeholders	1		1
49	Consider/evaluate Arizona's development of more local supplies to reduce reliance on Arizona project canals		1	1
50	Consider/evaluate benefits and effects of Lower Basin offstream storage		1	1
51	Consider/evaluate benefits and effects of operating Yuma Desalting Plant		1	1
52	Consider/evaluate consistency with and potential impacts to other established programs, i.e. LCRMSCP, Adaptive Mgmt, etc.	1		1
53	Consider/evaluate criteria that include two levels of shortage determination, first affects CAP deliveries, and affects other Lower Basin State deliveries	1		1
54	Consider/evaluate criteria that includes conjunctive management of Lakes Powell and Mead		1	1
55	Consider/evaluate criteria that limits population and housing growth and increases in-stream-flows	1		1
56	Consider/evaluate criteria that requires equitable sharing of shortages between Upper and Lower basins	1		1
57	Consider/evaluate criteria that restricts reservoir releases when reservoir storage is below 50 percent of capacity	1		1
58	Consider/evaluate criteria that would require proportional sharing of short-term shortages to minimize impacts to low priority right holders	1		1
59	Consider/evaluate eliminating boating on Lake Mead to protect water quality from fuel spills	1		1
60	Consider/evaluate financial and economic feasibility of long-term fallowing program		1	1
61	Consider/evaluate financial and economic impacts of maintaining elevation of Lake Mead at or above minimum power pool elevation		1	1
62	Consider/evaluate how higher magnitude shortages would affect the cut-back of rights in he 1929 to 1968 pool of entitlements		1	1
63	Consider/evaluate impacts on NPS units along Colorado River	1		1
64	Consider/evaluate impacts on recreation and tourism along the Colorado River	1		1
65	Consider/evaluate impacts to local and regional economies along the Colorado River	1		1
66	Consider/evaluate large-scale water lifters for hydroelectric production to increase turbine efficiency		1	1
67	Consider/evaluate legal and contractual requirements for protecting or not protecting minimum power pool elevations at lakes Powell and Mead		1	1
68	Consider/evaluate more stringent methods for determination of "normal" or "surplus" conditions	1		1
69	Consider/evaluate new water allocation guidelines that consider more accurate estimates of natural flow	1		1
70	Consider/evaluate other complimentary programs such as tamarisk removal, cloud seeding, desalination, etc.	1		1
71	Consider/evaluate plan that augments supplies by constructing additional Upper Colorado River water storage capacity	1		1
72	Consider/evaluate plan that includes interstate water leasing consistent with Colorado River Board of California's 1991 proposal for water leasing	1		1
73	Consider/evaluate plan that includes interstate water leasing consistent with Governor Roy Romer's proposal for the 40 year non-development of part of Colorado's allotted water under the	1		1
74	Consider/evaluate potential impacts to boating and fishing	1		1
75	Consider/evaluate potential impacts to recreation on Grand Canyon National Park and Glen Canyon National Recreation Area	1		1
76	Consider/evaluate potential impacts to recreation on lakes Mead and Powell	1		1
77	Consider/evaluate potential impacts to water supply intake pumps resulting from future reduced in-stream flows	1		1
78	Consider/evaluate power conservation program to minimize hydro-peaking releases	1		1
79	Consider/evaluate proactive steps to prevent future shortages from occurring	1		1
80	Consider/evaluate programs that augment the water supply to the system		1	1
81	Consider/evaluate programs to allow use of mainstem water by forbearance, replacement, or exchange	1		1

**Table V-16**  
**Socio-economics Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
82	Consider/evaluate reallocation of water between agricultural and municipal	1		1
83	Consider/evaluate Reclamation's ability to fund a long-term land following program		1	1
84	Consider/evaluate reducing California's Colorado River water supply and replacing it with sustainable supplies such as ocean desalination		1	1
85	Consider/evaluate reducing federal subsidies to cotton and sugar cane farmers		1	1
86	Consider/evaluate replacing Southern California' Colorado River water supply with water from Northern California		1	1
87	Consider/evaluate requiring use of more efficient irrigation practices as means to conserve water	1		1
88	Consider/evaluate reservoir management strategy that would store water in headwater reservoirs as long as possible	1		1
89	Consider/evaluate shortage criteria that reduces deliveries to all users by same percentage amount	1		1
90	Consider/evaluate shortage criteria that reduces deliveries to all users, other than those with Present Perfected rights, by same percentage amount		1	1
91	Consider/evaluate socio-economic impact of low levels of lakes Mead and Powell		1	1
92	Consider/evaluate specific mandatory conservation strategies tied to hydrologic predictions	1		1
93	Consider/evaluate start-up and expanded Yuma Desalter Project operations	1		1
94	Consider/evaluate storage losses and required conservation volumes associated with long-term land following programs		1	1
95	Consider/evaluate storage of surplus supplies in groundwater aquifers, when available	1		1
96	Consider/evaluate storage options that maximize power production	1		1
97	Consider/evaluate strategies that manage Lake Powell and Mead water levels to protect Las Vegas' water supply		1	1
98	Consider/evaluate strategies that protect Federal Reserved Water Rights	1		1
99	Consider/evaluate strategies that provide for equitable sharing of shortages between parties to international treaties	1		1
100	Consider/evaluate Upper Basin delivery schedules that allow releases less than 8.23 maf/year from Lake Powell	1		1
101	Consider/evaluate use of Lake Mead as primary flood control facility in system	1		1
102	Consider/evaluate value of voluntary intra-state following and other arrangements deemed necessary to mitigate impacts resulting from shortages		1	1
103	Consider/evaluate water conservation effect of alternative rebate programs to convert turf to desert landscape		1	1
104	Consider/evaluate water conservation effects if replace hydroelectric power with wind and solar generation		1	1
105	Consult with Hoover power contractors and brief them on proposed changes and proposed mitigation prior to adoption of new strategies and guidelines		1	1
106	Criteria should assure 7.5 maf delivery to the Lower Basin		1	1
107	Criteria should give priority to meeting domestic and agricultural demands over power generation		1	1
108	Criteria should maintain current apportionment to assure state's future development project needs	1		1
109	Develop and implement drought management solutions now to minimize impacts in future years	1		1
110	Develop and use accurate Upper Basin depletions and projected new depletions for use in calculating 602(a) storage requirements		1	1
111	Develop basin-wide conjunction water supply management program that considers all sources of supply		1	1
112	Develop methods to minimize and fully mitigate any adverse impacts in and to the value of power that Hoover power contracts will receive		1	1
113	Develop plan that maximizes generation of electrical power	1		1
114	Development of shortage guidelines should consider protection of elevations that will allow SNWA intakes to function		1	1
115	Evaluate effects on groundwater from potential transition from surface water use to groundwater use		1	1
116	Evaluate effects on hydroelectric generation and Lake Mead and Lake Powell equalization requirements		1	1
117	Evaluate effects on recreation, such as rafting in the Grand Canyon, fishing, and visual effects of reservoir draw-downs		1	1
118	Evaluate effects on the Southern Nevada Water Authority's drinking water supply and its intakes		1	1
119	Evaluate effects on water rights, including Tribal water rights		1	1
120	Evaluate effects that guidelines may have on urban areas		1	1

**Table V-16**  
**Socio-economics Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
121	Evaluate methods to mitigate impacts on amount and value of power Hoover Contractors will receive	1		1
122	For all alternatives to be considered, evaluate potential impacts to Hoover power production	1		1
123	For all alternatives to be considered, evaluate potential impacts to power production	1		1
124	Guidelines should not include programs that place involuntary taxes or user fees on water or power users		1	1
125	Interim strategies that end before 2017 may impact negotiation of Hoover Service Contracts	1		1
126	Management Strategies should address adverse impacts to water deliveries to Mexico	1		1
127	Maximize storage at Lake Mead to maximize power production at Hoover Dam and make up lost power production capacity at Glen Canyon Dam	1		1
128	NEPA analysis needs to evaluate impacts of the guidelines and strategies collectively with other proposed projects such as bypass flow replacement, operation of YDP, new regulatory storage facilities, etc.		1	1
129	Opposes development of expensive and complex Reclamation-managed land fallowing program as alternative to protect junior water users		1	1
130	Opposes power surcharge to protect future marginal power production loss at Hoover Dam		1	1
131	Opposes use of any water and power surcharges to fund Reclamation-managed land fallowing program		1	1
132	Protect cultural resources in Glen and Grand canyons by discontinuing storage in Lake Powell	1		1
133	Request that power production be removed from the storage algorithm used to model and determine releases from Lake Powell under Section 602(a)		1	1
134	Reservoir operating guidelines should benefit both Upper and Lower Basins		1	1
135	Secretary must account for needs and water rights of Navajo Nation	1		1
136	Shortage guidelines should cover only that group of entitlements that are post-September 30, 1968 in priority		1	1
137	Shortages should be first applied to users with post-1968 entitlements		1	1
138	Undertake a complete review of Section 602(a) of the Colorado River Basin Project Act of 1968		1	1
139	Undertake a complete review of the storage algorithm used to model and determine releases from Lake Powell under Section 602(a)		1	1
<b>Total Comments</b>		<b>3,042</b>	<b>161</b>	<b>3,203</b>

# **Appendix V**

## **Summary of Issues Raised in Comments Grouped by Resource/Issue Area**

**V-17 Transboundary Impacts Related Comment Ranked by Frequency of  
Comment**

**Table V-17**  
**Transboundary Impacts Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
1	Consider/evaluate submitted shortage criteria alternative - "Conservation Before Shortage"	1	7	8
2	Consider /evaluate Arizona shortage and Lake Mead trigger proposal with 600 KAF delivery reduction		8	8
3	Consider/evaluate flexible criteria that would require consultation with Arizona for reductions in excess of 600 KAF		7	7
4	Consider/evaluate guidelines that require Mexico and Nevada to share in shortages with Arizona		7	7
5	Shortage guidelines and management strategies should all include assumption that Yuma Desalting Plant will be operated at full capacity		6	6
6	Consider/evaluate apportioning shortages among Priority 4 water users consistent with Law of the River and respective contracts		4	4
7	Consider/evaluate guidelines that require Mexico share in shortages		4	4
8	Evaluate requirement of minimum 8.23 maf/year objective release from Lake Powell		4	4
9	Evaluate both direct and indirect environmental and economic impacts to river and all water users		3	3
10	Consider/evaluate plan that limits releases from Lake Powell to 7.5 MAFY	2		2
11	Guidelines should be premised upon proportionate sharing of shortages by Mexico	2		2
12	Consider/evaluate new water allocation guidelines that protect critical habitats in Grand Canyon and elsewhere.	1	1	2
13	Address potential salinity impacts to Mexico water deliveries	1		1
14	Consider Colorado River Salinity Control Act in analysis		1	1
15	Consider/evaluate altering 602(a) storage parameters		1	1
16	Consider/evaluate benefits and effects of operating Yuma Desalting Plant		1	1
17	Consider/evaluate elimination of 14.85 maf storage requirements set forth in Interim 602(a) Storage Guideline for Management of Colorado River		1	1
18	Consider/evaluate potential of new law suit opposing All-American Canal Lining Project	1		1
19	Consider/evaluate start-up and expanded Yuma Desalter Project operations	1		1
20	Consider/evaluate strategies that provide for equitable sharing of shortages between parties to international treaties	1		1
21	Consider/evaluate Upper Basin delivery schedules that allow releases less than 8.23 maf/year from Lake Powell	1		1
22	Criteria should assure 7.5 maf delivery to the Lower Basin		1	1
23	Develop plan consistent with international treaty obligations	1		1
24	Evaluate effects on Treaty obligations with Tribes and Mexico, Biological Opinions, discharge and diversion permits, and other agreements, such as those to restore the Colorado River Delta.		1	1
25	Evaluate effects on general water quality and end uses of water going to Arizona, California, Nevada, and Mexico		1	1
26	Include language in Management Strategies stating that IBWC Minute No. 242 will not be changed	1		1
27	Management Strategies should address adverse impacts to water deliveries to Mexico	1		1
28	Request consultation with Mexico to explain NEPA process and potential impacts on water quantity and quality to Mexico deliveries	1		1
29	Request that power production be removed from the storage algorithm used to model and determine releases from Lake Powell under Section 602(a)		1	1
29	Reservoir operating guidelines should benefit both Upper and Lower Basins		1	1
30	Undertake a complete review of Section 602(a) of the Colorado River Basin Project Act of 1968		1	1
31	Undertake a complete review of the storage algorithm used to model and determine releases from Lake Powell under Section 602(a)		1	1
32	Update reference to drought or the allocation of waters between the U.S. and Mexico consistent with terminology used in 1944 Water Treaty	1		1

<b>Total Comments</b>	<b>16</b>	<b>62</b>	<b>78</b>
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# **Appendix V**

## **Summary of Issues Raised in Comments Grouped by Resource/Issue Area**

**V-18 Transportation/Traffic Related Comments Ranked by Frequency of Comment**

**Table V-18**  
**Transportation / Traffic Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
1	Consider/evaluate reduced but stable Lake Mead levels to minimize impacts to businesses such as Marinas and tour guides	1	1	2
2	Consider/evaluate alternatives that ensure sufficient flows for boat safety and navigation	1		1
3	Consider/evaluate conjunctive reservoir management strategies that optimize recreation on lakes Mead and Powell	1		1
4	Consider/evaluate criteria that limits population and housing growth and increases in-stream-flows	1		1
5	Consider/evaluate critical water levels on lakes Powell and Mead below which many recreational services would be curtailed altogether	1		1
6	Consider/evaluate eliminating boating on Lake Mead to protect water quality from fuel spills	1		1
7	Consider/evaluate impacts on recreation and tourism along the Colorado River	1		1
8	Consider/evaluate potential impacts to boating and fishing	1		1
9	Consider/evaluate potential impacts to recreation on Grand Canyon National Park and Glen Canyon National Recreation Area	1		1
10	Consider/evaluate potential impacts to recreation on lakes Mead and Powell	1		1
<b>Total Comments</b>		<b>10</b>	<b>1</b>	<b>11</b>

# **Appendix V**

## **Summary of Issues Raised in Comments Grouped by Resource/Issue Area**

**V-19 Water Supply/Quantity Related Comments Ranked by Frequency of  
Comment**

**Table V-19**  
**Water Supply / Quantity Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
1	Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam	975	6	981
2	Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers	952	4	956
3	Update Compact to reflect the Colorado River's supply limitations and changing societal demands	946	5	951
4	Develop plan that maximizes storage at Lake Mead and minimizes storage at Lake Powell	48	10	58
5	Consider/evaluate costs and benefits of restoring natural flows through Glen and Grand Canyons	29	8	37
6	Opposes decommissioning of Glen Canyon Dam	14		14
7	Consider/evaluate aggressive water conservation now to minimize drought impacts in future years	9	2	11
8	Consider/evaluate submitted shortage criteria alternative - "Conservation Before Shortage"	1	7	8
9	Consider /evaluate Arizona shortage and Lake Mead trigger proposal with 600 KAF delivery reduction		8	8
10	Guidelines and strategies should provide priority to water supply over hydrogeneration		8	8
11	Consider/evaluate flexible criteria that would require consultation with Arizona for reductions in excess of 600 KAF		7	7
12	Consider/evaluate guidelines that require Mexico and Nevada to share in shortages with Arizona		7	7
13	Consider/evaluate efficiency of storage system based on reality of increased demand and decreased supply	6		6
14	Consider/evaluate aggressive tamarisk eradication efforts to conserve water	4		4
15	Consider/evaluate managing new housing development as means to manage water demands	4		4
16	Affected water users and respective State should be allowed to determine how to manage shortages within respective state		4	4
17	Consider/evaluate apportioning shortages among Priority 4 water users consistent with Law of the River and respective contracts		4	4
18	Consider/evaluate guidelines that require Mexico share in shortages		4	4
19	Evaluate requirement of minimum 8.23 maf/year objective release from Lake Powell		4	4
20	Consider/evaluate criteria that avoids impacts to Tribe's CAP water	3		3
21	Consider/evaluate ocean desalination water to make up shortages	3		3
22	Consider/evaluate return of treated wastewater to river to supplement supplies	2	1	3
23	Consider/evaluate plan that limits releases from Lake Powell to 7.5 MAFY	2		2
24	Consider/evaluate plan that minimizes releases from Lake Powell	2		2
25	Consider/evaluate requiring use of artificial grass to conserve water	2		2
26	Guidelines should be premised upon proportionate sharing of shortages by Mexico	2		2
27	Consider/evaluate alternative pricing schedules for agricultural water that do not include subsidies and encourage conservation	1	1	2
28	Consider/evaluate new water allocation guidelines that protect critical habitats in Grand Canyon and elsewhere.	1	1	2
29	Consider/evaluate programs that can augment the available basin supplies, such as cloud seeding, ocean desalination, etc.	1	1	2
30	Consider/evaluate restrictions on outdoor water features to conserve water	1	1	2
31	Consider/evaluate specific measures that result in more efficient management of Colorado River water supplies	1	1	2
32	Develop strategies that facilitate transfer of water from senior water rights holder to more junior water users	1	1	2
33	Consider/evaluate benefits and effects of augmentation of Colorado River water supplies pursuant to 1968 Act		2	2
34	Consider/evaluate intra- and interstate sale, lease, transfer, trade or exchange of water within Basin		2	2
35	Consider/evaluate Lake Mead minimum storage elevation that optimizes water availability for all users & no other elevation protections		2	2
36	Evaluate impacts on diversions to each Priority water user under varying shortage conditions		2	2
37	Adjust the Colorado River System Simulation Model to properly calculate active storage in the Upper Basin		1	1
38	Any new guidelines show help delay likelihood of a Compact Call on the Upper Basin states		1	1
39	Balance water and electric needs against environmental requirements		1	1
40	Challenges claim that decreasing shortages will have positive impact on fish, wildlife or natural areas		1	1
41	Clarify the post-1968 non-Central Arizona Project rights in Arizona and the post-1968 rights in Nevada in order to determine how shortages will be distributed among the post-1968 entitlements		1	1

**Table V-19  
Water Supply / Quantity Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
42	Conduct and accurate evaluation of long-term costs and socioeconomic impacts associated with land fallowing		1	1
43	Consider charging surcharge to agricultural deliveries to fund conservation projects such as converting ditches to pipelines	1		1
44	Consider conservation of water supply consistent with Lakes Mead and Powell authorization laws	1		1
45	Consider market-based strategies		1	1
46	Consider Upper Basin releases that enhance storage in Lake Powell to maintain power generation at Glen Canyon	1		1
47	Consider/evaluate altering 602(a) storage parameters		1	1
48	Consider/evaluate alternatives that ensure sufficient flows for boat safety and navigation	1		1
49	Consider/evaluate Arizona's development of more local supplies to reduce reliance on Arizona project canals		1	1
50	Consider/evaluate benefits and effects of Lower Basin offstream storage		1	1
51	Consider/evaluate benefits and effects of operating Yuma Desalting Plant		1	1
52	Consider/evaluate criteria that include two levels of shortage determination, first affects CAP deliveries, and affects other Lower Basin State deliveries	1		1
53	Consider/evaluate criteria that includes conjunctive management of Lakes Powell and Mead		1	1
54	Consider/evaluate criteria that limits population and housing growth and increases in-stream-flows	1		1
55	Consider/evaluate criteria that requires equitable sharing of shortages between Upper and Lower basins	1		1
56	Consider/evaluate criteria that restricts reservoir releases when reservoir storage is below 50 percent of capacity	1		1
57	Consider/evaluate criteria that would require proportional sharing of short-term shortages to minimize impacts to low priority right holders	1		1
58	Consider/evaluate delivery or diversion restrictions that are imposed in reverse order of priority to protect the rights of holders of senior rights	1		1
59	Consider/evaluate delivery reductions based on actual hydrologic conditions		1	1
60	Consider/evaluate delivery reductions that are flexible and responsive to hydrologic conditions	1		1
61	Consider/evaluate development of contingency plans for equitable distribution of supplies under a shortage flow conditions	1		1
62	Consider/evaluate effect of annual releases from Glen Canyon Dam on humpback chub	1		1
63	Consider/evaluate effects on the ongoing litigation over water supply in the Gunnison River		1	1
64	Consider/evaluate effects that guidelines may have on recently adopted Interim Surplus Guidelines	1		1
65	Consider/evaluate elimination of 14.85 maf storage requirements set forth in Interim 602(a) Storage Guideline for Management of Colorado River		1	1
66	Consider/evaluate financial and economic feasibility of long-term fallowing program		1	1
67	Consider/evaluate financial and economic impacts of maintaining elevation of Lake Mead at or above minimum power pool elevation		1	1
68	Consider/evaluate guidelines that trigger drought conditions at Lake Powell when level drops below 3600 feet	1		1
69	Consider/evaluate how higher magnitude shortages would affect the cut-back of rights in the 1929 to 1968 pool of entitlements		1	1
70	Consider/evaluate including effects of climate variability and long-term trends in climate in analysis and future operations	1		1
71	Consider/evaluate minimum Grand Canyon flows of 8,000 cfs for protection of native fish	1		1
72	Consider/evaluate more stringent methods for determination of "normal" or "surplus" conditions	1		1
73	Consider/evaluate new source of supply that can provide 750,000 acre feet per year, source to be revealed only after commenter proposed contractual arrangements met	1		1
74	Consider/evaluate new water allocation guidelines that consider more accurate estimates of natural flow	1		1
75	Consider/evaluate operating measures that consider the full range of reservoir operations, not just low reservoir conditions		1	1
76	Consider/evaluate other complimentary programs such as tamarisk removal, cloud seeding, desalination, etc.	1		1
77	Consider/evaluate plan that augments supplies by constructing additional Upper Colorado River water storage capacity	1		1
78	Consider/evaluate plan that includes interstate water leasing consistent with Colorado River Board of California's 1991 proposal for water leasing	1		1

**Table V-19**  
**Water Supply / Quantity Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
79	Consider/evaluate plan that includes interstate water leasing consistent with Governor Roy Romer's proposal for the 40 year non-development of part of Colorado's allotted water under the	1		1
80	Consider/evaluate plan that stores more water in Upper Basin reservoirs to reduce evaporation losses	1		1
81	Consider/evaluate potential impacts to boating and fishing	1		1
82	Consider/evaluate potential impacts to fish and wildlife resources from decreased in-stream flows	1		1
83	Consider/evaluate potential impacts to Mittry Lake Wildlife Area by changed river operations	1		1
84	Consider/evaluate potential impacts to operations of Flaming Gorge and Gunnison River	1		1
85	Consider/evaluate potential impacts to other off-stream reservoirs such as Alamo Dam and Lake Pleasant	1		1
86	Consider/evaluate potential impacts to water supply intake pumps resulting from future reduced in-stream flows	1		1
87	Consider/evaluate programs that augment the water supply to the system		1	1
88	Consider/evaluate programs to allow use of mainstem water by forbearance, replacement, or exchange	1		1
89	Consider/evaluate reallocation of water between agricultural and municipal	1		1
90	Consider/evaluate Reclamation's ability to fund a long-term land following program		1	1
91	Consider/evaluate reducing California's Colorado River water supply and replacing it with sustainable supplies such as ocean desalination		1	1
92	Consider/evaluate replacing Southern California' Colorado River water supply with water from Northern California		1	1
93	Consider/evaluate requiring use of more efficient irrigation practices as means to conserve water	1		1
94	Consider/evaluate reservoir management strategy that would store water in headwater reservoirs as long as possible	1		1
95	Consider/evaluate role of watershed and soils disturbing activities on Colorado River system		1	1
96	Consider/evaluate shortage criteria that reduces deliveries to all users by same percentage amount	1		1
97	Consider/evaluate shortage criteria that reduces deliveries to all users, other than those with Present Perfected rights, by same percentage amount		1	1
98	Consider/evaluate specific mandatory conservation strategies tied to hydrologic predictions	1		1
99	Consider/evaluate storage losses and required conservation volumes associated with long-term land following programs		1	1
100	Consider/evaluate storage of surplus supplies in groundwater aquifers, when available	1		1
101	Consider/evaluate strategies that manage Lake Powell and Mead water levels to protect Las Vegas' water supply		1	1
102	Consider/evaluate strategies that protect Federal Reserved Water Rights	1		1
103	Consider/evaluate strategies that provide for equitable sharing of shortages between parties to international treaties	1		1
104	Consider/evaluate top water storage of users unused entitlement as opposed to re-allocation to other users		1	1
105	Consider/evaluate Upper Basin delivery schedules that allow releases less than 8.23 maf/year from Lake Powell	1		1
106	Consider/evaluate value of voluntary intra-state following and other arrangements deemed necessary to mitigate impacts resulting from shortages		1	1
107	Consider/evaluate water conservation effect of alternative rebate programs to convert turf to desert landscape		1	1
108	Criteria should assure 7.5 maf delivery to the Lower Basin		1	1
109	Criteria should give priority to meeting domestic and agricultural demands over power generation		1	1
110	Criteria should maintain current apportionment to assure state's future development project needs	1		1
111	Develop and use accurate Upper Basin depletions and projected new depletions for use in calculating 602(a) storage requirements		1	1
112	Develop basin-wide conjunction water supply management program that considers all sources of supply		1	1
113	Develop plan that maximizes beneficial use of the available water for domestic municipal and agricultural in U.S.	1		1
114	Development of shortage guidelines should consider protection of elevations that will allow SNWA intakes to function		1	1
115	Evaluate current planned equalization triggers and criteria used to calculate upper basin storage		1	1

**Table V-19  
Water Supply / Quantity Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
116	Evaluate effect of livestock and grazed areas on runoff and sediment		1	1
117	Evaluate effects on Treaty obligations with Tribes and Mexico, Biological Opinions, discharge and diversion permits, and other agreements, such as those to restore the Colorado River Delta.		1	1
118	Evaluate effects on groundwater from potential transition from surface water use to groundwater use		1	1
119	Evaluate effects on in-stream water quality and water reaching the Colorado River Delta, including water temperatures and flow fluctuations		1	1
120	Evaluate effects on the Southern Nevada Water Authority's drinking water supply and its intakes		1	1
121	Evaluate effects on water rights, including Tribal water rights		1	1
122	Evaluate effects on water supply diversion quantities and schedules		1	1
123	Evaluate effects that guidelines may have on urban areas		1	1
124	Evaluate guidelines ability to restore river flows to pre-dam conditions		1	1
125	Guidelines should be adopted in a timely manner to augment the water supplies and provide Nevada time to develop additional permanent supplies		1	1
126	Guidelines should be structured to give protection to senior entitlements as established in the 1968 Colorado River Basin Act and 1964 Supreme Court decree		1	1
127	Incorporate shortage criteria in the Lower Basin that recognizes water right priorities	1		1
128	Management Strategies should address adverse impacts to water deliveries to Mexico	1		1
129	NEPA analysis needs to evaluate impacts of the guidelines and strategies collectively with other proposed projects such as bypass flow replacement, operation of YDP, new regulatory storage facilities, etc.		1	1
130	Opposes development of expensive and complex Reclamation-managed land fallowing program as alternative to protect junior water users		1	1
131	Opposes inclusion of Conservation Before Shortage alternative in EIS		1	1
132	Opposes use of any water and power surcharges to fund Reclamation-managed land fallowing program		1	1
133	Re-evaluate how determination of "normal" or "surplus" conditions are made		1	1
134	Request consultation with Mexico to explain NEPA process and potential impacts on water quantity and quality to Mexico deliveries	1		1
135	Request that power production be removed from the storage algorithm used to model and determine releases from Lake Powell under Section 602(a)		1	1
136	Reservoir operating guidelines should benefit both Upper and Lower Basins		1	1
137	Secretary must account for needs and water rights of Navajo Nation	1		1
138	Shortage guidelines should cover only that group of entitlements that are post-September 30, 1968 in priority		1	1
139	Shortages should be first applied to users with post-1968 entitlements		1	1
140	Undertake a complete review of Section 602(a) of the Colorado River Basin Project Act of 1968		1	1
141	Undertake a complete review of the storage algorithm used to model and determine releases from Lake Powell under Section 602(a)		1	1
<b>Total Comments</b>		<b>3,057</b>	<b>161</b>	<b>3,218</b>

# **Appendix V**

## **Summary of Issues Raised in Comments Grouped by Resource/Issue Area**

**V-20 Water Quality Related Comments Ranked by Frequency of Comment**



**Table V-20  
Water Quality Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
1	Consider/evaluate sustainable sediment management program for Lake Powell and Lake Mead	947	9	956
2	Shortage guidelines and management strategies should all include assumption that Yuma Desalting Plant will be operated at full capacity		6	6
3	Consider/evaluate ocean desalination water to make up shortages	3		3
4	Consider/evaluate return of treated wastewater to river to supplement supplies	2	1	3
5	Consider/evaluate programs that can augment the available basin supplies, such as cloud seeding, ocean desalination, etc.	1	1	2
6	Evaluate effects on lake water quality		2	2
7	Evaluate effects on the timing and rate of lake turnover		2	2
8	Address potential salinity impacts to Mexico water deliveries	1		1
9	Avoid impacts to Glen Canyon Adaptive Management Program event-driven sediment experiments	1		1
10	Consider Colorado River Salinity Control Act in analysis		1	1
11	Consider/evaluate benefits and effects of operating Yuma Desalting Plant		1	1
12	Consider/evaluate effect and impacts to water quality		1	1
13	Consider/evaluate eliminating boating on Lake Mead to protect water quality from fuel spills	1		1
14	Consider/evaluate Glen Canyon Dam Seasonally Adjusted Steady Flow water management strategies to provide warmer release water temperatures to enhance humpback chub conservation	1		1
15	Consider/evaluate Lake Powell levels and flows thru Grand Canyon that benefit spawning and recruitment of razorback suckers as noted in BO for ISG	1		1
16	Consider/evaluate other complimentary programs such as tamarisk removal, cloud seeding, desalination, etc.	1		1
17	Consider/evaluate programs that augment the water supply to the system		1	1
18	Consider/evaluate reducing California's Colorado River water supply and replacing it with sustainable supplies such as ocean desalination		1	1
19	Consider/evaluate role of watershed and soils disturbing activities on Colorado River system		1	1
20	Consider/evaluate shortage criteria that reduces deliveries to all users, other than those with Present Perfected rights, by same percentage amount		1	1
21	Consider/evaluate start-up and expanded Yuma Desalter Project operations	1		1
22	Consider/evaluate water quality impacts below Lake Mead		1	1
23	Develop plan consistent with international treaty obligations	1		1
24	Evaluate effect of livestock and grazed areas on runoff and sediment		1	1
25	Evaluate effects on Treaty obligations with Tribes and Mexico, Biological Opinions, discharge and diversion permits, and other agreements, such as those to restore the Colorado River Delta.		1	1
26	Evaluate effects on dilution of perchlorate entering Lake Mead from Henderson, Nevada via Las Vegas Wash		1	1
27	Evaluate effects on general water quality and end uses of water going to Arizona, California, Nevada, and Mexico		1	1
28	Evaluate effects on in-stream water quality and water reaching the Colorado River Delta, including water temperatures and flow fluctuations		1	1
29	Evaluate effects on salinity, mercury, sediment, radioactive substances and other constituents of Lower Colorado River water		1	1
30	Evaluate effects on sediment movement and impacts on beach replenishment in the Grand Canyon		1	1
31	Evaluate effects on the Southern Nevada Water Authority's drinking water supply and its intakes		1	1
32	Incorporate shortage criteria in the Lower Basin that minimizes impacts to water quality of low reservoir conditions	1		1
33	Management Strategies should address adverse impacts to water deliveries to Mexico	1		1
34	NEPA analysis needs to evaluate impacts of the guidelines and strategies collectively with other proposed projects such as bypass flow replacement, operation of YDP, new regulatory storage facilities, etc.		1	1
35	Request consultation with Mexico to explain NEPA process and potential impacts on water quantity and quality to Mexico deliveries	1		1
<b>Total Comments</b>		<b>964</b>	<b>38</b>	<b>1,002</b>

# **Appendix V**

## **Summary of Issues Raised in Comments Grouped by Resource/Issue Area**

**V-21 Water Rights Related Comments Ranked by Frequency of Comment**

**Table V-21**  
**Water Rights Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
1	Consider/evaluate costs and benefits of decommissioning Glen Canyon Dam	975	6	981
2	Consider/evaluate transfer of Lake Powell and Lake Mead storage to groundwater aquifers	952	4	956
3	Update Compact to reflect the Colorado River's supply limitations and changing societal demands	946	5	951
4	Develop plan that maximizes storage at Lake Mead and minimizes storage at Lake Powell	48	10	58
5	Consider/evaluate Arizona shortage and Lake Mead trigger proposal with 600 KAF delivery reduction		8	8
6	Guidelines and strategies should provide priority to water supply over hydrogeneration		8	8
7	Consider/evaluate flexible criteria that would require consultation with Arizona for reductions in excess of 600 KAF		7	7
8	Consider/evaluate guidelines that require Mexico and Nevada to share in shortages with Arizona		7	7
9	Consider/evaluate managing new housing development as means to manage water demands	4		4
10	Consider/evaluate apportioning shortages among Priority 4 water users consistent with Law of the River and respective contracts		4	4
11	Consider/evaluate guidelines that require Mexico share in shortages		4	4
12	Evaluate requirement of minimum 8.23 maf/year objective release from Lake Powell		4	4
13	Consider/evaluate criteria that avoids impacts to reliability to Tribe's CAP water	3		3
14	Consider/evaluate effects that guidelines may have on the Law of the River	1	2	3
15	Consider/evaluate plan that limits releases from Lake Powell to 7.5 MAFY	2		2
16	Consider/evaluate plan that minimizes releases from Lake Powell	2		2
17	Guidelines should be premised upon proportionate sharing of shortages by Mexico	2		2
18	Consider/evaluate new water allocation guidelines that protect critical habitats in Grand Canyon and elsewhere.	1	1	2
19	Develop strategies that facilitate transfer of water from senior water rights holder to more junior water users	1	1	2
20	Consider/evaluate benefits and effects of augmentation of Colorado River water supplies pursuant to 1968 Act		2	2
21	Consider/evaluate intra- and interstate sale, lease, transfer, trade or exchange of water within Basin		2	2
22	Evaluate impacts on diversions to each Priority water user under varying shortage conditions		2	2
23	Any new guidelines show help delay likelihood of a Compact Call on the Upper Basin states		1	1
24	Avoid guidelines and strategies that increase risk of shortage in Lower Basin that are not consistent with Law of the River		1	1
25	Challenges claim that decreasing shortages will have positive impact on fish, wildlife or natural areas		1	1
26	Clarify the post-1968 non-Central Arizona Project rights in Arizona and the post-1968 rights in Nevada in order to determine how shortages will be distributed among the post-1968 entitlements		1	1
27	Consider charging surcharge to agricultural deliveries to fund conservation projects such as converting ditches to pipelines	1		1
28	Consider conservation of water supply consistent with Lakes Mead and Powell authorization laws	1		1
29	Consider market-based strategies		1	1
30	Consider/evaluate altering 602(a) storage parameters		1	1
31	Consider/evaluate benefits and effects of Lower Basin offstream storage		1	1
32	Consider/evaluate criteria that include two levels of shortage determination, first affects CAP deliveries, and affects other Lower Basin State deliveries	1		1
33	Consider/evaluate criteria that limits population and housing growth and increases in-stream-flows	1		1
34	Consider/evaluate criteria that requires equitable sharing of shortages between Upper and Lower basins	1		1
35	Consider/evaluate criteria that restricts reservoir releases when reservoir storage is below 50 percent of capacity	1		1
36	Consider/evaluate criteria that would require proportional sharing of short-term shortages to minimize impacts to low priority right holders	1		1
37	Consider/evaluate delivery or diversion restrictions that are imposed in reverse order of priority to protect the rights of holders of senior rights	1		1
38	Consider/evaluate delivery reductions based on actual hydrologic conditions		1	1
39	Consider/evaluate delivery reductions that are flexible and responsive to hydrologic conditions	1		1
40	Consider/evaluate development of contingency plans for equitable distribution of supplies under a shortage flow conditions	1		1
41	Consider/evaluate effects on the ongoing litigation over water supply in the Gunnison River		1	1

**Table V-21**  
**Water Rights Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
42	Consider/evaluate elimination of 14.85 maf storage requirements set forth in Interim 602(a) Storage Guideline for Management of Colorado River		1	1
43	Consider/evaluate guidelines that trigger drought conditions at Lake Powell when level drops below 3600 feet	1		1
44	Consider/evaluate how higher magnitude shortages would affect the cut-back of rights in the 1929 to 1968 pool of entitlements		1	1
45	Consider/evaluate more stringent methods for determination of "normal" or "surplus" conditions	1		1
46	Consider/evaluate new source of supply that can provide 750,000 acre feet per year, source to be revealed only after commenter proposed contractual arrangements met	1		1
47	Consider/evaluate new water allocation guidelines that consider more accurate estimates of natural flow	1		1
48	Consider/evaluate plan that augments supplies by constructing additional Upper Colorado River water storage capacity	1		1
49	Consider/evaluate plan that includes interstate water leasing consistent with Colorado River Board of California's 1991 proposal for water leasing	1		1
50	Consider/evaluate plan that includes interstate water leasing consistent with Governor Roy Romer's proposal for the 40 year non-development of part of Colorado's allotted water under the	1		1
51	Consider/evaluate potential of new law suit opposing All-American Canal Lining Project	1		1
52	Consider/evaluate reallocation of water between agricultural and municipal	1		1
53	Consider/evaluate reducing California's Colorado River water supply and replacing it with sustainable supplies such as ocean desalination		1	1
54	Consider/evaluate replacing Southern California's Colorado River water supply with water from Northern California		1	1
55	Consider/evaluate shortage criteria that reduces deliveries to all users by same percentage amount	1		1
56	Consider/evaluate shortage criteria that reduces deliveries to all users, other than those with Present Perfected rights, by same percentage amount		1	1
57	Consider/evaluate storage of surplus supplies in groundwater aquifers, when available	1		1
58	Consider/evaluate strategies that manage Lake Powell and Mead water levels to protect Las Vegas' water supply		1	1
59	Consider/evaluate strategies that protect Federal Reserved Water Rights	1		1
60	Consider/evaluate strategies that provide for equitable sharing of shortages between parties to international treaties	1		1
61	Consider/evaluate top water storage of users unused entitlement as opposed to re-allocation to other users		1	1
62	Consider/evaluate Upper Basin delivery schedules that allow releases less than 8.23 maf/year from Lake Powell	1		1
63	Criteria should assure 7.5 maf delivery to the Lower Basin		1	1
64	Criteria should give priority to meeting domestic and agricultural demands over power generation		1	1
65	Criteria should maintain current apportionment to assure state's future development project needs	1		1
66	Develop and use accurate Upper Basin depletions and projected new depletions for use in calculating 602(a) storage requirements		1	1
67	Develop basin-wide conjunction water supply management program that considers all sources of supply		1	1
68	Develop plan consistent with international treaty obligations	1		1
69	Develop plan that maximizes beneficial use of the available water for domestic municipal and agricultural in U.S.	1		1
70	Evaluate effects on Treaty obligations with Tribes and Mexico, Biological Opinions, discharge and diversion permits, and other agreements, such as those to restore the Colorado River Delta.		1	1
71	Evaluate effects on groundwater from potential transition from surface water use to groundwater use		1	1
72	Evaluate effects on water rights, including Tribal water rights		1	1
73	Evaluate guidelines ability to restore river flows to pre-dam conditions		1	1
74	Guidelines should be structured to give protection to senior entitlements as established in the 1968 Colorado River Basin Act and 1964 Supreme Court decree		1	1
75	Incorporate shortage criteria in the Lower Basin that recognizes water right priorities	1		1
76	Management Strategies should address adverse impacts to water deliveries to Mexico	1		1
77	Protect cultural resources in Glen and Grand canyons by discontinuing storage in Lake Powell	1		1
78	Request consultation with Mexico to explain NEPA process and potential impacts on water quantity and quality to Mexico deliveries	1		1

**Table V-21**  
**Water Rights Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
79	Request that power production be removed from the storage algorithm used to model and determine releases from Lake Powell under Section 602(a)		1	1
80	Reservoir operating guidelines should benefit both Upper and Lower Basins		1	1
81	Secretary must account for needs and water rights of Navajo Nation	1		1
82	Shortage guidelines should cover only that group of entitlements that are post-September 30, 1968 in priority		1	1
83	Shortages should be first applied to users with post-1968 entitlements		1	1
84	Undertake a complete review of Section 602(a) of the Colorado River Basin Project Act of 1968		1	1
85	Undertake a complete review of the storage algorithm used to model and determine releases from Lake Powell under Section 602(a)		1	1
86	Update reference to drought or the allocation of waters between the U.S. and Mexico consistent with terminology used in 1944 Water Treaty	1		1
<b>Total Comments</b>		<b>2,970</b>	<b>108</b>	<b>3,078</b>

# **Appendix V**

## **Summary of Issues Raised in Comments Grouped by Resource/Issue Area**

**V-22 Miscellaneous Related Comments Ranked by Frequency of Comment**

**Table V-22  
Miscellaneous Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
1	Affected water users and respective State should be allowed to determine how to manage shortages within respective state		4	4
2	Request regular consultations with tribe during development of alternatives	3	1	4
3	Request Secretary to assign representative to act as U.S.'s trustee for tribe and provide for direct participation in process	3		3
4	Request that Hoover power contractors be consulted on any changes or potential impacts relating to Hoover power production	1	2	3
5	Request to be added to mailing list, kept informed of progress, and provided with copies of study reports	1	1	2
6	Arizona Game & Fish Department will work with lower basin states to develop report to congress, if needed	1		1
7	Consider/evaluate potential impacts of proposed Yucca Mountain waste disposal site on Colorado River and groundwater supplies	1		1
8	Consider/evaluate potential of new law suit opposing All-American Canal Lining Project	1		1
9	Consider/evaluate reconstruction of Glen Canyon Dam to be made structurally safer	1		1
10	Consider/evaluate strategies that protect federal mandates such as protect nation and preserve national sovereignty	1		1
11	In the absence of a Consensus Plan, the Basin states would like the opportunity to submit specific alternatives for evaluation		1	1
12	Please advice if there will be additional public meetings in Phoenix	1		1
13	Provide information on public scoping meetings.		1	1
14	Provide results of public scoping meetings		1	1
15	Quechan Tribe requests to be listed as a party of interest and notified of additional opportunities to comment	1		1
16	Request consultation with Mexico to explain NEPA process and potential impacts on water quantity and quality to Mexico deliveries	1		1
17	Request that Western Area Power Administration be included in process to help analyze potential impacts relating to power production		1	1
18	Secretary must account for needs and water rights of Navajo Nation	1		1
19	Support the comments and recommendations submitted by the Arizona Department of Water Resources		1	1
20	Supports position and recommendations of Basin States	1		1
21	Supports position of Glen Canyon Institute for Glen Canyon Dam	1		1
22	Update reference to drought or the allocation of waters between the U.S. and Mexico consistent with terminology used in 1944 Water Treaty	1		1
23	Use process that weighs benefits against impacts	1		1
<b>Total Comments</b>		<b>21</b>	<b>13</b>	<b>34</b>

# **Appendix V**

## **Summary of Issues Raised in Comments Grouped by Resource/Issue Area**

**V-23 Alternatives Related Comment Ranked by Frequency of Comment**



**Table V-23**  
**Alternatives Related Comments Ranked by Frequency of Comment**

Comment No.	Comment Summary	Group 1	Group 2	Total
1	Consider /evaluate Arizona shortage and Lake Mead trigger proposal with 600 KAF delivery reduction		8	8
2	Consider/evaluate submitted shortage criteria alternative - "Conservation Before Shortage"	1	7	8
3	Opposes inclusion of Conservation Before Shortage alternative in EIS		1	1
<b>Total Comments</b>		<b>1</b>	<b>16</b>	<b>17</b>

# **Appendix W**

## **Copies of Unique Comment Letters**

### **W.1 Business Comment Letters (B)**

**From:** <SchubeCM@aol.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 7/26/05 8:56AM  
**Subject:** Public Comment-Glen Canyon

To Whom It May Concern:

As a guide on the Colorado Plateau that has seen a lot of different stages of how Glen Canyon and Lake Powell have operated over the years, it is quite obvious that government officials seriously need to take a hard look at new management strategies on the operation of Glen Canyon Dam, Lake Powell, the Grand Canyon and Lake Mead. There are serious issues that need to be dealt with. I am not a "radical" viewpoint and realize that the total de-commission of Glen Canyon Dam is probably not realistic but it is obvious that the Colorado Compact needs to be "redone" and management issues for Grand Canyon need to be seriously dealt with. As far as Glen Canyon and Lake Powell, it is too late, the damage has been done. It is an eyesore and I am somewhat embarrassed to take customers into the upper regions of the "lake" and show them what has been done to it. Most people just shake their head in disgust. The lower basin needs to get in gear and get serious about how they are or need to adjust to inadequate water supplies.

Lynn Schuett

| 1



## **Absurd Computer Models of Evaporation and Sedimentation**

For the Lake Powell Meeting of 7.28.2005 by USBR

### **Evaporation**

Computer models of evaporation loss may be right in their narrow focus, but the summer evaporation is not really a "loss" of water, just a loss of canal and pipeline water for downstream water users. Summer clouds are initially beneficial for the shade they cause and ultimately the precipitation they become.

### **Sedimentation**

Computer models of sedimentation were not used before 200 B.C when three dams on the Oronte River in Lebanon and Syria were built, using large hand-hewn basalt blocks and a primitive mortar.

The Homs "Lake" has held water for over 2,200 years and plays today still an important function of the irrigation culture of the Oronte Valley. There is some silt buildup and the dam has been raised twice during its existence. Sedimentation is a certainty for any artificial impoundment, but its rate of anticipated progress need not be exaggerated. | 1

Mindless extrapolation of "anticipated" silt buildup of an artificial impoundment is absurd, or "junk science", but quite useful as a fund-raising device among politically motivated activists.

### **Conclusion**

Agenda-driven panic is not the right solution. Sane, detached, neutral, professional consideration of all factors is called for in matters that may influence our actions beyond the current century. | 2

Werner A. Ruemmele PE

## Kucera, Cindy

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**From:** Paul Rusanowski [paul.rusanowski@shingleygroup.com]  
**Sent:** Tuesday, August 30, 2005 10:10 AM  
**To:** strategies@lc.usbr.gov; strategies@uc.usbr.gov  
**Subject:** Comments - lakes Powell and Mead

**Attachments:** Co R planning.doc



Co R planning.doc  
(99 KB)

See attached document. Hard copy sent in the mail.

Paul C. Rusanowski, Ph.D.  
Regional Manager  
The Shipley Group  
1584 S 500 W, Ste 201  
Woods Cross, UT 84010  
888-270-2157 (Off)  
888-270-2158 (fax)  
801-499-7831 (cell)



August 30, 2005

Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
Attention: UC-402  
125 South State Street  
Salt Lake City, UT 84318-1147

Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
Attention: BC00-1000  
PO Box 61470  
Boulder City, NV 89006-1470

Subject: Comments on Development of Management Strategies for Lake Powell and  
Lake Mead Under low Reservoir Conditions

Gentlemen:

I recommend that the following three management strategies be considered in the above planning process by the Bureau of Reclamation (BR).

The first strategy concerns the use of reclaimed water within the Colorado River above Lake Mead. During low reservoir conditions the BR should consider the value of utilizing reclaimed water from major cities to supplement natural river flows. Contracts could be negotiated with major cities (populations greater than 5,000) to return 50 -75% or more of the water withdrawn from the Colorado River for City purposes after treatment to meet water quality requirements. Such contracts would help to stabilize, and possibly increase, low summer flows during periods of drought. Under normal reservoir management conditions the Cities would still be able to use reclaimed water for secondary/industrial purposes rather than contracted discharge back into the river. | 1

The second strategy concerns use of reclaimed water in the greater Las Vegas area. During low reservoir conditions the BR should consider the value of utilizing reclaimed water from the Greater Las Vegas area to supplement flows into Lake Mead. Treated and reclaimed water could be piped to the Moapa area and discharged into the Muddy River to flow back into Lake Mead. Again, a contract could be negotiated with the City of Las Vegas and/or the SNWA to ensure that 50-75% of the reclaimed water from the City is discharged into the Muddy River when low reservoir conditions exist. When such conditions do not exist then reclaimed water could be used for other industrial and commercial uses.

The third strategy concerns management and storage of surplus waters within the lower Colorado River drainage. The Las Vegas area has depleted many of its natural ground aquifers. This depletion has created an opportunity to store surplus river water in these partially depleted aquifers. Surplus water could be pumped to these aquifers during periods of excess precipitation and river flows to be withdrawn later during the summer or in periods of drought. Such a water management system would more efficiently utilize available Colorado River water to satisfy uses in the lower river area. It would lessen demand during low flow periods and provide a more equitable distribution of water resources to all users throughout the year. It would also provide more flexibility in management of both Lakes Mead and Powell during low reservoir conditions by altering summer water demand requirements. Aquifers in Clark County, Nevada would be the most logical to utilize for water storage in this management strategy.

2

I recognize that these three strategies likely involve actions outside of your agency authority. However, the benefits to your mission warrant their consideration at this time. I believe that the inclusion of management strategies that rely on cooperation with other federal, State and local agencies is clearly appropriate in seeking win-win solutions for managing Lakes Powell and Mead under low reservoir conditions. Defining the nature and extent of commitments and cooperating entities, and their willingness to implement cooperative actions for any or all of these strategies, will determine the feasibility and practicality of their integration into your mission.

Please keep me informed of your progress in developing reservoir management strategies and of future opportunities to provide input.

Sincerely,

Paul C. Rusanowski, Ph.D.  
Regional Manager

B-2000 Watermasters.txt

From: LC strategies [strategies@lc.usbr.gov]  
Sent: Wednesday, September 28, 2005 1:05 PM  
To: pfm@watermasters.com  
Subject: Re: Development of Colorado River Management Strategies

Mr. Miller,

Thank you for your interest in Reclamation's Colorado River programs. Jayne Harkins, Deputy Regional Director, Lower Colorado Region, most likely spoke with you at the Arizona Hydrological Society Symposium.

On September 30, 2005, Reclamation will notice our intent in the Federal Register to prepare an environmental impact statement and to solicit comments and hold public scoping meetings on the development of Lower Basin shortage guidelines and coordinated management strategies for the operation of Lake Powell and Lake Mead under low reservoir conditions. The full text of that notice will be posted on our website, <http://www.usbr.gov/lc/riverops.html>, as well updated project information throughout the process. We will also add you to our mailing list.

The notice will include information on four public meetings that will be held to solicit comments on the scope of specific shortage guidelines and other coordinated management strategies and the issues and alternatives that should be analyzed. Oral and written comments will be accepted at the public meetings to be held at the following locations:

Tuesday, November 1, 2005 \* 6:00 p.m. to 8:00 p.m., Hilton Salt Lake City Center, Topaz Room, 255 South West Temple, Salt Lake City, Utah.

Wednesday, November 2, 2005 \* 6:00 p.m. to 8:00 p.m., Adam's Mark Hotel, Tower Court D, 1550 Court Place, Denver, Colorado.

Thursday, November 3, 2005 \* 6:00 p.m. to 8:00 p.m., Arizona Department of Water Resources, Third Floor, Conference Rooms A&B, 500 North Third Street, Phoenix, Arizona.

Tuesday, November 8, 2005 \* 6:00 p.m. to 8:00 p.m., Henderson Convention Center, Grand Ballroom, 200 South Water Street, Henderson, Nevada.

Written comments on the proposed development of these strategies may be sent by close of business on Wednesday, November 30, 2005, to: Regional Director, Bureau of Reclamation, Lower Colorado Region, Attention: BC00-1000, P.O. Box 61470, Boulder City, Nevada 89006-1470, faxogram at (702) 293-8156, or e-mail at [strategies@lc.usbr.gov](mailto:strategies@lc.usbr.gov); and/or Regional Director, Bureau of Reclamation, Upper Colorado Region, Attention: UC-402, 125 South State Street, Salt Lake City, Utah 84318-1147, faxogram at (801) 524-3858, or e-mail at [strategies@uc.usbr.gov](mailto:strategies@uc.usbr.gov).

Again, thank you for your interest in Reclamation's projects.

Sincerely,

Nan Yoder  
Program Manager  
Boulder Canyon Operations Office



B-2000 Watermasters.txt

>>> "Paul Miller" <pfm@watermasters.com> 09/27/05 7:11 PM >>>  
I recently attended the Arizona Hydrological Society Symposium conducted 21  
Sept to 24 Sept in Flagstaff, Arizona. One of the featured  
presenters was  
to be Mr. Robert Johnson from the Boulder City office of the  
Bureau of Reclamation. Due to an unexpected meeting in D.C., a  
lady by the first  
name of JANE spoke in his place. Following her presentation I  
spoke very  
briefly with her and at that time I thought I had obtained an  
email address for her, but apparently I was mistaken. I would like  
to make contact with her, if that is possible, as I am very  
interested in pursuing how the public can have "voice" in the  
activities of the Bureau which affect those of us  
dependent upon the Colorado River. Jane, I believe indicated  
there was to  
be public input session in the near future and I would like to  
know the  
nature and location of these events. Thank you

Paul F. Miller

Physical Address: 8686 North Central Ave - Suite 208

Phoenix, Arizona 85020-3153

Mail Address: PO Box 47146

Phoenix, Arizona 85068-7146

Voice - 602-943-2512

Fax - 602-943-2542

Cell Phone 602-228-2357

email ... pfm@watermasters.com

The reasonable man adapts himself to the world;  
the unreasonable one persists in trying to adapt  
the world to himself. Therefore, all progress  
depends on the unreasonable man.

George Bernard Shaw

**Kucera, Cindy**

---

**From:** Craig Morgan [craigmorgan@avalex.info]  
**Sent:** Wednesday, November 30, 2005 4:25 PM  
**To:** strategies@lc.usbr.gov  
**Subject:** Colorado River Reservoir Operations: Development of Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions  
**Attachments:** EIS Scope Comments.doc

Attached please find my comments on the proposed shortage guideline development

Craig W. Morgan P.E.  
Avalex Inc.

P.O. Box 550218  
South Lake Tahoe, California 96155

591 Tahoe Keys Blvd., Suite D6  
South Lake Tahoe, California 96150

(530) 543-3200  
Fax (530) 543-3201  
[craigmorgan@avalex.info](mailto:craigmorgan@avalex.info)

VIA EMAIL

November 30, 2005

Mr. Robert W. Johnson  
Regional Director,  
Bureau of Reclamation  
Lower Colorado Region, Attention: BCOO-1000  
P.O. Box 61470  
Boulder City, Nevada 89006-1470

**Re: Colorado River Reservoir Operations: Development of Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions**

Dear Mr. Johnson,

The following scoping comments are provided in response to the notice to solicit public comments on the development of alternatives considered in the development of shortage guidelines and coordinated management strategies for the operation of Lake Powell and Lake Mead under low reservoir conditions (70 Fed. Reg. 57322, dated September 30, 2005).

It is understood that the purpose of the shortage guidelines and management strategies are to 1) inform the Secretary of the Department of the Interior's (Secretary's) decision in the Annual Operating Plan process during periods of shortage; and 2) provide a degree of certainty to the water users in the Lower Basin. In order to achieve these purposes, it is expected that the Secretary in its role as Water Master for the Colorado River will uphold the collection of statutes, interstate compacts, regulations, court decisions, court decrees, and international treaty and tribal water rights that are known as the "Law of the River". The development of shortage guidelines that are inconsistent with this body of law will only circumvent the second goal as outlined by the Bureau – that of providing a degree of certainty to water users. Indeed, the fact that the Secretary has undertaken the development of shortage guidelines has already introduced uncertainty and doubt among many water users on the river, in as much as the specter now exists that the Secretary may change the "Law of the River".

One of the foundations of the "Law of the River" is the longstanding precept of "first in time, first in right". This precept, which is a major tenet of Western Water Law, provides a measure of certainty to all water users. The precept exists to resolve questions of water use during periods of a shortage and it is expected that all of the alternatives considered in the development of the shortage guidelines will abide by it. Suggestions by some observers that urban water users should be given a higher priority during a shortage on the river because they have a greater need are misplaced and only encourages many of these junior appropriators to be even less prudent in their water supply planning efforts than they are today. This will only lead to further and more significant conflicts on the river in the future. It is the responsibility of each water user on the river to prudently plan for their

Mr. Robert W. Johnson

November 30, 2005

Page 2 of 2

own water supply needs given the limitations that exist, and other users on the river should not be penalized for the failure of those who do not do so properly. It is important, therefore, that the Secretary in the development of alternative shortage management strategies identify how each alternative adheres to the "Law of the River". Unless this is done, it is difficult to ascertain whether a specific alternative is reasonable or feasible.

1

With respect to the development of specific criteria in determining when a shortage should be declared, the Secretary should revisit how it determines "normal" or "surplus" conditions on the Colorado. The determination of "surplus" and "normal" conditions has a direct bearing upon when a "shortage" will occur and, therefore, should be included in any analysis regarding shortage guidelines. For example, as has been observed by others in recent comments to the Bureau, if the trigger for declaring a surplus is set too low, then surpluses may be determined in years when in fact no such surplus occurs leading to unwarranted shortages in subsequent years.

2

In establishing a "shortage" trigger elevation, it is recommended that less significance be given to an arbitrary elevation in Lake Mead that some view as necessary to protect the Southern Nevada Water Authority's lower intake structures and a minimum power pool, and more significance be given to utilizing a minimum storage elevation that optimizes the water availability for all water users on the river taking into consideration water right priorities. The same observation applies with respect to any similar elevations established for Lake Powell.

3

4

There is no doubt that assessing the impacts of each selected alternative will entail a complicated analysis of the environmental and economic impacts of not only the river system, but of each of the river's water users and their area of use. This analysis should encompass both the direct impacts of each management alternative and the indirect impacts of which there will be many. For example, any further reductions in flow to agricultural users in the Imperial Valley will correspondingly result in reductions in flow to the Salton Sea causing significant impacts to air quality if no mitigation is provided. Another significant impact that requires careful evaluation is the impact of shortage management strategies on the water quality below Lake Mead.

5

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Thank you for considering these comments. I would appreciate being adding to your mailing list for correspondence related to this project.

Sincerely,

*/c/ Craig W. Morgan*

Craig W. Morgan, P.E.  
Principal Engineer  
Avalex Inc.

Cc: Michael Abatti  
James Abatti

B-2001

# **Appendix W**

## **Copies of Unique Comment Letters**

### **W.2 Federal Agency Comment Letters (F)**





**Department of Energy**  
 Western Area Power Administration  
 P.O. Box 11606  
 Salt Lake City, UT 84147-0606

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JUN 13 2005

Mr. Bob Johnson  
 Regional Director  
 Lower Colorado Regional Office  
 U.S. Bureau of Reclamation  
 P.O. Box 61470  
 Boulder City, NV 89006-1470

Mr. Rick Gold  
 Regional Director  
 Upper Colorado Regional Office  
 U.S. Bureau of Reclamation  
 125 South State Street, Room 6107  
 Salt Lake City, UT 84138-1102

402  
700  
OR 100

Dear Mr. Johnson and Mr. Gold:

In response to the Colorado River Management Work Group Process Meeting (Meeting) on May 26, Western is providing its comments about the issues raised. First, we commend Reclamation for proactively pursuing solutions to the challenges posed by low-water storage and large water demands on the Colorado River. Pursuing a solution, at this time, should mitigate the serious impacts to both the water and power users that, otherwise, might ensue in the future.

1

The two largest hydropower facilities in the Southwest are the Hoover and Glen Canyon Power Plants. Power from these plants plays a critical role in interconnected power system operations, stability, and reliability in the WACM and WALC control areas as well as the Western Interconnection as a whole. Additionally, the low-cost hydropower generation is crucial to the financial condition of many of our customers in the Upper and Lower Basins. These include municipalities, Native American tribes, electrical cooperatives, Federal and State facilities, and, of course, the many water users who rely on the Colorado River generation for project pumping.

This generation is the principal revenue source for Reclamation's irrigation projects in the Upper and Lower Basin States and many other uses on the river. Loss of either of these generation facilities would severely impact Western's ability to fund dam and power system operations and maintenance, repay the Federal investment in these facilities, and support the many environmental programs funded from power revenues. With this in mind, the focus of our comments is to ensure that Federal hydropower generation is provided serious consideration during this process for the benefit of the Colorado River Storage, Boulder Canyon, and Parker-Davis projects, our customers, and the general public.

2

The Meeting's purpose was to discuss the process by which the guidelines for operating in shortage or low-reservoir conditions will be developed and implemented. We believe there were two areas of concern related to the process. First, is the scope of the process - primarily whether Lake Powell releases should be within the scope of the process or only Lower Basin shortage guidelines. The second concern is the type of process utilized, such as modification of the Long-Range Operating Criteria (LROC) or development of interim guidelines. Directly related to the type of process is the duration of the guidelines developed and the ability to perform future reviews or updates of these guidelines.

3

4

During discussions at the Meeting about the type of process to pursue, an opinion was expressed that the process should be very similar to that of the Interim Surplus Guidelines (ISG) and should terminate coincident with the ISG in 2016. The ISG process involved an environmental impact



statement and a subsequent record of decision. Western has concerns regarding this approach. The current Hoover Electric Service Contracts terminate in 2017. Western could face tremendous uncertainty about the resources available at Hoover if the shortage guidelines were to expire a year before the new marketing period begins.

Of the options discussed, perhaps a modification of the LROC would be the best option for implementing the new shortage/low-reservoir guidelines. The advantages of this process are the following:

5

- 1. It provides continuity for the guidelines with regular reviews to enable changes as needed.
- 2. An extensive environmental review should not be required and would, therefore, be easier to implement.
- 3. Decisions made would be within the scope of the Secretary of Interior's discretionary authority to formulate and execute the LROC.

Finally, we support a process to

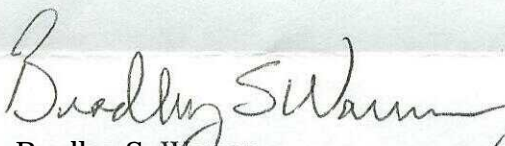
- 1. Incorporate shortage criteria in the Lower Basin that would recognize water right priorities in the Lower Colorado River, minimize the impacts on water quality of low reservoir conditions, and maintain power generation capacity to Lower Basin customers; and
- 2. Consider Upper Basin releases as contemplated by the Colorado River Compact that could enhance storage in Lake Powell to maintain power generation at Glen Canyon and continue to produce power repayment revenue during drought periods for the water user and CRSP customer benefits.

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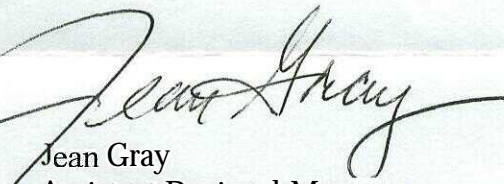
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We appreciate this opportunity to provide comments about the issues raised at the Meeting.

Sincerely,



Bradley S. Warren  
CRSP Manager  
CRSP Management Center



Jean Gray  
Assistant Regional Manager  
for Power Marketing  
Desert Southwest Regional Office

cc:

Mr. Terry Fulp  
Area Manager  
Boulder Canyon Operation Office  
P.O. Box 61470  
Boulder City, NV 89006

Mr. Tom Ryan  
Upper Colorado Regional Office  
U.S. Bureau of Reclamation  
125 South State Street, Room 6107  
Salt Lake City, UT 84138-1147



International Boundary and Water Commission  
United States Section  
Engineering Department  
4171 N. Mesa, Suite C-100  
El Paso, TX 79902

July 20, 2005

Robert W. Johnson  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
Attention: BCOO-1000  
P.O. Box 61470  
Boulder City, Nevada 89006-1470

Dear Mr. Johnson:

The United States Section of the International Boundary and Water Commission (USIBWC), has reviewed the news release entitled "Reclamation Seeks Public Comments on Development of Management Strategies for Lake Powell and Lake Meade Under Low Reservoir Conditions" dated June 15, 2005, and the Federal Register Notice on the action entitled "Colorado River Reservoir Operations: Development of Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions" hereon after referred to as Management Strategies. The USIBWC hereby provides the following comments presented on the Management Strategies document. These comments address potential discretionary and/or indirect impacts to the 1944 Water Treaty of the International Boundary and Water Commission, United States and Mexico (IBWC), and IBWC Minutes and USIBWC responsibilities that could result in adverse transboundary effects related to the waters of the Colorado River. Based on the information provided, trends may be that the days of surplus waters are at an end, water conservation is imperative and stable water quantity in the upper basin is necessary.

General Comments

1. The USIBWC continuously works with the Mexican Section of the International Boundary and Water Commission, on deliveries of Colorado River waters according to the 1944 Water Treaty. The 1944 Water Treaty is the abbreviation for "Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande" signed November 14, 1944. As defined in the 1944 Water Treaty, "Any other quantities arriving at the Mexican points of diversion, with the understanding that in any year in which, as determined by the United States Section, there exists a surplus of waters of the Colorado River in excess of the amount necessary to supply users in the United States and the guaranteed quantity of 1,500,000 acre-feet (1,859,234,000 cubic meters) annually to Mexico, the United States undertakes to deliver to Mexico, in the manner set out in Article 15 of this Treaty, additional waters of the Colorado River system to provide a total quantity not to exceed 1,700,000 acre-feet (2,098,931,000 cubic meters) a year." In respect to this treaty, we ask that any action you propose on the Management Strategies addresses the adverse impacts that may occur upon the water quantity.

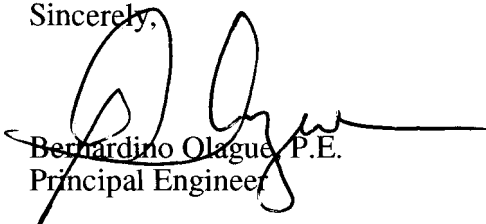


2. According to IBWC Minute No. 242, "The United States shall adopt measures to assure that not earlier than January 1, 1974, and no later than July 1, 1974, the approximately 1,360,000 acre-feet (1,677,545,000 cubic meters) delivered to Mexico upstream of Morelos Dam, have an annual average salinity of no more than 115 p.p.m. +/- 30 p.p.m. U.S. count (121 p.p.m. +/- 30 p.p.m. Mexican count) over the annual average salinity of Colorado River waters which arrive at Imperial Dam ..." The Management Strategies have the potential of causing adverse impact to water quality from the salinity of the Colorado River waters in both countries. We request that language be included in the Management Strategies stating the IBWC Minute No. 242 not be changed and that provisions are included to address potential salinity issues in the Management Strategy. 2  
3
  
3. We understand that existing water quantity is more stable in the lower basin reservoirs than in the upper basin, that salinity accumulates in the upper basin reservoirs and does not affect the lower basin, and water coming to Imperial Dam is of good quality. We would welcome Reclamation's support in a technical meeting with Mexico should future developments of the Management Strategies indicate a trend otherwise, such as an explanation of National Environmental Policy Act alternatives developed about water quantity and quality of deliveries made to Mexico. 4

Specific Comment

1. Management Strategies, page 3, paragraph 2. Regarding the stated "... while demands for Colorado River water supplies have continued to increase.", and paragraph 3 "In the future, low reservoir conditions may not be limited to drought periods ..." and "... the Republic of Mexico has an allocation to the waters of the Colorado River ...," the USIBWC does not believe that the statements mean drought periods as defined in the 1944 Water Treaty, Article 10. Article 10 states, "In the event of extraordinary drought .... making it difficult for the United States to deliver the guaranteed quantity ..." Please update any reference to drought or the allocation of waters between the United States and Mexico unless they are being defined as stated in the 1944 Water Treaty. 5

Thank you for the opportunity to review the document, and we appreciate your continued coordination with our agency regarding these activities. In case additional information is required, please have the person you designate contact Mr. Steve Fox at (915) 832-4736.

Sincerely,  
  
Bernardino Olague, P.E.  
Principal Engineer

**Management Strategies for Lake Powell and Lake Mead  
Under Low Water Conditions  
Comments by the National Park Service**

**July 26, 2005 – Henderson, NV  
Gary Warshefski, Deputy Superintendent, Lake Mead NRA**

**July 28, 2005 – Salt Lake City, UT  
Kitty L. Roberts, Superintendent Glen Canyon National Recreation Area**

The Secretary of the Interior directed the Bureau of Reclamation to develop additional Colorado River management strategies to address operations of Lake Powell and Lake Mead under low reservoir conditions. The National Park Service is charged by Congress to manage the resources as well as recreational use on these reservoirs and the intervening reach of the river in Grand Canyon National Park and Glen Canyon National Recreation Area under the National Park Service Organic Act and the enabling legislation of the three units. The recreational opportunities provided by these park service units are substantial (14 million visitors annually) and result in direct and indirect economic benefits to the local and regional economies (estimated at over \$1 billion annually). In addition, nationally significant natural and cultural resources are associated with the reservoirs and the main stem Colorado River. The Bureau of Reclamation and the National Park Service enjoy a close working relationship which ensures that the requirements of both agencies are met.

Over the past five years prolonged drought conditions within the Colorado River watershed reduced overall storage volumes to 33 and 54 percent for lakes Powell and Mead, respectively, which has negatively affected recreational use and likely caused significant changes to the local and regional economies. The drought has caused direct economic hardship to NPS concessioners and hundreds of local businesses operating under NPS commercial use licenses that provide recreational services to the public at Lake Mead and Glen Canyon NRA's. The National Park Service, likewise has been substantially financially impacted in order to implement numerous emergency measures to help cope with the effects of drought on lake recreation. These measures have included: closing or extending launch ramps; moving or adjusting courtesy docks, sewage disposal facilities, navigational aids, and marina services (water, sewer, power and gas lines) etc., with a total cost approaching \$20 million over the past three years. The concessioners experienced reduced profits mostly due to increased expenditures to move and/or adjust marinas themselves. The specific economic ramifications to the local and regional economies caused by reduced recreational use are unknown but are thought to be significant. If drought conditions were to persist and water levels approached certain critical levels, boating access to the lakes may have to be discontinued altogether.

The National Park Service recognizes that the reservoirs were constructed to operate within a broad operational range (lake levels) and that their purposes included storage of water for future uses, providing for reclamation of arid and semiarid lands, providing for flood

control, recreation and power generation. However, when considering reservoir management strategies to provide water use in times of extended drought, we offer the following considerations in order to minimize impacts to lake recreation as well as other NPS resources:

1. Establish critical water levels on lakes Powell and Mead (below which many recreational services would be curtailed altogether) when defining shortage conditions and developing criteria for alternative water deliveries during shortage periods. | 1
2. Evaluate the concept of conjunctive reservoir management during times of shortage (to the extent practicable under the law of the river) to optimize the recreation on both reservoirs while maintaining needed water deliveries, protecting water intake facilities and protecting hydropower production. | 2
3. While developing monthly and daily release volumes and schedules during periods of shortage continue to evaluate the tradeoffs between the natural, cultural and recreation resource needs of Grand Canyon National Park and Glen Canyon National Recreation Area downstream of Glen Canyon Dam (as required by the Grand Canyon Protection Act) and recreation on the two reservoirs. | 3  
| 4
4. Evaluate the impacts of alternative shortage strategies on the local and regional economies (including the Hualapai and Navajo tribes) along the Colorado River. | 5
5. Evaluate the impacts on recreation and tourism of alternative shortage strategies on the local and regional economies along the Colorado River. | 6
6. Evaluate the impacts of shortage strategies on other NPS units along the Colorado River (upstream of Lake Powell and downstream of Lake Mead). | 7

We look forward to working with the BOR over the coming months to develop management strategies for the two reservoirs when shortage conditions exist. We also look forward to assisting the BOR in evaluating the impacts of any proposed strategies on the resources found within the NPS units along the entire Colorado River corridor.



United States Department of the U.S. Fish and Wildlife Service

2321 West Royal Palm Road, Suite 1 Phoenix, Arizona 85021-4951

Telephone: (602) 242-0210 FAX: (602) 242-2

Handwritten routing slip with dates and initials, including '8/23/05' and '8/25/05', and a stamp from the U.S. Fish and Wildlife Service.

In Reply Refer to: LCR

August 18, 2005

Memorandum

To: Regional Director (Attn: BCOO-1000), Bureau of Reclamation, Lower Colorado Region, Boulder City, Nevada

To: Regional Director, (Attn: UC-402), Bureau of Reclamation, Upper Colorado Region, Salt Lake City, Utah

From: Field Supervisor, Fish and Wildlife Service, Phoenix, Arizona

Subject: Colorado River Reservoir Operations: Development of Management Strategies for Lakes Powell and Mead Under Low Reservoir Conditions

In regard to your Federal Register Notice requesting public comment on the development of management strategies for Lakes Powell and Mead on the Colorado River under low reservoir conditions, including anticipated management strategies for shortage guidelines for the Lower Colorado River Basin, the Fish and Wildlife Service (FWS) offers the following comments to support development of your strategies. The FWS understands that water levels in Lakes Mead and Powell are determined by releases to Lower Basin States, flood control, equalization of Lakes Mead and Powell under 602(a) of the Colorado River Basin Project Act, surplus declarations under the Interim Surplus Guidelines, and other Bureau of Reclamation (Reclamation) programs under the Law of the River.

Glen Canyon Dam and Its Effects to the Colorado River within the Glen Canyon Dam Adaptive Management Program (AMP)

Reclamation completed Section 7 consultation on the operation of Glen Canyon Dam (January 7, 1995) for operations outlined in the 1995 Record of Decision (ROD) on the operation of Glen Canyon Dam and associated Final Environmental Impact Statement (EIS). Since that time, minor reinitiated consultations have taken place. Most recently, Reclamation completed consultation for a controlled flood in November 2004. Consideration of the effects of possible future shortage criteria has not been previously addressed.

The completed consultations primarily concern the pattern of daily and monthly releases. All have specified a minimum annual release volume of 8.23 million acre-feet (MAF). Additional consultation may be necessary if Reclamation pursues management strategies that would necessitate monthly or daily release patterns that differ from those that are specified in the ROD,

or should strategies be adopted that would result in a reduction in the minimum annual release volume of 8.23 MAF.

In 1998, Reclamation began the process of environmental compliance for construction of a temperature control device (TCD) at Glen Canyon Dam to warm release temperatures of water to improve conditions for native fish survival, including the endangered humpback chub (*Gila cypha*). The FWS considers a TCD as supportive of humpback chub recovery. In 2004, Reclamation reinitiated scoping on this project. In the absence of a TCD for water release warming purposes, the only way to provide warmer water in the mainstem of the Colorado River in the Grand Canyon area would be through releases during times of low reservoir levels in Lake Powell. Given this as a potential limitation, the FWS recommends that Reclamation maximize the conservation benefit of warmer release water temperatures when warmer water is available by utilizing stable flow regimes, such as the Seasonally Adjusted Steady Flow water management, as identified in the EIS, and mechanical removal of nonnative fishes.

Also, the pattern of annual releases may become increasingly important to humpback chub conservation, Annual release patterns determine reservoir levels and, in the absence of a TCD, reservoir levels are another way to control the water temperatures of Glen Canyon Dam releases. Thus, we recommend that Reclamation consider the effect of annual releases from Glen Canyon Dam on humpback chub in the development of management strategies for the Colorado River under low reservoir conditions.

### **Lower Colorado River Multi-Species Conservation Program (LCR MSCP) and Associated Effects**

In the *LCR MSCP*, Reclamation included as a covered action a modeling assumption that would serve to address future shortage criteria. That is, shortages would be imposed to keep Lake Mead at or above elevation 1050 feet mean sea level (msl) approximately 80 percent (%) of the time over the next 50 years, and additional shortage would be imposed if needed to protect elevation 950 feet msl 100% of the time. As long as any future shortage criteria based on protection of Lake Mead elevations are not lower than these elevations or at least 80% or 100% effective and within the analysis of effects contained in the *LCR MSCP*, the FWS believes that Endangered Species Act (ESA) coverage would likely be met through the *LCR MSCP*. However, because there may be new information available at the time of such a review, additional consultation may be required.

The *LCR MSCP* analysis also considered the reduction in flows below Hoover Dam that would result under the shortage modeling assumption. Those reductions are included in the 1.574 MAF in changes in points of diversion covered under the *LCR MSCP*. As long as the shortages do not result in a reduction in flow greater than the 1.574 MAF, the reductions in flows are covered by the *LCR MSCP* and additional consultation would not be required. Again, the development of new information prior to the time of the review may result in a need for additional consultation.

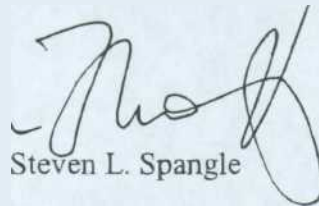
With implementation of the *LCR MSCP*, the effects of shortage criteria to Lake Mead and the lower Colorado River have been addressed by the conservation provided. However, the FWS recommends that options for future management of Lake Mead include consideration of changes

to lake levels to benefit the endangered razorback sucker (*Xyrauchen texanus*). In the biological opinion for the Interim Surplus Guidelines, management options are identified to raise water levels to benefit spawning and recruitment of razorback suckers. The FWS believes that consideration of these types of options will require coordination with management of Lake Powell and the Colorado River through the Grand Canyon to achieve goals and minimize adverse effects to the larger system. Timing of flows into Lake Mead may also allow for riparian management at its delta to provide habitat for the endangered southwestern willow flycatcher (*Empidonax traillii extimus*) and other migratory bird species.

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In summary, these comments are intended to support Reclamation in this strategy development period. If the FWS can be of further assistance, please contact Sam Spiller (Lower Colorado River Coordinator) (602)841-5329, Glen Knowles (Glen Canyon Dam operations) at (602) 242-0210 (x233), Lesley Fitzpatrick (LCR MSCP compliance) (x 36), or me.



Steven L. Spangle

cc: Regional Director, Assistant Regional Directors (ES, FR, and MB/SP) and NWRS Chief (RC), Fish and Wildlife Service, Albuquerque, NM

W:\Sam Spiller\ColRiverReservoirOps LowFlow fwscomments.doc

**Duren, Sabre**

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**From:** Norm\_Henderson@nps.gov  
**Sent:** Monday, August 22, 2005 4:02 PM  
**To:** strategies@lc.usbr.gov; strategies@uc.usbr.gov  
**Subject:** NPS comments on lake management strategies

This is a duplicate letter and comments to F.003 (NPS)

**Attachments:** Final mgt strategies cover memo.pdf; Shortage Criteria public comments72505.fnl.pdf



Final mgt strategies cover mem... Shortage Criteria public comme...

Regional Director, Lower Colorado and Upper Colorado regions:

Attached is the formal memorandum from both the Regional Director of both the Pacific West and Intermountain regions transmitting our prepared testimony presented at the public meetings on July 26, 2005 and July 28, 2005 in Henderson, Nevada and Salt Lake City, Utah, respectively, as our official comments regarding the development of management strategies for Lake Powell and Lake Mead, including Lower Basin shortage guidelines under low reservoir conditions.

(See attached file: Final mgt strategies cover memo.pdf) (See attached file: Shortage Criteria public comments72505.fnl.pdf)

If you have any questions regarding this submittal, please contact me.

\*\*\*\*\*  
\*\*\*\*\*

Norm Henderson ; Colorado River Coordinator ; 324 South State Street, Suite  
200 ; Box 30

Salt Lake City, UT 84111 ; 801-741-1012 Ext. 102 Voice ; 801-741-1102 Fax ;  
mobile 801-550-4461





## United States Department of the Interior

### NATIONAL PARK SERVICE INTERMOUNTAIN REGION PACIFIC WEST REGION



August 19, 2005

#### Memorandum

**To:** Regional Director, Bureau of Reclamation, Upper Colorado Region  
Regional Director, Bureau of Reclamation, Lower Colorado Region

**From:** Regional Director, National Park Service, Intermountain Region  
Regional Director, National Park Service, Pacific West Region

**Subject:** Comments on the proposed development of management strategies for Lake Powell and Lake Mead, including Lower Basin Shortage Guidelines, under low reservoir conditions

Attached are the comments presented by the National Park Service to the Bureau of Reclamation at public hearings in Salt Lake City, Utah and Henderson, Nevada on July 28, 2005 and July 26, 2005, regarding the process of developing low water management strategies, including shortage guidelines. We hope these comments will be useful when developing a lake management strategy that addresses the diversity of water use requirements. We look forward to working with the Bureau of Reclamation and other stakeholders in developing this strategy. As you are aware, drought induced low-water conditions have affected recreational use of the two reservoirs and caused direct financial hardships to concessioners and local businesses, as well as the National Park Service. This experience has taught us that low-water recreational impacts occur as the reservoirs drop below certain critical water levels. Understanding these critical levels will be useful in strategy development.

Given that management strategies that benefit one reservoir may have negative effects on the other, it is important that NPS input on the matter be coordinated. To this end, we have designated Norm Henderson (the NPS Colorado River Coordinator) as the lead staff individual for the subject process (telephone 801-741-1012 ext 102). Please contact him if you have any questions about our coordinated input or NPS interests in general regarding the development of an integrated management approach for the two reservoirs.

8/17/05

Michael Snyder  
Regional Director, Intermountain Region

8/19/05

Jonathan B. Jarvis  
Regional Director, Pacific West Region



**Management Strategies for Lake Powell and Lake Mead  
Under Low Water Conditions  
Comments by the National Park Service**

**July 26, 2005 – Henderson, NV  
Gary Warshefski, Deputy Superintendent, Lake Mead NRA**

**July 28, 2005 – Salt Lake City, UT  
Kitty L. Roberts, Superintendent Glen Canyon National Recreation Area**

The Secretary of the Interior directed the Bureau of Reclamation to develop additional Colorado River management strategies to address operations of Lake Powell and Lake Mead under low reservoir conditions. The National Park Service is charged by Congress to manage the resources as well as recreational use on these reservoirs and the intervening reach of the river in Grand Canyon National Park and Glen Canyon National Recreation Area under the National Park Service Organic Act and the enabling legislation of the three units. The recreational opportunities provided by these park service units are substantial (14 million visitors annually) and result in direct and indirect economic benefits to the local and regional economies (estimated at over \$1 billion annually). In addition, nationally significant natural and cultural resources are associated with the reservoirs and the main stem Colorado River. The Bureau of Reclamation and the National Park Service enjoy a close working relationship which ensures that the requirements of both agencies are met.

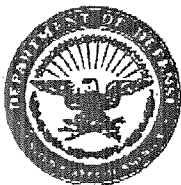
Over the past five years prolonged drought conditions within the Colorado River watershed reduced overall storage volumes to 33 and 54 percent for lakes Powell and Mead, respectively, which has negatively affected recreational use and likely caused significant changes to the local and regional economies. The drought has caused direct economic hardship to NPS concessioners and hundreds of local businesses operating under NPS commercial use licenses that provide recreational services to the public at Lake Mead and Glen Canyon NRA's. The National Park Service, likewise has been substantially financially impacted in order to implement numerous emergency measures to help cope with the effects of drought on lake recreation. These measures have included: closing or extending launch ramps; moving or adjusting courtesy docks, sewage disposal facilities, navigational aids, and marina services (water, sewer, power and gas lines) etc., with a total cost approaching \$20 million over the past three years. The concessioners experienced reduced profits mostly due to increased expenditures to move and/or adjust marinas themselves. The specific economic ramifications to the local and regional economies caused by reduced recreational use are unknown but are thought to be significant. If drought conditions were to persist and water levels approached certain critical levels, boating access to the lakes may have to be discontinued altogether.

The National Park Service recognizes that the reservoirs were constructed to operate within a broad operational range (lake levels) and that their purposes included storage of water for future uses, providing for reclamation of arid and semiarid lands, providing for flood

control, recreation and power generation. However, when considering reservoir management strategies to provide water use in times of extended drought, we offer the following considerations in order to minimize impacts to lake recreation as well as other NPS resources:

1. Establish critical water levels on lakes Powell and Mead (below which many recreational services would be curtailed altogether) when defining shortage conditions and developing criteria for alternative water deliveries during shortage periods.
2. Evaluate the concept of conjunctive reservoir management during times of shortage (to the extent practicable under the law of the river) to optimize the recreation on both reservoirs while maintaining needed water deliveries, protecting water intake facilities and protecting hydropower production.
3. While developing monthly and daily release volumes and schedules during periods of shortage continue to evaluate the tradeoffs between the natural, cultural and recreation resource needs of Grand Canyon National Park and Glen Canyon National Recreation Area downstream of Glen Canyon Dam (as required by the Grand Canyon Protection Act) and recreation on the two reservoirs.
4. Evaluate the impacts of alternative shortage strategies on the local and regional economies (including the Hualapai and Navajo tribes) along the Colorado River.
5. Evaluate the impacts on recreation and tourism of alternative shortage strategies on the local and regional economies along the Colorado River.
6. Evaluate the impacts of shortage strategies on other NPS units along the Colorado River (upstream of Lake Powell and downstream of Lake Mead).

We look forward to working with the BOR over the coming months to develop management strategies for the two reservoirs when shortage conditions exist. We also look forward to assisting the BOR in evaluating the impacts of any proposed strategies on the resources found within the NPS units along the entire Colorado River corridor.



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 99TH AIR BASE WING (ACC)  
NELLIS AIR FORCE BASE, NEVADA

AUG 31 2005

Colonel Walter D. Givhan  
Commander  
4430 Grissom Avenue, Suite 101  
Nellis AFB, NV 89191-7007

Mr Robert W. Johnson, Regional Director  
Bureau of Reclamation, Lower Colorado Region  
Attn: BCOO-1000  
P. O. Box 61470  
Boulder City, NV 89006-1470

Dear Mr Johnson

In response to the Bureau of Reclamation's Notice to Solicit Comments (*Colorado River Reservoir Operations: Development of Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions, 70 Fed. Reg. 34,794 (15 June 2005)*), I hereby submit comments on behalf of the United States Air Force, and more specifically, Nellis Air Force Base.

Both the United States Air Force and Nellis Air Force Base officials laud and support your efforts to develop strategies for protecting water resources within the Colorado River Basin. We look forward to working with you in developing strategies to conserve this valuable natural resource.

We support strategies that would identify and establish critical water levels at Lake Powell and at Lake Mead; establish criteria for water delivery during periods of water shortage; provide for equitable sharing of shortages between parties to international treaties; protect Federal Reserved Water Rights; protect federal mandates, such as the Department of Defense mission to protect this nation from hostile activity and to preserve our national sovereignty.

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We look forward to working with the Bureau of Reclamation during the coming months in developing and evaluating managerial strategies for low water conditions at both Hoover and Glen Canyon Dams.

Sincerely

Walter D. Givhan  
Colonel, USAF

## Kucera, Cindy

---

**From:** Fujii.Laura@epamail.epa.gov  
**Sent:** Wednesday, November 30, 2005 4:55 PM  
**To:** strategies@lc.usbr.gov  
**Cc:** strategies@uc.usbr.gov  
**Subject:** US EPA scoping comments for Development of Lower Basin Shortage Guidelines

**Attachments:** LCRshortageNOI.pdf



LCRshortageNOI.pdf (95 KB)

Dear Bureau of Reclamation:

Below is the pdf file of our scoping comments for the Development of Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions.

A copy has been faxed and mailed to Robert W. Johnson, Regional Director, Lower Colorado Region.

(See attached file: LCRshortageNOI .pdf) EPA scoping comments for Lower Basin Shortage Guidelines

We appreciate the opportunity to provide comments and look forward to continued participation in this process as more information becomes available. Please send three copies of the Draft Environmental Impact Statement to the address below (mail code: CED-2), when it is released for public review. If you have any questions, please contact me at the telephone number or e-mail address below.

Sincerely,

Laura Fujii  
Region 9 US Environmental Protection Agency Environmental Review Office, CED-2  
Communities and Ecosystems Division  
75 Hawthorne St., San Francisco, CA. USA 94105  
phone: 415-972-3852  
fax: 415-947-8026  
fujii.laura@epa.gov

November 30, 2005

Robert W. Johnson  
Regional Director  
Lower Colorado Region  
Bureau of Reclamation  
Attn: BC00-1000  
P.O. Box 61470  
Boulder City, NV 89006-1470

Subject: Scoping Comments for Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions, Lower Colorado River Basin

The U.S. Environmental Protection Agency (EPA) has reviewed the Federal Register Notice published September 30, 2005, requesting comments on the Bureau of Reclamation's (Reclamation) decision to prepare a Draft Environmental Impact Statement for the above action. Our comments are provided pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and Section 309 of the Clean Air Act. Our detailed comments are enclosed.

EPA supports the development of shortage guidelines which will provide specific criteria for reductions in annual water deliveries during low reservoir conditions. The beneficial uses of the Lower Colorado River are diverse, providing vital environmental, economic, and public health benefits for Arizona, California and Nevada (Lower Basin States). Unpredictable large disruptions in water deliveries or sudden changes in Lake Mead and Lake Powell operations could have significant adverse impacts on these beneficial uses.

We recommend the shortage guidelines be based upon the principles of: 1) collaboration, partnerships, and a transparent public involvement process; 2) protection of the environment, human health, and beneficial uses of the Colorado River; 3) minimization of involuntary reductions; and 4) mitigation for evenly-shared shortages. A goal of the shortage guidelines should be small predictable reductions in annual water use versus large involuntary disruptions in water supply service and Colorado River flows.

To minimize adverse impacts to the environment and beneficial uses, we urge Reclamation to consider the following proposals during development of the shortage guidelines:

- Expand the ongoing efforts in the Lower Basin States to improve water quality, maximize water conservation, and enhance water use efficiencies. These improvement programs should be pursued on a continuous basis regardless of hydrological conditions.
- Focus on voluntary reductions prior to implementing involuntary shortages.
- Design shortage criteria that provide reductions based upon clear predictable triggers.
- Develop and commit to a detailed monitoring and accounting system.
- Provide sufficient flexibility to accommodate future shifts in water policy and long-term water resource planning.

The draft environmental impact statement (DEIS) would evaluate the direct, indirect, and cumulative impacts of the proposed shortage guidelines. Special attention should be given to third party impacts, including transboundary impacts, and beneficial uses that have no water rights and who may be most vulnerable to drought and a reduction in water use or Colorado River flows (e.g., fish, water quality, recreation, Colorado River Delta).

We appreciate the opportunity to provide comments on the preparation of the DEIS. We look forward to continued participation in this process as more information becomes available. When the DEIS is released for public review, please send three copies to the address above (mail code: CED-2). If you have any questions, please contact me or Laura Fujii, the lead reviewer for this project. Laura can be reached at 415-972-3852 or [fujii.laura@epa.gov](mailto:fujii.laura@epa.gov).

Sincerely,  
/s/

Duane James, Manager  
Environmental Review Office  
Communities and Ecosystems Division

Enclosure:  
Detailed Comments  
Tribal Consultation Executive Order

cc: Jayne Harkins, Assistant Regional Director, Lower Colorado Region, BOR  
Rick L. Gold, Regional Director, Upper Colorado Region, BOR  
California State Water Resources Control Board  
US Fish and Wildlife Service, Sacramento, Phoenix Main, Southern Nevada  
Offices  
Regional Tribal Operations Committee

**EPA DETAILED SCOPING COMMENTS LOWER BASIN SHORTAGE GUIDELINES AND COORDINATED MANAGEMENT STRATEGIES FOR LAKE POWELL AND LAKE MEAD UNDER LOW RESERVOIR CONDITIONS, LOWER COLORADO RIVER BASIN, CA, AZ, NV, NOVEMBER 30, 2005**

**Conservation and Water Use Efficiency**

Constant determined efforts to maximize water conservation and water use efficiencies are essential in assuring a long-term, sustainable balance between available water supplies, demand and ecosystem and public health. These efforts are even more urgent given the projected growth in the Lower Colorado River Basin and the adverse effects of the multi-year drought.

***Recommendation:***

We urge the Bureau of Reclamation (Reclamation) to work with all stakeholders in implementing all feasible and available tools to maximize water conservation and water use efficiencies. Maintaining water quality and reducing water pollution should be major goals because they extend the “useful life” of water supplies and reduce treatment costs.

Possible water conservation and use efficiency tools include water transfers and exchanges, pricing, irrigation efficiencies, operational flexibilities, market-based incentives, water acquisition, conjunctive use, voluntary temporary or permanent land fallowing, pooling water and making it available on the basis of specific allocation criteria, and wastewater reclamation and recycling. Supporting sustainable water use and compatible “multiple benefits” of water would also extend the beneficial use of limited water resources.

**Environmental Impact Analysis**

The Lower Colorado River is a vital part of the water supplies of Arizona, California, Nevada, and Mexico. Recreation, hydropower generation, and habitat for threatened and endangered species are also key beneficial uses. In addition, the river is a significant part of the historical and cultural resources of the Lower Colorado River region.

***Recommendation:***

The draft environmental impact statement (DEIS) should evaluate the direct, indirect, and cumulative impacts of the proposed shortage guidelines. Special attention should be given to third party impacts, including transboundary impacts, and beneficial uses that have no water rights and who may be most vulnerable to drought and a reduction in water use or Colorado River flows (e.g., fish, water quality, recreation, Colorado River Delta). The analysis should include an evaluation of the potential effects on the following issues:

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Water Quality

*Lake Mead Water Quality*

- Effects on the Southern Nevada Water Authority’s drinking water supply and its intakes | 3
- Effects on dilution of perchlorate entering Lake Mead from Henderson, Nevada via Las Vegas Wash | 4
- Effects on the timing and rate of lake turnover | 5
- Effects on lake water quality | 6

*Lake Powell Water Quality*

- Effects on the timing and rate of lake turnover | 7
- Effects on lake water quality | 8

*Downstream Impacts*

- Effects on salinity, mercury, sediment, radioactive substances and other constituents of Lower Colorado River water | 9
- Effects on general water quality and end uses of water going to Arizona, California, Nevada, and Mexico | 10
- Effects on in-stream water quality and water reaching the Colorado River Delta, including water temperatures and flow fluctuations | 11

Other issues

- Effects on water rights, including Tribal water rights | 12
- Effects on water supply diversion quantities and schedules | 13
- Effects on recreation, such as rafting in the Grand Canyon, fishing, and visual effects of reservoir draw-downs | 14
- Effects on sediment movement and impacts on beach replenishment in the Grand Canyon | 15
- Effects on hydroelectric generation and Lake Mead and Lake Powell equalization requirements | 16
- Effects on flood control | 17
- The effects on fisheries, threatened and endangered species, and the Lower Colorado River Multiple Species Habitat Conservation Strategy | 18
- Effects on Treaty obligations with Tribes and Mexico, Biological Opinions, discharge and diversion permits, and other agreements, such as those to restore the Colorado River Delta. | 19
- Effects on groundwater from potential transition from surface water use to groundwater use | 20

**Monitoring and Accounting**

Monitoring and accounting of shortages and management actions should be key components of the shortage guidelines.



***Recommendation:***

Include in the DEIS a description of the monitoring and accounting system that will be implemented before, during, and after shortages are implemented.

21

**Consultation and Coordination with Tribal Governments**

Many Tribes may be affected by shortages and related operational actions in the Lower Colorado River basin. These Tribes include five tribes on the Lower Colorado River and six tribes that use or may be affected by shortages imposed on the Central Arizona Project. These Tribes also have a keen interest in water allocation, water use, and water quality within the Lower Colorado River basin because it is their primary water source and the river has a significant role in their cultural heritage. For instance, the Colorado River Tribes have outstanding Colorado River water rights and the Cocopah and Quachan Tribal groups wish to restore their ancestral lands in the Colorado River Delta.

***Recommendation:***

We recommend that all potentially affected Tribes be consulted on a government-to-government basis pursuant to the Executive Order on Consultation and Coordination with Indian Tribal Governments (enclosed).

22

**Lower Colorado River Context**

It is well known that Colorado River water issues are complex with many diverse users. To ensure full disclosure and understanding of potential impacts and implications of the shortage guidelines, we recommend the DEIS include an introductory section providing an overview of current water allocations, uses, and water management in the Lower Colorado River basin.

***Recommendation:***

We recommend the DEIS include a comprehensive overview of water allocation and uses in the Lower Colorado River basin. An overview of water supply allocation, constraints, environmental and socioeconomic issues and how they influence management of the Lower Colorado River will help minimize confusion, clarify issues, and ensure well-informed decision making.

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11/30/05

THE WHITE HOUSE  
Office of the Press Secretary

For Immediate Release  
0

November 6, 2000

EXECUTIVE ORDER

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CONSULTATION AND COORDINATION  
WITH INDIAN TRIBAL GOVERNMENTS

By the authority vested in me as President by the Constitution and the laws of the United States of America, and in order to establish regular and meaningful consultation and collaboration with tribal officials in the development of Federal policies that have tribal implications, to strengthen the United States government-to-government relationships with Indian tribes, and to reduce the imposition of unfunded mandates upon Indian tribes; it is hereby ordered as follows:

Section 1. Definitions. For purposes of this order:

(a) "Policies that have tribal implications" refers to regulations, legislative comments or proposed legislation, and other policy statements or actions that have substantial direct effects on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes.

(b) "Indian tribe" means an Indian or Alaska Native tribe, band, nation, pueblo, village, or community that the Secretary of the Interior acknowledges to exist as an Indian tribe pursuant to the Federally Recognized Indian Tribe List Act of 1994, 25 U.S.C. 479a.

(c) "Agency" means any authority of the United States that is an "agency" under 44 U.S.C. 3502(1), other than those considered to be independent regulatory agencies, as defined in 44 U.S.C. 3502(5).

(d) "Tribal officials" means elected or duly appointed officials of Indian tribal governments or authorized intertribal organizations.

Sec. 2. Fundamental Principles. In formulating or implementing policies that have tribal implications, agencies shall be guided by the following fundamental principles:

(a) The United States has a unique legal relationship with Indian tribal governments as set forth in the Constitution of the United States, treaties, statutes, Executive Orders, and court decisions. Since the formation of the Union, the United States has recognized Indian tribes as domestic dependent nations under its protection. The Federal Government has enacted numerous statutes and promulgated numerous regulations that establish and define a trust relationship with Indian tribes.

(b) Our Nation, under the law of the United States, in accordance with treaties, statutes, Executive Orders, and judicial decisions, has recognized the right of Indian tribes to self-government. As domestic dependent nations, Indian tribes exercise inherent sovereign powers over their members and territory. The United States continues to work with Indian tribes on a government-to-government basis to address issues concerning Indian tribal self-government, tribal trust resources, and Indian tribal treaty and other rights.

(c) The United States recognizes the right of Indian tribes to self-government and supports tribal sovereignty and self-determination.

Sec. 3. Policymaking Criteria. In addition to adhering to the fundamental principles set forth in section 2, agencies shall adhere, to the extent permitted by law, to the following criteria when formulating and implementing policies that have tribal implications:

(a) Agencies shall respect Indian tribal self-government and sovereignty, honor tribal treaty and other rights, and strive to meet the responsibilities that arise from the unique legal relationship between the Federal Government and Indian tribal governments.

(b) With respect to Federal statutes and regulations administered by Indian tribal governments, the Federal Government shall grant Indian tribal governments the maximum administrative discretion possible.

(c) When undertaking to formulate and implement policies that have tribal implications, agencies shall:

- (1) encourage Indian tribes to develop their own policies to achieve program objectives;
- (2) where possible, defer to Indian tribes to establish standards and
- (3) in determining whether to establish Federal standards, consult with tribal officials as to the need for Federal standards and

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y any alternatives that would limit the scope of Federal standards or otherwise preserve the prerogatives and authority of Indian tribes.

Sec. 4. Special Requirements for Legislative Proposals. Agencies shall not submit to the Congress legislation that would be inconsistent with the policymaking criteria in Section 3.

Sec. 5. Consultation. (a) Each agency shall have an accountable process to ensure meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications. Within 30 days after the effective date of this order, the head of each agency shall designate an official with principal responsibility for the agency's implementation of this order. Within 60 days of the effective date of this order, the designated official shall submit to the Office of Management and Budget (OMB) a description of the agency's consultation process.

l (b) To the extent practicable and permitted by law, no agency shall promulgate any regulation that has tribal implications, that imposes substantial direct compliance costs on Indian tribal governments, and that is not required by statute, unless:

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- (1) funds necessary to pay the direct costs incurred by the Indian tribal government or the tribe in complying with the regulation are provided by the Federal Government; or
  - (2) the agency, prior to the formal promulgation of the regulation
    - (A) consulted with tribal officials early in the process of developing the proposed regulation;
    - (B) in a separately identified portion of the preamble to the regulation as it is to be issued in the Federal Register provides to the Director of OMB a tribal summary impact statement, which consists of a description of the extent of the agency's prior consultation with tribal officials a summary of the nature of their concerns and the agency's position supporting the need to issue the regulation, and a statement of the extent to which the concerns of tribal officials have been met; and
- e

- (C) makes available to the Director of OMB any written communications submitted to the agency by tribal officials.

(c) To the extent practicable and permitted by law, no agency shall promulgate any regulation that has tribal implications and that preempts tribal law unless the agency, prior to the formal promulgation of the regulation,

- (1) consulted with tribal officials early in the process of developing the proposed regulation;
- (2) in a separately identified portion of the preamble to the regulation as it is to be issued in the Federal Register, provides to the Director of OMB a tribal summary impact statement, which consists of a description of the extent of the agency's prior consultation with tribal officials, a summary of the nature of their concerns and the agency's position supporting the need to issue the regulation, and a statement of the extent to which the concerns of tribal officials have been met; and
- (3) makes available to the Director of OMB any written communications submitted to the agency by tribal officials.

(d) On issues relating to tribal self-government, tribal trust resources, or Indian tribal treaty and other rights, each agency should explore and, where appropriate, use consensual mechanisms for developing regulations, including negotiated rulemaking.

#### Sec. 6. Increasing Flexibility for Indian Tribal Waivers.

(a) Agencies shall review the processes under which Indian tribes apply for waivers of statutory and regulatory requirements and take appropriate steps to streamline those processes.

(b) Each agency shall, to the extent practicable and permitted by law, consider any application by an Indian tribe for a waiver of statutory or regulatory requirements in connection with any program administered by the agency with a general view toward increasing opportunities for utilizing flexible policy approaches at the Indian tribal level in cases in which the proposed waiver is consistent with the applicable Federal policy objectives and is otherwise appropriate.

(c) Each agency shall, to the extent practicable and permitted by law, render a decision upon a complete application for a waiver within 120 days of receipt of such application by the agency, or as otherwise provided by law or regulation. If the application for waiver is not granted, the agency shall provide the applicant with timely written notice of the decision and the reasons therefor.

(d) This section applies only to statutory or regulatory requirements that are discretionary and subject to waiver by the agency

Sec. 7. Accountability.

(a) In transmitting any draft final regulation that has tribal implications to OMB pursuant to Executive Order 12866 of September 30, 1993, each agency shall include a certification from the official designated to ensure compliance with this order stating that the requirements of this order have been met in a meaningful and timely manner.

(b) In transmitting proposed legislation that has tribal implications to OMB, each agency shall include a certification from the official designated to ensure compliance with this order that all relevant requirements of this order have been met.

(c) Within 180 days after the effective date of this order the Director of OMB and the Assistant to the President for Intergovernmental Affairs shall confer with tribal officials to ensure that this order is being properly and effectively implemented.

Sec. 8. Independent Agencies. Independent regulatory agencies are encouraged to comply with the provisions of this order.

Sec. 9. General Provisions. (a) This order shall supplement but not supersede the requirements contained in Executive Order 12866 (Regulatory Planning and Review), Executive Order 12988 (Civil Justice Reform), OMB Circular A-19, and the Executive Memorandum of April 29, 1994, on Government-to-Government Relations with Native American Tribal Governments.

(b) This order shall complement the consultation and waiver provisions in sections 6 and 7 of Executive Order 13132 (Federalism).

(c) Executive Order 13084 (Consultation and Coordination with Indian Tribal Governments) is revoked at the time this order takes effect.

(d) This order shall be effective 60 days after the date of this order.

Sec. 10. Judicial Review. This order is intended only to improve the internal management of the executive branch, and is not intended to create any right, benefit, or trust responsibility, substantive or procedural, enforceable at law by a party against the United States, its agencies, or any person.

WILLIAM J. CLINTON

THE WHITE HOUSE,  
November 6, 2000.

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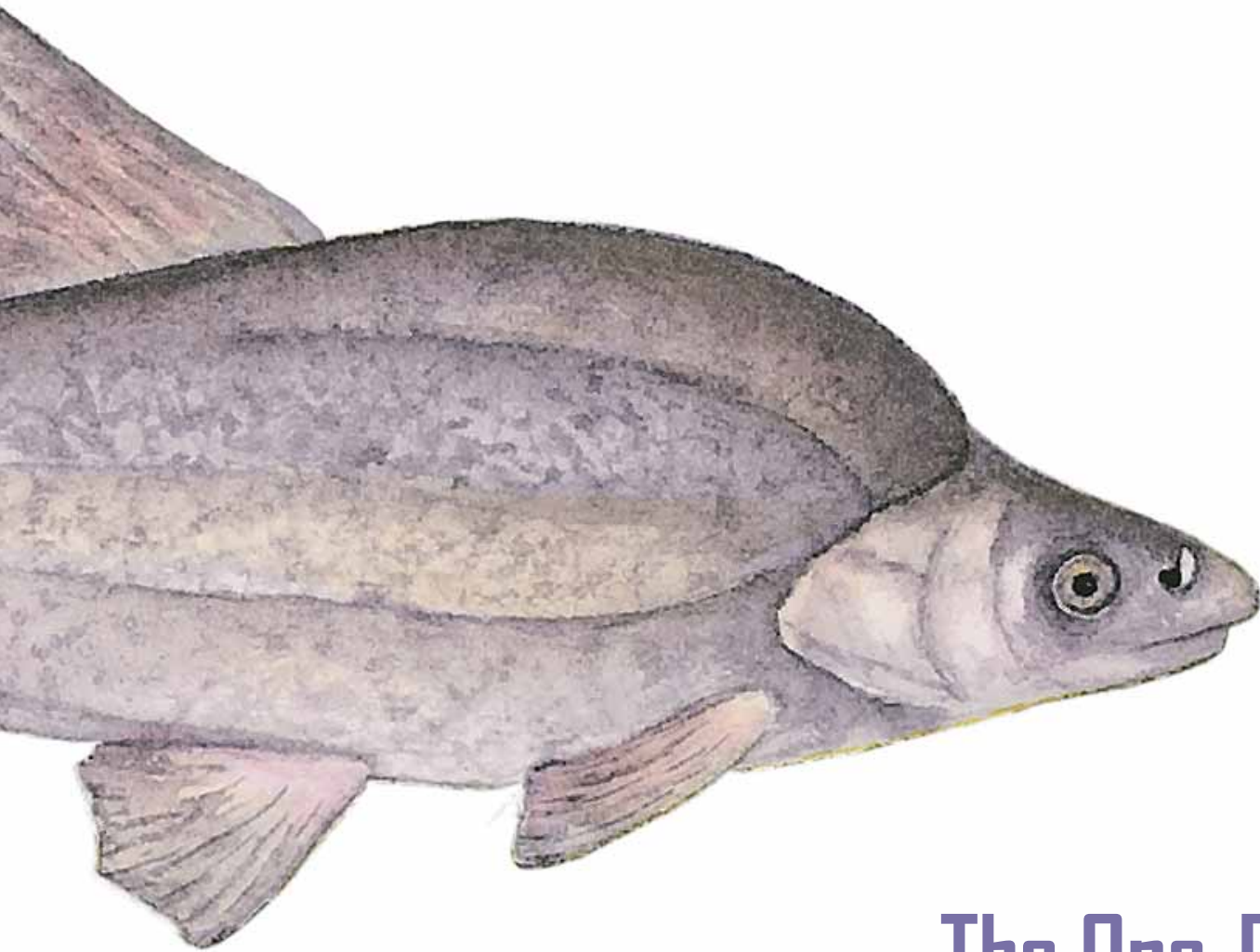
Executive Order 11651, signed by President John F. Kennedy, established the Office of Management and Organization (OMO) to improve the efficiency and effectiveness of the Federal Government. The OMO was the first of its kind and set the precedent for the creation of the Office of Management and Enterprise Services (OMES) in 1993. OMES was created to provide comprehensive management and enterprise services to the Federal Government, including financial management, information management, and human resources management. The OMB, established in 1970, is the primary agency responsible for coordinating and supervising the activities of the Executive Branch, including the development and execution of the President's budget and the preparation of the President's annual report to Congress. The OMB also oversees the operations of the Executive Branch and provides advice and information to the President and the Vice President. The OMB is headed by the Comptroller of the Currency, who is appointed by the President and confirmed by the Senate. The OMB is an independent agency and is not part of any other department or agency. The OMB is responsible for the following functions: (1) to assist the President in the development and execution of the President's budget; (2) to assist the President in the preparation of the President's annual report to Congress; (3) to coordinate and supervise the activities of the Executive Branch; (4) to provide advice and information to the President and the Vice President; (5) to oversee the operations of the Executive Branch; and (6) to provide financial management, information management, and human resources management services to the Federal Government.

# **Appendix W**

## **Copies of Unique Comment Letters**

### **W.3 Special Interest Group/Non-Governmental Organization Comment Letters (G)**





# The One-Dam Solution

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Preliminary report to the Bureau of Reclamation on proposed reoperation strategies for Glen Canyon and Hoover Dam under low water conditions.

July 2005

We welcome public feedback toward the development of a subsequent edition of this report to be concluded following release of Bureau of Reclamation draft recommendations for the reoperations of Glen Canyon and Hoover Dam.



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*“We’ve got to rethink the use of water.*

*But if you think it’s [the drought] going to go away, the people that think well,*

*we’re going to go back to a wet cycle, don’t bet on it.”*

Stewart Udall, former Secretary of the Interior

December 2003

# Summary

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Life in the Southwest depends on the Colorado River. Preserving this resource requires achieving a sustainable balance between water supply and demand. However, population growth and climate change are disrupting this equilibrium and pushing the management of this resource to its limit.

Federal laws and water projects regulating the consumption of Colorado River water do not adequately reflect this imbalance. Current laws allocate more water to the basin states than the river actually provides. More federal dams have been built than are needed wasting at least 13 percent of the river's flow annually.<sup>1</sup> Sediment backing up behind dams represents a multi-billion-dollar management challenge that has so far been ignored. Meanwhile hundreds of millions of dollars are being invested in failed efforts to manage environmental problems resulting from dam operations.

At the heart of these challenges lie the nation's largest reservoirs, Lake Powell behind Glen Canyon Dam near the Utah/Arizona border and Lake Mead behind Hoover Dam on the Arizona/Nevada border. Combined they cause the loss of 10 percent of the Colorado's annual flow,<sup>2</sup> while declining surplus flows render the future filling of these reservoirs an unlikely occurrence.

Grand Canyon National Park, which lies between Glen Canyon Dam and Lake Mead, has seen its native ecosystem devastated by dam operations. Four native fish are now extinct, one is in jeopardy and another is of special concern. Glen Canyon Dam has trapped the sediment necessary to maintain habitat and beaches for wildlife and recreation, as well as the stabilization

of archeological sites. So far, measures to reverse the decline of these park resources as directed by the 1992 Grand Canyon Protection Act have failed.

The desire to prevent the further filling of Lake Mead with sediment played a major role in influencing the construction of Glen Canyon Dam. However, sediment is now reducing Lake Powell's storage and if left unresolved will compromise the safe operation of Glen Canyon Dam, as well as Hoover Dam should Glen Canyon Dam fail.

As the Bureau of Reclamation now explores strategies to address the operations of Lake Powell and Lake Mead under low reservoir conditions, it is critical that the scope of this analysis be expanded. A far more comprehensive review must be undertaken that explores the overall relevance of these two facilities for storing and distributing scarce Colorado River water, including:

- Reducing the use of inefficient above-ground water storage facilities, while expanding the use of underground storage to minimize evaporation losses. Regional aquifers could provide greater storage capacity than Lake Powell and Lake Mead combined.<sup>3</sup>
- Employ Lake Mead as the principal water storage and distribution facility for water delivery to the lower basin states. Lake Powell storage is in excess of current and future needs resulting in unnecessary evaporative losses to a limited water supply.
- Employ Lake Mead as the starting point for transporting sediment around the lower Colorado River system.

- Updating federal laws, especially the Colorado River Compact, to reflect the Colorado River’s limitations and changing societal demands.

Developing a forward-looking policy on the future operations of Glen Canyon and Hoover Dams is critical to meeting the immense challenges facing Colorado River managers. It is not something to be relegated to a stopgap response to immediate concerns, but must be a central component of

the federal government’s fulfillment of its legal responsibility to provide leadership and direction for the management of the Colorado River. To this end, it is vital that a comprehensive Environmental Impact Statement be conducted on the future operations of these dams, and that this be done in consort with other water conservation measures to preserve the economic, ecological and cultural vitality of the Colorado River region.

## Colorado River

The Colorado River is central to the economy of the Southwest. The basin spans 242,000 square miles as it descends 1,450 miles from the Rocky Mountains to the Gulf of California in Mexico. More than 25 million people utilize water from the Colorado River, including the metropolitan areas of Los Angeles, Las Vegas, Phoenix, Salt Lake City, Denver and Albuquerque. Agriculture consumes on average 70 percent of the river. Industry and households consume the rest. In an attempt to meet increasing demands, the Colorado River has become the most regulated river in North America. Nearly every tributary has been dammed.

# The Coming Crisis

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Colorado River flows have averaged just 60 percent of normal since 2000. Even with the average snow-pack in the spring of 2005, reservoir levels are unlikely to reach 60 percent of full capacity this year. These flows will barely accommodate current demands, doing little to overcome the storage deficit created by the region's use of nearly two gallons of water for every one gallon that nature has provided.<sup>4</sup> Absent a dramatic change in long-term weather patterns, a substantial reduction in Colorado River water use will soon become a necessity.

History shows that the current drought is not unusual. Over the past century the Colorado River experienced reduced flows around 1900, the 1930s and 1950s.<sup>5</sup> Moreover, the present downturn represents a minor reduction in precipitation when compared to severe droughts that occurred between 900 and 1300.<sup>6</sup>

During the more recent droughts, Colorado River water users were spared serious shortages because supply still far exceeded demand. This is no longer the case. As water use continues to increase there will be little, if any, surplus water to be placed in storage.

The National Academy of Sciences estimated that over the past century the Colorado River's average annual flow was 14 million acre-feet (MAF) (an acre-foot equals 325,851 gallons).<sup>7</sup> However, analysis using tree-ring data concludes the average annual flow of the Colorado River over the past 400 years is approximately 13.5 MAF.<sup>8</sup> With current Colorado River water use at approximately 12.6 MAF annually and rising, it will soon become clear that reservoir storage capacity will far exceed what can be used.<sup>9</sup>

Even more alarming is the Department of Energy's prediction that climate change will cause Colorado River flows to decline 14 percent by 2010, and 18 percent by 2040.<sup>10</sup>

While a brief period of higher flows may bring temporary respite, permanent shortages are likely to become the norm. It is therefore essential that solutions be crafted before such shortages occur.

# Flaws in the System

## WATER OVER-ALLOCATED

While managers and scientists debate whether Colorado River reservoirs will ever fill again, the drought has highlighted an 83-year-old problem that policy makers have ignored: more Colorado River water is allocated than the river actually produces.

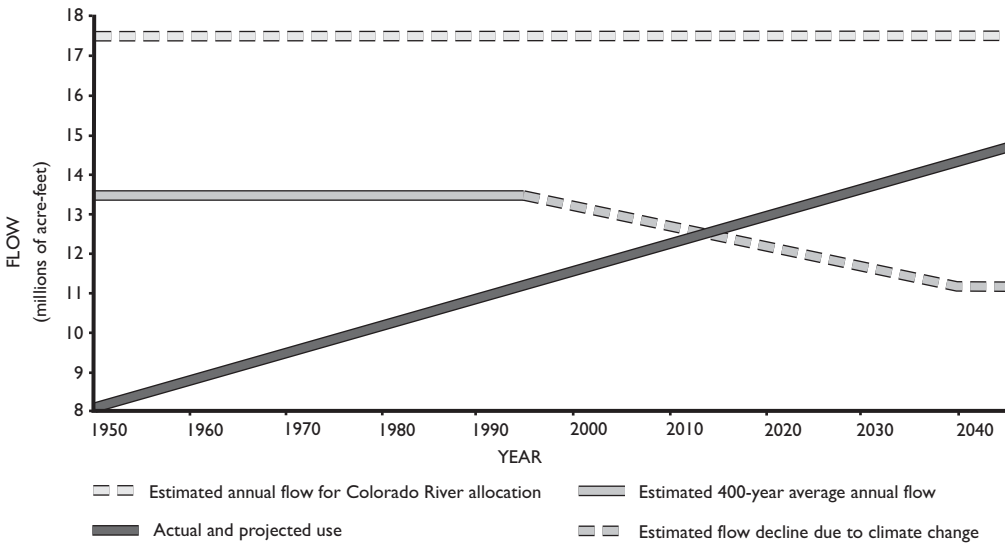
In 1922 the federal government, acting as water master for the Colorado River, entered into an agreement, the Colorado River Compact, with seven western states to divide the river's total flow into two portions: the Upper and Lower Basins. The Upper Basin comprises the states of Colorado, New Mexico, Utah and Wyoming. The Lower Basin states are Arizona, California and Nevada. The Upper and Lower Basins were each awarded 7.5 MAF of water annually. In 1944 a treaty agreement awarded the

Republic of Mexico 1.5 MAF, with 0.75 MAF coming from each basin.

Climate history reveals that this combined allocation of 15 MAF is 11 percent above the 400-year average of 13.5 MAF.<sup>11</sup> The U.S. Geological Survey and others report that the period from 1906 to 1921, partly used to formulate the Compact allocation, had been the wettest period of the 20th century if not the wettest period in nearly 800 years.<sup>12</sup>

In 1979 the Government Accounting Office advised Congress that unless aggressive management policies were pursued, the Colorado River system would begin to fail on the supply side by the year 2000.<sup>13</sup> Since 1999 system-wide storage has declined more than 40 percent.<sup>14</sup>

A System Over-allocated



Sources: Norris Hundley, 1975; C.W. Stockton and G.C. Jacoby, 1976; N.S. Christensen et al, 2004; Bureau of Reclamation, 2000.

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Department of Energy research predicts that by 2010 the Upper Basin will not be able to meet its full water delivery allocations to the Lower Basin 20 percent of the time, dropping to nearly 40 percent of the time thereafter.<sup>15</sup> Despite these warnings, there has yet to be any substantive movement to correct the over-allocation problem.

### **INEFFICIENT WATER STORAGE**

The federal government has constructed more than 40 major dams on the Colorado River and its tributaries, principally for storing and diverting water. These reservoirs have a combined storage capacity equivalent to four and one-half years of the river's average annual flow, but they also cause the loss of up to 13 percent of these flows.<sup>16</sup>

Studies show that an optimum relationship exists between the basin's annual water flow and its storage capacity, since more reservoirs and canals cause more water to be lost to evaporation and seepage. Optimal water storage for the Colorado River was calculated to be about 30 MAF.<sup>17</sup> However, this analysis could not sway the momentum toward building fewer dams.

Lake Powell and Lake Mead are the most inefficient components in this system. Their locations are known for extremely low humidity, high summer temperatures and strong winds that maximize evaporative losses. Since its completion in 1963, Lake Powell has lost approximately 21.1 MAF to the atmosphere and Lake Mead, completed 30 years prior, has lost 57.1 MAF.<sup>18</sup>

In addition, the porosity of the rock that surrounds the reservoirs compounds the water loss through

seepage. The problem is most pronounced at Lake Powell, where the surrounding sandstone is soft and extremely permeable resulting in 18.7 MAF being lost. At Lake Mead, where the rock is more resistant, about 1 MAF has been lost.<sup>19</sup> It is believed that some percentage of the seepage may return as the reservoirs recede, but it is unclear how much and how soon.

This water is incredibly valuable. Based on recent wholesale prices for untreated Colorado River water, Lake Mead and Lake Powell annually lose on average \$350 million worth of water to evaporation.<sup>20</sup>

### **THE LOOMING PROBLEM OF SEDIMENT**

The Colorado River is the most sediment-laden river in the country. Prior to the construction of Glen Canyon Dam, sediment had already filled ten percent of Lake Mead.<sup>21</sup> When Glen Canyon Dam was built, engineers estimated that its river outlet tubes would be compromised by sediment within 100 years, affecting the safe operation of the dam.<sup>22</sup> The Bureau of Reclamation reiterated this in 2002.<sup>23</sup>

Hydrologists and geomorphologists warn that sediment could affect dam operations even sooner.<sup>24</sup> Lake Powell's declining level (92 feet below full pool in July 2005) has exposed more than 100 miles of sediment deposits in the tributaries flowing into the reservoir. These streams are "reworking" or remobilizing these deposits and advancing them towards Glen Canyon Dam.

Additionally, the side canyons and tributaries of the Colorado River contain six decades of accumulated sediment that are poised to be flushed into the



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reservoir. A major flood, as experienced in the past, could carry this material in one large event, rapidly diminishing the operational life of the reservoir.<sup>25</sup>

The National Academy of Sciences estimates that 44 million tons of sediment enters Lake Powell every year, or 84 tons per minute.<sup>26</sup> In order for Glen Canyon Dam to be sustained over time, the annual inflow of sediment will need to be dredged and removed.

The Glen Canyon area is one of the most remote and rugged landscapes in North America. Developing and maintaining such a massive dredging, hauling and disposal program would be very costly. If the sediment is moved to the most environmentally responsible location, the Colorado River delta, transportation costs alone could be \$2.6 billion annually.<sup>27</sup>

Sediment represents the most serious long-term problem facing the Colorado River water storage system and must no longer be ignored.

# The Underground Solution

The most efficient way to store water in a dry climate is below ground where water is not exposed to the atmosphere's evaporative forces. While large reservoirs such as Lake Powell and Lake Mead can collectively cause the loss of upwards of 17 percent<sup>28</sup> of the water reaching them each year, storing this water underground can reduce these losses to as little as one percent once delivered to recharge facilities.<sup>29</sup>

Methods to introduce surface water into aquifers include direct injection using mechanical pumps and percolation in or near dry riverbeds. The primary losses associated with such recharging of underground reservoirs occur while moving the water to where it will be injected or absorbed. To minimize evaporation and conserve electricity, percolation methods can be intensified during winter months and mechanical injection methods during mild months when demand for electricity is reduced.

The arid regions dependent on the water resources of the Colorado River are endowed with natural underground locations which combined could accommodate six years of the Colorado River's annual flow.<sup>30</sup> Some of the largest aquifers are located adjacent to existing aqueducts such as the Central Arizona Project and the California Aqueduct. Along these aqueducts about 26 MAF of storage capacity is available for California and at least 15 MAF for Arizona. Another 25-46 MAF of storage may also be available via additional aquifers in Arizona. While Nevada and Utah's groundwater storage potential is not as well endowed or explored, they too are engaged in recharge activities in and around Las Vegas and Salt Lake City. They also could utilize the significant storage potential in Arizona and California as water

banks to be used as credits against surplus withdrawals from the river.<sup>31</sup>

Some infrastructure to utilize aquifers for Colorado River water storage has been in place for nearly 20 years. The main factor inhibiting its expanded use is that above-ground reservoirs are being used instead. By shifting to a program to maximize underground storage, nearly all the water that would otherwise be stored in Lake Powell and Lake Mead could become available for artificial recharge. This could save 809,000 AF of water annually that would otherwise be lost to reservoir evaporation and seepage.<sup>32</sup>

By eliminating Lake Powell and employing Lake Mead principally to capture the annual floods for water distributed to recharge locations it is estimated that approximately 5 MAF of annual ground water recharge capacity would be necessary to capture surplus flows at Lake Mead.<sup>33</sup> Present recharge capacity for Colorado River water is in excess of 1.3 MAF per year.<sup>34</sup> Costs associated with expanding programs of artificial recharge would not be inconsistent with ongoing investments in aqueduct and pipeline development.<sup>35</sup>

Recharging these aquifers could also reverse the mounting problems associated with their rapid depletion, including higher pumping costs, property damage, contamination from invading seawater and plumes of human-induced pollution. In Las Vegas, for example, aquifer levels have dropped 300 feet in some areas.<sup>36</sup> Although ground subsidence cannot be reversed, recharging these aquifers with Colorado River water will prevent further damage. A rising water table would also revive desert riparian zones and springs that benefit wildlife habitat.

## Existing Colorado River Aquifer Recharge Facilities



# Rethinking Glen Canyon Dam

While the benefits of expanding groundwater recharge present a strong case for evaluating the future role of storage reservoirs along the Colorado River, there is already a compelling need to examine the merits of the system's most troublesome facility, Glen Canyon Dam.

## UNNECESSARY & UNCERTAIN WATER STORAGE

Glen Canyon Dam was built to aid the Upper Basin states to deliver 8.23 MAF of water annually to the Lower Basin.<sup>37</sup> The rationale was that during periods of drought, Lake Powell's storage would allow the Upper Basin to fulfill this commitment without impacting its own water use.

However, a Bureau of Reclamation model demonstrated that Glen Canyon Dam's contributions to meet these deliveries are negligible.<sup>38</sup> Lake Mead alone would have provided all of the storage needed for the Lower Basin until recently. Not until autumn of 2004, 41 years after Glen Canyon Dam was completed, had the water stored in Lake Powell been a factor in supplementing Upper Basin water delivery to the Lower Basin.<sup>39</sup>

While it may appear that Lake Powell has for the first time been fulfilling its intended purpose, this has come at a significant cost. Obtaining that 23.5 MAF (the amount in Lake Powell when the drought began in July 1999) of water in Lake Powell after 41 years resulted in 35.7 MAF being lost to evaporation and seepage. This combined loss represents just 40 percent efficiency for long-term water storage.<sup>40</sup>

Additionally, the refilling of Lake Powell will be a rare occurrence. When the reservoir began filling in 1963, there was less demand on available water. This allowed

an average surplus of 2.6 MAF annually to flow into Lake Powell, filling it in 17 years.<sup>41</sup> Demand has since increased nearly 100 percent in the Upper Basin and is projected to average 5.4 MAF by 2020.<sup>42</sup> Subtracting this annual projected use by the Upper Basin from the river's average annual flow of 13.5 MAF, then subtracting the 8.23 MAF that Glen Canyon Dam must annually release downstream leaves no surplus to help refill the reservoir. This average annual surplus goes into the red when accounting for the Department of Energy's anticipated declines in river flows due to climate change.<sup>43</sup>

## REVIVING GRAND CANYON'S ECOSYSTEM

The river ecosystem in Grand Canyon National Park began declining as Lake Powell began to fill in 1963. Since then, river resources in the park have steadily deteriorated to a state of near collapse. If more effective measures are not taken soon, the integrity of this ecosystem will be forever compromised. The operation of Glen Canyon Dam has caused four of the Canyon's eight native fish species to become extinct. A fifth is headed in this direction and a sixth is now considered a species of "special concern." Native birds, mammals, reptiles and amphibians along the river corridor have been affected as well.<sup>44</sup>

In an effort to reverse this decline, Congress passed the Grand Canyon Protection Act in 1992. In 1995 an Environmental Impact Study (EIS) established mitigation measures relating to Glen Canyon Dam's operations.<sup>45</sup> Since the recovery program began, and after more than \$223 million has been spent, one native fish disappeared from the Canyon and another has declined to nearly unrecoverable levels.<sup>46</sup>

## Glen Canyon Dam's impacts on Grand Canyon's ecosystem

- The water below the dam is constantly cold at 47 degrees Fahrenheit. The natural river fluctuated seasonally from near freezing to 80 degrees Fahrenheit.
- River flows fluctuate daily between 8,000 and 20,000 CFS (cubic feet per second). Naturally they would fluctuate seasonally from 3,000 to 100,000 CFS.
- The dam has trapped the sediment required to maintain sandbar habitat and supply nutrients to the food web.
- The dam blocks fish migration, limiting their genetic integrity and habitat diversity.
- Non-native fish inhabit this new environment and compete with the native fish.

As outlined in a recent report to Congress by the Secretary of the Interior,<sup>47</sup> no progress has been made toward meeting the mandate of the Grand Canyon Protection Act, the objectives of the EIS, or the recovery goals which attempt to bring the dam into compliance with the Endangered Species Act.<sup>48</sup>

In addition, the core of the National Park Service Organic Act<sup>49</sup>—“to leave [national parks] unimpaired for the enjoyment of future generations”—is being violated as resources continue to deteriorate in Grand Canyon National Park.

A major limitation of efforts to restore Grand Canyon thus far has been the inability to deliver sediment and nutrients to the ecosystem.<sup>50</sup> With nearly all the sediment trapped behind Glen Canyon Dam, there has been a continued decline in the food base and backwater habitat for endangered fish, disturbances at archeology sites and a loss of camping beaches. Resource managers have been prohibited from examining the solution that offers the greatest chance of habitat recovery—restoring the river's natural processes by decommissioning Glen Canyon Dam.

### SEDIMENT COSTS

Water managers must develop a program to manage the sediment entering Lake Powell. As there is no feasible method to flush this sediment through Glen Canyon Dam, not to mention the dams downstream, sediment must be mechanically removed.

The overall scale of such a project in design, implementation and cost would rival any of the Colorado River water projects to date. Like Hoover

Dam, it would be an unprecedented undertaking. A range of alternatives will need to be explored, including allowing the sediment to flow downstream and removing it from Lake Mead.

From the standpoint of convenience, Lake Mead affords much easier access to the sediment than Lake Powell. Superior transport systems are already available at Lake Mead, both highway and railroad. Topographically, Lake Mead offers a better range of disposal sites with fewer constraints should a pipeline/slurry system be preferred. Should it be deemed appropriate to transport the sediment to nature's intended destination, the Colorado River delta, the distance from Lake Mead would be half as far as from Lake Powell.

Managers must also assess the value of the sediment toward achieving compliance with federal laws guiding endangered species recovery in Grand Canyon National Park. Sediment augmentation—moving sediment around the dam—has already been discussed as a necessary next step to reverse Glen Canyon Dam's impacts on Grand Canyon.<sup>51</sup> However, such augmentation approaches may not contain necessary nutrients like carbon, which is essential to rebuilding a healthy, native food web in Grand Canyon.<sup>52</sup>

### UNCERTAIN POWER, FAR FROM IRREPLACEABLE

When Lake Powell is at full or near full, Glen Canyon Dam can on average generate enough power to service 389,000 homes.<sup>53</sup> Declining reservoir storage has caused power production to drop 40 percent.<sup>54</sup> Production could fall to zero should below normal

inflows persist and water consumption remain unchanged.<sup>55</sup>

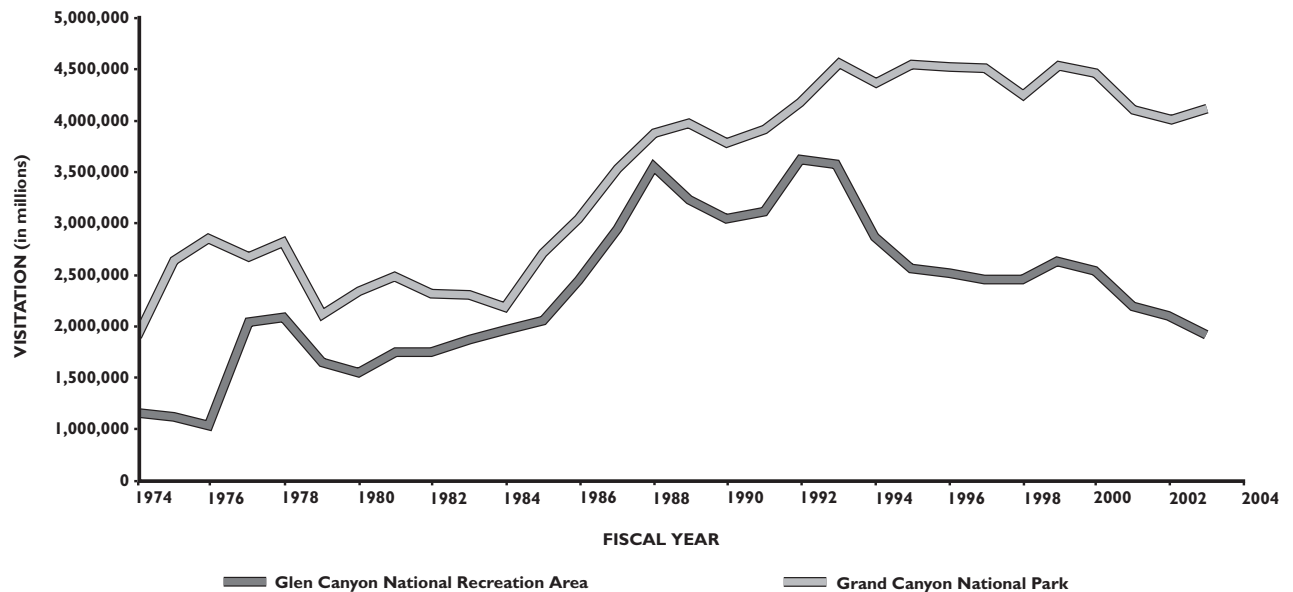
Glen Canyon Dam's customers normally enjoy a 40 percent subsidy over the prevailing market rates. Now they must obtain replacement power at competitive rates.<sup>56</sup> Substitute power is readily available and will continue to absorb Glen Canyon Dam's shortfalls, even if power generation falls to zero.

Since 2000, declining power revenues from Glen Canyon Dam have brought repayments on federal loans for Colorado River infrastructure to a near standstill.<sup>57</sup> While periodic high flows may help power production and enhance revenues for a short time,

climate change and increased water demand have rendered power generation from Glen Canyon Dam far from certain.

To the extent electricity is produced, this comes at a cost of water lost to evaporation and seepage. This water itself has economic value and would provide a comparable revenue stream should the dam be decommissioned. More importantly, there is no substitute for the lost water. Since scarcity of water was the driving force behind construction of Glen Canyon Dam, recovery of this water should influence the dam's future.

### 30-year Visitation History of Glen Canyon National Recreation Area and Grand Canyon National Park



SOURCE: National Park Service

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## TOURISM

Lake Powell and the surrounding Glen Canyon National Recreation Area contribute to a tourism economy centered at Page, Arizona. However, visitation there has declined nearly 50 percent over the past 15 years.<sup>58</sup>

Low reservoir levels restricting boater access have accelerated these declines. In November 2004, Aramark, the area concessionaire, was forced to close facilities that had previously been open year-round.<sup>59</sup> The National Park Service (NPS) has invested heavily to improve facilities. Despite spending \$22 million in 2004 alone,<sup>60</sup> NPS was unable to keep boat ramps fully operational. These problems will continue as lower reservoir levels likely become the norm.

A portion of the Navajo Nation shares its border with Lake Powell and contributes to the tourism industry as well. Their concession contractor, Antelope Point Holdings, opened a marina in 2004, but declining reservoir levels prevented the launching of boats. While modifications have been made, a cliff prevents the marina from operating when the reservoir is about 115 feet low, a reoccurring problem should low water levels persist. The Navajo Nation's desire to construct a water pipeline from the Colorado River, however, can proceed without Lake Powell.

Recreational trout fishing in the Colorado River below Glen Canyon Dam has experienced a decline in visitation similar to that of Lake Powell, from 52,000 angler days in 1983, to 25,000 in 1999.<sup>61</sup>

A recent survey of visitors spending the night at Page revealed that Lake Powell boating was not the only

attraction. More than 50 percent of respondents were not engaged in water recreation on Lake Powell.<sup>62</sup> This is likely due to the town's central location along a widely used tourist route between the Grand Canyon and other popular national parks, national monuments and recreation areas.

Prior to Glen Canyon Dam, the Colorado River through Glen Canyon was emerging as a tourist destination on its own. Glen Canyon was one of the most spectacular features of the American landscape. Even now, Aramark and others are attempting to attract visitors by publicizing the uncovering of Glen Canyon's natural features at a diminishing reservoir.

The restoration of Glen Canyon by decommissioning Glen Canyon Dam could spawn a river recreation industry comparable to what now exists in Grand Canyon National Park. Hiking, biking and other land-based activities could also be as popular as they are elsewhere in the Canyon County of the Colorado River.

## ELIMINATING CONCERNS FOR SAFETY

Glen Canyon Dam has a dangerous safety record. In 1983, snowmelt caused an emergency situation that nearly ended in dam failure. A faulty design in the dam's spillways led to hydraulic pressure excavating bedrock and forced dam managers to abandon the spillways' full use. Luckily, disaster was averted when inflows subsided prior to water overtopping the dam.<sup>63</sup>

The Bureau of Reclamation has forecasted that if Glen Canyon Dam failed when full, a wall of water 580 feet high would enter Grand Canyon.<sup>64</sup> A wave 68

feet high would overcome Hoover Dam and begin a flood that would subside eleven days later. Such a failure could devastate critical water distribution and transportation networks for Arizona, Nevada, Southern California and Mexico, along with the homes and businesses of tens of thousands of people.

Historically, flood control storage has not been a high priority for managers of the Colorado River system, requiring just 5.35 MAF annually to be available

system-wide at the beginning of each year.<sup>65</sup> It was this low requirement that allowed the 1983 problems at Glen Canyon Dam to materialize. By eliminating Lake Powell and operating Lake Mead for efficient ground water diversions, nearly four times the current flood control protection could be achieved.<sup>66</sup>

## Indian Nations

Glen Canyon Dam inundated the cultural heritage of the First Nations upstream and is slowly eroding what remains downstream in Grand Canyon National Park.

Navajo, Hopi, Zuni, White Mesa Ute, Southern Paiute, Kaibab Paiute, Shivwits Paiute, Havasupai, and Hualapai all have connections to the Colorado River in Glen and Grand Canyons, including sacred sites and artifacts dating back 10,000 years. Reports on roughly 2000 sites submerged by Lake Powell describe shelter caves, dwellings, granaries, irrigation systems, rock art panels, burials, ceramics, and projectile points.<sup>67</sup> Included were revered sacred sites of the Navajo for ceremonies and prayer, such as Rainbow Bridge National Monument, a 291-foot-high natural bridge.

The operation of Glen Canyon Dam currently affects some 264 archeological sites in Grand Canyon. Fluctuating river flows in response to hydropower demands destabilize riverbanks where the sites reside. These fluctuating flows disturb the cultural properties in the process. Furthermore,

a failure of Glen Canyon Dam would completely obliterate some 964 known cultural sites.<sup>68</sup> Federal laws require the preservation of these ancestral artifacts and National Park Service and First Nation policies require that artifacts and burials be preserved in place.

Only a few remaining medicine people are truly aware of what has been submerged under Lake Powell. Some still say that choking the river with a dam brought disharmony and discontent to their people and only with the restoration of these sacred sites can their physical and spiritual health become restored.<sup>69</sup>



# Re-examine the Colorado River Compact

Since the Colorado River Compact was approved in 1922 over-allocation, reduced supply and population growth have greatly altered the ability of the Compact to serve its intended purposes.

The goals of the Compact are “to provide for equitable division and apportionment of the use of the waters of the Colorado River System; to establish the relative importance of different beneficial uses of water; to promote interstate comity; to remove causes of present and future controversies; and to secure the expeditious agricultural and industrial development of the Colorado River basin, the storage of its waters, and the protection of life and property from floods.”<sup>74</sup>

The Compact has not achieved an “equitable division” of water for the constituency. With the river providing on average 13.5 MAF (instead of the 15 MAF allocated by the Compact), and with Mexico receiving 1.5 MAF, just 12 MAF remains for the two basins. The Lower Basin is guaranteed 6.75 MAF (7.5 MAF minus its 0.75 MAF contribution to Mexico). Thus, in the best of circumstances the Upper Basin could on average count on just 5.25 MAF (13.5 MAF of river flow minus 7.5 MAF of Lower Basin consumption minus its own 750,000 AF contribution to Mexico) or 22 percent less than the Lower Basin.

The Compact lacks provisions for addressing real shortages. The lowering of Lake Powell and present climate conditions render this an immediate possibility today, and medium- to long-term supply and demand trends suggest that this situation is not likely to improve in the future. If Lake Powell is empty there may be times when the Upper Basin may not be able to meet its 8.23 MAF obligation to the Lower Basin.

A responsible attempt to craft a new agreement that reflects the reality of river supply must be initiated. This could be done by adjusting allocations annually to reflect actual river flows. It is becoming more evident that the current system, which evaluates the allocation to the Upper Basin after its delivery to the Lower Basin has been satisfied, has needlessly delayed prudent approaches to ensure balance in the system and to meet the challenges of future shortages.

The Compact establishes the most important use of Colorado River water to be domestic and agricultural purposes, with other uses subservient. The destruction of Grand Canyon’s river ecosystem illustrates how important environmental considerations are as well. But nothing illustrates the environmental challenge more clearly than the demise of the Colorado River delta, where reduction in flows has caused the ecosystem to virtually disappear.<sup>75</sup> Future discussions of allocation must therefore include environmental flows.

The decommissioning of Glen Canyon Dam and the expansion of aquifer storage systems is not only consistent with this priority, but actually better facilitates the achievement of Compact purposes. Lake Mead can capture surplus water and ensure its storage for the Lower Basin, in the reservoir and through groundwater aquifers. Furthermore, as noted in Article VIII of the Compact, only 5 MAF of storage is needed in the Lower Basin to safeguard its perfected rights. Lake Mead on its own clearly satisfies this requirement.

The Compact does not provide for an equitable and timely means to reduce allocations. In order to avert major complications a basin-wide evaluation of current water use, coupled with an assessment of



senior-perfected water rights, needs to be conducted. With this information, a systematic plan to allocate water rights between the states, Tribes and Mexico can

be achieved, and will minimize future impacts to the economy and the environment.

## Federal Responsibility

The Colorado River passes through seven states as well as many national parks and monuments before entering Mexico. The complexity of interstate, tribal and international agreements places the federal government at center stage in charting management strategies for the Colorado River. Congress has passed much legislation pertaining to its management, forming a body of law referred to as “The Law of the River.” Many of these laws are no longer effective. They fail to achieve a sustainable balance between water supply and demand, and to adequately protect fragile ecosystems associated with the river. It is critical that Congress revisit this legislation and remedy the problems that have developed.

In 1922 Congress approved the Colorado River [Interstate] Compact that quantified Colorado River water allocations for each state and, in 1944, Mexico. Unfortunately the Compact greatly over-estimated the amount of water actually available within the watershed and allocated 3-4 MAF more than the river can now provide.

Congress passed the Colorado River Storage Project of 1956, and the Colorado River Basin Project Act of 1968, authorizing water projects that impounded or diverted water on nearly every tributary.<sup>70</sup> These projects increased system-wide storage to 62 MAF, well beyond the level of diminishing returns. The legislation did not include a plan or a source of funding to manage the removal of sediment from the reservoirs.

In response to public concern over the impacts of Glen Canyon Dam on the resources of Grand Canyon National Park, Congress passed the Grand Canyon Protection Act (GCPA) in 1992.<sup>71</sup> This act directed the Secretary of the Interior to complete an Environmental Impact Study (EIS) on the operations of Glen Canyon Dam. The GCPA also directs the Interior Secretary to “protect, mitigate adverse impacts to, and improve the natural, cultural, and recreational resource values downstream from the dam, for which Grand Canyon National Park and Glen Canyon National Recreation Area were established.” On average \$11 million is being spent annually in efforts that have failed to reverse declines in native species, and to restore sandbar and beach deposits.

Additionally, the National Park Service Organic Act of 1916 provides clear Congressional guidance to protect resources like Grand Canyon. Units of the National Park System are managed “to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same by such means as will leave them unimpaired for the enjoyment of future generations.”<sup>72</sup>

Lastly, the Endangered Species Act<sup>73</sup> requires the US Fish and Wildlife Service to protect and provide recovery for endangered species. Since the GCPA was passed the Razorback Sucker has been extirpated and the Humpback Chub population is in serious decline.

# Conclusion

Colorado River water managers have long ignored resolving administrative and structural problems affecting a critical component of the Southwest's water supply. Continued inaction will invite conflict, forcing a response to emerge from crisis as opposed to reason. More likely than not, reactionary decisions would compound the problem, merely providing an urgent response to solve a minor detail and avoiding movement towards a comprehensive solution for the watershed.

The leadership in the Bureau of Reclamation has not stepped forward in this regard. As concern over the present drought intensified, the agency merely stated that the reservoirs were performing as intended: delivering water in times of shortage.<sup>76</sup> Planners must re-examine how efficient the system really is based on the reality of increased demand and decreased supply. This must include how Colorado River water, whatever the amount nature chooses to provide, can be stored as efficiently as possible.

In so doing, planners should not be impeded by the other incidental uses of Colorado River water, such as power generation and recreation. The prevailing need is to manage the river's finite water supply as efficiently as possible. Though power production and recreation have substitutes, there is no substitute for Colorado River water.

Nor are there substitutes for the ecosystems impacted by water projects on the Colorado River. Grand Canyon National Park is a core element of

our natural heritage and laws have been enacted specifically to ensure its protection. Nonetheless, dam operations continue to undermine the famous ecosystems of the Colorado River.

With these issues in mind, and in conjunction with a larger objective of achieving sustainable water management and ecological restoration on the Colorado River, it is recommended that future operations of Lake Powell and Lake Mead be explored in conjunction with a much broader evaluation to:

- 1) Pursue transfers of Lake Powell and Lake Mead storage to groundwater aquifers. | 3
- 2) Develop a sustainable sediment management program for Lake Powell and Lake Mead. | 4
- 3) Determine the costs and benefits of decommissioning Glen Canyon Dam to restore natural flows through Glen and Grand Canyons. | 5  
6
- 4) Identify new water allocation guidelines to reflect the amount of water the Colorado River actually provides, how it should be distributed and what amounts are needed to protect critical habitats in Grand Canyon and elsewhere. | 7  
8

1. Historic evaporation losses for Colorado River main stem reservoirs have averaged 1.8 million acre-feet (MAF) annually (not adjusted for the river's natural evaporation), 13 percent of the river's average annual paleoclimatic flow of 13.5 MAF.

—Bureau of Reclamation. Upper Colorado Region: Water Operations. "Table LC-1 and UC-1." *Colorado River System Consumptive Uses and Losses Report (1971-2000)*.

The paleoclimatic stream flow of 13.5 MAF at the Compact Point (Lee's Ferry, Arizona) is based on a 400-year, tree-ring database.

—Stockton, C. W. and G. C. Jacoby. "Long Term Surface Water Supply and Stream Flow Trends in the Upper Colorado River Basin." *Lake Powell Research Project Bulletin No. 18 (University of California at Los Angeles: Institute of Geophysics and Planetary Physics, 1976)*.

A tree-ring reconstruction study completed in 2000 has proposed the long-term yield for the Colorado River is 13.2 MAF.

—Hidalgo, Hugo G., Thomas C. Piechota and John A. Dracup. "Alternative Principal Components Regression Procedures for Dendrohydrologic Reconstructions." *Water Resources Research, Vol. 36, No. 11 (November, 2000)*, 3241-3249.

2. On average, Lake Powell evaporates 516,000 acre-feet (AF) and Lake Mead evaporates 828,000 AF for a total of 1.34 MAF, 10 percent of the average annual paleoclimatic flow.

—See: Note 1 (Bureau of Reclamation).

3. Arizona has approximately 15 MAF of available groundwater storage along the Central Arizona Project at existing, direct aquifer recharge facilities.

—Robson, S. G. and E. R. Banta. *Ground Water Atlas of the United States*. U.S. Geological Survey Atlas HA 730-C (1995), figures 42 and 43.

Online: [http://capp.water.usgs.gov/gwa/ch\\_c/C-text3.html](http://capp.water.usgs.gov/gwa/ch_c/C-text3.html)

—Tim Henley, Arizona Water Banking Authority. Personal communication, June 30, 2005.

—Another 25-46 MAF may be available in the state when considering nearby aquifer volume minus aquifer depletion as reported by the U.S. Geological Survey *Ground Water Atlas (above)*.

California has the potential to store 26 MAF of Colorado River water underground along the Colorado Aqueduct.

—California Department of Water Resources. *California's Groundwater: Bulletin 118* (Updated in 2003 with aquifer storage capacity estimates).

—Bill Hassencamp, Metropolitan Water District. Personal communication, July 18, 2005.

—Mark Buehler, Coachella Valley Water District. Personal communication, July 18, 2005.

4. Bureau of Reclamation. Upper Colorado Region: Water Operations. "Operations Summary and Reservoir Status." *Annual Operating Plan for the Colorado River System Reservoirs (2000-*

*2006)*.

—Bureau of Reclamation. Upper Colorado Region: Water Operations. "Beneficial Consumptive Uses and Losses." *Colorado River System Consumptive Uses and Losses Report (1971-2000)*.

5. Webb, Robert H., Gregory J. McCabe, Richard Hereford and Christopher Wilkowske. *Climatic Fluctuations, Drought, and Flow in the Colorado River Basin*. U.S. Geological Survey Fact Sheet 2004-3062 (June, 2004).

6. Cook, Edward R., Connie A. Woodhouse, C. Mark Eakin, David M. Meko and David W. Stahle. "Long-Term Aridity Changes in the Western United States." *Science Vol. 306 (November 5, 2004)*, 1015-1018.

7. Dawdy, David R. "Hydrology of Glen Canyon and Grand Canyon," *Colorado River Ecology and Dam Management: Proceedings of a Symposium May 24-25, 1990. Santa Fe, New Mexico (Washington D.C.: Academy Press, 1991)*, 46.

8. See: Note 1 (Stockton et al and Hidalgo et al).

9. Based on the 8.25 MAF delivered at the Compact Point (Lee's Ferry, Arizona) plus Upper Basin consumption of 4.4 MAF for a total of 12.65 MAF.

—Bureau of Reclamation. Upper River Region: Water Operations. "Upper Colorado River Tributaries." *Colorado River System Consumptive Uses and Losses Report (1996-2000)*, 14.

10. Christensen, Niklas S., Andrew Wood, Nathalie Voisin, Dennis P. Lettenmaier and Richard N. Palmer. *The Effects of Climate Change on the Hydrology and Water Resources of the Colorado River Basin (2004)*, 1-2.

11. See: Note 1 (Stockton et al and Hidalgo et al).

12. See: Note 5 (Webb et al).

—Gray, Stephen T., Stephen T. Jackson and Julio L. Betancourt. "Tree-Ring Reconstructions of Interannual to Decadal Scale Precipitation Variability for Northeastern Utah Since 1226 A.D." *Journal of the American Water Resources Association (August, 2004)*, 947-960.

13. Government Accounting Office. *Comptroller General's Report to the Congress. Colorado River Basin Water Problems: How to Reduce Their Impact CED-79-11 (1979)*, 1.

14. See: Note 4 (Bureau of Reclamation).

15. See: Note 10 (Christensen et al).

16. See: Note 1 (Bureau of Reclamation).

17. Langbein, Walter B. *Water Yield and Reservoir Storage in the United States*. U.S. Geological Survey Circular 409 (1959).

18. See: Notes 1 & 2 (Bureau of Reclamation).

19. Bureau of Reclamation. Upper Colorado Region: Water Operations. *24-Month Study Reports*. (Lake Powell and Lake Mead bank storage columns.)

Online: <http://www.usbr.gov/uc/water/crsp/studies/index.html>

20. With wholesale prices of Colorado River water of at least \$258 per acre-foot, and average annual evaporation losses of Lake Powell and Lake Mead of 0.516 and 0.828 MAF respectively (not adjust-

- ed for the river's natural evaporation), and results in \$347 million in economic losses.
- San Diego County Water Authority. *Historic Water Transfer Agreement Gets Final Approval as QSA Falters*. San Diego Water Authority press release (December 31, 2002).
21. Average annual rate of sedimentation in Lake Mead is estimated to be 102,000 AF, representing a total of 2.86 MAF deposited over the 28 years Hoover Dam operated prior to the completion of Glen Canyon Dam, or 10 percent of Lake Mead's storage capacity.
- Smith, W. O., C. P. Vetter, and G. B. Cummings. *Comprehensive Survey of Sedimentation in Lake Mead, 1948-49*. U.S. Geological Survey Professional Paper 295 (1960), 195 & 231.
22. Schultz, Ernest R. *Design Features of Glen Canyon Dam: Paper for Presentation at ASCE April, 1961 Convention*. (Phoenix: Bureau of Reclamation Construction Division), 30.
23. Spangler, Jerry. "Draining Powell Called a Pipe Dream." *Deseret News*. Salt Lake City (June 18, 2002).
24. Dohrenwend, John C. "Rapid Progradation of the Colorado and San Juan River Deltas into Lake Powell Reservoir, July 2002 to March 2004." *Four Corners Geological Society Newsletter, April 2004*. (Durango, Colorado), 4.
- University of Arizona. *Exposed Upper Colorado River Delta is Rapidly Eroding into Lake Powell*. University of Arizona press release (May 7, 2003).
25. Graf, William L. *The Colorado River: Instability and Basin Management*. (Washington D.C.: Association of American Geographers, 1985), 34.
- Hereford, Richard. "Valley-Fill Alluviation (ca. 1400-1880) During the Little Ice Age, Paria River Basin and Southern Colorado Plateau, U.S.A." *Geological Society of America Bulletin v. 114* (2002), 1550-1563.
26. Andrews, Edmund D. "Sediment Transport in the Colorado River Basin." *Colorado River Ecology and Dam Management: Proceedings of a Symposium May 24-25, 1990 Santa Fe, New Mexico*. (Washington D.C.: Academy Press, 1991), 68.
27. Annual sediment of 44 million tons would require approximately two million truckloads at standard loads of 22 tons per truck. The distance from Lake Powell's Hite Marina to the Colorado River delta is 1,300 miles round trip, requiring a fleet of 15,000 trucks working around the clock. At \$1 per mile per truck, the total operating costs alone would be \$2.6 billion annually.
- Owner-Operator Independent Drivers Association. *Cost Per Mile Worksheet*. Online: [http://www.ooida.com/trucking\\_tools/CPM/cost\\_per\\_mile\\_print.htm](http://www.ooida.com/trucking_tools/CPM/cost_per_mile_print.htm)
28. The average annual water flow entering Lake Powell since 1963 is estimated to be 10.9 MAF. When full, Lake Powell can cause the loss of 606,000 AF (1999). When the remainder of this water flows into Lake Mead, when it is full, another 1.23 MAF (1999) can be lost. Combined, this represents 1.84 MAF lost, or 17 percent of the 10.9 MAF inflows.
- Bureau of Reclamation. Upper Colorado Region: Water Operations. *Historic Data: Lake Powell Inflows*. Online: <http://www.usbr.gov/uc/crsp/GetSiteInfo>
- See: Note 9 (Bureau of Reclamation), 21 & 31.
29. Artificial recharge projects in Arizona using Colorado River water have reported evaporation losses of one percent or less.
- Central Arizona Project. *Groundwater Recharge Projects: Operations*. Online: <http://www.cap-az.com/recharge/index.cfm?action=Aqua&subSection=70>
30. Robson, S. G. and E. R. Banta. *Ground Water Atlas of the United States*. U.S. Geological Survey Atlas HA 730 (1995). Online: <http://capp.water.usgs.gov/gwa/gwa.html>
31. The Southern Nevada Water Authority currently has agreements to store 1.25 MAF in the state of Arizona.
- Southern Nevada Water Authority. *Southern Nevada Water Authority Water Resources Plan* (2005), 3:19.
32. Eliminating Lake Powell would save on average 414,000 AF of evaporation losses (516,000 AF of annual evaporation loss minus 102,000 AF lost (see Myers below) from river evaporation).
- Myers, Tom. *Water Balance of Lake Powell: An Assessment of Groundwater Seepage and Evaporation*. (Salt Lake City: Glen Canyon Institute, 1999), 3.
- Maintaining Lake Mead's useable storage (not including dead pool storage) to 5 MAF (1,007 feet above sea level), the minimum required by the Colorado River Compact would reduce its average annual evaporation from 828,000 AF to approximately 433,000 AF.
- Stanley, J. W. "Chapter I: Reservoir Storage." *Comprehensive Survey of Sedimentation in Lake Mead, 1948-49*. U.S. Geological Survey Professional Paper 295 (1960), 87 & 90.
- Langbein, W. B. "Chapter J: Water Budget." *Comprehensive Survey of Sedimentation in Lake Mead, 1948-49*. U.S. Geological Survey Professional Paper 295 (1960), 97.
33. The wettest decade of the historic record (1911-1920) had an average annual surplus of 5 MAF.
- California Department of Water Resources. "Observed Natural Flow at Lee's Ferry." *Colorado River Drought Information*. Online: [http://www.salttonsea.water.ca.gov/data/co\\_river.cfm](http://www.salttonsea.water.ca.gov/data/co_river.cfm)
34. Along the Central Arizona Project, existing direct recharge projects have the ability to recharge approximately 900,000 MAF.
- Arizona Department of Water Resources. *Permitted Projects—December 31, 2003*. Online: <http://www.water.az.gov/recharge/PermittedFacilities.htm>
- Virginia O'Connell, Arizona Water Resources Department. Personal communication, July 18, 2005.
- Along the Colorado River Aqueduct in California, existing direct recharge projects have the ability to recharge 450,000 AF, and other projects are currently under construction

that will bring the total to 700,000 AF.  
 —Bill Hassencamp, Metropolitan Water District. Personal communication, July 18, 2005.  
 —Mark Buehler, Coachella Valley Water District. Personal communication, July 18, 2005.  
 Las Vegas Nevada has recharged as much as 32,000 AF in one year.  
 —Las Vegas Valley Water District. *Las Vegas Valley Water District 2004 Artificial Recharge Annual Report* (2004), 3.  
 35. Examples of ongoing planning and development for water projects include the Central Utah Project, the Animas-La Plata Project, the Colorado River Return Project, and the Navajo Water Supply Project.  
 36. Bartolino, J. R. and W. L. Cunningham. *Ground-Water Depletion Across the Nation*. U.S. Geological Survey Fact Sheet 103-03, (February, 2004).  
 37. Glen Canyon Dam only releases 8.23 MAF because the Upper Basin's Paria River (below the dam and above the Compact Point at Lee's Ferry, Arizona) contributes 20,000 acre-feet annually for a total of 8.5 MAF.  
 38. Rosekrans, Spreck. *The Effect of Draining Lake Powell on Water Supply and Electricity Production*. (San Francisco: Environmental Defense Fund, 1997).  
 39. Without Lake Powell the 21st century drought would have depleted Lake Mead in the fall of 2004. At that time (2004) the combined storage at Lake Mead and Lake Powell was equal to the capacity of Lake Powell when it was nearly full in July 1999 (23.5 MAF).  
 —Bureau of Reclamation. Lower Colorado Region: Water Operations. *Historic Data: Lake Mead Levels*.  
 Online: <http://www.usbr.gov/lc/region/g4000/hourly/mead-elv.html>  
 —Bureau of Reclamation. Upper Colorado Region: Water Operations. *Historic Data: Lake Powell Levels*.  
 Online: <http://www.usbr.gov/uc/crsp/GetSiteInfo>  
 40. In 1999, Lake Powell was nearly full and stored 23.5 MAF of water. Lake Powell's average annual evaporation is 414,000 AF (after deducting 102,000 AF for river evaporation were the dam not there) and the total after 41 years of operation is 17.0 MAF. The total lost to seepage at Lake Powell is 18.7 MAF, for a total of 35.7 MAF (evaporation and seepage). It has therefore required a grand total of 59.2 MAF to obtain the 23.5 MAF actually used. This 23.5 MAF is just 40 percent of the total.  
 —See: Note 9 (Bureau of Reclamation), 23 & 31.  
 —See Note 19 (Bureau of Reclamation).  
 41. Bureau of Reclamation. Upper Colorado Region: Water Operations. *Historic Data: Lake Powell Inflow & Release*.  
 Online: <http://www.usbr.gov/uc/crsp/GetSiteInfo>  
 42. Bureau of Reclamation. Lower Colorado Region Water Operations. "Colorado River Water Use Since 1906."

Online: <http://www.usbr.gov/lc/region/g4000/uses.html>  
 —Department of the Interior: Bureau of Reclamation. "Attachment K. Upper Basin Depletion Schedule." *Colorado River Surplus Criteria Final Environmental Impact Statement* (2000).  
 43. See: Note 10 (Christensen et al).  
 44. National Park Service: Grand Canyon National Park. *Endangered, threatened, and sensitive wildlife of potential occurrence along the Colorado River in Grand Canyon*. Online: <http://data2.itc.nps.gov/nature/documents/ACF18EB.doc>  
 45. Department of the Interior. *Report to Congress: Operations of Glen Canyon Dam Pursuant to the Grand Canyon Protection Act of 1992, Water Years 1999-2001, Secretary of the Interior* (May, 2002), 2-8.  
 46. Experts believe the fourth species to be extirpated (regionally extinct) in the Grand Canyon is the Razorback Sucker.  
 —National Park Service: Grand Canyon National Park. *Grand Canyon National Park Profile* (2004), 2.  
 A total of \$223 million has been invested in mitigating Glen Canyon Dam's impacts on Grand Canyon.  
 —*Updike, Christopher N. and Steven P. Gloss*. "Confronting Social Impediments to Adaptive Management: Lessons from the Grand Canyon Ecosystem." *Grand Canyon Monitoring and Research Center: Colorado River Ecosystem Science Symposium*, (October, 2003).  
 47. See: Note 45 (Department of the Interior), 22-27.  
 48. U.S. Fish and Wildlife Service. *Final Biological Opinion on the Operation of Glen Canyon Dam* (January, 1995), 33.  
 49. The National Park Service Organic Act (16 U.S.C. 1 2 3, and 4), as set forth herein, consists of the Act of Aug. 25 1916 (39 Stat. 535) and amendments thereto.  
 50. See: Note 45 (Department of the Interior).  
 51. National Academy of Sciences: Commission on Geosciences, Environment and Resources. *River Resource Management in the Grand Canyon* (Washington D.C.: Academy Press, 1996), 4.  
 —Bureau of Reclamation. Upper Colorado Regional Office: Glen Canyon Dam Adaptive Management Program. *Fiscal Year 2006 Budget & Work Plan* (March, 2005), 19 & Worksheet 4.  
 52. Haden, G. Allen, Dean W. Blinn, Joseph P. Shannon, and Kevin P. Wilson. "Driftwood: An Alternative Habitat for Macroinvertebrates in a Large Desert River." *Hydrobiologia* 397 (1999), 179-186.  
 53. Based on the average annual output of Glen Canyon Dam (5,166,000 MWh), and average annual Arizona residential electricity use at 13,300 kWh per household.  
 —Southwest Energy Efficiency Project. *Arizona: Energy Efficiency and Energy Consumption*. (Boulder, Colorado: Southwest Energy Efficiency Project).  
 54. Bureau of Reclamation. *Drought or Opportunity: Remarks Delivered by John W. Keys, III, Commissioner, Bureau of Reclamation, Colorado River Water Users Association, 2003 Annual*



*Meeting, Las Vegas*. Bureau of Reclamation press release (December 12, 2003).

Power generation for 2004 from Colorado River Storage Project dams, of which Glen Canyon is the primary contributor, dropped 40 percent from when the reservoir was near full in 1999. —Western Area Power Administration. “Salt Lake City Area/Integrated Projects: Powerplants”. *Annual Report: Statistical Appendix* (1999-2004).

Online: <http://www.wapa.gov/newsroom/pubs.htm>

55. See: Note 51 (National Academy of Sciences), 65.

56. Western Area Power Administration. “Continued Drought Brings Many Questions.” *Closed Circuit* (May 28, 2004).

57. From 2000-2004 repayments to the federal treasury for projects in the Colorado River Storage Project Act averaged just \$6.2 million on an outstanding loan due in 2050 of \$2.6 billion. —See: Note 54 (Western Area Power Administration).

58. National Park Service: Public Use Statistics Office. *Visitation*. Online: <http://www2.nature.nps.gov/stats/>

59. Aramark Corporation. *Powell Resorts & Marinas Announces Seasonal Operating Schedule*. Aramark press release (October 19, 2004).

60. National Park Service. *\$22 Million in Facility Improvement Projects Completed or Ongoing at Glen Canyon National Recreation Area*. Glen Canyon National Recreation Area press release (October 4, 2004).

61. Jonas, Lilian. *Lake Powell Preliminary Socioeconomic Impact Analysis*. (Salt Lake City: Glen Canyon Institute, 1999), 27.

62. *Ibid*, 30.

63. Carothers, Steven W. and Bryan T. Brown. *The Colorado River through Grand Canyon: Natural History and Human Change*. (Tucson: University of Arizona Press, 1991), 26-29.

64. Latham, Stephen E. *Glen Canyon Dam, Arizona: Dam Failure Inundation Study*. (Denver: Bureau of Reclamation, 1998), 7-9.

65. Bureau of Reclamation. Lower Colorado Region: Water Operations. “Flood Control Operation.” *Colorado River Interim Surplus Criteria, Final Environmental Impact Statement* (2000), 1:20–21.

66. Operating Lake Mead at 1007 feet above sea level to reduce evaporative losses would leave on average 21 MAF of flood control storage, nearly four times the present 5.35 MAF system-wide requirement.

—*Ibid*, 1:17.

67. Geib, Phil R. *Glen Canyon Revisited: University of Utah Anthropological Paper 119*. (Salt Lake City: University of Utah Press, 1996), 1.

68. Grand Canyon National Park and Northern Arizona University. *1999 Summary Report: Archeological Site Monitoring and Management along the Colorado River corridor in Grand Canyon National Park* (Executive Summary).

69. Luckert, Karl W. *Navajo Mountain and Rainbow Bridge*

*Religion* (Flagstaff: Museum of Northern Arizona, 1977).

70. *Colorado River Storage Project Act*. 43 U.S.C. §§ 620-620o, April 11, 1956, as amended 1962, 1964, 1968 and 1980.

*Colorado River Basin Project Act*. 43 U.S.C. §§ 1501-1556, September 30, 1968, as amended 1974, 1978, 1980, 1982, 1984 and 1992.

71. *Reclamation Projects Authorization and Adjustment Act of 1992*. Title XVIII—Grand Canyon Protection, Section 1803-1806.

72. See: Note 49 (National Park Service Organic Act).

73. *Endangered Species Act*. 7 U.S.C. 136; 16 U.S.C. 460 et seq. 1973.

74. *Colorado River Compact*. Signed at Santa Fe, New Mexico. Ratified by act of Congress December 21, 1928. 45 Stat. 1057. Congressional Record, 70th Cong. 2d Sess. At 324-325.

75. Newcom, Joshua S. “Deciding About the Colorado River Delta: Rejuvenated Wetlands Raise New Issues About Where Flood Flow Should Go.” *River Report, Spring 1999* (Sacramento: Water Education Foundation).

76. Reese, April. “Current Colorado River Basin Dry Spell Could Be Worst in 500 Years.” *Land Letter*. Washington D.C. (June 24, 2004).

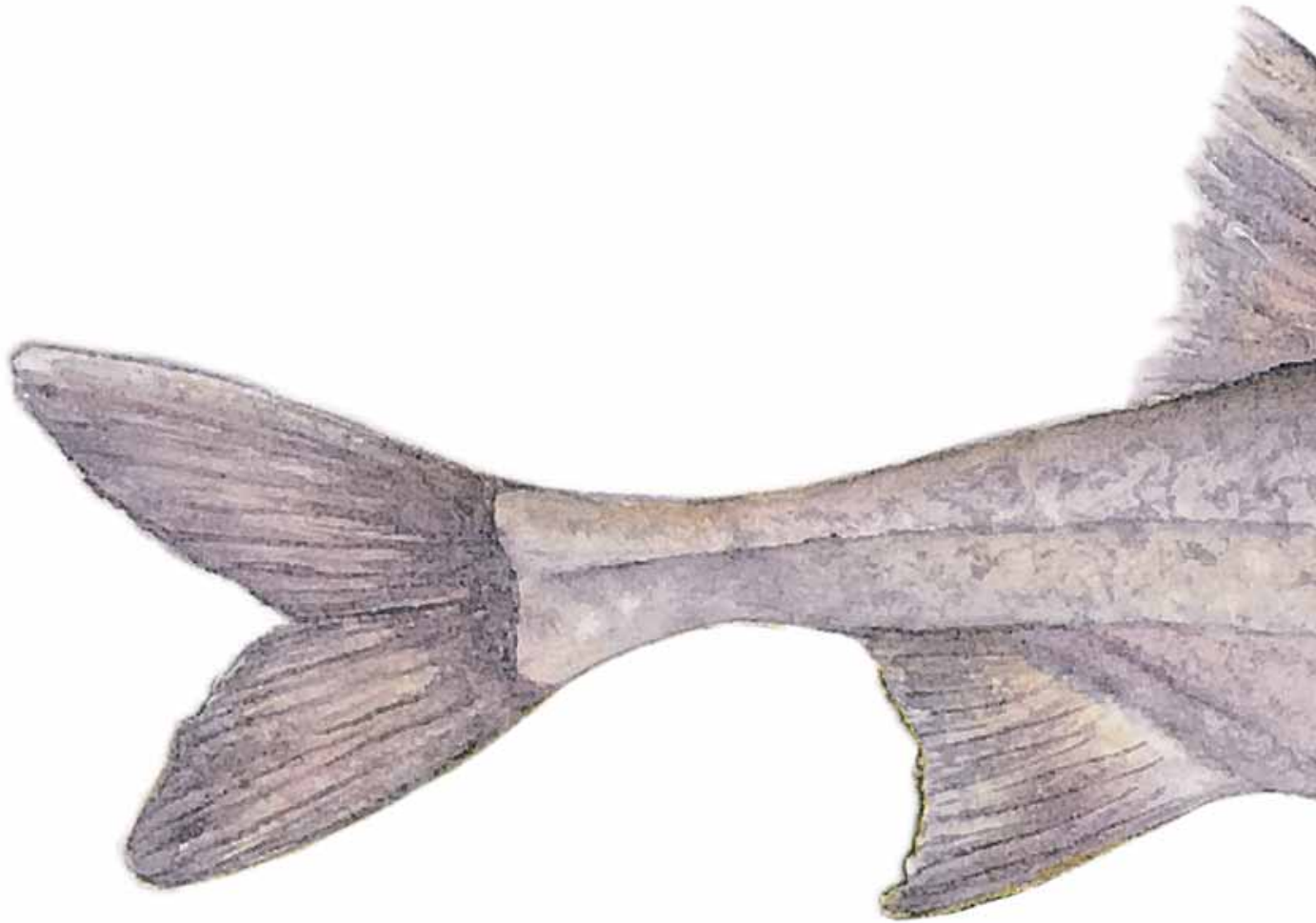
# LIVING RIVERS

COLORADO RIVERKEEPER®

From the Rocky Mountains through seven states and Mexico, the Colorado River is the artery of the desert southwest. A healthy river system is essential to the ecological integrity of the Colorado Plateau just as a well managed water resource is essential to the economic health and prosperity of the river basin states that depend on Colorado River water. However, mismanagement, greed and complacency are robbing the Colorado of its ability to achieve its ecological and economic potential.

Living Rivers/Colorado Riverkeeper empowers a movement to instill a new ethic of achieving ecological restoration that is balanced with also meeting human needs. We work to:

- Restore aquatic and riparian ecosystems along the river and its delta.
- Repeal antiquated laws which are resulting in chronic ecological damage and the wasting of water resources.
- Reduce unnecessary water use and its impacts on river ecology and the economy.
- Recommend sustainable solutions to Colorado River water resource management.
- Recruit constituents to aid in achieving a healthy and sustainable Colorado River system.



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July 18, 2005

Honorable Gale A. Norton, Secretary  
Department of the Interior  
1849 C Street, NW  
Washington DC 20240

**Re: Development of Lower Basin Shortage Guidelines**

Dear Secretary Norton:

Last year, you asked the Colorado River basin states to recommend approaches regarding proactive drought management actions in the basin. Last month, the Bureau of Reclamation published a notice to solicit comments and hold public meetings on the development of Lower Basin shortage guidelines (70 Fed.Reg. 34794). Defenders of Wildlife, Environmental Defense, National Wildlife Federation, Pacific Institute, Sierra Club, and Sonoran Institute respectfully submit the attached “Conservation Before Shortage” policy proposal in response to these requests. 1

We believe that it is preferable for water users to voluntarily engage in predictable, small-scale reductions in use – and receive compensation for those reductions – rather than face large-scale, involuntary, and uncompensated disruptions in water deliveries that could cut into municipal and agricultural water supplies and create unmitigated economic impacts. Our “Conservation Before Shortage” proposal would dramatically reduce the risk of large-scale, involuntary shortages to Lower Basin users and to Mexico, by implementing a series of increasing conservation targets linked to the declining elevation of Lake Mead. The required amount of water would be conserved by offering to pay Colorado River water users, located anywhere in the Lower Colorado River basin or in Mexico, to voluntarily forbear water use.

Funds to pay for forbearance would come from federal appropriations as well as a surcharge applied to all Lower Basin water users and consumers of power generated at the Hoover Dam. One of the more significant corollary benefits of the conservation program described in the “Conservation Before Shortage” proposal, beyond the primary benefit of protecting water users from involuntary and uncompensated shortages, would be the preservation of power production at Hoover Dam at higher levels and for longer durations than would otherwise occur.

**CONSERVATION BEFORE SHORTAGE BENEFITS**

- *Reduced need for new water projects.* The introduction of flexibility into Colorado River management will allow those who are willing and able to reduce their water use to be compensated for doing so, and will avoid the need to impose reductions in water use on those who cannot. By eliminating the potential for water shortages where they cannot easily be accommodated, this policy will limit the need for costly new water projects to protect water users that cannot tolerate interruptions in water supplies.
- *Protection of the environment.* Fish, wildlife, and natural areas on the Colorado River do not, for the most part, have their own water rights. As such, they are “last in line” for water, and are the most vulnerable of all water users to drought. “Conservation Before Shortage” reduces overall water consumption in dry years, decreasing the risk of shortages that could disproportionately impact environmental uses in the future. Also, by increasing protection against shortage for water users that have inflexible demands, it will allow some water to

remain in the river for the wildlife that needs it to survive while still meeting critical human needs.

- *Improved power production.* Consistent maintenance of reservoir storage and power head above baseline conditions in average to low flow conditions, resulting in increased power production and improved power revenues, as well as elimination of the risk that elevations at Lake Mead will drop below minimum power head, improving the reliability of power production.
- *Increased certainty for water users.* Significant reduction in the likelihood of involuntary and uncompensated shortages in the Lower Basin at levels above 500,000 acre-feet (the approximate level at which a shortage exceeds the ability of the Arizona Water Bank to readily buffer the shortage).
- *Reduces risk of involuntary shortage.* In the past, the established priority system on the Colorado River has prompted those most at risk of shortage to limit their exposure by promoting actions that could have devastated invaluable ecological resources. Minimizing this risk will benefit all Colorado River stakeholders.

We look forward to working with Reclamation on the development of shortage guidelines. Please do not hesitate to contact any of us if you would like any additional information on the Conservation Before Shortage proposal.

Sincerely,

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Colorado River Tribes

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# Conservation Before Shortage

## Proposed Shortage Criteria for Colorado River Operations

### I. Background/Context

The effects of a multi-year drought have had a tremendous impact on storage in the Colorado River basin. Although above-average precipitation in the Lower Basin has led to small recoveries in system storage over the winter of 2004-2005, total system storage on the Colorado River has decreased by more than 40% over the past several years. As a result, there is a real possibility that the Secretary of the Interior will declare an actual shortage on the lower Colorado River in the near future. A shortage declaration would reduce deliveries to the Central Arizona Project (CAP) and to southern Nevada (which are among the first in line for cuts in the event of a shortage).

The surface elevation of Lake Mead dropped more than 80 feet from the end of 2000 through the end of 2004; Lake Powell dropped by more than 115 feet in this period. The Bureau of Reclamation's (Reclamation's) Riverware model of the Colorado, based on historic flow records, projects that reservoir levels at Lake Powell could head quickly towards the minimum power pool if the drought continues, and reservoir levels at Lake Mead could fall below the elevation of southern Nevada's upper intakes or remain in a long-term decline that will be difficult to reverse until Powell begins to re-fill. In addition, the model predicts that even if precipitation levels returned to average today, it could take 10-20 years for the Colorado River reservoir system to recover fully (during which time continued development of water supplies in the Upper Basin will further shrink available supplies). As a result, it is time to begin a long-delayed discussion about the method for defining, mitigating, and sharing shortages on the Colorado River.

Although the Secretary of the Department of the Interior (Secretary) has the authority to declare a shortage on the Colorado River, thereby reducing deliveries to some Lower Colorado River contractors, to date no criteria exist for determining when such a shortage will be declared. In June 2005, the Department of the Interior (DOI) noticed its intent to begin a public scoping process for the development of "Lower Basin Shortage Guidelines," (70 Fed.Reg. 34794). In 2004, DOI initiated a series of technical meetings with the Colorado Basin states to discuss drought issues, and the seven Basin states met frequently among themselves throughout the winter of 2004-2005 to discuss potential shortage criteria. Non-governmental organizations (NGOs) were not invited to participate in these discussions; however, several NGOs with interest and expertise in Colorado River issues began meeting over the winter to develop an alternative shortage proposal. These organizations met with Reclamation staff to review the results of technical modeling runs developed in support of the states' discussions, and Reclamation has provided additional modeling data to these interested NGOs in response to their inquiries and to evaluate potential shortage criteria.

These meetings led to the development of this document, which proposes an approach to the management of shortages in the Lower Colorado through the implementation of a tiered conservation program that is tied to the surface elevation of Lake Mead.

## II. Rationale for this Proposal

The basic rationale behind this “Conservation Before Shortage” proposal is that shortage criteria should attempt to maximize the reliability and predictability of water deliveries on the Lower Colorado by introducing increased flexibility into the management of river resources when shortage conditions are imminent.

### *Principles:*

- It is desirable to protect the elevation of Lake Mead at 1050 feet (the current minimum power pool) to the extent feasible without implementing shortages that would involuntarily curtail deliveries to Lower Basin users.
- It is desirable to protect the elevation of Lake Mead at no less than 1000 feet under any condition in order to protect Southern Nevada Water Authority’s lower intake structures, as well as the new minimum power pool if proposed low-pressure turbines are installed at Hoover Dam.
- It is desirable to avoid shortages in the Lower Basin above 500,000 acre-feet whenever possible (the approximate level at which shortages would cut into CAP’s deliveries beyond those currently utilized for water banking).
- It is preferable for Lower Basin water users to voluntarily engage in predictable, small-scale reductions in use – and receive compensation for those reductions – rather than face large-scale, involuntary, and uncompensated disruptions in water deliveries that could cut into municipal and agricultural water supplies and create unmitigated economic impacts.
- Minimizing large, forced disruptions to normal deliveries as a result of shortage declarations will minimize the threat of unmitigated environmental impacts in the Lower Colorado River and Delta as a result of significantly decreased deliveries to low-priority users and corresponding return flows that support environmental values.
- Market-based programs, with low transaction costs and appropriate mitigation of third-party impacts, can offer a reasonable mechanism for minimizing the risk and impacts of shortage.<sup>1</sup>
- Users of Colorado River water in Mexico may wish to participate in short-term conservation agreements, to reduce the probability of larger, uncompensated future reductions due to a declaration of shortage under the 1944 Treaty with Mexico.
- Water can be obtained from agricultural users in the United States, and could be obtained in Mexico with an appropriate agreement,<sup>2</sup> through the use of voluntary, market-based forbearance programs. Economic studies of Lower Basin agricultural use, as well as recent leases of water from farmers in this area, suggest that there is a large volume of water in the basin that could be obtained for \$20 - 100 per acre-foot (see Figure 9).

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<sup>1</sup> Some 4.5 million acre-feet of Colorado River water are used to irrigate crops in the Lower Basin states, and more than 1 million acre-feet are used to irrigate crops in Mexico. Conservation of between 200,000 and 600,000 acre-feet through the use of part-year fallowing programs, dry year options, or other similar arrangements would constitute only 4-11% of total Lower Basin agricultural use in the United States and Mexico. (However, as even small-scale reductions in agricultural water use may have third-party impacts, some portion of funds accrued for the purchase of water should be set aside to support community economic development in affected areas.) Conversely, without these small-scale reductions, water users would likely be faced with the need to curtail large amounts of water quite abruptly, with significant economic consequences. (Shortages of nearly 2 million acre-feet in a single year are predicted by Reclamation’s model when the 1000 feet elevation is protected at Lake Mead without conservation measures).

<sup>2</sup> Such an agreement would likely require a new Minute to the 1944 Treaty with Mexico. Fallowing agreements in Mexico would have to be administered by the appropriate authorities.

### **III. Conservation Before Shortage Policy**

The “Conservation Before Shortage” policy essentially consists of two sets of criteria tied to projected elevations at Lake Mead on January 1 of a given year, according to the Bureau of Reclamation’s August 24-month study. These criteria consist of three “conservation triggers,” which impose progressively increasing conservation goals as lake levels drop from 1100 feet to 1050 feet, and a “shortage trigger,” which imposes involuntary shortages in the Lower Basin as are necessary to accomplish absolute protection of Lake Mead at a minimum elevation of 1000 feet.

#### **(A) Normal Conditions**

In years when the 24-month study projects the elevation of Lake Mead on January 1 will be at or above 1100 feet, the Secretary of the Interior (Secretary) shall determine a Normal or Surplus (as defined by the Interim Surplus Guidelines) year.

#### **(B) Conservation Triggers**

##### ***First Conservation Trigger: Below 1100 Feet at Lake Mead***

In years when the 24-month study projects the elevation of Lake Mead on January 1 will be at or above 1075 feet but below 1100 feet, the Secretary will seek to conserve 200,000 acre-feet of water. On behalf of the Secretary, Reclamation will preferentially seek to achieve this 200,000 acre-feet of savings by means of voluntary conservation agreements (including forbearance agreements) with Lower Basin delivery-contract holders. Additionally, Reclamation will, to the extent permitted by law and through the appropriate authorities, seek forbearance or other such water conservation agreements with Colorado River users in Mexico. In the case of such agreements, U.S. deliveries of Colorado River water to Mexico at the Northerly International Boundary will be reduced by the total volume indicated by these binational agreements.

##### ***Second Conservation Trigger: Below 1075 Feet at Lake Mead***

In years when the 24-month study projects that the elevation of Lake Mead on January 1 will be at or above 1050 feet but below 1075 feet, the Secretary will seek to conserve 400,000 acre-feet of water. Reclamation will preferentially seek to achieve this 400,000 acre-feet of savings by means of voluntary conservation agreements (including forbearance agreements) with Lower Basin delivery-contract holders. Additionally, Reclamation will, to the extent permitted by law and through the appropriate authorities, seek forbearance or other such water conservation agreements with Colorado River users in Mexico. In the case of such agreements, U.S. deliveries of Colorado River water to Mexico at the Northerly International Boundary will be reduced by the total volume indicated by these binational agreements.

##### ***Third Conservation Trigger: Below 1050 Feet at Lake Mead***

In years when the 24-month study projects that the elevation of Lake Mead on January 1 will be below 1050 feet (minimum power pool absent the installation of low-pressure turbines), the Secretary will seek to conserve 600,000 acre-feet of water. Reclamation will preferentially seek to achieve this 600,000 acre-feet of savings by means of voluntary conservation agreements (including forbearance agreements) with Lower Basin delivery-contract holders. Additionally, Reclamation will, to the extent permitted by law and through the appropriate authorities, seek

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forbearance or other such water conservation agreements with Colorado River users in Mexico. In the case of such agreements, U.S. deliveries of Colorado River water to Mexico at the Northernly International Boundary will be reduced by the total volume indicated by these binational agreements.

### **(C) Shortage Trigger**

#### ***Absolute Protection of Lake Mead Elevation 1000 Feet***

The Secretary shall not permit the elevation of Lake Mead to drop below elevation 1000 feet (minimum low-pressure power pool and Southern Nevada Water Authority intakes) at any time. Shortages to Colorado River contractors shall be implemented in the Lower Basin and in Mexico<sup>3</sup> to the extent necessary to prevent such declines.

### **(D) Funding Mechanisms**

In recognition of the federal government's continuing national obligation to replace the MODE bypass flow to Mexico, 43 U.S.C. § 1571(c), the federal government will assume responsibility for the cost of all conservation agreements up to the volume of the bypass flow that the Secretary has not otherwise replaced in the year that a conservation trigger becomes effective. Given the national interest in minimizing both environmental impacts and economic disruptions resulting from the involuntary curtailment of deliveries to Colorado River users, the federal government would also assume responsibility for half of the cost of any additional agreements required to generate conserved water for the "Conservation Before Shortage" policy, pursuant to the Secretary's authority under the Reclamation States Emergency Drought Relief Act of 1991 (Drought Relief Act),<sup>4</sup> conservation authorities in the Farm Bill, or other appropriate authority that may be granted by Congress.

To the extent that conservation of water is required beyond that to be funded by the federal government in the manner described above, conservation activities would be funded through one or both of the following:

#### ***Power Pool Protection Fund***

The priority of water used for power generation is considered to be tertiary to that of irrigation and domestic use under the Law of the River. As a result, Hoover and Glen Canyon Dams are operated to maintain deliveries to water users regardless of the impact of declining reservoir levels on power production. However, one of the more significant corollary benefits of the conservation program described in this proposal, beyond the primary benefit of protecting water users from involuntary and uncompensated shortages, would be the preservation of power production at Hoover Dam at higher levels and for longer durations by reducing deliveries for irrigation, domestic use, and underground storage in a manner that would not otherwise occur under current practices.

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<sup>3</sup> In the event that a shortage is declared and is also considered to be an extraordinary drought under the 1944 Treaty, deliveries to Mexico will be reduced in the same proportion as consumptive uses in the United States are reduced.

<sup>4</sup> The Reclamation States Emergency Drought Relief Act of 1991, 43 U.S.C. §§ 2201 *et seq.*, provides the Secretary of Interior the authority to purchase water "from willing sellers, including, but not limited to, water made available by Federal Reclamation project contractors through conservation or other means with respect to which the seller has reduced the consumption of water." 43 U.S.C. § 2211(c).

Given the significant loss in generating capacity that has already occurred as a result of declines in power pool elevations,<sup>5</sup> and the even more significant impacts that would be associated with a total loss of generating capacity, the implementation of “Conservation Before Shortage” would clearly benefit power purchasers and consumers. As such, it would seem reasonable to derive a percentage of the funding for the proposed voluntary conservation program from a modest, conditional surcharge on power rates under existing or renewed contracts for hydropower produced at Hoover Dam as a means to mitigate against the loss of power head and stave off the complete loss of power production at Hoover Dam.<sup>6</sup> This surcharge could be imposed in years when Reclamation’s August 24-month study projects that the storage in Lake Mead falls below fifty percent of its active capacity. The revenues generated by this surcharge could be collected in a “power pool protection fund,” to be maintained by Reclamation for expenditure when and if lake elevations reach a conservation “trigger.”

### ***Temporary Cost Recovery/Delivery Surcharges***

Pursuant to the Drought Relief Act, the Secretary of Interior is authorized to engage in water purchases from willing sellers and to seek cost recovery for water delivered from the users of that water under temporary contracts. 43 U.S.C. §2211(c), §2212(a),(c). Reclamation could utilize this authority to purchase water through temporary, part-year fallowing arrangements, dry-year options, or similar mechanisms, and would seek cost recovery from Colorado River users. In recognition of the Basin-wide interest in alleviating the impacts of drought and reducing uncertainty on the Lower Colorado, and in the interests of encouraging extraordinary conservation to minimize the likelihood of significant delivery interruptions, the cost of some portion of conservation agreements, including those with Colorado River users in Mexico, could be funded through a conservation surcharge imposed on a per-acre-foot basis on all Lower Basin contractors.

### ***Anticipated Cost of Conservation***

Current short-term leasing agreements between farmers and irrigation districts or municipal water agencies, as well as recent research on the net returns per acre-foot of irrigation water, suggest that “Conservation Before Shortage” water could be obtained for \$20 - 100 per acre-foot. To ensure that such water remains available in times of increased scarcity (when market forces might otherwise increase the cost), the Secretary should be granted the authority to enter into “Conservation Before Shortage option agreements,” similar to existing dry-year leasing agreements/interruptible supply agreements that have been enacted within the basin states.

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<sup>5</sup> Largely as a result of declining reservoir elevations, power production at Hoover and Glen Canyon has declined steadily since the onset of drought conditions in the Colorado River Basin. Annual power production at Hoover fell from 5,697 gigawatt-hours (GWh) in 1998 to 4,094 GWh in 2003, according to Western Area Power Administration (WAPA) Annual Reports, 1998 – 2003. A portion of hydropower revenues currently supports the two Upper Basin endangered fish recovery programs, the Glen Canyon Adaptive Management Program, and the Colorado River Salinity Control Program; alternative sources of revenue should be identified and implemented to fully fund these recovery programs. The Department of the Interior should also work proactively with WAPA to identify alternative sources of power for those Indian tribes that have experienced power shortages, or drastic increases in power costs, due to the declining production associated with falling reservoir levels.

<sup>6</sup> The rates for power produced at Hoover Dam have increased as reservoir levels and power production have declined, but may still remain well below open market rates. Although annual revenues tend to vary from year to year, revenues from Hoover Dam power production have generally been in the range of \$50 million annually.



#### **IV. Analysis: Benefits of Conservation Before Shortage Policy**

To date, actual shortage criteria for the Colorado River have not been defined. For the purposes of comparison, a ‘baseline’ was defined as the current operating conditions for the Colorado River, with the addition of a policy requiring the absolute protection of Lake Mead at 1000 feet (that is, Hoover Dam would not release any water to cause the elevation of Lake Mead to drop below 1000 feet). The baseline policy does *not* provide for the implementation of conservation measures. These ‘baseline’ conditions, reflecting current operating conditions, are depicted in the following figures.

Analysis of the “Conservation Before Shortage” policy suggests that this policy could produce significant benefits for Basin water users by:

- Consistently maintaining reservoir storage and power head above baseline conditions in average to low flow conditions, resulting in increased power production and improved power revenues;
- Significantly reducing the likelihood of involuntary, uncompensated shortages in the Lower Basin and corresponding, unmitigated economic impacts;
- Significantly reducing the likelihood of involuntary and uncompensated shortages in the Lower Basin at levels above 500,000 acre-feet (the approximate level at which a shortage imposed by the Secretary would cut into CAP deliveries, by exceeding the ability of the Arizona Water Bank to readily buffer the shortage); and
- Eliminating the risk that elevations at Lake Mead will drop below minimum power head, improving the reliability of power production and associated revenues.

The analyses below show the impacts of the “Conservation Before Shortage” (CBS) policy on reservoir operations based on historic flows in the Colorado River Basin.

##### ***Modeling Assumptions***

The proposed “Conservation Before Shortage” policy was modeled using Reclamation’s Riverware model, which is based on historical records of flows in the Colorado River Basin over approximately the past century. Conservation triggers, as described in Section III, were implemented at 1100 feet, 1075 feet and 1050 feet, with the assumption that required measures to reduce Lower Basin consumptive use by 200,000, 400,000, and 600,000 acre-feet, respectively, would be implemented in years when the January 1 elevation at Lake Mead is below the triggers. An absolute protection trigger was implemented at Lake Mead elevation 1000 feet, with releases from Lake Mead to meet delivery obligations to Lower Basin users reduced as necessary to maintain that level. To avoid even modestly under-predicting the elevations of Mead and Powell pools, particularly in the near term, this modeling has assumed that the schedule of Upper Basin depletions will effectively begin with the last reported actual level for CY 2000, will increase at a

slower rate than projected by the Upper Colorado River Basin Commission through CY 2009, and will increase at the rate projected by the Commission thereafter.<sup>7</sup>

For purposes of the model, the minimum objective release out of Lake Powell was assumed to be 8.23 maf per year (reflecting current operating conditions).<sup>8</sup> Alternative scenarios for conjunctive management were not modeled, and the protection of a minimum power pool at Lake Powell was not incorporated into this proposal; either or both of these assumptions would affect the elevation of Lake Powell. Model runs used end-of-year 2004 elevations at Lake Mead and Lake Powell to establish initial conditions for 2005, and were run through year 2025.

### ***Protection of Lake Mead***

Figures 1 -3 show the potential value of implementing the CBS policy, under a range of average to extremely low flow conditions. **These and following figures show that the CBS policy would greatly benefit the elevation of Lake Mead.**

As shown in Figure 1 below, under average conditions, the CBS policy would maintain reservoir elevations at Mead approximately 30 feet above the baseline policy. As shown by Figures 2 and 3, the CBS policy would significantly reduce the rate of decline in the lower 25<sup>th</sup> and in the very low 10<sup>th</sup> percentile reservoir elevations for Mead and maintain even these lower reservoir elevations above the 1000 foot protection level. Model runs showed essentially no impact of the CBS on the higher 90<sup>th</sup> percentile Mead elevations, so no figure is provided.

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<sup>7</sup> See "Estimates of Future Depletions in the Upper Division States," Upper Colorado River Commission Memorandum, December 23, 1999. This schedule predicts a 440,000 acre-foot increase in Upper Basin depletions between 2000 and 2010 and a 542,000 acre-foot increase over actual CY2000 depletions, as reported in Reclamation's Consumptive Uses and Losses 1996-2000 report (see Tables UC-1 & UC-6). Actual increases in Upper Basin depletions water may not keep pace with this schedule, because water that would otherwise have been utilized has been and may continue to be physically unavailable for depletion in the Upper Basin due to drought conditions, and in other cases, projects that were proposed to have been constructed during this period may not yet have been or will not be completed through CY 2009. A slower rate of increase from 2000 to 2009 was modeled by subtracting four increments of 100,000 acre-feet from the Commission's schedule from CY 2005 to 2009. This and all other Riverware modeling exercises should be revised to reflect actual increases in Upper Basin depletions as soon as more current information becomes available.

<sup>8</sup> This assumption is not intended to endorse or reject the Secretary's current use of 8.23 maf as the minimum release objective for Powell, the protection of a minimum power pool at Powell, or proposals for the conjunctive management of the combined storage of Mead and Powell. Alternative release scenarios should be incorporated into the modeling for this proposal as they are developed. As a general matter, none of the assumptions used in this proposal should be construed as an interpretation of the 1922 Colorado River Compact, the 1944 Treaty with Mexico, or any other aspect of the Law of the River.

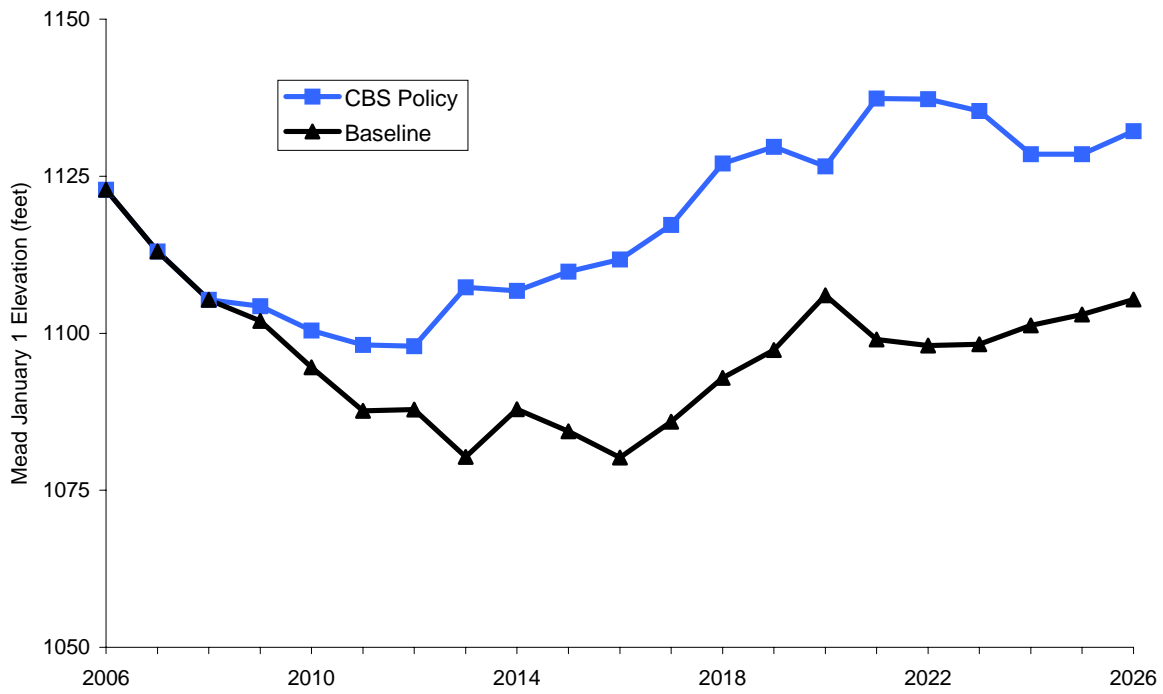


Figure 1. Impact of CBS policy on elevations at Lake Mead, at 50<sup>th</sup> percentile elevation.

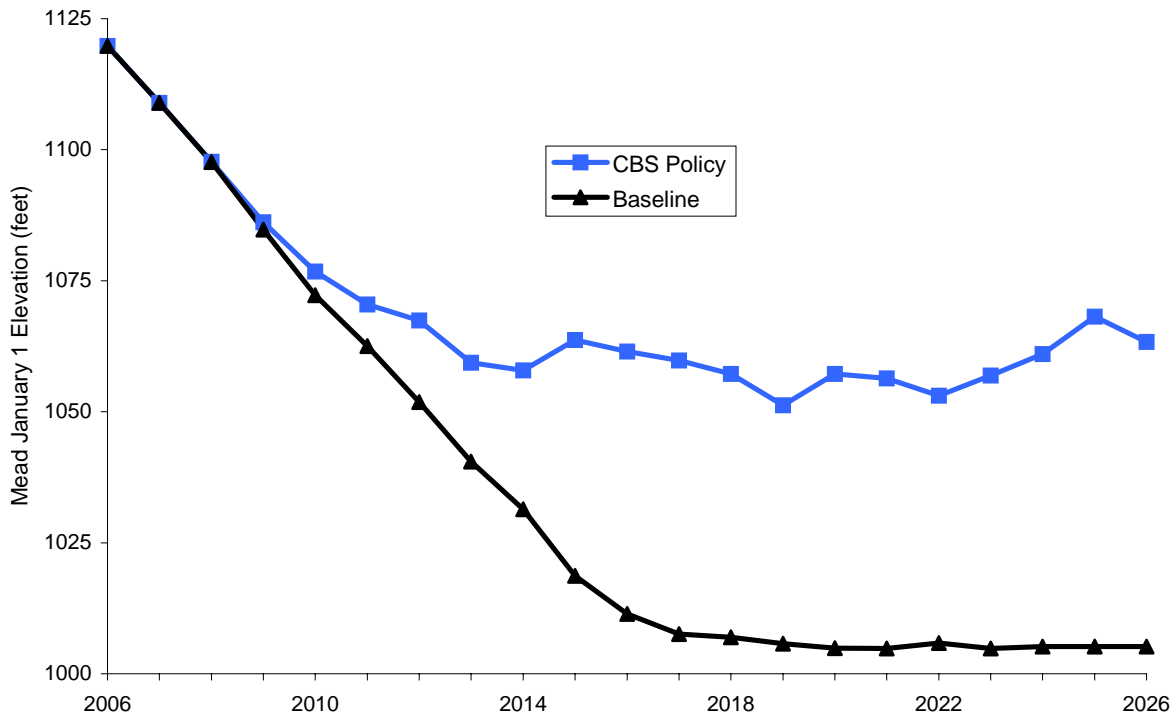


Figure 2. Impact of CBS policy on elevations at Lake Mead, at 25<sup>th</sup> percentile elevation.

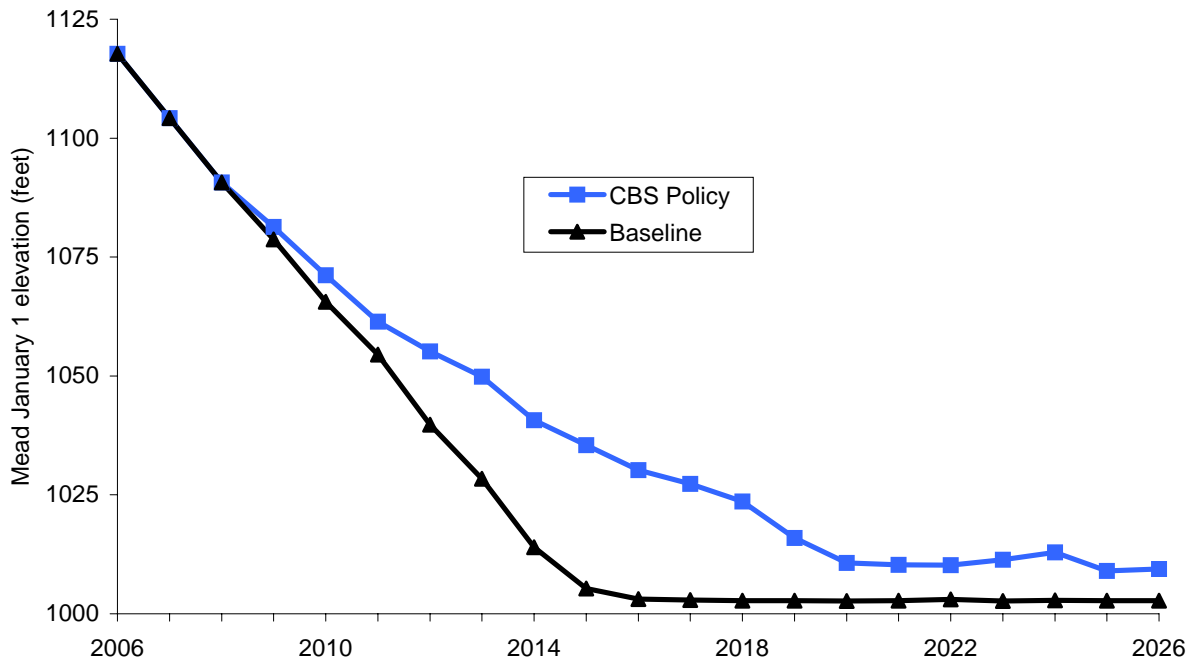


Figure 3. Impact of CBS policy on Lake Mead elevation, at 10<sup>th</sup> percentile elevation.

### Probability of Shortages

As noted above, a primary goal of the CBS policy is to significantly reduce the probability of an involuntary, uncompensated shortage in excess of 500,000 acre-feet (the approximate level at which CAP deliveries would be reduced beyond that currently utilized for water banking). As shown in Figure 4, below, the probability of shortages exceeding 500,000 acre-feet is reduced to 5% or less through the entire modeled period under the CBS policy. By contrast, the probability of shortage under the baseline policy rapidly approaches 30% during this same period. Furthermore, as shown in Figure 5, below, the CBS policy reduces the probability of any involuntary shortage by approximately 20% over the next 20 years.

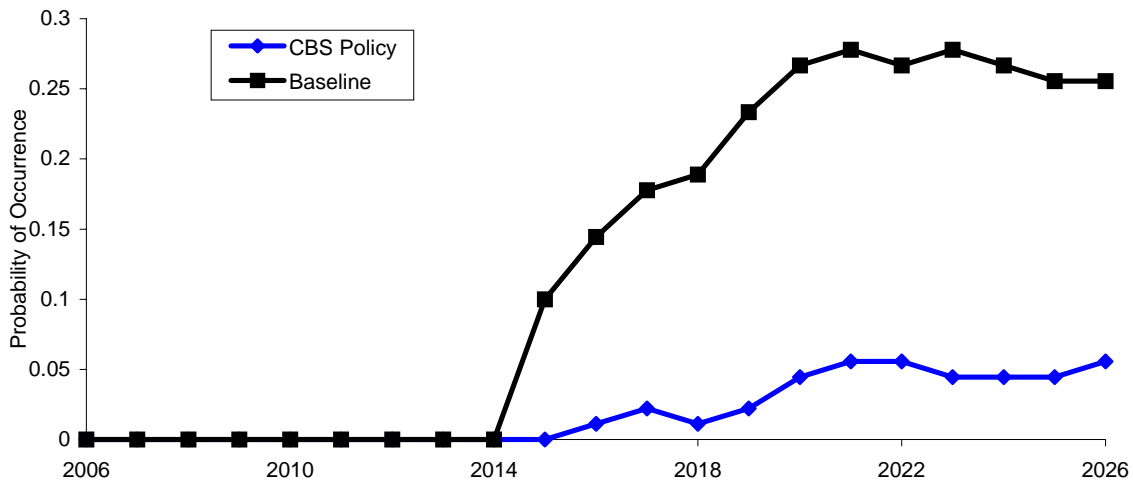


Figure 4. Impact of CBS policy on probability of involuntary Lower Basin shortage greater than 500,000 acre-feet.

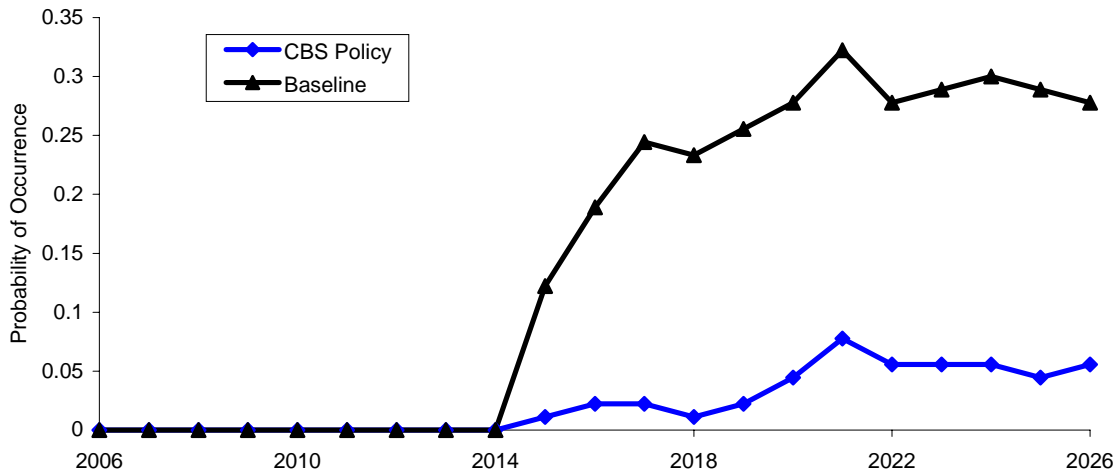


Figure 5. Impact of CBS policy on probability of any involuntary shortage in the Lower Basin.

**Probability of Reaching Conservation Triggers**

Figures 6 - 8, below, show the relative probability of reaching or exceeding any of the proposed conservation triggers at 1100 feet, 1075 feet and 1050 feet. As one might expect, the probability of reaching the first two triggers is highest in the earlier years of the modeled period, while the probability of reaching the third trigger is higher towards the end of the modeled period. However, the probability of reaching and continuing to remain below a given trigger for an extended period of time appears to be low because of the conservation measures tied to the triggers. For obvious reasons, trigger levels are most likely to be reached under low or very low flow conditions, and are rarely (if ever) reached under high flow conditions.

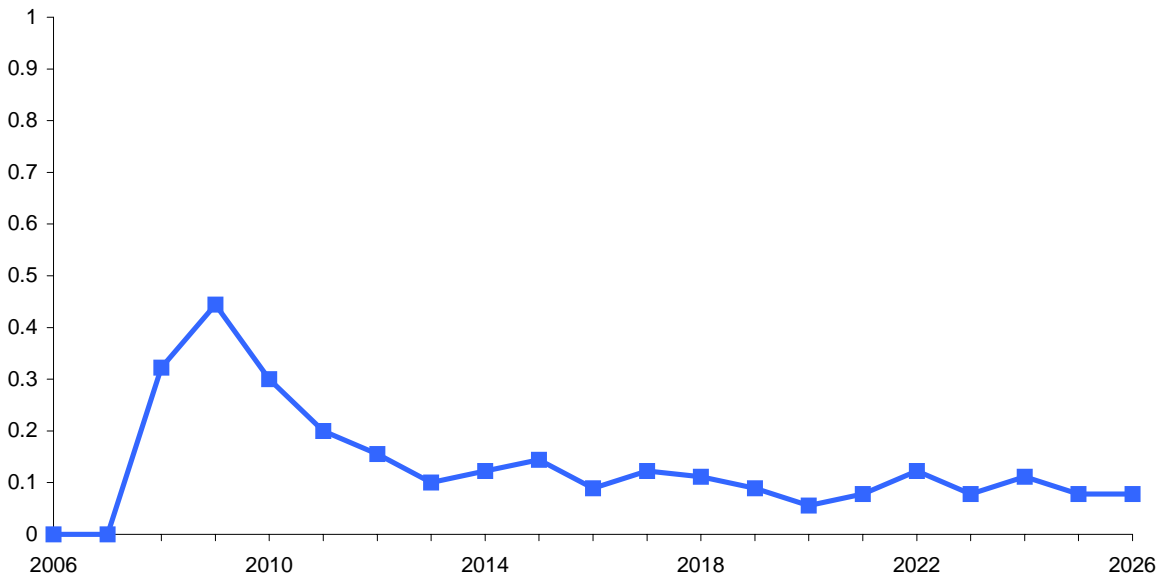


Figure 6. Probability of Lake Mead January 1 elevation occurring in a bounded range of 1100 feet to 1075 feet, with CBS policy in place.

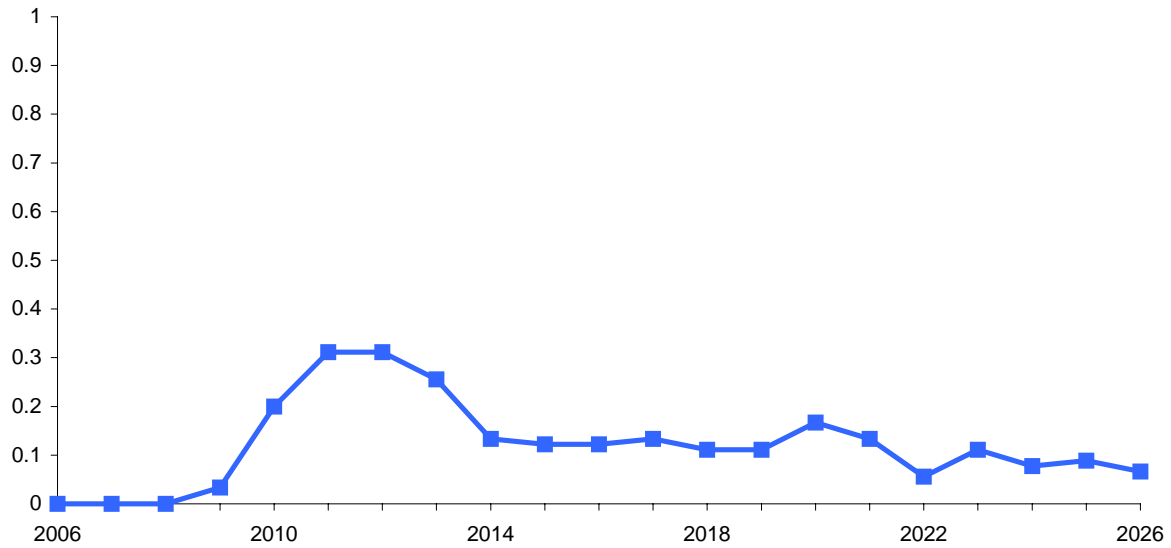


Figure 7. Probability of Lake Mead January 1 elevation occurring in a bounded range of 1075 feet to 1050 feet, with CBS policy in place.

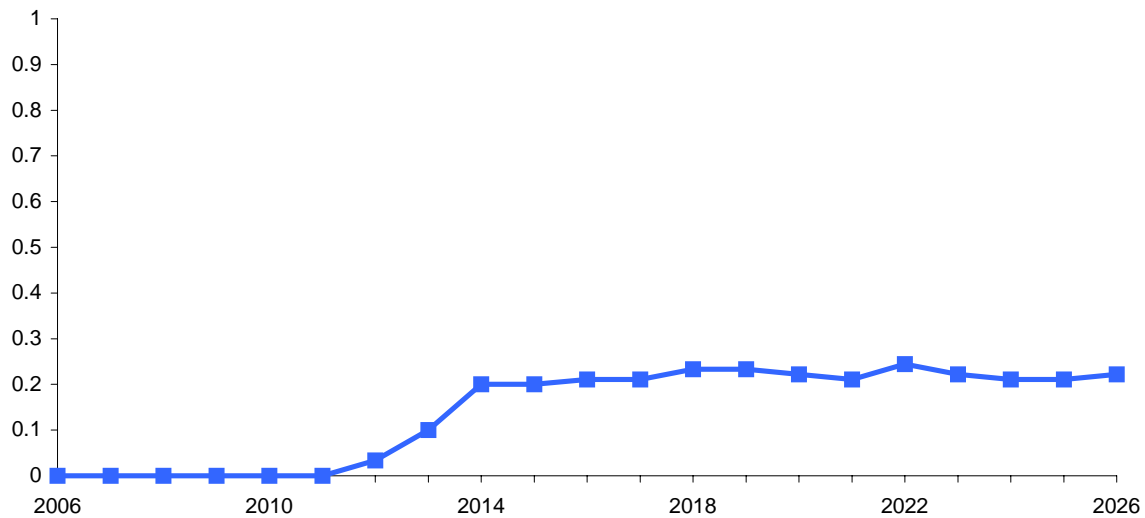


Figure 8. Probability of Lake Mead January 1 elevation occurring below 1050 feet, with CBS policy in place.

**Cost of Implementing Conservation Triggers**

The cost of implementing conservation triggers is directly related to the cost of obtaining water using the proposed voluntary, market-based conservation mechanisms. Recent purchases of water from farmers in the Lower Basin, as well as analysis of agricultural production in this area, suggest that there is a substantial volume of water used for irrigation which could potentially be obtained on a temporary basis for \$20 - 100 per acre-foot. For example, in 2004, the Imperial Irrigation District acquired water from its farmers for less than \$60 per acre-foot.

As shown in Figure 9, a recent economic study by Environmental Defense into the profits returned by field crops suggests that slightly more than 2.3 million acre-feet of agricultural water

is being used by Lower Basin farmers in California and Arizona to produce profits of less than \$100 per acre-foot; more than one million acre-feet of agricultural water is being used to produce profits of less than \$20 per acre-foot. (Figures are based on the average volume of water applied to produce a crop unit and market rates for each crop, less costs of production.)

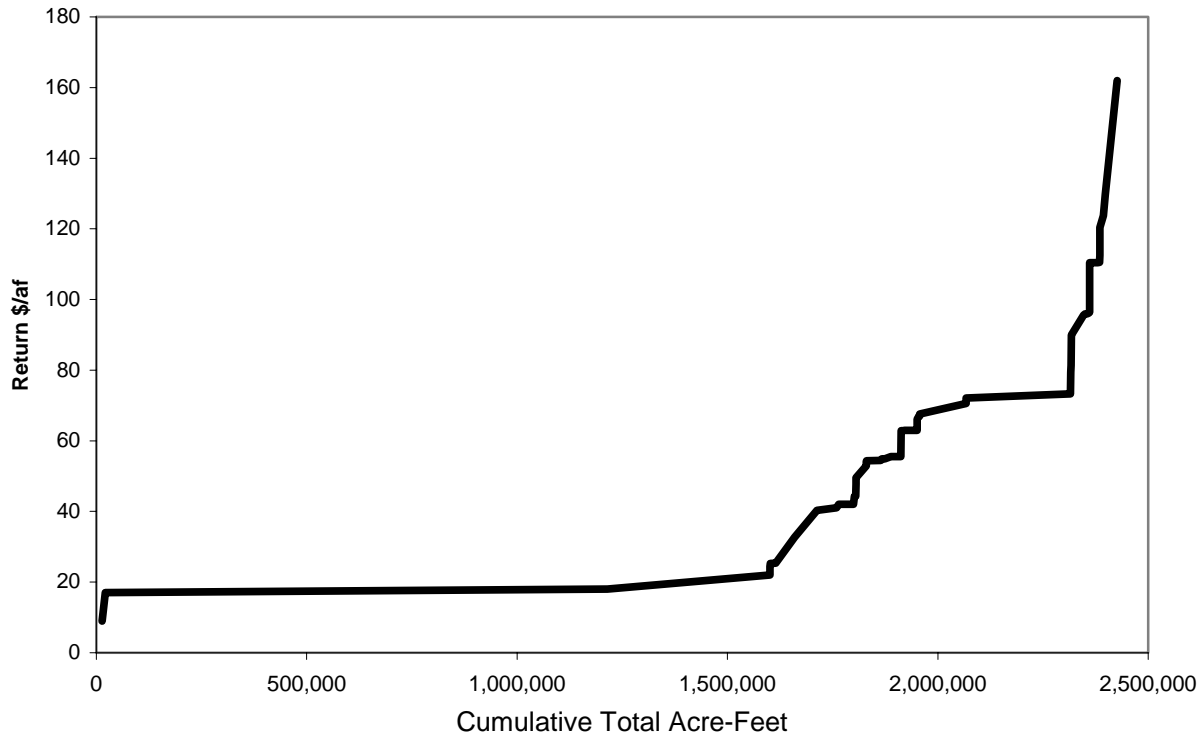


Figure 9. Profits per acre-foot returned on Colorado River water used in the production of selected crops in the Lower Colorado River Basin.<sup>9</sup>

While these figures do not necessarily reflect the amount at which any given water user would be willing to take part in a part-year fallowing program or agree to a dry-year option, they do suggest that if an open, market-based approach is used to identify potential participants, a number of water users in the Lower Basin would probably be willing to temporarily reduce or forgo the use of water for agricultural production in a price range between \$20 and \$100 per acre-foot (as the sale of water in this range would produce equal or greater monetary returns to the user than the use of water to irrigate crops).

In order to mitigate third-party impacts of fallowing, the federal government could establish a drought economic adjustment fund that would provide economic development grants to affected communities in the counties of origin. These funds preferentially would go to established county-based farm labor assistance programs to the extent that such programs exist, and could include lump sum payments to displaced workers based on a percentage of foregone annual income.

<sup>9</sup> This graph has not been published elsewhere. For methodology, please contact Jennifer Pitt at [jpitt@environmentaldefense.org](mailto:jpitt@environmentaldefense.org). A study using similar methodology, but limited to crop values in the Wellton-Mohawk Irrigation and Drainage District, has been published previously (Pitt et al., *New Water for the Colorado River: Replacing the Bypass Flow*, 6 U. Denver Water L. Rev. 68 (2002)). The study found a range of prices similar to that represented here for profits derived from water use in that area.

Using these assumptions for water acquisition costs, Table 1 suggests the approximate range of costs for implementing each of the conservation triggers under the CBS policy.

*Table 1. Approximate federal and power/water user cost of implementation of CBS policy conservation trigger levels (assumes that water can be acquired temporarily for \$20 - \$100/acre-foot, and that the annual federal bypass obligation of 110,000 acre-feet has not otherwise been satisfied).*

Trigger	Conservation required	Federal obligation (bypass + 50%)	Federal cost (millions)	Remaining Obligation	Water user cost (millions)	Power Surcharge (millions)	User cost per af (all Lower Basin users)
1075-1100	200,000 af	155,000 af	\$3 - \$15.4	45,000 af	\$0.45 - \$2.3	\$0.45 - \$2.3	\$0.06 - \$0.30
1050-1075	400,000 af	255,000 af	\$5 - \$25.4	145,000 af	\$1.5 - \$7.3	\$1.5 - \$7.3	\$0.19 - \$0.97
Below 1050	600,000 af	355,000 af	\$7 - \$35.4	245,000 af	\$2.5 - \$12.3	\$2.5 - \$12.3	\$0.33 - \$1.63

***Cost of Not Implementing “Conservation Before Shortage” Policy***

Although the “Conservation Before Shortage” policy would impose notable costs on water and power users, and on taxpayers generally, these costs should be compared with the much larger financial costs that would occur if the Secretary were to impose involuntary, uncompensated shortages, as well as the costs due to the lack of certainty and reliability that would exist without the CBS policy. The recent drought and decrease in power production at both Hoover Dam and Glen Canyon Dam point to the dramatic costs imposed by the loss of reservoir storage.

If Lake Mead falls to 1050 feet, power rates will need to be increased to an approximate composite rate of 2.31 cents/kWh, which is a 44.3% increase over current rates. Replacement power purchases would be (depending on the user) 2.9 to 3.7 times the Hoover rate. In FY03, replacement power may have cost customers an additional \$24 million.



**From:** Dan Silver <dsilverla@earthlink.net>  
**To:** <strategies@lc.usbr.gov>, <strategies@uc.usbr.gov>  
**Date:** 7/25/05 9:59PM  
**Subject:** Development of Management Strategies for Lake Powell and LakeMead Under Low Reservoir Conditions

July 25, 2005

Regional Director  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000  
P.O. Box 61470  
Boulder City, Nevada 89006-1470

Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
Attention: UC-402  
125 South State Street  
Salt Lake City, Utah 84318-1147

RE: Development of Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions

Gentlepersons:

Please accept the following comments from Endangered Habitats League, a Southern California regional organization dedicated to ecosystem protection and sustainable land use. For the reasons outlined below, we urge your consideration of the <sup>3</sup>One Dam Solution.<sup>2</sup>

1. No longer a need for a single-use dam at Glen Canyon

It was not until the fall of 2004, more than 40 years after Glen Canyon Dam began impounding Lake Powell that Lake Powell water storage actually augmented water storage downstream. But with climate change already causing long-term flow reductions, and water consumption levels near the river's historic average flow and rising, it's unlikely that Lake Powell will fill again. The surplus water that filled it during 17 years the first time is no longer there to build a storage cushion. Even should surplus water accumulate, Lake Mead on its own could accommodate it.

1

2. It's time for more efficient storage

With Lake Powell and Lake Mead losing to evaporation upwards of 17 percent of the water that flows into them, it's time that more efficient means be explored for storing this precious water. Vacant space in underground aquifers on, or accessible to, existing Colorado River infrastructure could accommodate more water than these two reservoirs combined-and with far greater efficiency. Upwards of 810,000 acre-feet of water annually-enough water for 1.6 million households of four people each-could be saved by eliminating Lake Powell and operating Lake Mead principally for distribution to groundwater recharge facilities.

2

3. Revive Grand Canyon

3

Between Lake Powell and Lake Mead lies one of the world's most famous and geologically and ecologically unique river canyons, Grand Canyon National Park. The operation of both these reservoirs has impacted the Canyon, but Glen Canyon Dam has been far more devastating. Since its completion four of eight native fish have gone extinct and the dam has trapped the sediment necessary to maintain habitat and beaches for wildlife and recreation, as well as the stabilization of archeological sites.

3 Cont.

4. Manage the sediment

Sediment is a major unresolved problem threatening the long-term operations of Lake Powell and Lake Mead. Ultimately, sediment will have to be removed from one or both of these reservoirs. Removing sediment from Lake Mead rather than Lake Powell is the most feasible and least expensive likely alternative. While original estimates projected that sediment would not effect the safe operations of Glen Canyon Dam for another 60 years, scientists now warn that major problems could occur sooner.

4

5. Revise the Colorado River Compact

The Colorado River Compact of 1922, which largely governs the discharge of flows from Lake Powell to Lake Mead, cannot meet its intended purpose of sharing Colorado River water equitably between the Upper and Lower Basin states. The Compact allocated 11 percent more water than the river has to give, and affords the Lower Basin 20 percent more water than the upper basin. With river flows expected to decline 18 percent by 2040, this inequity will worsen as the Upper Basin is required to deliver to the Lower Basin its full share regardless of declines in river flow.

5

Given the growing challenges and looming shortages facing Colorado River water users as a result of these dams, a far more comprehensive assessment addressing the issues above is fully warranted, and should be done through an Environmental Impact Statement.

6

Sincerely,

Dan Silver  
Executive Director  
Endangered Habitats League  
8424-A Santa Monica Blvd., #592  
Los Angeles, CA 90069-4267

Tel 213-804-2750  
Fax 323-654-1931  
dsilverla@earthlink.net  
www.ehleague.org



Regional Director  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000  
P.O. Box 61470  
Boulder City, Nevada 89006-1470

Sent by Fax (702) 293-8156

Dear Regional Director:

On behalf of the thousands of members of the Maricopa Audubon Society here in central Arizona, we urge you to abandon and decommission Glen Canyon Dam. Our members visit all of the Colorado River wildlife habitats for study and recreation. Each time a new dam is built the wildlife habitats become more sterile and less dynamic. Our members were greatly saddened when Glen Canyon added to the death of that river. 1

Remarkably, it was not until the fall of 2004, more than 40 years after Glen Canyon Dam began impounding Lake Powell that Lake Powell water storage actually augmented water storage downstream. But with climate change already causing long-term flow reductions, and water consumption levels near the river's historic average flow and rising, it's unlikely that Lake Powell will fill again. The surplus water that filled it during 17 years the first time is no longer there to build a storage cushion. Even should surplus water accumulate, Lake Mead on its own could accommodate it.

We believe its long overdue to institute more efficient storage 2

With Lake Powell and Lake Mead losing to evaporation upwards of 17 percent of the water that flows into them, it's time that more efficient means be explored for storing this precious water. Vacant space in underground aquifers on, or accessible to, existing Colorado River infrastructure could accommodate more water than these two reservoirs combined-and with far greater efficiency. Upwards of 810,000 acre-feet of water annually-enough water for 1.6 million 3

DEDICATED TO THE PROTECTION OF NATURAL WETLANDS IN AN ARID ENVIRONMENT

households of four people each-could be saved by eliminating Lake Powell and operating Lake Mead principally for distribution to groundwater recharge facilities.

#### Revive Grand Canyon

Between Lake Powell and Lake Mead lies one of the world's most famous and geologically and ecologically unique river canyons, Grand Canyon National Park. The operation of both these reservoirs has impacted the Canyon, but Glen Canyon Dam has been far more devastating. Since its completion four of eight native fish have gone extinct and the dam has trapped the sediment necessary to maintain habitat and beaches for wildlife and recreation, as well as the stabilization of archeological sites.

4

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Sediment is a major unresolved problem threatening the long-term operations of Lake Powell and Lake Mead. Ultimately, sediment will have to be removed from one or both of these reservoirs. Removing sediment from Lake Mead rather than Lake Powell is the most feasible and least expensive likely alternative. While original estimates projected that sediment would not effect the safe operations of Glen Canyon Dam for another 60 years, scientists now warn that major problems could occur sooner.

5

#### Revise the Colorado River Compact

The Colorado River Compact of 1922, which largely governs the discharge of flows from Lake Powell to Lake Mead, cannot meet its intended purpose of sharing Colorado River water equitably between the Upper and Lower Basin states. The Compact allocated 11 percent more water than the river has to give, and affords the Lower Basin 20 percent more water than the upper basin. With river flows expected to decline 18 percent by 2040, this inequity will worsen as the Upper Basin is required to deliver to the Lower Basin its full share regardless of declines in river flow.

8

The growing challenges and looming shortages facing Colorado River water users as a result of these dams indicate that a far more comprehensive assessment addressing the issues above is fully warranted, and should be done through an Environmental Impact Statement.

7

Sincerely,



Robert A. Witzeman, M.D., Conservation Chairperson  
602 840-0052, witzeman@cox.net

FAX COVER SHEET

Date: August 29, 2005

To: Regional Director, Bureau of Reclamation

1. Upper Colorado Region

FAX # (801)524-3858

2. Lower Colorado Region

FAX # (702)293-8156

From: Robert Lippman  
Rock the Earth

Sent from FAX # (435)259-9846; voice contact, (435)259-1182

Re: Comments on Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions [BCOO-1000; ADM-5.10] [UC-402]

No. Pages (including cover): 9

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Keyword		



*Defending the Planet One Bent at a Time*

**1536 Wynkoop St.  
Suite B200  
Denver, CO 80202**

August 29, 2005

**VIA FACSIMILE & U.S. MAIL**

Mr. Bob Johnson  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
Attention: BCOO-1000  
Box 61470  
Boulder City, NV 89006-1470  
FAX (702) 293-8156

Mr. Rick Gold  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
Attention: UC-402  
125 South State Street  
Salt Lake City, UT 84318-1147  
FAX (801) 524-3858

**RE: COMMENTS OF ROCK THE EARTH REGARDING DEVELOPMENT OF  
MANAGEMENT STRATEGIES FOR LAKE POWELL AND LAKE MEAD  
UNDER LOW RESERVOIR CONDITIONS [BCOO-1000; ADM-5.10]**

Dear Regional Directors:

Rock the Earth ("RtE") is a Colorado nonprofit corporation with a national membership of concerned citizens. Like many other Americans, RtE members rely on the Colorado River Basin for a multitude of needs. RtE Members regularly seek the peace, quiet, and solitude of the national public lands for recreational, artistic, naturalist, and spiritual activities, including but not limited to hiking, camping, non-motorized water sports, photography, and meditation. Our members utilize the Colorado River as a source

Mr. Bob Johnson  
Mr. Rick Gold  
Colorado River Drought Management Plan  
August 29, 2005  
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for drinking water as well as recreational activities and will be directly affected by the forthcoming Management Strategies for Lake Powell and Lake Mead under low reservoir conditions (the "Plan") as it will allow for changes in the way that the Colorado River is managed.

We appreciate this formal opportunity to comment on the matter of Colorado River Reservoir management, as we believe that an expanded, comprehensive, coordinated and forward-looking study and action plan for water management in the Colorado Basin is mandated by significantly changed, problematic conditions and needs. These include, but are not limited to, changing climatic and hydrological conditions, overallocation of the Colorado's water resources, outmoded legal and administrative water rights infrastructures, increasingly expanding demands on the system, inequities and waste regarding Colorado River water appropriations, storage and delivery, overdeveloped and inefficient Colorado River water storage and delivery systems, continuously degrading ecological systems and health, increasing water pollution and salinity, the utter lack of planning regarding sedimentation and its effects (including the likelihood of reaching "deadpool" conditions at Lake Powell, hereafter referred to as Powell Reservoir), and the ongoing inability to bring the system into compliance with a number of environmental mandates. The Colorado River water management infrastructure is largely outmoded, unsustainable, and unable to accomplish even its originally intended purposes, under present and anticipated conditions. It fails to adequately address shortages and changing hydrological and climatological conditions, and exacerbates the already severe ecological impacts of the structural system.

#### Observations.

##### 1. Diminishing returns and system inefficiency.

It is well documented that the historical average run-off in the Colorado is lower than the figure upon which the Colorado River Compact is predicated (1). Water from the Colorado is overallocated by at least 11% above the 400 year average (2). Rapid development in the Upper Basin has diminished the availability of surpluses, and the situation is further exacerbated by documented climatic change and resulting drought in the Western United States (3). Colorado River flows are expected to continue to decline (4). Even prior to the present drying trend, studies predicted the Colorado system would fail on the supply side by the year 2000 (5).

Compounding the problem and trend are factors involving the inefficiency of the system, due to tremendous evaporation losses (6). Under present scenarios, storage exceeds an "optimal," efficient level by 100% (7, 8). Because of this, the chances of Powell Reservoir filling again in the near future are negligible (9). It should also be noted that power generation is also compromised by, and may be discontinued by,

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continual low reservoir levels (10). Sedimentation is also reducing storage capacity and the system's lifespan at a rapid rate (11, 12). Draining Powell Reservoir as a rational response to these trends and problems would not jeopardize long term water delivery commitments to the Lower Basin (13).

## 2. Ongoing ecological degradation.

The environmental changes and decline in ecological health of the system are well documented (14). Powell Reservoir has not only inundated hundreds of miles of natural and free-flowing river ecologies and resources, but has also disrupted the riparian and riverine ecology of Grand Canyon National Park, with the erosion of beaches, changes in water characteristics, and extirpation and endangerment of approximately 6 species of fish (15). Present mitigation efforts to protect endangered species are failing (16), and the ecological impacts and disruptions under present infrastructure and management have devastated the formerly productive Colorado River delta (16). Present infrastructures, management strategies and agency priorities have raised ongoing issues regarding the inability of the Bureau of Reclamation to bring the system into compliance with the Endangered Species Act, the Clean Water Act, the Grand Canyon Protection Act, the Archeological and Historical Protection Act, the Colorado River Storage Project Act, and the National Environmental Policy Act (17).

Additionally, salinity and the accumulation of toxic materials and metals are increasing due to evaporation, leaching and sedimentation, resulting in water quality degradation, large scale agricultural damage, increased costs and compromised ecological systems and health (18). Human recreational and commercial uses, along with motorized recreation activities, have polluted the waters of the Colorado River with petroleum products and waste, and with harmful bacteria and coliforms (19).

The full scope of systemic impacts and management options for the Colorado River has never been properly addressed, and environmental studies have been unduly limited and narrowed (20).

## 3. Recreation and Tourism.

The factors noted above have also had a direct impact on recreational resources and tourism, as visitation to Glen Canyon NRA (Lake Powell) has been consistently declining (by nearly 50 percent over the past 15 years) (21), while reservoir navigation has become problematic, marina facilities have been closing, and Park Service costs for maintaining access have been increasing (22).

## 4. Safety.

In 1983 and 1984 high flows and a lack of adequate planning and management for flood control caused a near catastrophic occurrence/failure at Glen Canyon Dam. Spillway failure from the high flows required lowering releases, nearly causing overtopping of the dam by the rising, impounded waters; only a temporary, 8 foot



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plywood barrier prevented overtopping (23). The maximizing of power revenues and political pressure from the Colorado Basin states and recreational interests to maintain Powell Reservoir as full as possible seriously compromise flood control needs and priorities, as well as safety. Although recent hydrological studies indicate that the filling of Powell Reservoir is unlikely in the near future, a dam failure would result in the overtopping of Hoover Dam and all other downstream facilities, destroying water delivery systems and inundating communities in Arizona and California (24). The elimination of Powell Reservoir will actually increase flood control capability of the system, as Mead Reservoir levels would be drawn down to provide for Lower Basin water uses (25).

Recommendations.

Rock the Earth submits that the present, crisis situation provides an unprecedented opportunity for articulation and implementation of long-overdue changes in the management paradigm. Present and anticipated conditions and experience call for a new vision, and a goal of balancing present and future hydrological, ecological, social and technological realities with system resources and management options, through the development of a comprehensive plan for sustainable Colorado River water management.

1. A comprehensive and synergistic environmental impact statement should be immediately undertaken and placed on a fast track for implementation of sustainable water management and sound ecological practices. Management of the diverse interests and resources of the Colorado River must be coordinated and balanced in a long range view and plan. 1
  
2. The option of decommissioning Powell Reservoir should be fully examined (with a report and recommendation to Congress to remove any political impediments to this necessity) in a cost-benefit context, in terms of system and management inefficiencies, water losses, ecological impacts, and other externalities and diminishing returns. Issues surrounding the implementation of this option should be articulated, and solutions/alternatives crafted based upon defensible science and documented hydrological and climatological factors. 2
  
3. Maintain and manage Hoover Dam and Mead Reservoir as the primary storage and flood control facility in the system. Mead storage capacity is more than adequate to safeguard and provide the Lower Basin's "perfected rights." A fully maintained Mead allows for ecological restoration of Glen Canyon, Grand Canyon, and the Colorado delta, and is more efficient in terms of water and power delivery than two partially filled reservoirs. Mead is also better sited for implementing sediment transport access and 3

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technical solutions than Powell, and the removal of Powell Reservoir will decrease salinity and pollution impacts to the system, while increasing available water supply.

4. Bank any surplus water flows (enhanced by removal of Powell) in underground aquifers, accessible by existing aqueducts, most notably in Arizona (but also considering Utah, Nevada and California possibilities), for simple retrieval when needed. In addition to mitigating the evaporation loss problem, incidental benefits from such banking would inure to areas presently plagued with groundwater mining, subsidence, falling water tables, rising pumping costs, and habitat losses. These aquifers would also provide much more long-term storage capacity than reservoirs.

4

5. Implement aggressive water conservation strategies in the Colorado Basin, considering equity (Tribal and Mexican rights, balanced water priorities and uses, and fair allocations), efficiency, sustainability and growth issues.

5

6. Study and make firm recommendations to facilitate the updating and transformation of Western water law and the "Law of the River" to reflect the river system's limitations, present and anticipated future conditions, and the interests of sustainability, conservation, ecological health, and equity. The concepts of senior appropriators, beneficial use, and non-use triggered lapses need to be reassessed and replaced with a sustainable, conservative water management and allocation paradigm that recognizes and balances ecological and instream uses/benefits with sustainable and equitable water allocations and deliveries.

6

7. Embark on realistic and now-feasible restoration projects in the Colorado Basin. Glen Canyon has shown to be capable of short-term restoration through documented sediment transport. Recreational opportunities on a restored river system would offset the loss of the flatwater recreational economy of Powell Reservoir. Tribal interests (sacred sites, religious freedom, archaeological protection, etc.) would be respected and enhanced by restoration. Restoration efforts for Grand Canyon would require more creative and diligent efforts due to the complexity and cost of sediment transport and the potential problems involving environmental quality; however, a free-flowing Colorado through the Grand Canyon would provide the most hope and opportunity for species recovery and habitat restoration. Eliminating evaporative water losses and managing water delivery through banking and a single primary reservoir (Mead), will free up sufficient water for delta restoration, while providing a greater measure of equity and guarantee for Mexican interests as recognized by Treaty and Compact.

7

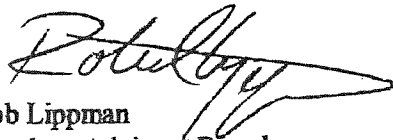
8. Study and develop plans for sediment transport/removal from Glen Canyon, Mead Reservoir and other impoundments.

8

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Again, Rock the Earth appreciates this opportunity to comment on this matter of such critical importance and impact. The failure to plan for a sustainable future for the American Southwest will result in devastating and insurmountable problems and contention; the vision to overcome political inertia and confront the challenges of climate change, unsustainable growth and declining environmental quality may allow us as a society and species to move towards the hope of a sustainable future.

For Rock the Earth:



Bob Lippman  
Member, Advisory Board

Marc A. Ross  
President & Executive Director

- C: -Governors Offices of the 7 basin States (Arizona, California, Nevada, Utah, New Mexico, Colorado, Wyoming)  
-Gail Norton, Secretary of the Interior  
-Director, United States Fish and Wildlife Service  
-Director, National Park Service

Notes.

1. Stockton, C. W., and G. C. Jacoby. "Long Term Surface Water Supply and Stream Flow Trends in the Upper Colorado River Basin," Lake Powell Research Project Bulletin No. 18 (University of California at Los Angeles, Institute of Geophysics and Planetary Physics, 1976; Bureau of Reclamation, Upper Colorado Region: Water Operations. "Table LC-1 and UC-1." Colorado River System Consumptive Uses and Losses Report (1971 - 2000).
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6. See Note 1 (Bureau of Reclamation).
7. Langbein, Walter B. Water Yield and Reservoir Storage in the United States. U. S. Geological Survey Circular No. 409 (1959).
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16. See Note 14, p. 8.
17. See, e.g., Department of the Interior. Report to Congress: Operations of Glen Canyon Dam Pursuant to the Grand Canyon Protection Act of 1992, Water Years 1999 – 2001, Secretary of the Interior (May, 2002); See Note 15.
18. See Note 15, p. 7, 11.
19. See Note 15, p. 11.
20. See, e.g., Note 15, p. 4; Clotworthy, Bruce. Parched: The Future of the Glen Canyon Dam in a Drier West. 17 Utah Bar Journal 8; Pub. L. No. 106-113, sec 1000(a)(3) (1999).

**Mr. Bob Johnson**  
**Mr. Rick Gold**  
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## Duren, Sabre

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**From:** Connie Woodhouse [Connie.Woodhouse@noaa.gov]  
**Sent:** Tuesday, August 23, 2005 10:12 AM  
**To:** strategies@lc.usbr.gov  
**Subject:** response to call for comments

**Attachments:** USBRpaleocomments.doc



USBRpaleocomment  
s.doc

Hi Terry,

A number of the paleoscientists and climate scientists who attended the Colorado River/Paleo workshop in Tucson in May would like to voice support for the consideration of paleodata in the management of the Colorado River system. Attached is a letter that was generated and signed by 17 of us that we hope the USBR will read and consider in the development of management strategies. And of course, all of use are more than willing to assist in this however possible.

best regards,

Connie

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Connie Woodhouse  
Paleoclimatology Branch  
NOAA National Climatic Data Center  
325 Broadway E/CC23  
Boulder, CO 80305  
USA

tel: (303) 497-6297  
fax: (303) 497-6513  
e-mail: Connie.Woodhouse@noaa.gov

G.008

August 23, 2005

Regional Director  
Bureau of Reclamation, Lower Colorado Region  
Attn: BCOO-1000  
P.O. Box 61470  
Boulder City, NV 89006-1470

Regional Director  
Bureau of Reclamation, Upper Colorado Region  
Attn: UC-402  
125 South State St.  
Salt Lake City, UT 84318-1147

Re: Comments on content, format, mechanisms, and analysis to be considered during the development of management strategies for Lake Powell and Lake Mead under low reservoir conditions

The recent (1999-2004) drought in the western U.S. is a reminder that droughts are a prominent feature of the Colorado River basin. Major droughts, such as this recent event and the 1930s and 1950s droughts, have been experienced several times over the period of modern climate records. Because they have occurred in the historical past, it is reasonable and widely accepted that we should expect droughts of similar magnitude to occur in the future. However, the instrumental record of droughts extends back just 100 years and provides only a subset of the droughts that have occurred over a longer time frame, as documented by numerous reconstructions of past climate over the past 300 to 1000 years from tree-ring data. Tree-ring reconstructions suggest that droughts more persistent and more severe than any in the instrumental have occurred over the past centuries. These records indicate that the frequency of extreme drought events has also varied, and that the recent centuries have included periods of time with a higher frequency of extreme events than what we have seen in the past 100 years.

Reconstructions of streamflow from tree rings are possible because annual tree growth in many parts of the western U.S. is controlled by the same set of climatic conditions that contribute to water year flows. The current methodologies employed in tree-ring based reconstructions are the result of over 30 years of work leading to improved statistical techniques for modeling hydroclimatic variability from tree rings and the validation of those modeling results with independent data. Analyses of other types of paleohydrologic data, such as the geochemistry and fossil content of lake sediments, provide additional checks and validations of the tree-ring records. After over three decades of careful research, we as a scientific community, can assert confidence in the use of tree-ring data to extend our annual records of hydrology back beyond the 100 years of instrumental records.

High quality reconstructions of streamflow exist for the Colorado River basin which quantify annual hydrologic conditions for over 400 years. These records highlight the fact

that gauged flow records for the past 100 years do not capture the full range of drought severity and duration that can occur on the Colorado River. Extended records of streamflow allow a broader range of shortage scenarios to be considered to determine the best possible management strategies for coping with drought.

The information from the extended records of past hydroclimatic variability needs to be used in concert with current and projected climate information in the management of the river. Future hydroclimatic conditions will not be entirely analogous to conditions of the past, but by documenting and understanding the record of past variability and extremes, which contain a broader range of conditions as well as information on decadal variability, judicious management strategies can be developed when considering projections of future climate and water availability.

In conclusion, we urge that paleohydrologic data, along with other relevant climate data, be considered in any assessment of possible Colorado River shortages in the future and in the determination of shortage criteria. The scientific community represented in this letter is willing to assist the US Bureau of Reclamation with use and interpretation of these data.

The opinions expressed in this letter are those of the individuals listed below and not those of their affiliated organizations.

Sincerely,

Franco Biondi, University of Nevada, Reno, NV  
Daniel Cayan, Scripps Institute of Oceanography and U.S. Geological Survey, La Jolla, CA  
Julia Cole, University of Arizona, Tucson, AZ  
Henry Diaz, NOAA/OAR Climate Diagnostics Center, Boulder, CO  
David Enfield, NOAA Atlantic Oceanographic and Meteorological Laboratory, Miami FL  
Gregg Garfin, University of Arizona, Tucson, AZ  
Stephen Gray, U.S. Geological Survey, Tucson, AZ  
Hugo Hidalgo, Scripps Institute of Oceanography, La Jolla, CA  
Katherine Hirschboeck, University of Arizona, Tucson, AZ  
Katherine Jacobs, University of Arizona, Tucson, AZ  
Douglas Kenney, University of Colorado, Boulder, CO  
Jeffrey Lukas, University of Colorado, Boulder, CO  
Glen MacDonald, University of California, Los Angeles, CA  
Ramzi Touchan, University of Arizona, Tucson, AZ  
Bradley Udall, University of Colorado, Boulder, CO  
Robert S. Webb, NOAA/OAR Climate Diagnostics Center, Boulder, CO  
Connie Woodhouse, NOAA/NESDIS National Climatic Data Center, Boulder, CO



**Duren, Sabre**

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**From:** Lynn Hamilton [GCRG@infomagic.net]  
**Sent:** Friday, August 26, 2005 3:10 PM  
**To:** strategies@lc.usbr.gov  
**Cc:** GCRG-BOARD@LIST.GCRG.ORG  
**Subject:** Grand Canyon River Guides' comments on low reservoir conditions  
**Attachments:** BuRec comments on low reservoir conditions 05, Final.doc

As a diverse non-profit organization representing over 1,800 professional river guides, passengers, private boaters and assorted river and canyon aficionados, Grand Canyon River Guides offers the attached comments to this public process regarding the development of management strategies for low reservoir conditions in Lakes Powell and Mead.

We are concerned that the deadline for comments may preclude effective river guide participation since it falls at the height of the river season. Many river guides are on the water, away from home, phone and email. They will not be aware of this public process nor have the ability to offer comments, effectively disenfranchising this primary user group. Accordingly, please consider extending your deadline in order to maximize public participation.

Thank you for your consideration. We appreciate the ability to be involved in this public process and look forward to a successful resolution!

Sincerely,

Lynn Hamilton  
Executive Director  
Grand Canyon River Guides, Inc.  
PO Box 1934  
Flagstaff, AZ 86002  
(928) 773-1075 Phone  
(928) 773-8523 Fax  
[gcrg@infomagic.net](mailto:gcrg@infomagic.net)

G.010

9/4/2005



PO Box 1934  
Flagstaff, AZ 86002  
(928) 773-1075 Phone  
(928) 773-8523 Fax  
gcr@infomagic.net

August 26, 2005

Regional Director  
Bureau of Reclamation, Lower Colorado Region  
Attn: BCOO – 1000  
PO Box 61470  
Boulder, City, NV 89006-1470

To Whom It May Concern,

Grand Canyon River Guides, Inc. would like to offer our views on the development of management strategies for Lakes Powell and Mead under low reservoir (drought) conditions. Climatic studies of the Colorado Plateau suggest that the drought may continue, on and off, over the next decade. What separates this drought from earlier ones is drastically increased water demand stemming from the huge population influx into the region. We applaud the Bureau of Reclamation for developing shortage guidelines before emergencies occur. Even should precipitation levels return to average amounts, it could take more than a decade of “average” years to refill both reservoirs.

Our diverse organization of over 1,800 individuals is dedicated to protecting the Grand Canyon, setting the highest standards for the river profession, celebrating the unique spirit of the river community, and providing the best possible river experience. Our role as the recreational stakeholder for the Adaptive Management Program, and our sharp focus on the immediate environmental issues of the Colorado River within Grand Canyon National Park and the recreational concerns therein, lead GCRG to submit the following recommendations:

- 1) Regardless of the management strategies adopted by the Bureau of Reclamation pending completion of this public comment process, navigability and boating safety of the Colorado River through Grand Canyon must be ensured. Based on our extensive knowledge of the requisite conditions for safe and successful river trips, GCRG recommends that flow levels not fall below 5,000 cfs at night and 10,000 cfs during the day, while averaging no less than 8,000 cfs.

- 2) South Cove in Lake Mead now serves as the take-out point for many river trips. River guides have experienced difficulties created by river incision and shifting channels in Lake Mead due to low reservoir conditions. Furthermore, extremely low water levels could render the South Cove ramp unusable. Under these circumstances, river trips would be forced to travel significantly farther to Temple Bar, or congestion at Diamond Creek would be drastically increased, resulting in negative impacts to the Hualapai river running enterprise. Stabilizing Lake Mead water levels may lead to a reasonably constant and safer configuration that also benefits the businesses dependent upon this disembarkation point. 2
  
- 3) Low reservoir conditions should not impinge upon nor supersede event-driven sediment experiments from Glen Canyon Dam within the parameters approved by the Adaptive Management Program. Sediment is crucial for protecting and preserving: a) endangered species dependent upon near shore habitat, b) irreplaceable archaeological resources along the river corridor, c) camping beaches necessary for continued viability of the Grand Canyon river recreation industry, and d) the natural geomorphic features of Grand Canyon as guaranteed by the National Park Service Organic Act of 1916. 3
  
- 4) River restoration and endangered species are key components of the demands placed upon these reservoir systems. This focus must not be lost in the ensuing struggle between Upper and Lower Basin States. The primary mandate of the Grand Canyon Protection Act of 1992 (section 1804) pledges that: *“The Secretary shall operate Glen Canyon Dam...to protect, mitigate adverse impacts to, and improve 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”*. 4
  
- 5) Water allotments for all seven basin states should be reduced by the same percentage based on the projected water deficit for each year of drought. Simplicity and equitability can minimize stakeholder conflict. 5
  
- 6) Consider options that maximize efficiency of water storage including alternatives that reduce overall evaporative loss to the system. Also, consider ways to maximize power generation and water retention while reducing the need for daily fluctuations. 6  
7
  
- 7) Given the realities of continuing drought conditions exacerbated by ever increasing water demands, mandatory water conservation measures are an absolute necessity. Any basin state that successfully implements such measures should receive a pre-determined “water rebate” as an incentive. 8
  
- 8) Similarly, any basin state that successfully reduces its peak power demand by distribution to low peak periods or by institution of conservation and alternative energy methods should receive a “water rebate.” This would lessen reliance on environmentally harmful high daily fluctuations and reduce dependence on hydro peaking power during a period of diminishing reservoir levels. 9

Grand Canyon environmental and recreational issues are widely considered a model for changing demographic challenges to the river system. As our organization's strength, Grand Canyon River Guides' principle focus will remain on the operations of Glen Canyon Dam and its downstream impacts, yet we recognize this is but one critical segment of a much larger river system. Accordingly, GCRG advocates a basin-wide approach in the following majority opinion statement of our membership: 10

*"The U.S. government should conduct all appropriate and necessary research to compile a full-scale Environmental Impact Statement delineating the impacts of Glen Canyon Dam and its power plant operations on the Colorado River's upstream and downstream resources, including national parks, monuments and recreational areas in its watershed."* 11

Initial water allotments set in the 1920s were based on data from what we now recognize as a wet cycle. Nor could policymakers envision the population explosion and societal changes experienced by the American West. The primary concern of our constituency is that the Colorado River through Grand Canyon will be "bled dry" by competing interests. We believe the American public places high value on in-stream flows, whether for recreational, environmental, hydropower, or intrinsic reasons; and additional water should not be taken from the basin to satisfy unsustainable growth of outlying metropolitan areas. 12

The Colorado River is a system of extremes, yet we stress that *a river without water is not a river*. Grand Canyon River Guides presents our recommendations to this public process in light of this overriding concern. Although the Colorado River Storage Project will continue to endure, all strategies must be examined equally and thoroughly in order to develop a creative and workable solution to the inherent challenges posed by ever-increasing demands on this river system.

Sincerely,

The Officers and Board of Directors  
Grand Canyon River Guides, Inc.

**Duren, Sabre**

**From:** greg hunt [greghunt@waterkeepers.org.au]  
**Sent:** Sunday, August 28, 2005 10:51 PM  
**To:** strategies@lc.usbr.gov; strategies@uc.usbr.gov  
**Subject:** Attention: BCOO-1000 and UC-402

Dear Regional Directors  
 Upper and Lower Colorado Regions  
 Bureau of Reclamation

Waterkeepers Australia understands that you are accepting public comment on the re-operation of the two largest reservoirs in the US, Lake Powell and Lake Mead. Communities affected by your proposals must be involved in your decision-making processes to ensure that the range of views is contributed to maximise the possibility of sound decisions. You must examine the viability of permanently ceasing operations at Lake Powell and employing just one reservoir to capture and manage the bulk of Colorado River flows. Our colleagues at Living Rivers have given you reasons for this course of action as follows:

Please know that:

1. No longer a need for a single-use dam at Glen Canyon | 1

It was not until the fall of 2004, more than 40 years after Glen Canyon Dam began impounding Lake Powell that Lake Powell water storage actually augmented water storage downstream. But with climate change already causing long-term flow reductions, and water consumption levels near the river's historic average flow and rising, it's unlikely that Lake Powell will fill again. The surplus water that filled it during 17 years the first time is no longer there to build a storage cushion. Even should surplus water accumulate, Lake Mead on its own could accommodate it.

2. It's time for more efficient storage | 2

With Lake Powell and Lake Mead losing to evaporation upwards of 17 percent of the water that flows into them, it's time that more efficient means be explored for storing this precious water. Vacant space in underground aquifers on, or accessible to, existing Colorado River infrastructure could accommodate more water than these two reservoirs combined—and with far greater efficiency. Upwards of 810,000 acre-feet of water annually—enough water for 1.6 million households of four people each—could be saved by eliminating Lake Powell and operating Lake Mead principally for distribution to groundwater recharge facilities.

3. Revive Grand Canyon | 3

Between Lake Powell and Lake Mead lies one of the world's most famous and geologically and ecologically unique river canyons, Grand Canyon National Park. The operation of both these reservoirs has impacted the Canyon, but Glen Canyon Dam has been far more devastating. Since its completion four of eight native fish have gone extinct and the dam has trapped the sediment necessary to maintain habitat and beaches for wildlife and recreation, as well as the stabilization of archaeological sites.

4. Manage the sediment | 4

Sediment is a major unresolved problem threatening the long-term operations of Lake Powell and Lake Mead. Ultimately, sediment will have to be removed from one or both of these reservoirs. Removing sediment from Lake Mead rather than Lake Powell is the most feasible and least expensive likely alternative. While original estimates projected that sediment would not effect the safe operations of Glen Canyon Dam for another 60 years, scientists now warn that major problems could occur sooner.

5. Revise the Colorado River Compact | 5

The Colorado River Compact of 1922, which largely governs the discharge of flows from Lake Powell to Lake Mead, cannot meet its intended purpose of sharing Colorado River water equitably between the Upper and Lower Basin states.

The Compact allocated 11 percent more water than the river has to give, and affords the Lower Basin 20 percent more water than the upper basin. With river flows expected to decline 18 percent by 2040, this inequity will worsen as the Upper Basin is required to deliver to the Lower Basin its full share regardless of declines in river flow.

A comprehensive assessment addressing the issues above is fully warranted and should be done through an Environmental Impact Statement. These issues have effects far beyond national borders, and need for the involvement of communities in environmental management is universal. Your Bureau would do well to incorporate this thinking.

Yours sincerely

Greg Hunt  
National Manager  
Waterkeepers Australia

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Version: 7.0.344 / Virus Database: 267.10.16/83 - Release Date: 26/08/2005

**Duren, Sabre**

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**From:** Lynn Hamilton [GCRG@infomagic.net]  
**Sent:** Monday, August 29, 2005 2:59 PM  
**To:** strategies@lc.usbr.gov  
**Subject:** Grand Canyon River Guides' comments - received?

This is same Commenter as  
G.010, No additional comments  
provided in this letter

On Friday the 26th, we emailed Grand Canyon River Guides' comments on the development of management strategies for low reservoir conditions in Lakes Powell and Mead. Can you please confirm your receipt of these comments? Thank you very much.

Lynn Hamilton  
Executive Director  
Grand Canyon River Guides  
PO Box 1934  
Flagstaff, AZ 86002  
(928) 773-1075 Phone  
(928) 773-8523 Fax  
[gcrg@infomagic.net](mailto:gcrg@infomagic.net)

G.012

## Duren, Sabre

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**From:** John Weisheit [john@livingrivers.org]  
**Sent:** Monday, August 29, 2005 2:20 PM  
**To:** strategies@lc.usbr.gov; strategies@uc.usbr.gov  
**Cc:** john@livingrivers.org  
**Subject:** Living Rivers supplemental letter

Note: This is same Commenter and comments as G.001, no additional or new comments provided in this letter

**Attachments:** LivingRivers02.pdf



LivingRivers02.pdf  
(121 KB)

To: The Regional Directors of the Upper and Lower Colorado, Bureau of Reclamation  
From: Living Rivers/Colorado Riverkeeper  
Date: August 29, 2005

A file called LivingRivers02.pdf is attached. The letter submitted includes a coalition of groups that support "The One-Dam Solution," previously submitted by Living Rivers staff to the Bureau of Reclamation at the scoping meetings of July 26 and 28, 2005 at Henderson, Nevada and Salt Lake City, Utah, respectively.

Please let me know if there are problems concerning this pdf file. I will deliver a copy by hand to Bureau of Reclamation staff at tomorrow's AMWG meeting in Phoenix.

Thank you  
John Weisheit  
Conservation Director  
Living Rivers and Colorado Riverkeeper

G.013



# LIVING RIVERS

COLORADO RIVERKEEPER®

August 30, 2005

Mr. Bob Johnson  
Regional Director  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000  
P.O. Box 61470  
Boulder City, NV 89006-1470

Mr. Rick Gold  
Regional Director  
Bureau of Reclamation, Upper Colorado Region  
Attention: UC-402  
125 South State Street  
Salt Lake City, Utah 84318-1147

Dear Mr. Johnson & Mr. Gold,

Living Rivers, Colorado Riverkeeper, and the undersigned organizations submit the following report, *The One-Dam Solution*, as scoping comments for the development of management strategies for operations at Lake Powell and Lake Mead, on the Colorado River, under low reservoir conditions.

With current demand for Colorado River water nearly at the river's historical annual flow of 13.5 million-acre feet (MAF) and rising, and government-sponsored scientists anticipating average annual flows to decline 18 percent by 2040, the prospect of ongoing low water conditions for Colorado River reservoirs is a near certainty. The average flow of 60 percent into the system for the past six years is firm evidence of this.

For more than 25-years, government scientists and administrators have warned that shortages would be occurring now. This action is the first to reexamine the flawed operational strategies that have been in place as far back as 1922 when the Colorado River Compact allocated 11 percent more water than the Colorado River has to give.

**PO Box 466 • Moab, UT 84532 • (435) 259-1063 • Fax (435) 259-7612**

Reexamining these two reservoirs is critical, as they constitute more than two-thirds of the system's storage capacity, which with declining inflows and increased demand are proving excessive.

Meanwhile, these two reservoirs can cause the loss of upwards of ten percent of the river's average annual flow due to evaporation—valuable water for critical habitats and water users downstream.

Furthermore, the challenges facing the future operations of these reservoirs go beyond water allocation and storage inefficiencies. Sediment entering Lake Powell will eventually compromise Glen Canyon Dam's safety. Despite recent warnings that this could happen sooner than the 40-year-old estimate of 2060, there has been no comprehensive monitoring or analysis conducted to address this inevitable problem.

Lastly, despite more than \$200 million already spent, no gains have been made to restore the critical habitat for endangered species in Grand Canyon National Park impacted by Glen Canyon Dam's operations. The mandates of the Grand Canyon Protection Act and the Endangered Species Act in particular are being ignored to maintain Lake Powell even though it is proving to be both wasteful and unnecessary for water storage.

It is therefore critical that the Bureau of Reclamation broadly reexamine the operations of these facilities in accordance with preparing an Environmental Impact Statement to address the following:

- 1) Pursue transfers of Lake Powell and Lake Mead storage to groundwater aquifers.
- 2) Develop a sustainable sediment management program for Lake Powell and Lake Mead.
- 3) Determine the costs and benefits of decommissioning Glen Canyon Dam to restore natural flows through Glen and Grand Canyons.
- 4) Identify new water allocation guidelines to reflect the amount of water the Colorado River actually provides, how it should be distributed and what amounts are needed to protect critical habitats in Grand Canyon and elsewhere.

A water management crisis is looming on the Colorado River. The federal government, as Water Master, has the responsibility to help avert this. Most of the issues addressed in the attached report are not new, but continuing to ignore them will only worsen the impacts once the crisis arrives.

Page three  
Regional Directors Johnson and Gold

Thank you for the opportunity to submit these comments. As this process continues in the months ahead, we will be expanding the alliance of groups concerned about the protection of the water resources from the Colorado River.

Sincerely yours,

Original signed

John Weisheit  
Conservation Director, Living Rivers  
Colorado Riverkeeper

Attachment: *The One-Dam Solution*

On behalf of the following groups:

Alabama Environmental Council  
American Wildlands  
Audubon Society of Greater Denver  
Black Warrior Riverkeeper  
Blackwater/Nottoway Riverkeeper  
Bluewater Network  
Boulder Regional Group  
Buckeye Forest Council  
California Save Our Streams Council  
Center for Biological Diversity  
Choqueyapu Riverkeeper  
Cold Mountain, Cold Rivers  
Colorado Plateau River Guides  
Colorado White Water Association  
Coosa River Basin Initiative  
Dogwood Alliance  
Electors Concerned about Animas Water  
Endangered Habitats League  
Erie Canalkeeper  
Forest Guardians  
Forest Watch  
Forests Forever  
Four Corners School of Outdoor Education  
Free the Planet  
Friends of Living Oregon Waters

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Regional Directors Johnson and Gold

Friends of the Animas River  
Friends of the Earth  
Friends of the Eel River  
Friends of the Milwaukee River  
Glen Canyon Institute  
Goods From The Woods  
Grand Riverkeeper  
Great Egg Harbor Watershed Association  
Great Old Broads for Wilderness  
Green Party of Utah  
Hells Canyon Preservation Council  
Inland Empire Waterkeeper  
International Society for Preservations of the Tropical Rainforest  
Jumping Frog Research Institute  
Kettle Range Conservation Group  
Land Institute  
London Canalkeeper  
Lone Tree Council  
Lower Neuse Riverkeeper  
Maricopa Audubon  
Milwaukee Riverkeeper  
Morava Riverkeeper  
New Riverkeeper  
New River Foundation  
Northwest Rafters Association  
Northwoods Wilderness Recovery  
Neuse River Foundation  
Orange County Coastkeeper  
Oregon Natural Desert Association  
Outdoor Adventure River Specialists  
Patapsco Riverkeeper  
Red Rock Forests  
Restore: The North Woods  
Ridgeline & Open Space Coalition  
River Runners for Wilderness  
Riverhawks  
Rocky Mountain Peace and Justice Center  
Russian Riverkeeper  
Sacramento River Preservation Trust  
Salt Creek Watershed Network  
San Diego Coastkeeper  
San Luis Obispo Coastkeeper  
Satilla Riverkeeper

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Regional Directors Johnson and Gold

Southern Utah Wilderness Alliance  
Taxpayers for the Animas River  
The Clinch Coalition  
The River Project  
Upper Coosa Riverkeeper  
Ventura Coastkeeper  
Virginia Forest Watch  
West/Rhode Riverkeeper  
Western Watersheds Project  
Wild Wilderness  
Wilderness Watch  
Wildlaw

**DEFENDERS OF WILDLIFE □ ENVIRONMENTAL DEFENSE □  
NATIONAL WILDLIFE FEDERATION □ THE NATURE CONSERVANCY IN ARIZONA □  
PACIFIC INSTITUTE □ SIERRA CLUB □  
SONORAN INSTITUTE**

August 31, 2005

Regional Director  
Bureau of Reclamation, Lower Colorado Region  
Attn: BCOO-1000  
P.O. Box 61470  
Boulder City, NV 89006-1470

Regional Director  
Bureau of Reclamation, Upper Colorado Region  
Attn: UC-402  
125 South State Street  
Salt Lake City, UT 84318-1147

*Via Facsimile (702-293-8156 & 801-524-3858) and Mail*

Re: Colorado River Reservoir Operations: Development of Management Strategies  
for Lake Powell and Lake Mead Under Low Reservoir Conditions

Dear Sirs:

These comments regarding Lake Powell and Lake Mead management strategies, including Lower Basin shortage guidelines, are submitted on behalf of Defenders of Wildlife, Environmental Defense, National Wildlife Federation, the Nature Conservancy in Arizona, Pacific Institute, Sierra Club, and the Sonoran Institute. At its public meetings in June, the Bureau of Reclamation (Reclamation) sought answers to specific questions about the process the agency should use. These included the form the strategies should take, whether they should be interim or permanent, and the appropriate level of National Environmental Policy Act (NEPA) analysis.

We urge Reclamation to prepare an Environmental Impact Statement (EIS) on management strategies (including shortage guidelines) pursuant to NEPA. Reclamation appropriately prepared an EIS for the Interim Surplus Guidelines; like the Interim Surplus Guidelines, new management strategies for the Colorado River system would represent a "major federal action significantly affecting the environment" and would likewise merit full analysis and disclosure. As such, Reclamation should, of course, examine alternative strategies which may be interim or permanent, and may be implemented through the Annual Operating Plan (AOP), Long Range Operating Criteria (LROC), formal rule-making or guidelines.



Several of the groups on this letter have already submitted a proposal, entitled "Conservation Before Shortage," as to the substance of a management strategy during shortage and The Nature Conservancy in Arizona is now adding its support to that proposal by joining this letter. The intent of the Conservation Before Shortage proposal is to suggest a method by which increased flexibility can be introduced into the management of river resources in order to increase the reliability and predictability of water deliveries under low reservoir conditions. Providing for increased levels of flexibility in river management will be critical to meeting the demands of both human and environmental water users in the future, particularly as Upper Basin use and the impacts of climate change decrease overall water availability in the Colorado River system. However, the mechanisms proposed in the Conservation Before Shortage proposal are clearly not the only means by which such flexibility could be achieved. For example, recent discussions between the Basin States have highlighted options such as conjunctive management of system reservoirs, banking of water in Lake Mead, providing credits for the temporary or permanent retirement of pre-1928 tributary water, and other mechanisms. We urge Reclamation to consider a broad range of alternatives for introducing increased flexibility into river management, including the mechanisms described in the Conservation Before Shortage proposal.

With regard to the form of a preferred strategy, the preferred alternative should take the form of guidelines, like the Interim Surplus Guidelines (which were also the subject of an EIS). Formal rulemaking is not appropriate in this situation, nor is ad hoc implementation through the AOP. Guidelines will fulfill the need of water users who rely on the Colorado River to plan for the occurrence and amount of shortage and the impact on water deliveries. These guidelines, like the Interim Surplus Guidelines (ISG), would be applied each year as part of the AOP process and be subject to review every five years, concurrent with LROC reviews. Guidelines that are the subject of an EIS will also have the benefit of a Record of Decision that clearly spells out any final decision.

3

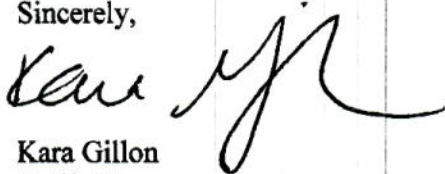
Lastly, we urge Reclamation to issue permanent guidelines. Unlike the Interim Surplus Guidelines, which were developed to meet a specific purpose – to give California a "soft landing" while reducing its water use to 4.4 million acre-feet over a fifteen-year period – shortage guidelines will be designed to meet a broader purpose – management during low reservoir conditions. Shortage guidelines should be designed to guide water management and use now and in the future, as the drought conditions that have prevailed in the Colorado River Basin for the past six years may well continue past 2016 and in any event are certain to return in the future. Mechanisms to increase flexibility in the river system and allocate potential shortfalls will thus need to be applicable for the long-term, particularly as the Upper Basin continues to develop its water supply and as water availability in the entire Basin is impacted by extended drought events or by climate change. Furthermore, alternatives that would be in effect concurrently with the ISG (and thus only in effect for determinations made through calendar year 2016) do not make sense as they would be in effect for only eight years assuming that Reclamation completes this process by December 2007; short-term guidelines could thus put Basin water users back in a similar or worse position than they are today in less than a decade. While changes to shortage management strategies may well be necessary in the future to respond to changing demands associated with human and environmental needs in the Lower Basin, Upper Basin, and Mexico, it is critical that Reclamation establish a lasting framework within which long-term water planning can be conducted.

4



Thank you for this opportunity to comment. Please place us on your mailing list and send further documentation as it becomes available.

Sincerely,



Kara Gillon  
Staff Attorney  
Defenders of Wildlife  
824 Gold SW  
Albuquerque, NM 87102  
[kgillon@defenders.org](mailto:kgillon@defenders.org)

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State Director  
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[pgraham@tnc.org](mailto:pgraham@tnc.org)

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Sierra Club  
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Peter W. Culp  
Attorney for Programs  
Sonoran Institute  
4835 E. Cactus Rd. Suite 270  
Scottsdale, AZ 85254  
[peter@sonoran.org](mailto:peter@sonoran.org)



# LIVING RIVERS

## COLORADO RIVERKEEPER<sup>®</sup>

August 30, 2005

Mr. Bob Johnson  
 Regional Director  
 Bureau of Reclamation, Lower Colorado Region  
 Attention: BCOO-1000  
 P.O. Box 61470  
 Boulder City, NV 89006-1470

Mr. Rick Gold  
 Regional Director  
 Bureau of Reclamation, Upper Colorado Region  
 Attention: UC-402  
 125 South State Street  
 Salt Lake City, Utah 84318-1147

Dear Mr. Johnson & Mr. Gold,

Living Rivers, Colorado Riverkeeper, and the undersigned organizations submit the following report, *The One-Dam Solution*, as scoping comments for the development of management strategies for operations at Lake Powell and Lake Mead, on the Colorado River, under low reservoir conditions.

With current demand for Colorado River water nearly at the river's historical annual flow of 13.5 million-acre feet (MAF) and rising, and government-sponsored scientists anticipating average annual flows to decline 18 percent by 2040, the prospect of ongoing low water conditions for Colorado River reservoirs is a near certainty. The average flow of 60 percent into the system for the past six years is firm evidence of this.

For more than 25-years, government scientists and administrators have warned that shortages would be occurring now. This action is the first to reexamine the flawed operational strategies that have been in place as far back as 1922 when the Colorado River Compact allocated 11 percent more water than the Colorado River has to give.

Reexamining these two reservoirs is critical, as they constitute more than two-thirds of the system's storage capacity, which with declining inflows and increased demand are proving excessive.

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Note: This is same Commenter and comments as G.001, no additional or new comments provided in this letter

Page two  
Regional Directors Johnson and Gold

Meanwhile, these two reservoirs can cause the loss of upwards of ten percent of the river's average annual flow due to evaporation—valuable water for critical habitats and water users downstream.

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It is therefore critical that the Bureau of Reclamation broadly reexamine the operations of these facilities in accordance with preparing an Environmental Impact Statement to address the following:

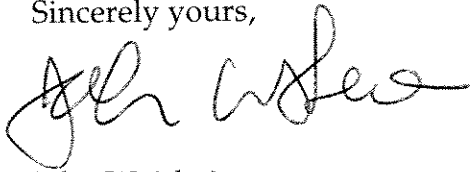
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Thank you for the opportunity to submit these comments. As this process continues in the months ahead, we will be expanding the alliance of groups concerned about the protection of the water resources from the Colorado River.

Page three  
Regional Directors Johnson and Gold

Sincerely yours,



John Weisheit  
Conservation Director, Living Rivers  
Colorado Riverkeeper

On behalf of the following groups:

Alabama Environmental Council  
American Wildlands  
Audubon Society of Greater Denver  
Black Warrior Riverkeeper  
Blackwater/Nottoway Riverkeeper  
Bluewater Network  
Boulder Regional Group  
Buckeye Forest Council  
California Save Our Streams Council  
Center for Biological Diversity  
Choqueyapu Riverkeeper  
Cold Mountain, Cold Rivers  
Colorado Plateau River Guides  
Colorado White Water Association  
Coosa River Basin Initiative  
Dogwood Alliance  
Electors Concerned about Animas Water  
Endangered Habitats League  
Erie Canalkeeper  
Forest Guardians  
Forest Watch  
Forests Forever  
Four Corners School of Outdoor Education  
Free the Planet  
Friends of Living Oregon Waters  
Friends of the Animas River  
Friends of the Earth  
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Friends of the Milwaukee River  
Glen Canyon Institute  
Goods From The Woods  
Grand Riverkeeper

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Regional Directors Johnson and Gold

Great Egg Harbor Watershed Association  
Great Old Broads for Wilderness  
Green Party of Utah  
Hells Canyon Preservation Council  
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International Society for Preservations of the Tropical Rainforest  
Jumping Frog Research Institute  
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Maricopa Audubon  
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Northwest Rafters Association  
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Outdoor Adventure River Specialists  
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Restore: The North Woods  
Ridgeline & Open Space Coalition  
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Ventura Coastkeeper  
Virginia Forest Watch  
West/Rhode Riverkeeper

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Regional Directors Johnson and Gold

Western Watersheds Project  
Wild Wilderness  
Wilderness Watch  
Wildlaw

PLEASE ADD

SAN DIEGO COASTKEEPER  
CASCO BAYKEEPER  
UPPER NEUSE RIVERKEEPER  
MONTANA RIVER ACTION



# WYOMING FARM BUREAU FEDERATION

P.O. Box 1348  
Laramie, Wyoming 82073 • (307) 745-4835

August 31, 2005

Regional Director, Bureau of Reclamation  
Lower Colorado Region  
Attn: BCOO-1000  
P.O. Box 61470  
Boulder City, NV 89006-1470

To Whom It May Concern:

The Wyoming Farm Bureau Federation would like to provide the following comments to the Bureau of Reclamation with respect to the Development of Management Strategies for Lake Powell and Lake Mead under low reservoir conditions. The Wyoming Farm Bureau Federation represents agricultural producers throughout the state of Wyoming. As an upper basin state under the Colorado River Compact, Wyoming and its agricultural producers have a great deal of interest in any actions taken within the basins of the Colorado River Compact.

- 1) **Revise reservoir operating rules to store water in headwater reservoirs as long as possible.** The evaporation that takes place during the summer months at Lake Mead and Lake Powell is significant. Lake Powell can lose between 430,000 and 600,000 acre-feet of water through evaporation, enough to supply Los Angeles with water for an entire year and more than twice what Las Vegas needs. Lake Mead, with its lower elevation and higher temperatures loses even more; around 700,000 acre-feet per year. As a comparison, the entire Green River Basin in Wyoming, which includes Flaming Gorge Reservoir, loses approximately 26,000 acre-feet to evaporation annually. By storing more water in the headwater reservoirs, including Flaming Gorge, the impacts of a prolonged drought could potentially be mitigated. 1
- 2) **Maintain current apportionment.** Wyoming has never used its full apportionment of water under the compact. However, when the compact became effective in 1922, the state was given an apportionment in perpetuity. It is important that Wyoming continues to hold entitlement to its full apportionment under the compact for future development projects and needs. 2
- 3) **Consider proportional sharing of short-term (drought) shortages, much like the current upper basin compact.** Presently, the Upper Basin states shoulder the whole burden in drought years and stand to be the ones to lose if there is a prolonged drought. In the formulation of the Lake Powell and Mead drought 3

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management plan there should be some mention of a proportional sharing of short-term shortages among the lower basin states. Some states could be dramatically affected by long-term drought. Both Colorado and Arizona would stand to lose a great deal of the municipal supply of Phoenix and Denver during a prolonged drought under the current arrangement. Some type of proportional sharing could prevent such a crippling event from taking place.

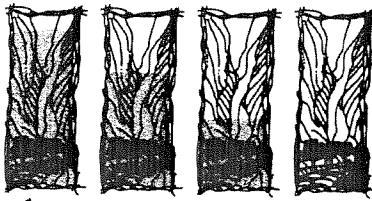
Thank you for the opportunity to comment on the development of management strategies for Lake Powell and Lake Mead under low reservoir conditions.

Respectfully,



David Willms  
Director of Government and Legal Affairs

Cc: NER Committee  
Board  
Governor's Office  
Wyoming Congressional Delegation



**glen canyon institute**  
Restore Glen Canyon

August 26, 2005

Mr. Robert Johnson  
Regional Director  
Bureau of Reclamation, Lower Colorado Region  
Attn: BCOO - 1000  
PO Box 61470  
Boulder, City, NV 89006-1470

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Dear Mr. Johnson:

The Glen Canyon Institute (GCI) provides you our comments on the development of management strategies for Lakes Powell and Mead under low reservoir (drought) conditions. The proposed actions by Reclamation will form the basis of *Shortage Criteria* that will guide your Colorado River management actions.

#### CONTEXT OF THE ISSUE

Total Colorado River system reservoir storage has decreased over 40% over the last 5 years. Climatic studies of the Southwestern United States suggest that the drought will likely continue for years to come. Increased flows, similar to those that have occurred in 2005 may occur periodically but certainly will not provide hydrologic conditions that existed during the filling period for the Colorado River Basin reservoirs. Lower water conditions coupled with increased water demand stemming from the large population influx into the region requires that a new approach be developed for Colorado River management. The Bureau of Reclamations' own hydrologic modeling predicts that it could take anywhere from 10 to 20 years for the reservoir system to fully recover under today's conditions. This does not take into account the anticipated development and continued depletion of Upper Colorado River Basin water supplies or the increased use in the Lower Colorado River Basin.

The Glen Canyon Institute is dedicated to evaluating and protecting the unique ecological, cultural and social environments of the Colorado River Basin, especially Glen and Grand Canyon. Our efforts are focused on developing dialogue and action on restoring the ecological integrity of the Colorado River system. Our goal is to do this based on science. We desire to develop solutions to the water, power and environmental concerns of the Colorado rather than continuing the business as usual approach of hydrologic management of the last 40 years. The issues facing the river system today are far more complex than those that the early management of the Colorado River was developed around.

Dedicated to restoring a free-flowing Colorado River through Glen and Grand Canyons.

G.017

450 South 900 East Suite 160 Salt Lake City, UT 84102 tel: 801.363.4450 fax: 801.363.4451 www.glencanyon.org

G-017



## AN INTEGRATED APPROACH AND NEED FOR A BASIN-WIDE EIS

Development of shortage criteria for the management of Glen Canyon and Hoover Dam is a step that should have been taken in 1970 when the Long-Range Operating Criteria were developed and implemented. Now we are 35 years down the road and find ourselves facing political, legal, social, hydrologic and environmental pressures that require a *system-based* rather than a *reservoir-specific* approach. The Colorado River Basin is a hydrologically controlled plumbing system that is composed of over 60 dams, reservoirs and diversions. Reservoirs Powell and Mead are the largest managed bodies of water on the system and are comparatively easily managed by the turning of knobs to release water. The hard part is to find an agreed upon, state and federal approach, to who gets what water then. What is clear is that the assumptions utilized when the 1922 Compact was negotiated and signed were in error. That error has been carried forward to today where we are today trying to fill the coffers of all states demand with a limited supply of water. The cumulative effect of those 1922 decisions should not continue to dictate water management in a far more complicated and water intense society.

What is needed today is to look for *solutions to the water issues* of the Colorado River Basin which demands an integrated, Basin wide approach to evaluating how the entire Colorado River system can be better managed to meet water, cultural, environmental, social and tribal water needs. The Glen Canyon Institute calls for the development of a *Colorado River Basin Environmental Impact Statement* in order to develop solutions for the future.

1  
2

The Glen Canyon Institute believes that the Bureau of Reclamation can provide the leadership and vision to initiate a Basin-Wide EIS in order to form a solid and coordinated basis for the future management of the Colorado River. The American people depend upon our government leaders to provide leadership and vision.

## RECOMMENDATIONS FOR CONSIDERATION

The Glen Canyon Institute believes that there are specific areas that the Bureau of Reclamation should evaluate and address in the development of the Colorado River Shortage Criteria. No one of these recommendations will by itself solve the water issues. Rather, the Institute advocates that a suite of these elements be integrated into a management portfolio that will provide options for water and resource managers.

### Utilize Underground Storage

Combined Lake Powell and Lake Mead loose to seasonal evaporation more than 17% of the annual water that flows into them. Aquifer storage efforts are ongoing in Arizona and California. Many of these aquifers are located adjacent to or in close proximity to the existing Central Arizona and California Aqueducts. By some estimates over 50 million acre feet of storage may exist in these two states alone. It is far more cost and water efficient to utilize these aquifers to store water rather than the large surface reservoirs of the Colorado River Basin.

3

### **Develop Specific Conservation Strategies Tied to Hydrologic Predictions**

Managing water in the existing reservoir dominated plumbing system requires a more conservation specific approach. The Glen Canyon Institute believes that developing a set of conservation focused water management thresholds (triggers), rather than an upper basin, lower basin centric approach makes is necessary. This approach has been recently proposed by conservation groups as an option for management. Specifically, the approach calls for using elevations of Lake Mead to dictate actions dependent upon Reclamation's 24-month study projections on January 1<sup>st</sup> of each year:

4

- *Conservation Triggers*
  - i. Elevation of Lake Mead drops below 1,100 feet  
Secretary of the Interior will require conservation of 200,000 acre-feet of water in order to maintain reservoir elevations. This water may come from conservation agreements, forbearance agreements, or other approaches that includes the country of Mexico.
  - ii. Elevation of Lake Mead drops below 1,075 feet  
Secretary of the Interior will require conservation of 400,000 acre-feet of water in order to maintain reservoir elevations. This water may come from conservation agreements, forbearance agreements, or other approaches that includes the country of Mexico.
  - iii. Elevation of Lake Mead drops below 1,050 feet  
Secretary of the Interior will require conservation of 600,000 acre-feet of water in order to maintain reservoir elevations. This water may come from conservation agreements, forbearance agreements, or other approaches that includes the country of Mexico.

This conservation oriented approach will by necessity, force management actions to be focused primarily at Lake Mead. Glen Canyon Dam and Lake Powell will be used to support maintaining Lake Mead elevations. Water released to support Lake Mead elevations will be credited back to Upper Basin users in the form of forbearance agreements, rebates or other appropriate vehicles to ensure credit.

In years of drought, water allotments for all seven basin states should be reduced by the same percentage based on the projected water deficit for each year of drought. Simplicity and equitability can minimize stakeholder conflict.

### **Sediment Management in Grand Canyon**

Glen Canyon Dam is trapping millions of tons of sediment in Lake Powell. This sediment historically supported the ecosystem of the Grand Canyon and the entire lower Colorado River Basin, including the Colorado River delta and the Sea of Cortez. Loss of sediment in the system is causing an ecological collapse that cannot be mitigated away by periodic high flow releases from Glen Canyon Dam. These efforts, while noble in nature, are nothing more than Band-Aids in the solution of the problem.

5

The sediment behind Glen Canyon Dam must be allowed to be moved downstream if there is any hope of saving what is left of the native fish assemblage and habitats in the

Grand Canyon. Reoperation and retrofitting of Glen Canyon would allow for sediment to be mobilized into the Grand Canyon and lower Colorado River system.

### **Endangered Species Protection and Habitat Restoration**

The primary mandate of the Grand Canyon Protection Act of 1992 (section 1804) pledges that: *"The Secretary shall operate Glen Canyon Dam...to protect, mitigate adverse impacts to, and improve 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"*. This commitment was reiterated in the 1996 Record of Decision for the Glen Canyon Dam Operations EIS.

The operation of Glen Canyon Dam has caused four of the Grand Canyon's eight native fish species to go extinct. Two of the remaining four native fish species are now showing negative population dynamics and may indeed be petitioned to be added to the **Endangered Species** list over the next several years. Native reptiles, birds, mammals and plants depend upon an intact ecosystem in the Grand Canyon, an ecosystem that is dependent upon sediment and more normal flows in the Colorado River.

### **Flow Conditions in the Grand Canyon.**

Based on knowledge of the requisite conditions for flow conditions in the Colorado River, minimum flows at Glen Canyon Dam should be no less than 8,000 cfs in order to keep important native fish habitats wetted during critical life history stages. Reduced reservoir levels in Lake Mead will allow the lower Grand Canyon to become more ecologically functional and provide additional areas for recreation and economic opportunity for the Hualapai people.

6

## **SUMMARY**

Water management in the Colorado River basin have since 1922 been based on incorrect assumptions and a political hierarchy that does not allow for integration of innovative approaches. Maintaining the Status Quo has become more important than addressing the inherent problems of the Colorado River system. The drought and the development of the Shortage Criteria provide an opportunity for the government, states and public to cooperatively work towards solutions for the Colorado River management. Solutions that must look at a portfolio of system-based solutions that cumulatively can achieve the desired goals of water efficiency, water deliveries and ecological restoration.

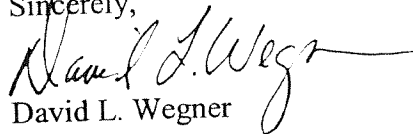
The Glen Canyon Institute strongly believes that one solution that needs to be evaluated is the *reoperation of Glen Canyon Dam*, permanently reduce the water levels in Lake Powell and restore Glen Canyon. This approach will provide water to Lake Mead to ensure adequate levels of water for power generation and water delivery to the lower basin. Administrative actions can be implemented to ensure that the upper basin states are not cheated out of their 1922 Compact water. New allocation guidelines should be developed that reflect the actual amount of water available to be distributed to the seven states and Mexico.

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Glen Canyon Dam has outlived its usefulness for providing the dowry for the upper basin states. Reevaluation of the role of Glen Canyon Dam, within the context of a system-wide Colorado River Basin EIS, could serve as the vehicle to develop solutions for the future management of the river that would allow all users to be kept whole while providing the benefits of restoring Glen Canyon, meeting the needs of the Endangered Species Act, preserving and restoring Grand Canyon, and invigorating new and innovative approaches to developing an integrative water and ecosystem management approach to the Colorado River Basin.

Thank you for considering our comments.

Sincerely,



David L. Wegner  
Board of Trustees  
Glen Canyon Institute

cc. Mr. Rick Gold  
Upper Colorado Regional Director

AUG-31-2005 WED 02:13 PM NOAA-CDC

August 31, 2005

Regional Director  
Bureau of Reclamation, Lower Colorado Region  
Attn: BCOO-1000  
P.O. Box 61470  
Boulder City, NV 89006-1470

Regional Director  
Bureau of Reclamation, Upper Colorado Region  
Attn: UC-402  
125 South State St.  
Salt Lake City, UT 84318-1147

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Re: Comments on content, format, mechanisms, and analysis to be considered during the development of management strategies for Lake Powell and Lake Mead under low reservoir conditions

Dear Sir or Madam:

Thank you for the opportunity to comment on the recent Federal Register Notice on the above-mentioned topic.

Management strategies for low reservoir operations of Lake Mead and Powell should include the effects of climate variability and long-term trends in climate. In addition, there are significant uncertainties on the management of the system due to potential changes in demand and new interpretations of the Law of the River. Specifically, we suggest the following be included in Reclamation's analysis of management strategies:

- Long-term Climate Variability
- Intra-seasonal Climate Variability
- Inter-annual Climate Variability
- Climate Change Trends
- Demand Efficiencies and Law of the River Ramifications

Details on each of these topics are below.

**Long-term Climate Variability**

The Colorado River basin streamflow gage record unfortunately extends back only 100 years. Dendrochronology, a subfield of paleoclimatology, has produced streamflow reconstructions for the basin going back over 450 years with the first reconstruction completed in 1976, and several new reconstructions have been created since 1995 (e.g. Woodhouse, Gray, Meko, 2005, in preparation). While there is some difference between these reconstructions -- and research is proceeding to explain these differences -- these data suggest that droughts more persistent and

more severe than any in the 20th and 21st centuries have occurred over the past centuries. These records also indicate that the frequency of extreme drought events has also varied, and that the past has included periods of time with a higher frequency of extreme events than what is documented in the short instrumental records of the past 100 years. We strongly encourage the use of this information in studying the potential risks of low flow conditions and how best to optimize reservoir operations. 1

### **Intra-seasonal Climate Variability**

Intra-seasonal climate variability deals with sub-seasonal changes in climate ranging from two weeks to less than a complete season. NOAA is producing "Week Two" experimental forecasts which substantially improve on NOAA's operational forecasts out to 14 days. These forecasts have the potential ability in some situations to allow for improved water management in the Lower Basin where operational constraints sometimes force unwanted releases. For example, it may have been possible to capture flood control releases from the Gila and Bill Williams in mainstem reservoirs during the winter of 2004-2005 using these forecasts. These forecasts should be of use under all reservoir conditions, but would be especially useful during low reservoir levels. We urge Reclamation to see if these forecasts may be valuable in reservoir management. 2

### **Inter-annual Climate Variability**

Climate variability occurs on numerous time scales from sub-seasonal to inter-annual to even decadal. The El Niño/Southern Oscillation (ENSO), which influences winter storm tracks and precipitation, is a major factor in inter-annual variability. The impacts of ENSO over the western United States are predictable to some extent, and there is a relatively strong ENSO signal in the Lower Basin. Western Water Assessment researchers are investigating the ENSO signal in the Upper Basin to determine the potential for predictability. We urge Reclamation to consider if NOAA Climate Prediction Center seasonal forecasts and other experimental forecasts may be useful in some years to optimize reservoir management. 3

### **Climate change and long-term trends**

Spring runoff, as well as other indicators, shows a trend toward earlier onset of spring in many areas of the West, although the Colorado River with its higher elevations appears to be lagging the Sierra and the Pacific Northwest (Dettinger, et al., 2001, Motc, et al., 2005). These indicators are consistent with an observed increase in spring temperature over western North America of 1-3° C (2-4.5° F) since the late 1970s.

Several modeling studies have projected the impacts of climate change on Colorado River water resources. In a study funded by USBR, Ryan (1996) estimated that the "best guess" scenario for the Gunnison River Basin is "warmer temperatures, less snowfall, more summer thunderstorms, and slightly reduced streamflow (5% reduction)." In a study of the Colorado Basin, Christensen, et al. (2004) found an increase in temperatures, especially in the late spring, and decreases in average precipitation. Nash and Gleick (1993) found that the Colorado reservoir system is highly sensitive to changes in runoff, and that violations in the Colorado Compact would potentially occur if runoff decreased by only 5%. Thus, even a small percentage decrease in average flows could jeopardize the potential to meet reservoir goals.



While we do not believe that these model runs should be accepted without challenge, these studies suggest that changes in timing and amount of runoff may be likely, and that even small changes in mean flow may have wide repercussions for the basin. We urge Reclamation to consider how climate change might affect reservoir operations in the Colorado River basin.

4

**Demand Efficiencies and Law of the River Ramifications**

Current research and modeling activities supported by Reclamation are proving extremely useful in evaluating proposals for modified reservoir management regimes. As stated throughout this letter, one way to increase the value of these already impressive efforts is through the more sophisticated consideration of past and future climate regimes and the nature of climate variability involving *supply-side* issues. There are two other areas, however, that we believe should be included in these analyses because of their potential to have a very large impact on reservoir operations: (1) demand-related issues, and (2) uncertainties over the Law of the River.

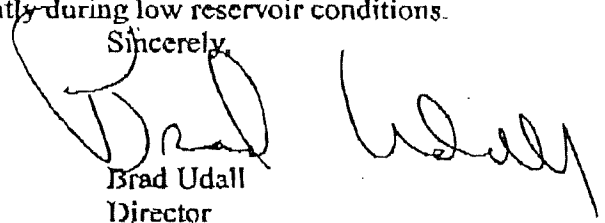
In a fully allocated system of the size of the Colorado River, small changes in demand (just like small changes in supply) have the ability to substantially impact the system. Many astute observers have commented that there is ample room in this system for improved efficiencies. We therefore urge Reclamation to consider how decreased demands through improved efficiencies would impact the reservoirs.

Finally, ambiguities in the Law of the River (e.g., use of tributaries) may obscure large and serious impacts to the supply of water. Any study of reservoir management is usually predicated on current – and often buried – interpretations of the Law of the River. Where such interpretations have such serious impacts, we urge that these interpretations and their impacts be made clear – it is pointless to conduct studies on Law of the River foundations that are in dispute and potentially subject to change.

**Concluding Comments**

The NOAA-University of Colorado Western Water Assessment is willing to work with Reclamation to assess any of the issues addressed in this letter so that Lakes Powell and Mead can be operated most efficiently during low reservoir conditions.

Sincerely,



Brad Udall  
Director  
University of Colorado/NOAA Western Water Assessment  
325 Broadway /CDC  
Boulder, CO 80305  
303-497-4573  
Bradley.Udall@Colorado.edu

**References:**

- Cayan, D.R., S. Kammerdiener, M.D. Dcuinger, J. M. Caprio, and D.H. Peterson, 2001: Changes in the onset of spring in the Western United States., *Bull. Am. Met. Soc.*, (82) 399-415.
- Christensen, N. S., A. W. Wood, N. Voisin, D. P. Lettenmaier, and R. N. Palmer, 2004: The effects of climate change on the hydrology and water resources of the Colorado River Basin. *Climatic Change* (62) 337-363.
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- Woodhouse, C. A., 2003: A 431-year reconstruction of western Colorado snowpack from tree rings. *Journal of Climate* (16) 1551-1561.
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# RECLAMATION

Managing Water in the West

U.S. Department of the Interior  
Bureau of Reclamation

— Comment Card —

COMMENTS DUE BY WEDNESDAY, NOVEMBER 30, 2005

PLEASE PRINT

Date: 11/1/05

Name: JAMES WECHSLER Title (if applicable): \_\_\_\_\_

Telephone: (801) 583-2090 Fax: \_\_\_\_\_

Organization/Business (if applicable): \_\_\_\_\_ E-Mail: jawer@aros.net

Address: 2475 EMERSON AVE

City: SALT LAKE CITY State: UT Zip: 84108

Yes, I would like to be added to your mailing list: E-Mail  US Mail

The Bureau of Reclamation is seeking public input on the Development of Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions. Your input on the scope of the project is greatly appreciated. Please write legibly.

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Please submit your comments to a project representative or fold this form in half, seal with tape and mail to: Regional Director, Bureau of Reclamation, Lower Colorado Region, Attention: BCOO-1000, P.O. Box 61470, Boulder City, NV 89006-1470.  
**Comments must be received by November 30, 2005.**

## James Wechsler, Sierra Club

1. We\* believe a full NEPA analysis is called for, with complete analyses of costs, benefits, and environmental implications of each alternative. 1

2. Shortage Criteria should be crafted for the long haul and should be implemented as a permanent policy. The recent drought is likely only a preview of what is to come given what we have learned from the long-term record of Colorado River flows, and given the probability of climate change to reduce flows over the next several decades. 2

3. We have a proposal for managing shortages, called Conservation Before Shortage (CBS). Benefits of Conservation Before Shortage include: 3

A - Reduced need for new water projects. Introducing flexibility into Colorado River management will allow those who are willing and able to reduce their water use to be compensated for doing so, and avoid the need to impose reductions in water use on those who cannot. By eliminating the potential for water shortages where they cannot easily be accommodated, this policy will limit the need for costly new water projects.

B - Protection of the environment. Fish, wildlife, and natural areas on the Colorado River do not, for the most part, have their own water rights. As such, they are "last in line" for water, and are the most vulnerable of all water users to drought. "Conservation Before Shortage" reduces overall water consumption in dry years, decreasing the risk of shortages that could disproportionately impact environmental uses in the future. Also, by increasing protection against shortage for water users that have inflexible demands, it will allow some water to remain in the river for the wildlife that needs it to survive while still meeting critical human needs.

C - Improved power production. Consistent maintenance of reservoir storage and power head above baseline conditions in average to low flow conditions will result in increased power production and improved power revenues, as well as elimination of the risk that elevations at Lake Mead will drop below minimum power head, improving the reliability of power production.

D - Increased certainty for water users: "Conservation Before Shortage" will significantly reduce the likelihood of involuntary and uncompensated shortages in the Lower Basin at levels above 500,000 acre-feet (the approximate level at which a shortage exceeds the ability of the Arizona Water Bank to readily buffer the shortage).

CBS offers an active, anticipatory approach that protects Colorado River water users and the environment from abrupt reductions in the amount of water available.

It's hard to reach consensus when someone has to lose. The current deadlock between the states reflects a zero-sum approach to river management, where one state or one water user is expected to shoulder the full burden of a drought by suffering a large, uncompensated shortage while other users are unaffected. CBS suggests a more cooperative, evenhanded approach to coping with drought.

CBS would create a predictable, rational system for water users, and distribute the costs between water and power users and the federal government.

CBS would include Mexican water users in the solution, thereby reducing the need for conservation among US water users.

\* Defenders of Wildlife, Environmental Defense, National Wildlife Federation, Pacific Institute, Sierra Club, Sonoran Institute

July 18, 2005

Honorable Gale A. Norton, Secretary  
Department of the Interior  
1849 C Street, NW  
Washington DC 20240

**Re: Development of Lower Basin Shortage Guidelines**

Dear Secretary Norton:

Last year, you asked the Colorado River basin states to recommend approaches regarding proactive drought management actions in the basin. Last month, the Bureau of Reclamation published a notice to solicit comments and hold public meetings on the development of Lower Basin shortage guidelines (70 Fed.Reg. 34794). Defenders of Wildlife, Environmental Defense, National Wildlife Federation, Pacific Institute, Sierra Club, and Sonoran Institute respectfully submit the attached "Conservation Before Shortage" policy proposal in response to these requests.

We believe that it is preferable for water users to voluntarily engage in predictable, small-scale reductions in use – and receive compensation for those reductions – rather than face large-scale, involuntary, and uncompensated disruptions in water deliveries that could cut into municipal and agricultural water supplies and create unmitigated economic impacts. Our "Conservation Before Shortage" proposal would dramatically reduce the risk of large-scale, involuntary shortages to Lower Basin users and to Mexico, by implementing a series of increasing conservation targets linked to the declining elevation of Lake Mead. The required amount of water would be conserved by offering to pay Colorado River water users, located anywhere in the Lower Colorado River basin or in Mexico, to voluntarily forgo water use.

Funds to pay for forbearance would come from federal appropriations as well as a surcharge applied to all Lower Basin water users and consumers of power generated at the Hoover Dam. One of the more significant corollary benefits of the conservation program described in the "Conservation Before Shortage" proposal, beyond the primary benefit of protecting water users from involuntary and uncompensated shortages, would be the preservation of power production at Hoover Dam at higher levels and for longer durations than would otherwise occur.

**CONSERVATION BEFORE SHORTAGE BENEFITS**

- *Reduced need for new water projects.* The introduction of flexibility into Colorado River management will allow those who are willing and able to reduce their water use to be compensated for doing so, and will avoid the need to impose reductions in water use on those who cannot. By eliminating the potential for water shortages where they cannot easily be accommodated, this policy will limit the need for costly new water projects to protect water users that cannot tolerate interruptions in water supplies.
- *Protection of the environment.* Fish, wildlife, and natural areas on the Colorado River do not, for the most part, have their own water rights. As such, they are "last in line" for water, and are the most vulnerable of all water users to drought. "Conservation Before Shortage" reduces overall water consumption in dry years, decreasing the risk of shortages that could disproportionately impact environmental uses in the future. Also, by increasing protection against shortage for water users that have inflexible demands, it will allow some water to

remain in the river for the wildlife that needs it to survive while still meeting critical human needs.

- *Improved power production.* Consistent maintenance of reservoir storage and power head above baseline conditions in average to low flow conditions, resulting in increased power production and improved power revenues, as well as elimination of the risk that elevations at Lake Mead will drop below minimum power head, improving the reliability of power production.
- *Increased certainty for water users.* Significant reduction in the likelihood of involuntary and uncompensated shortages in the Lower Basin at levels above 500,000 acre-feet (the approximate level at which a shortage exceeds the ability of the Arizona Water Bank to readily buffer the shortage).
- *Reduces risk of involuntary shortage.* In the past, the established priority system on the Colorado River has prompted those most at risk of shortage to limit their exposure by promoting actions that could have devastated invaluable ecological resources. Minimizing this risk will benefit all Colorado River stakeholders.

We look forward to working with Reclamation on the development of shortage guidelines. Please do not hesitate to contact any of us if you would like any additional information on the Conservation Before Shortage proposal.

Sincerely,

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Chair, Southwest Waters Committee  
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Peter Culp  
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attachment – “Conservation Before Shortage” proposal

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Mr. Don Ostler  
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Bureau of Reclamation staff

Members of the Colorado River  
Management Work Group

Colorado River Tribes

Colorado River NGOs

## Conservation Before Shortage

### Proposed Shortage Criteria for Colorado River Operations

#### I. Background/Context

The effects of a multi-year drought have had a tremendous impact on storage in the Colorado River basin. Although above-average precipitation in the Lower Basin has led to small recoveries in system storage over the winter of 2004-2005, total system storage on the Colorado River has decreased by more than 40% over the past several years. As a result, there is a real possibility that the Secretary of the Interior will declare an actual shortage on the lower Colorado River in the near future. A shortage declaration would reduce deliveries to the Central Arizona Project (CAP) and to southern Nevada (which are among the first in line for cuts in the event of a shortage).

The surface elevation of Lake Mead dropped more than 80 feet from the end of 2000 through the end of 2004; Lake Powell dropped by more than 115 feet in this period. The Bureau of Reclamation's (Reclamation's) Riverware model of the Colorado, based on historic flow records, projects that reservoir levels at Lake Powell could head quickly towards the minimum power pool if the drought continues, and reservoir levels at Lake Mead could fall below the elevation of southern Nevada's upper intakes or remain in a long-term decline that will be difficult to reverse until Powell begins to re-fill. In addition, the model predicts that even if precipitation levels returned to average today, it could take 10-20 years for the Colorado River reservoir system to recover fully (during which time continued development of water supplies in the Upper Basin will further shrink available supplies). As a result, it is time to begin a long-delayed discussion about the method for defining, mitigating, and sharing shortages on the Colorado River.

Although the Secretary of the Department of the Interior (Secretary) has the authority to declare a shortage on the Colorado River, thereby reducing deliveries to some Lower Colorado River contractors, to date no criteria exist for determining when such a shortage will be declared. In June 2005, the Department of the Interior (DOI) noticed its intent to begin a public scoping process for the development of "Lower Basin Shortage Guidelines," (70 Fed.Reg. 34794). In 2004, DOI initiated a series of technical meetings with the Colorado Basin states to discuss drought issues, and the seven Basin states met frequently among themselves throughout the winter of 2004-2005 to discuss potential shortage criteria. Non-governmental organizations (NGOs) were not invited to participate in these discussions; however, several NGOs with interest and expertise in Colorado River issues began meeting over the winter to develop an alternative shortage proposal. These organizations met with Reclamation staff to review the results of technical modeling runs developed in support of the states' discussions, and Reclamation has provided additional modeling data to these interested NGOs in response to their inquiries and to evaluate potential shortage criteria.

These meetings led to the development of this document, which proposes an approach to the management of shortages in the Lower Colorado through the implementation of a tiered conservation program that is tied to the surface elevation of Lake Mead.

## II. Rationale for this Proposal

The basic rationale behind this “Conservation Before Shortage” proposal is that shortage criteria should attempt to maximize the reliability and predictability of water deliveries on the Lower Colorado by introducing increased flexibility into the management of river resources when shortage conditions are imminent.

### *Principles:*

- It is desirable to protect the elevation of Lake Mead at 1050 feet (the current minimum power pool) to the extent feasible without implementing shortages that would involuntarily curtail deliveries to Lower Basin users.
- It is desirable to protect the elevation of Lake Mead at no less than 1000 feet under any condition in order to protect Southern Nevada Water Authority’s lower intake structures, as well as the new minimum power pool if proposed low-pressure turbines are installed at Hoover Dam.
- It is desirable to avoid shortages in the Lower Basin above 500,000 acre-feet whenever possible (the approximate level at which shortages would cut into CAP’s deliveries beyond those currently utilized for water banking).
- It is preferable for Lower Basin water users to voluntarily engage in predictable, small-scale reductions in use – and receive compensation for those reductions – rather than face large-scale, involuntary, and uncompensated disruptions in water deliveries that could cut into municipal and agricultural water supplies and create unmitigated economic impacts.
- Minimizing large, forced disruptions to normal deliveries as a result of shortage declarations will minimize the threat of unmitigated environmental impacts in the Lower Colorado River and Delta as a result of significantly decreased deliveries to low-priority users and corresponding return flows that support environmental values.
- Market-based programs, with low transaction costs and appropriate mitigation of third-party impacts, can offer a reasonable mechanism for minimizing the risk and impacts of shortage.<sup>1</sup>
- Users of Colorado River water in Mexico may wish to participate in short-term conservation agreements, to reduce the probability of larger, uncompensated future reductions due to a declaration of shortage under the 1944 Treaty with Mexico.
- Water can be obtained from agricultural users in the United States, and could be obtained in Mexico with an appropriate agreement,<sup>2</sup> through the use of voluntary, market-based forbearance programs. Economic studies of Lower Basin agricultural use, as well as recent leases of water from farmers in this area, suggest that there is a large volume of water in the basin that could be obtained for \$20 - 100 per acre-foot (see Figure 9).

<sup>1</sup> Some 4.5 million acre-feet of Colorado River water are used to irrigate crops in the Lower Basin states, and more than 1 million acre-feet are used to irrigate crops in Mexico. Conservation of between 200,000 and 600,000 acre-feet through the use of part-year fallowing programs, dry year options, or other similar arrangements would constitute only 4-11% of total Lower Basin agricultural use in the United States and Mexico. (However, as even small-scale reductions in agricultural water use may have third-party impacts, some portion of funds accrued for the purchase of water should be set aside to support community economic development in affected areas.) Conversely, without these small-scale reductions, water users would likely be faced with the need to curtail large amounts of water quite abruptly, with significant economic consequences. (Shortages of nearly 2 million acre-feet in a single year are predicted by Reclamation’s model when the 1000 feet elevation is protected at Lake Mead without conservation measures).

<sup>2</sup> Such an agreement would likely require a new Minute to the 1944 Treaty with Mexico. Fallowing agreements in Mexico would have to be administered by the appropriate authorities.

### **III. Conservation Before Shortage Policy**

The "Conservation Before Shortage" policy essentially consists of two sets of criteria tied to projected elevations at Lake Mead on January 1 of a given year, according to the Bureau of Reclamation's August 24-month study. These criteria consist of three "conservation triggers," which impose progressively increasing conservation goals as lake levels drop from 1100 feet to 1050 feet, and a "shortage trigger," which imposes involuntary shortages in the Lower Basin as are necessary to accomplish absolute protection of Lake Mead at a minimum elevation of 1000 feet.

#### **(A) Normal Conditions**

In years when the 24-month study projects the elevation of Lake Mead on January 1 will be at or above 1100 feet, the Secretary of the Interior (Secretary) shall determine a Normal or Surplus (as defined by the Interim Surplus Guidelines) year.

#### **(B) Conservation Triggers**

##### ***First Conservation Trigger: Below 1100 Feet at Lake Mead***

In years when the 24-month study projects the elevation of Lake Mead on January 1 will be at or above 1075 feet but below 1100 feet, the Secretary will seek to conserve 200,000 acre-feet of water. On behalf of the Secretary, Reclamation will preferentially seek to achieve this 200,000 acre-feet of savings by means of voluntary conservation agreements (including forbearance agreements) with Lower Basin delivery-contract holders. Additionally, Reclamation will, to the extent permitted by law and through the appropriate authorities, seek forbearance or other such water conservation agreements with Colorado River users in Mexico. In the case of such agreements, U.S. deliveries of Colorado River water to Mexico at the Northerly International Boundary will be reduced by the total volume indicated by these binational agreements.

##### ***Second Conservation Trigger: Below 1075 Feet at Lake Mead***

In years when the 24-month study projects that the elevation of Lake Mead on January 1 will be at or above 1050 feet but below 1075 feet, the Secretary will seek to conserve 400,000 acre-feet of water. Reclamation will preferentially seek to achieve this 400,000 acre-feet of savings by means of voluntary conservation agreements (including forbearance agreements) with Lower Basin delivery-contract holders. Additionally, Reclamation will, to the extent permitted by law and through the appropriate authorities, seek forbearance or other such water conservation agreements with Colorado River users in Mexico. In the case of such agreements, U.S. deliveries of Colorado River water to Mexico at the Northerly International Boundary will be reduced by the total volume indicated by these binational agreements.

##### ***Third Conservation Trigger: Below 1050 Feet at Lake Mead***

In years when the 24-month study projects that the elevation of Lake Mead on January 1 will be below 1050 feet (minimum power pool absent the installation of low-pressure turbines), the Secretary will seek to conserve 600,000 acre-feet of water. Reclamation will preferentially seek to achieve this 600,000 acre-feet of savings by means of voluntary conservation agreements (including forbearance agreements) with Lower Basin delivery-contract holders. Additionally, Reclamation will, to the extent permitted by law and through the appropriate authorities, seek



forbearance or other such water conservation agreements with Colorado River users in Mexico. In the case of such agreements, U.S. deliveries of Colorado River water to Mexico at the Northerly International Boundary will be reduced by the total volume indicated by these binational agreements.

### **(C) Shortage Trigger**

#### ***Absolute Protection of Lake Mead Elevation 1000 Feet***

The Secretary shall not permit the elevation of Lake Mead to drop below elevation 1000 feet (minimum low-pressure power pool and Southern Nevada Water Authority intakes) at any time. Shortages to Colorado River contractors shall be implemented in the Lower Basin and in Mexico<sup>3</sup> to the extent necessary to prevent such declines.

### **(D) Funding Mechanisms**

In recognition of the federal government's continuing national obligation to replace the MODE bypass flow to Mexico, 43 U.S.C. § 1571(c), the federal government will assume responsibility for the cost of all conservation agreements up to the volume of the bypass flow that the Secretary has not otherwise replaced in the year that a conservation trigger becomes effective. Given the national interest in minimizing both environmental impacts and economic disruptions resulting from the involuntary curtailment of deliveries to Colorado River users, the federal government would also assume responsibility for half of the cost of any additional agreements required to generate conserved water for the "Conservation Before Shortage" policy, pursuant to the Secretary's authority under the Reclamation States Emergency Drought Relief Act of 1991 (Drought Relief Act),<sup>4</sup> conservation authorities in the Farm Bill, or other appropriate authority that may be granted by Congress.

To the extent that conservation of water is required beyond that to be funded by the federal government in the manner described above, conservation activities would be funded through one or both of the following:

#### ***Power Pool Protection Fund***

The priority of water used for power generation is considered to be tertiary to that of irrigation and domestic use under the Law of the River. As a result, Hoover and Glen Canyon Dams are operated to maintain deliveries to water users regardless of the impact of declining reservoir levels on power production. However, one of the more significant corollary benefits of the conservation program described in this proposal, beyond the primary benefit of protecting water users from involuntary and uncompensated shortages, would be the preservation of power production at Hoover Dam at higher levels and for longer durations by reducing deliveries for irrigation, domestic use, and underground storage in a manner that would not otherwise occur under current practices.

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<sup>3</sup> In the event that a shortage is declared and is also considered to be an extraordinary drought under the 1944 Treaty, deliveries to Mexico will be reduced in the same proportion as consumptive uses in the United States are reduced.

<sup>4</sup> The Reclamation States Emergency Drought Relief Act of 1991, 43 U.S.C. §§ 2201 *et seq.*, provides the Secretary of Interior the authority to purchase water "from willing sellers, including, but not limited to, water made available by Federal Reclamation project contractors through conservation or other means with respect to which the seller has reduced the consumption of water." 43 U.S.C. § 2211(c).

Given the significant loss in generating capacity that has already occurred as a result of declines in power pool elevations,<sup>5</sup> and the even more significant impacts that would be associated with a total loss of generating capacity, the implementation of "Conservation Before Shortage" would clearly benefit power purchasers and consumers. As such, it would seem reasonable to derive a percentage of the funding for the proposed voluntary conservation program from a modest, conditional surcharge on power rates under existing or renewed contracts for hydropower produced at Hoover Dam as a means to mitigate against the loss of power head and stave off the complete loss of power production at Hoover Dam.<sup>6</sup> This surcharge could be imposed in years when Reclamation's August 24-month study projects that the storage in Lake Mead falls below fifty percent of its active capacity. The revenues generated by this surcharge could be collected in a "power pool protection fund," to be maintained by Reclamation for expenditure when and if lake elevations reach a conservation "trigger."

### ***Temporary Cost Recovery/Delivery Surcharges***

Pursuant to the Drought Relief Act, the Secretary of Interior is authorized to engage in water purchases from willing sellers and to seek cost recovery for water delivered from the users of that water under temporary contracts. 43 U.S.C. §2211(c), §2212(a),(c). Reclamation could utilize this authority to purchase water through temporary, part-year following arrangements, dry-year options, or similar mechanisms, and would seek cost recovery from Colorado River users. In recognition of the Basin-wide interest in alleviating the impacts of drought and reducing uncertainty on the Lower Colorado, and in the interests of encouraging extraordinary conservation to minimize the likelihood of significant delivery interruptions, the cost of some portion of conservation agreements, including those with Colorado River users in Mexico, could be funded through a conservation surcharge imposed on a per-acre-foot basis on all Lower Basin contractors.

### ***Anticipated Cost of Conservation***

Current short-term leasing agreements between farmers and irrigation districts or municipal water agencies, as well as recent research on the net returns per acre-foot of irrigation water, suggest that "Conservation Before Shortage" water could be obtained for \$20 - 100 per acre-foot. To ensure that such water remains available in times of increased scarcity (when market forces might otherwise increase the cost), the Secretary should be granted the authority to enter into "Conservation Before Shortage option agreements," similar to existing dry-year leasing agreements/interruptible supply agreements that have been enacted within the basin states.

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<sup>5</sup> Largely as a result of declining reservoir elevations, power production at Hoover and Glen Canyon has declined steadily since the onset of drought conditions in the Colorado River Basin. Annual power production at Hoover fell from 5,697 gigawatt-hours (GWh) in 1998 to 4,094 GWh in 2003, according to Western Area Power Administration (WAPA) Annual Reports, 1998 - 2003. A portion of hydropower revenues currently supports the two Upper Basin endangered fish recovery programs, the Glen Canyon Adaptive Management Program, and the Colorado River Salinity Control Program; alternative sources of revenue should be identified and implemented to fully fund these recovery programs. The Department of the Interior should also work proactively with WAPA to identify alternative sources of power for those Indian tribes that have experienced power shortages, or drastic increases in power costs, due to the declining production associated with falling reservoir levels.

<sup>6</sup> The rates for power produced at Hoover Dam have increased as reservoir levels and power production have declined, but may still remain well below open market rates. Although annual revenues tend to vary from year to year, revenues from Hoover Dam power production have generally been in the range of \$50 million annually.

#### **IV. Analysis: Benefits of Conservation Before Shortage Policy**

To date, actual shortage criteria for the Colorado River have not been defined. For the purposes of comparison, a 'baseline' was defined as the current operating conditions for the Colorado River, with the addition of a policy requiring the absolute protection of Lake Mead at 1000 feet (that is, Hoover Dam would not release any water to cause the elevation of Lake Mead to drop below 1000 feet). The baseline policy does *not* provide for the implementation of conservation measures. These 'baseline' conditions, reflecting current operating conditions, are depicted in the following figures.

Analysis of the "Conservation Before Shortage" policy suggests that this policy could produce significant benefits for Basin water users by:

- Consistently maintaining reservoir storage and power head above baseline conditions in average to low flow conditions, resulting in increased power production and improved power revenues;
- Significantly reducing the likelihood of involuntary, uncompensated shortages in the Lower Basin and corresponding, unmitigated economic impacts;
- Significantly reducing the likelihood of involuntary and uncompensated shortages in the Lower Basin at levels above 500,000 acre-feet (the approximate level at which a shortage imposed by the Secretary would cut into CAP deliveries, by exceeding the ability of the Arizona Water Bank to readily buffer the shortage); and
- Eliminating the risk that elevations at Lake Mead will drop below minimum power head, improving the reliability of power production and associated revenues.

The analyses below show the impacts of the "Conservation Before Shortage" (CBS) policy on reservoir operations based on historic flows in the Colorado River Basin.

##### ***Modeling Assumptions***

The proposed "Conservation Before Shortage" policy was modeled using Reclamation's Riverware model, which is based on historical records of flows in the Colorado River Basin over approximately the past century. Conservation triggers, as described in Section III, were implemented at 1100 feet, 1075 feet and 1050 feet, with the assumption that required measures to reduce Lower Basin consumptive use by 200,000, 400,000, and 600,000 acre-feet, respectively, would be implemented in years when the January 1 elevation at Lake Mead is below the triggers. An absolute protection trigger was implemented at Lake Mead elevation 1000 feet, with releases from Lake Mead to meet delivery obligations to Lower Basin users reduced as necessary to maintain that level. To avoid even modestly under-predicting the elevations of Mead and Powell pools, particularly in the near term, this modeling has assumed that the schedule of Upper Basin depletions will effectively begin with the last reported actual level for CY 2000, will increase at a

slower rate than projected by the Upper Colorado River Basin Commission through CY 2009, and will increase at the rate projected by the Commission thereafter.<sup>7</sup>

For purposes of the model, the minimum objective release out of Lake Powell was assumed to be 8.23 maf per year (reflecting current operating conditions).<sup>8</sup> Alternative scenarios for conjunctive management were not modeled, and the protection of a minimum power pool at Lake Powell was not incorporated into this proposal; either or both of these assumptions would affect the elevation of Lake Powell. Model runs used end-of-year 2004 elevations at Lake Mead and Lake Powell to establish initial conditions for 2005, and were run through year 2025.

### ***Protection of Lake Mead***

Figures 1 -3 show the potential value of implementing the CBS policy, under a range of average to extremely low flow conditions. **These and following figures show that the CBS policy would greatly benefit the elevation of Lake Mead.**

As shown in Figure 1 below, under average conditions, the CBS policy would maintain reservoir elevations at Mead approximately 30 feet above the baseline policy. As shown by Figures 2 and 3, the CBS policy would significantly reduce the rate of decline in the lower 25<sup>th</sup> and in the very low 10<sup>th</sup> percentile reservoir elevations for Mead and maintain even these lower reservoir elevations above the 1000 foot protection level. Model runs showed essentially no impact of the CBS on the higher 90<sup>th</sup> percentile Mead elevations, so no figure is provided.

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<sup>7</sup> See "Estimates of Future Depletions in the Upper Division States," Upper Colorado River Commission Memorandum, December 23, 1999. This schedule predicts a 440,000 acre-foot increase in Upper Basin depletions between 2000 and 2010 and a 542,000 acre-foot increase over actual CY2000 depletions, as reported in Reclamation's Consumptive Uses and Losses 1996-2000 report (see Tables UC-1 & UC-6). Actual increases in Upper Basin depletions water may not keep pace with this schedule, because water that would otherwise have been utilized has been and may continue to be physically unavailable for depletion in the Upper Basin due to drought conditions, and in other cases, projects that were proposed to have been constructed during this period may not yet have been or will not be completed through CY 2009. A slower rate of increase from 2000 to 2009 was modeled by subtracting four increments of 100,000 acre-feet from the Commission's schedule from CY 2005 to 2009. This and all other Riverware modeling exercises should be revised to reflect actual increases in Upper Basin depletions as soon as more current information becomes available.

<sup>8</sup> This assumption is not intended to endorse or reject the Secretary's current use of 8.23 maf as the minimum release objective for Powell, the protection of a minimum power pool at Powell, or proposals for the conjunctive management of the combined storage of Mead and Powell. Alternative release scenarios should be incorporated into the modeling for this proposal as they are developed. As a general matter, none of the assumptions used in this proposal should be construed as an interpretation of the 1922 Colorado River Compact, the 1944 Treaty with Mexico, or any other aspect of the Law of the River.

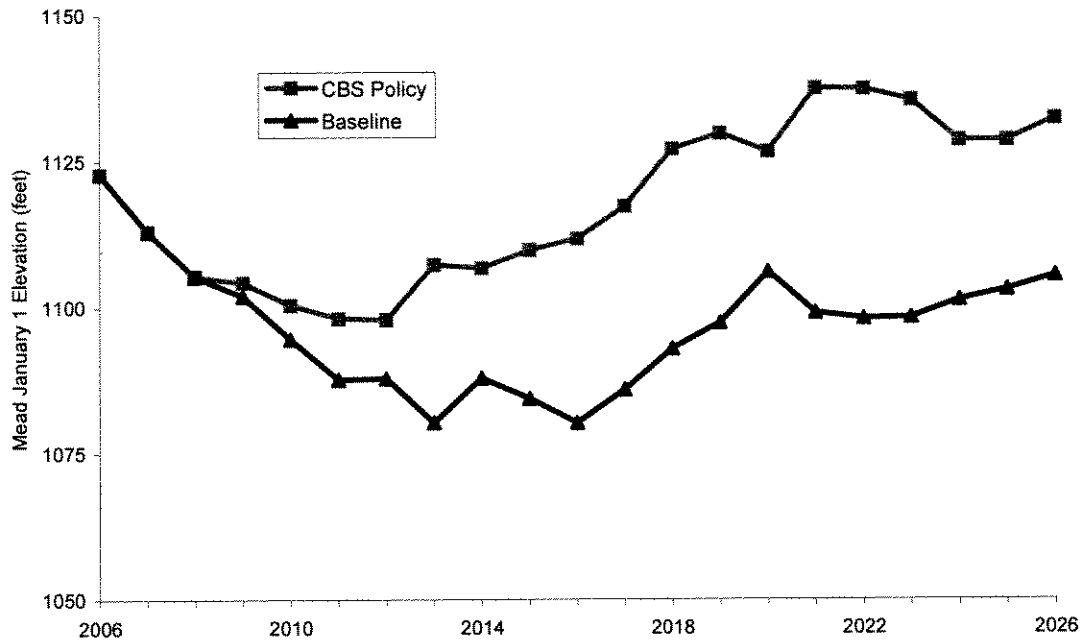


Figure 1. Impact of CBS policy on elevations at Lake Mead, at 50<sup>th</sup> percentile elevation.

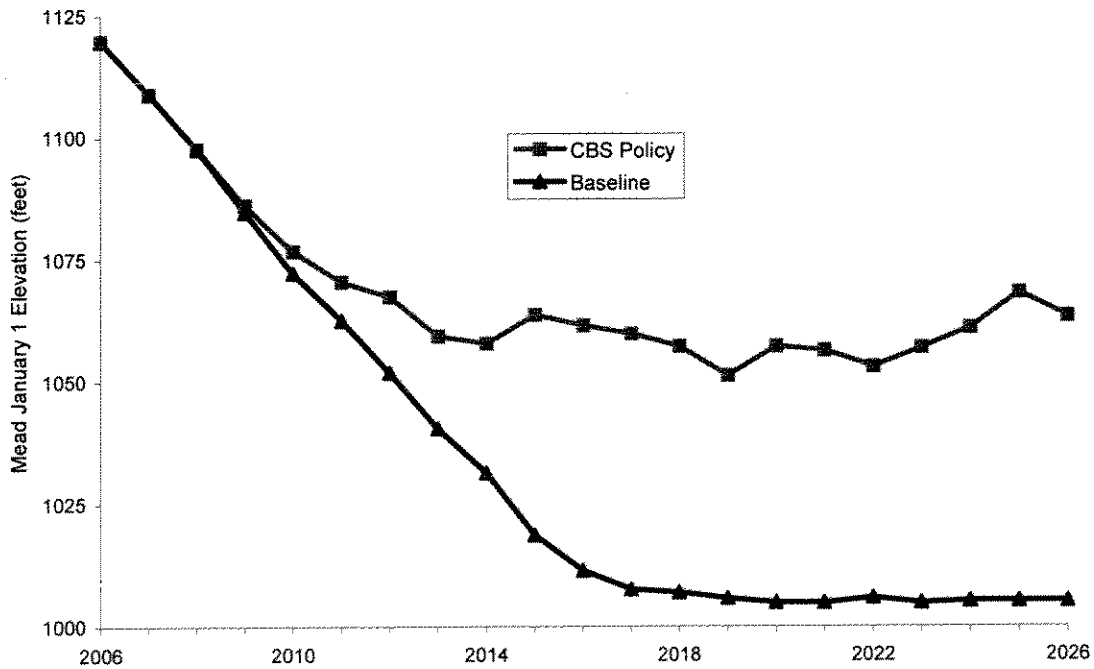


Figure 2. Impact of CBS policy on elevations at Lake Mead, at 25<sup>th</sup> percentile elevation.

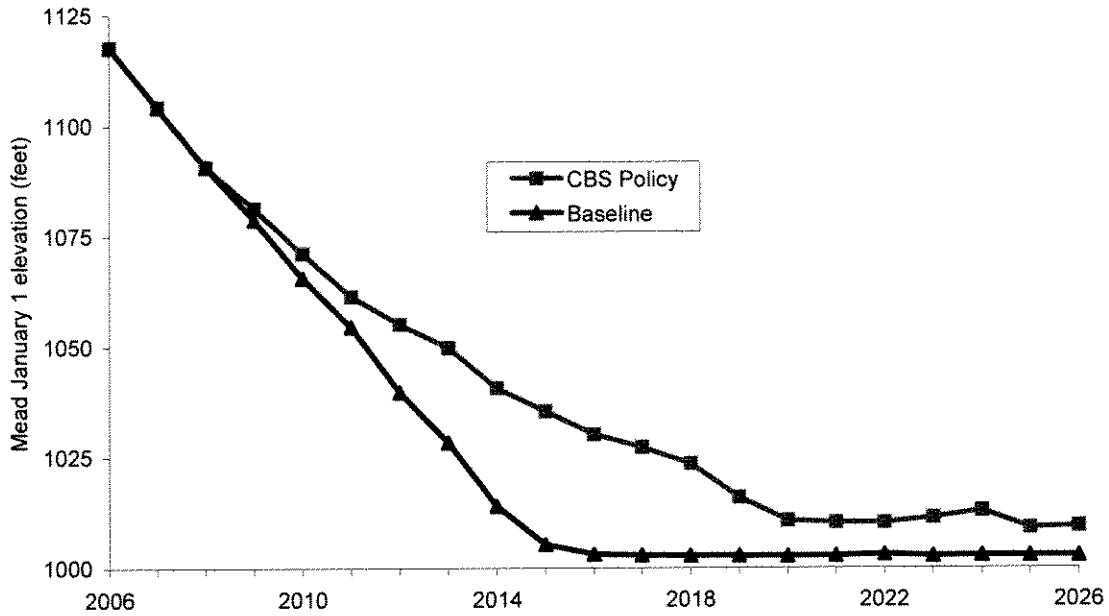


Figure 3. Impact of CBS policy on Lake Mead elevation, at 10<sup>th</sup> percentile elevation.

### Probability of Shortages

As noted above, a primary goal of the CBS policy is to significantly reduce the probability of an involuntary, uncompensated shortage in excess of 500,000 acre-feet (the approximate level at which CAP deliveries would be reduced beyond that currently utilized for water banking). As shown in Figure 4, below, the probability of shortages exceeding 500,000 acre-feet is reduced to 5% or less through the entire modeled period under the CBS policy. By contrast, the probability of shortage under the baseline policy rapidly approaches 30% during this same period. Furthermore, as shown in Figure 5, below, the CBS policy reduces the probability of any involuntary shortage by approximately 20% over the next 20 years.

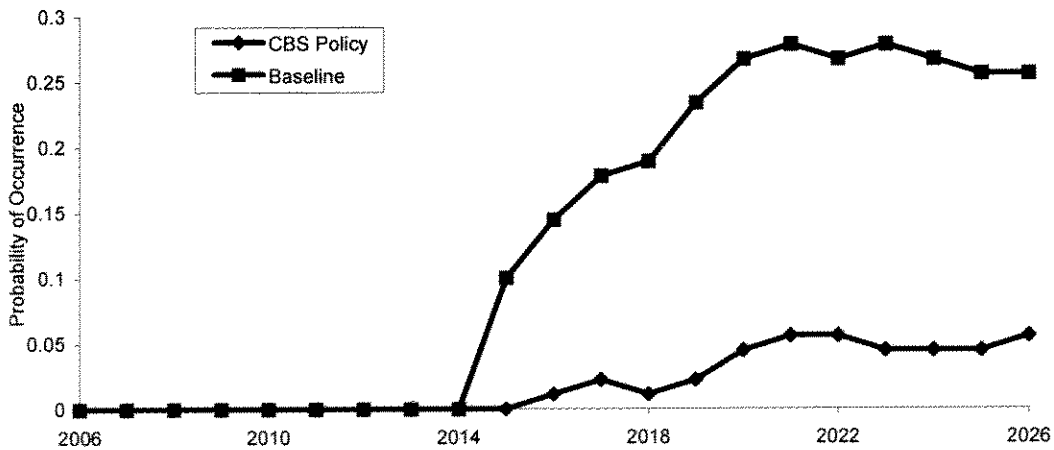


Figure 4. Impact of CBS policy on probability of involuntary Lower Basin shortage greater than 500,000 acre-feet.

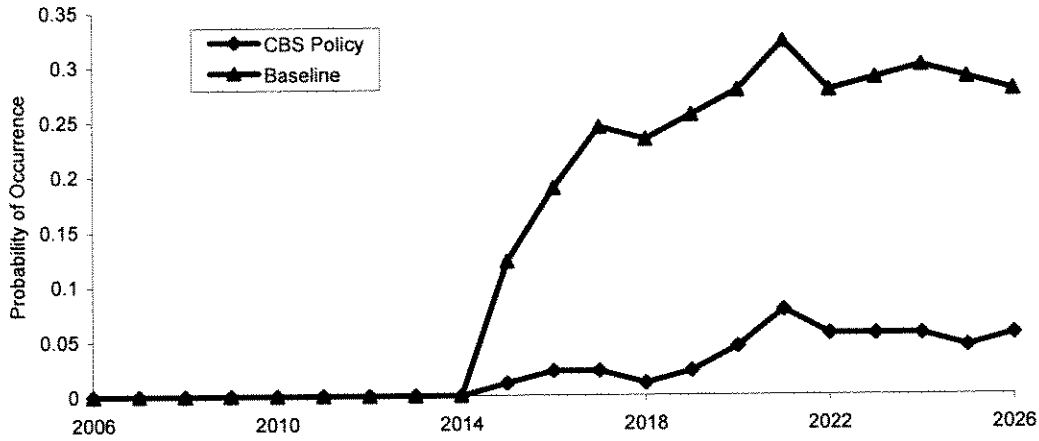


Figure 5. Impact of CBS policy on probability of any involuntary shortage in the Lower Basin.

### Probability of Reaching Conservation Triggers

Figures 6 - 8, below, show the relative probability of reaching or exceeding any of the proposed conservation triggers at 1100 feet, 1075 feet and 1050 feet. As one might expect, the probability of reaching the first two triggers is highest in the earlier years of the modeled period, while the probability of reaching the third trigger is higher towards the end of the modeled period. However, the probability of reaching and continuing to remain below a given trigger for an extended period of time appears to be low because of the conservation measures tied to the triggers. For obvious reasons, trigger levels are most likely to be reached under low or very low flow conditions, and are rarely (if ever) reached under high flow conditions.

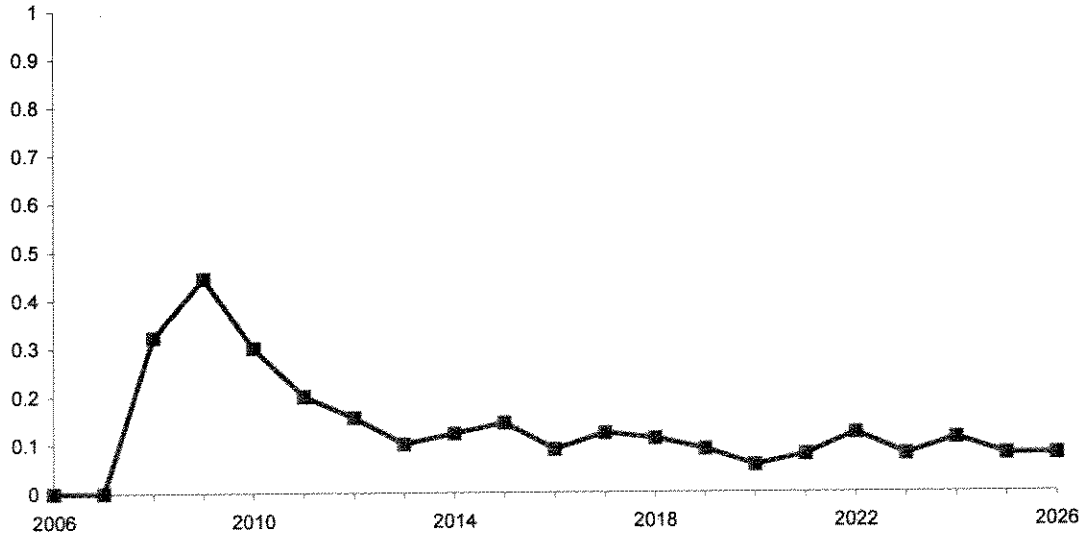


Figure 6. Probability of Lake Mead January 1 elevation occurring in a bounded range of 1100 feet to 1075 feet, with CBS policy in place.

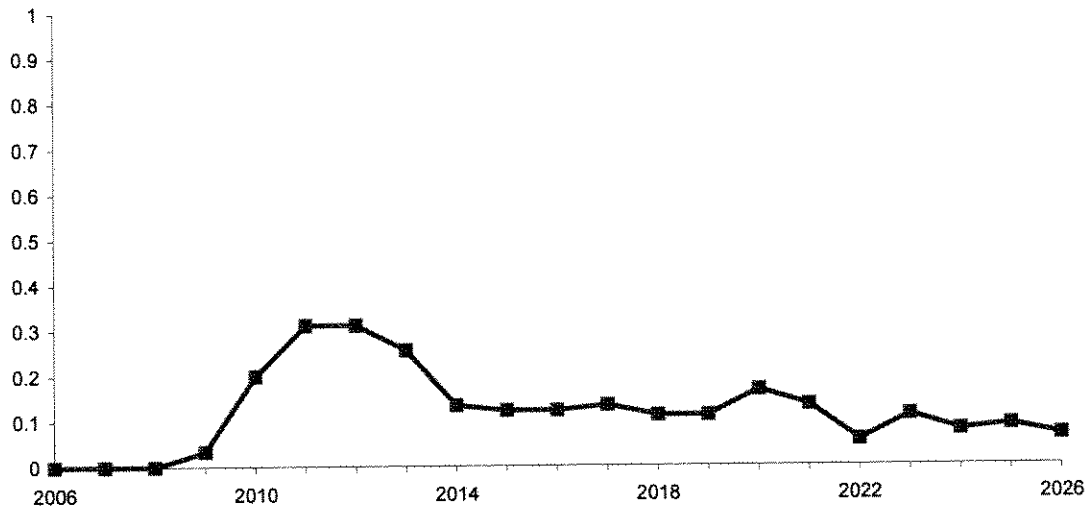


Figure 7. Probability of Lake Mead January 1 elevation occurring in a bounded range of 1075 feet to 1050 feet, with CBS policy in place.

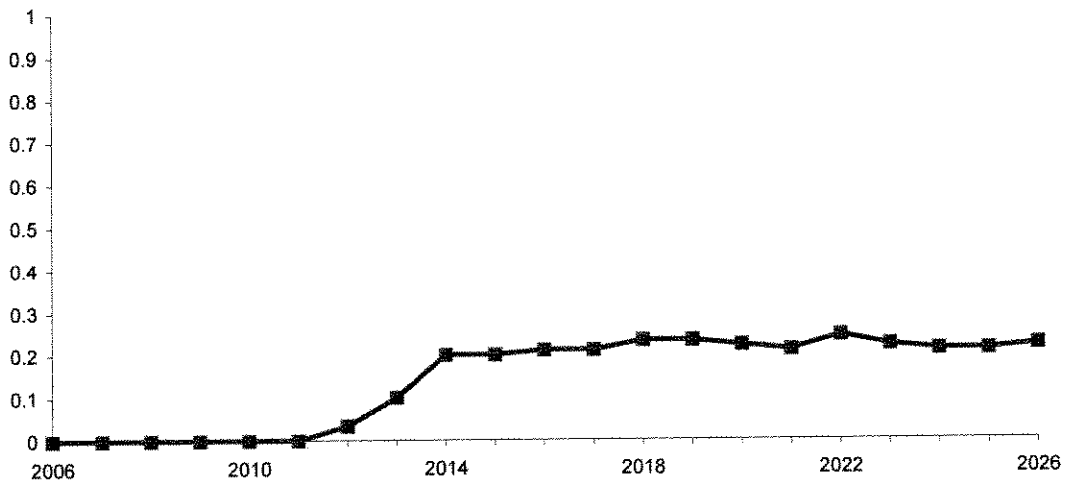


Figure 8. Probability of Lake Mead January 1 elevation occurring below 1050 feet, with CBS policy in place.

### Cost of Implementing Conservation Triggers

The cost of implementing conservation triggers is directly related to the cost of obtaining water using the proposed voluntary, market-based conservation mechanisms. Recent purchases of water from farmers in the Lower Basin, as well as analysis of agricultural production in this area, suggest that there is a substantial volume of water used for irrigation which could potentially be obtained on a temporary basis for \$20 - 100 per acre-foot. For example, in 2004, the Imperial Irrigation District acquired water from its farmers for less than \$60 per acre-foot.

As shown in Figure 9, a recent economic study by Environmental Defense into the profits returned by field crops suggests that slightly more than 2.3 million acre-feet of agricultural water



is being used by Lower Basin farmers in California and Arizona to produce profits of less than \$100 per acre-foot; more than one million acre-feet of agricultural water is being used to produce profits of less than \$20 per acre-foot. (Figures are based on the average volume of water applied to produce a crop unit and market rates for each crop, less costs of production.)

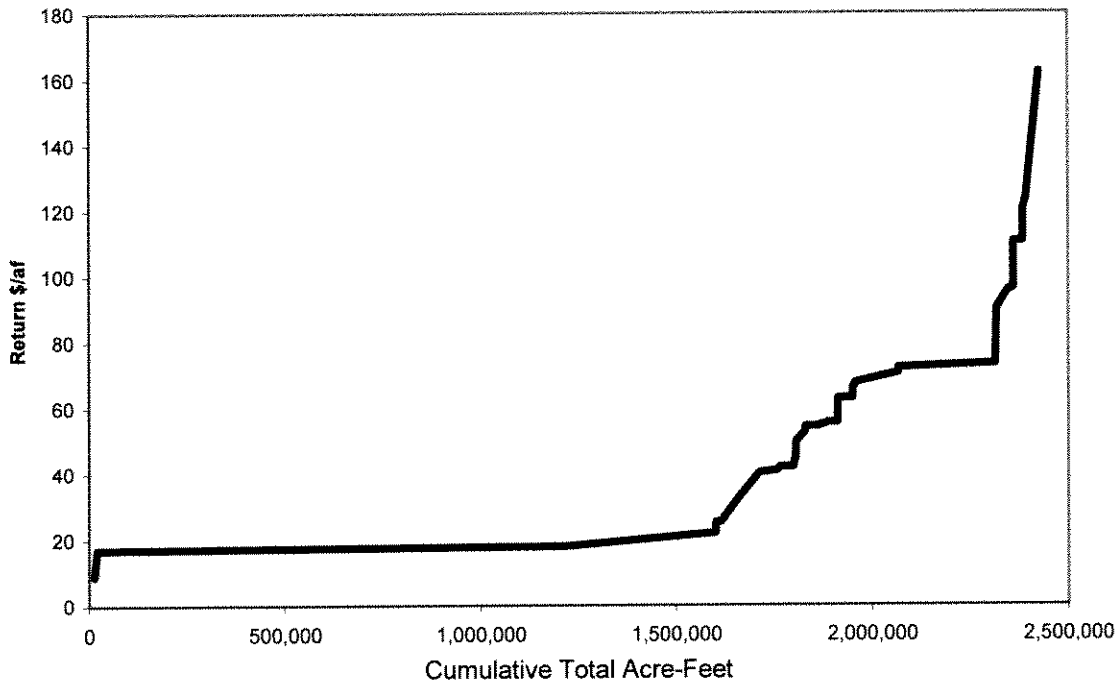


Figure 9. Profits per acre-foot returned on Colorado River water used in the production of selected crops in the Lower Colorado River Basin.<sup>9</sup>

While these figures do not necessarily reflect the amount at which any given water user would be willing to take part in a part-year fallowing program or agree to a dry-year option, they do suggest that if an open, market-based approach is used to identify potential participants, a number of water users in the Lower Basin would probably be willing to temporarily reduce or forgo the use of water for agricultural production in a price range between \$20 and \$100 per acre-foot (as the sale of water in this range would produce equal or greater monetary returns to the user than the use of water to irrigate crops).

In order to mitigate third-party impacts of fallowing, the federal government could establish a drought economic adjustment fund that would provide economic development grants to affected communities in the counties of origin. These funds preferentially would go to established county-based farm labor assistance programs to the extent that such programs exist, and could include lump sum payments to displaced workers based on a percentage of foregone annual income.

<sup>9</sup> This graph has not been published elsewhere. For methodology, please contact Jennifer Pitt at [jpitt@environmentaldefense.org](mailto:jpitt@environmentaldefense.org). A study using similar methodology, but limited to crop values in the Wellton-Mohawk Irrigation and Drainage District, has been published previously (Pitt et al., *New Water for the Colorado River: Replacing the Bypass Flow*, 6 U. Denver Water L. Rev. 68 (2002)). The study found a range of prices similar to that represented here for profits derived from water use in that area.

Using these assumptions for water acquisition costs, Table 1 suggests the approximate range of costs for implementing each of the conservation triggers under the CBS policy.

*Table 1. Approximate federal and power/water user cost of implementation of CBS policy conservation trigger levels (assumes that water can be acquired temporarily for \$20 - \$100/acre-foot, and that the annual federal bypass obligation of 110,000 acre-feet has not otherwise been satisfied).*

Trigger	Conservation required	Federal obligation (bypass + 50%)	Federal cost (millions)	Remaining Obligation	Water user cost (millions)	Power Surcharge (millions)	User cost per af (all Lower Basin users)
1075-1100	200,000 af	155,000 af	\$3 - \$15.4	45,000 af	\$0.45 - \$2.3	\$0.45 - \$2.3	\$0.06 - \$0.30
1050-1075	400,000 af	255,000 af	\$5 - \$25.4	145,000 af	\$1.5 - \$7.3	\$1.5 - \$7.3	\$0.19 - \$0.97
Below 1050	600,000 af	355,000 af	\$7 - \$35.4	245,000 af	\$2.5 - \$12.3	\$2.5 - \$12.3	\$0.33 - \$1.63

#### **Cost of Not Implementing "Conservation Before Shortage" Policy**

Although the "Conservation Before Shortage" policy would impose notable costs on water and power users, and on taxpayers generally, these costs should be compared with the much larger financial costs that would occur if the Secretary were to impose involuntary, uncompensated shortages, as well as the costs due to the lack of certainty and reliability that would exist without the CBS policy. The recent drought and decrease in power production at both Hoover Dam and Glen Canyon Dam point to the dramatic costs imposed by the loss of reservoir storage.

If Lake Mead falls to 1050 feet, power rates will need to be increased to an approximate composite rate of 2.31 cents/kWh, which is a 44.3% increase over current rates. Replacement power purchases would be (depending on the user) 2.9 to 3.7 times the Hoover rate. In FY03, replacement power may have cost customers an additional \$24 million.

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## ENVIRONMENTAL DEFENSE

finding the ways that work

November 2, 2005

Comments for the Bureau of Reclamation public scoping meeting to discuss  
Development of Shortage Criteria for the Colorado River

Submitted by Jennifer Pitt

1. We believe a full NEPA analysis is called for, with complete analyses of costs, benefits, and environmental implications of each alternative. 1
2. Shortage Criteria should be crafted for the long haul and should be implemented as a permanent policy. The recent drought is likely only a preview of what is to come given what we have learned from the long-term record of Colorado River flows, and given the probability of climate change to reduce flows over the next several decades. 2
3. We have a proposal for managing shortages, called Conservation Before Shortage (CBS).<sup>1</sup> Benefits of Conservation Before Shortage include: 3

A - Reduced need for new water projects.

The introduction of flexibility into Colorado River management will allow those who are willing and able to reduce their water use to be compensated for doing so, and avoid the need to impose reductions in water use on those who cannot. By eliminating the potential for water shortages where they cannot easily be accommodated, this policy will limit the need for costly new water projects to protect water users that cannot tolerate interruptions in water supplies.

B - Protection of the environment.

Fish, wildlife, and natural areas on the Colorado River do not, for the most part, have their own water rights. As such, they are "last in line" for water, and are the most vulnerable of all water users to drought. "Conservation Before Shortage" reduces

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<sup>1</sup> The Conservation Before Shortage policy was developed collaboratively by Defenders of Wildlife, Environmental Defense, National Wildlife Federation, The Nature Conservancy, Pacific Institute, and Sonoran Institute.

overall water consumption in dry years, decreasing the risk of shortages that could disproportionately impact environmental uses in the future. Also, by increasing protection against shortage for water users that have inflexible demands, it will allow some water to remain in the river for the wildlife that needs it to survive while still meeting critical human needs.

C - Improved power production.

Consistent maintenance of reservoir storage and power head above baseline conditions in average to low flow conditions will result in increased power production and improved power revenues, as well as elimination of the risk that elevations at Lake Mead will drop below minimum power head, improving the reliability of power production.

D - Increased certainty for water users:

"Conservation Before Shortage" will significantly reduce the likelihood of involuntary and uncompensated shortages in the Lower Basin at levels above 500,000 acre-feet (the approximate level at which a shortage exceeds the ability of the Arizona Water Bank to readily buffer the shortage).

CBS offers a proactive approach that protects Colorado River water users and the environment from abrupt reductions in the amount of water available.

It's hard to reach consensus when someone has to lose. The current deadlock between the states reflects a zero-sum approach to river management, where one state or one water user is expected to shoulder the full burden of a drought by suffering a large, uncompensated shortage while other users are unaffected. CBS suggests a more cooperative, evenhanded approach to coping with drought.

CBS would create a predictable, rational system for water users, and distribute the costs between water and power users and the federal government.

CBS would include Mexican water users in the solution, thereby reducing the need for conservation among US water users.

July 18, 2005

Honorable Gale A. Norton, Secretary  
Department of the Interior  
1849 C Street, NW  
Washington DC 20240

**Re: Development of Lower Basin Shortage Guidelines**

Dear Secretary Norton:

Last year, you asked the Colorado River basin states to recommend approaches regarding proactive drought management actions in the basin. Last month, the Bureau of Reclamation published a notice to solicit comments and hold public meetings on the development of Lower Basin shortage guidelines (70 Fed.Reg. 34794). Defenders of Wildlife, Environmental Defense, National Wildlife Federation, Pacific Institute, Sierra Club, and Sonoran Institute respectfully submit the attached "Conservation Before Shortage" policy proposal in response to these requests.

We believe that it is preferable for water users to voluntarily engage in predictable, small-scale reductions in use – and receive compensation for those reductions – rather than face large-scale, involuntary, and uncompensated disruptions in water deliveries that could cut into municipal and agricultural water supplies and create unmitigated economic impacts. Our "Conservation Before Shortage" proposal would dramatically reduce the risk of large-scale, involuntary shortages to Lower Basin users and to Mexico, by implementing a series of increasing conservation targets linked to the declining elevation of Lake Mead. The required amount of water would be conserved by offering to pay Colorado River water users, located anywhere in the Lower Colorado River basin or in Mexico, to voluntarily forgo water use.

Funds to pay for forbearance would come from federal appropriations as well as a surcharge applied to all Lower Basin water users and consumers of power generated at the Hoover Dam. One of the more significant corollary benefits of the conservation program described in the "Conservation Before Shortage" proposal, beyond the primary benefit of protecting water users from involuntary and uncompensated shortages, would be the preservation of power production at Hoover Dam at higher levels and for longer durations than would otherwise occur.

**CONSERVATION BEFORE SHORTAGE BENEFITS**

- *Reduced need for new water projects.* The introduction of flexibility into Colorado River management will allow those who are willing and able to reduce their water use to be compensated for doing so, and will avoid the need to impose reductions in water use on those who cannot. By eliminating the potential for water shortages where they cannot easily be accommodated, this policy will limit the need for costly new water projects to protect water users that cannot tolerate interruptions in water supplies.
- *Protection of the environment.* Fish, wildlife, and natural areas on the Colorado River do not, for the most part, have their own water rights. As such, they are "last in line" for water, and are the most vulnerable of all water users to drought. "Conservation Before Shortage" reduces overall water consumption in dry years, decreasing the risk of shortages that could disproportionately impact environmental uses in the future. Also, by increasing protection against shortage for water users that have inflexible demands, it will allow some water to

remain in the river for the wildlife that needs it to survive while still meeting critical human needs.

- *Improved power production.* Consistent maintenance of reservoir storage and power head above baseline conditions in average to low flow conditions, resulting in increased power production and improved power revenues, as well as elimination of the risk that elevations at Lake Mead will drop below minimum power head, improving the reliability of power production.
- *Increased certainty for water users.* Significant reduction in the likelihood of involuntary and uncompensated shortages in the Lower Basin at levels above 500,000 acre-feet (the approximate level at which a shortage exceeds the ability of the Arizona Water Bank to readily buffer the shortage).
- *Reduces risk of involuntary shortage.* In the past, the established priority system on the Colorado River has prompted those most at risk of shortage to limit their exposure by promoting actions that could have devastated invaluable ecological resources. Minimizing this risk will benefit all Colorado River stakeholders.

We look forward to working with Reclamation on the development of shortage guidelines. Please do not hesitate to contact any of us if you would like any additional information on the Conservation Before Shortage proposal.

Sincerely,

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Management Work Group

Colorado River Tribes

Colorado River NGOs

## Conservation Before Shortage

### Proposed Shortage Criteria for Colorado River Operations

#### I. Background/Context

The effects of a multi-year drought have had a tremendous impact on storage in the Colorado River basin. Although above-average precipitation in the Lower Basin has led to small recoveries in system storage over the winter of 2004-2005, total system storage on the Colorado River has decreased by more than 40% over the past several years. As a result, there is a real possibility that the Secretary of the Interior will declare an actual shortage on the lower Colorado River in the near future. A shortage declaration would reduce deliveries to the Central Arizona Project (CAP) and to southern Nevada (which are among the first in line for cuts in the event of a shortage).

The surface elevation of Lake Mead dropped more than 80 feet from the end of 2000 through the end of 2004; Lake Powell dropped by more than 115 feet in this period. The Bureau of Reclamation's (Reclamation's) Riverware model of the Colorado, based on historic flow records, projects that reservoir levels at Lake Powell could head quickly towards the minimum power pool if the drought continues, and reservoir levels at Lake Mead could fall below the elevation of southern Nevada's upper intakes or remain in a long-term decline that will be difficult to reverse until Powell begins to re-fill. In addition, the model predicts that even if precipitation levels returned to average today, it could take 10-20 years for the Colorado River reservoir system to recover fully (during which time continued development of water supplies in the Upper Basin will further shrink available supplies). As a result, it is time to begin a long-delayed discussion about the method for defining, mitigating, and sharing shortages on the Colorado River.

Although the Secretary of the Department of the Interior (Secretary) has the authority to declare a shortage on the Colorado River, thereby reducing deliveries to some Lower Colorado River contractors, to date no criteria exist for determining when such a shortage will be declared. In June 2005, the Department of the Interior (DOI) noticed its intent to begin a public scoping process for the development of "Lower Basin Shortage Guidelines," (70 Fed.Reg. 34794). In 2004, DOI initiated a series of technical meetings with the Colorado Basin states to discuss drought issues, and the seven Basin states met frequently among themselves throughout the winter of 2004-2005 to discuss potential shortage criteria. Non-governmental organizations (NGOs) were not invited to participate in these discussions; however, several NGOs with interest and expertise in Colorado River issues began meeting over the winter to develop an alternative shortage proposal. These organizations met with Reclamation staff to review the results of technical modeling runs developed in support of the states' discussions, and Reclamation has provided additional modeling data to these interested NGOs in response to their inquiries and to evaluate potential shortage criteria.

These meetings led to the development of this document, which proposes an approach to the management of shortages in the Lower Colorado through the implementation of a tiered conservation program that is tied to the surface elevation of Lake Mead.



## II. Rationale for this Proposal

The basic rationale behind this “Conservation Before Shortage” proposal is that shortage criteria should attempt to maximize the reliability and predictability of water deliveries on the Lower Colorado by introducing increased flexibility into the management of river resources when shortage conditions are imminent.

### *Principles:*

- It is desirable to protect the elevation of Lake Mead at 1050 feet (the current minimum power pool) to the extent feasible without implementing shortages that would involuntarily curtail deliveries to Lower Basin users.
- It is desirable to protect the elevation of Lake Mead at no less than 1000 feet under any condition in order to protect Southern Nevada Water Authority’s lower intake structures, as well as the new minimum power pool if proposed low-pressure turbines are installed at Hoover Dam.
- It is desirable to avoid shortages in the Lower Basin above 500,000 acre-feet whenever possible (the approximate level at which shortages would cut into CAP’s deliveries beyond those currently utilized for water banking).
- It is preferable for Lower Basin water users to voluntarily engage in predictable, small-scale reductions in use – and receive compensation for those reductions – rather than face large-scale, involuntary, and uncompensated disruptions in water deliveries that could cut into municipal and agricultural water supplies and create unmitigated economic impacts.
- Minimizing large, forced disruptions to normal deliveries as a result of shortage declarations will minimize the threat of unmitigated environmental impacts in the Lower Colorado River and Delta as a result of significantly decreased deliveries to low-priority users and corresponding return flows that support environmental values.
- Market-based programs, with low transaction costs and appropriate mitigation of third-party impacts, can offer a reasonable mechanism for minimizing the risk and impacts of shortage.<sup>1</sup>
- Users of Colorado River water in Mexico may wish to participate in short-term conservation agreements, to reduce the probability of larger, uncompensated future reductions due to a declaration of shortage under the 1944 Treaty with Mexico.
- Water can be obtained from agricultural users in the United States, and could be obtained in Mexico with an appropriate agreement,<sup>2</sup> through the use of voluntary, market-based forbearance programs. Economic studies of Lower Basin agricultural use, as well as recent leases of water from farmers in this area, suggest that there is a large volume of water in the basin that could be obtained for \$20 - 100 per acre-foot (see Figure 9).

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<sup>1</sup> Some 4.5 million acre-feet of Colorado River water are used to irrigate crops in the Lower Basin states, and more than 1 million acre-feet are used to irrigate crops in Mexico. Conservation of between 200,000 and 600,000 acre-feet through the use of part-year fallowing programs, dry year options, or other similar arrangements would constitute only 4-11% of total Lower Basin agricultural use in the United States and Mexico. (However, as even small-scale reductions in agricultural water use may have third-party impacts, some portion of funds accrued for the purchase of water should be set aside to support community economic development in affected areas.) Conversely, without these small-scale reductions, water users would likely be faced with the need to curtail large amounts of water quite abruptly, with significant economic consequences. (Shortages of nearly 2 million acre-feet in a single year are predicted by Reclamation’s model when the 1000 feet elevation is protected at Lake Mead without conservation measures).

<sup>2</sup> Such an agreement would likely require a new Minute to the 1944 Treaty with Mexico. Fallowing agreements in Mexico would have to be administered by the appropriate authorities.

### **III. Conservation Before Shortage Policy**

The "Conservation Before Shortage" policy essentially consists of two sets of criteria tied to projected elevations at Lake Mead on January 1 of a given year, according to the Bureau of Reclamation's August 24-month study. These criteria consist of three "conservation triggers," which impose progressively increasing conservation goals as lake levels drop from 1100 feet to 1050 feet, and a "shortage trigger," which imposes involuntary shortages in the Lower Basin as are necessary to accomplish absolute protection of Lake Mead at a minimum elevation of 1000 feet.

#### **(A) Normal Conditions**

In years when the 24-month study projects the elevation of Lake Mead on January 1 will be at or above 1100 feet, the Secretary of the Interior (Secretary) shall determine a Normal or Surplus (as defined by the Interim Surplus Guidelines) year.

#### **(B) Conservation Triggers**

##### ***First Conservation Trigger: Below 1100 Feet at Lake Mead***

In years when the 24-month study projects the elevation of Lake Mead on January 1 will be at or above 1075 feet but below 1100 feet, the Secretary will seek to conserve 200,000 acre-feet of water. On behalf of the Secretary, Reclamation will preferentially seek to achieve this 200,000 acre-feet of savings by means of voluntary conservation agreements (including forbearance agreements) with Lower Basin delivery-contract holders. Additionally, Reclamation will, to the extent permitted by law and through the appropriate authorities, seek forbearance or other such water conservation agreements with Colorado River users in Mexico. In the case of such agreements, U.S. deliveries of Colorado River water to Mexico at the Northerly International Boundary will be reduced by the total volume indicated by these binational agreements.

##### ***Second Conservation Trigger: Below 1075 Feet at Lake Mead***

In years when the 24-month study projects that the elevation of Lake Mead on January 1 will be at or above 1050 feet but below 1075 feet, the Secretary will seek to conserve 400,000 acre-feet of water. Reclamation will preferentially seek to achieve this 400,000 acre-feet of savings by means of voluntary conservation agreements (including forbearance agreements) with Lower Basin delivery-contract holders. Additionally, Reclamation will, to the extent permitted by law and through the appropriate authorities, seek forbearance or other such water conservation agreements with Colorado River users in Mexico. In the case of such agreements, U.S. deliveries of Colorado River water to Mexico at the Northerly International Boundary will be reduced by the total volume indicated by these binational agreements.

##### ***Third Conservation Trigger: Below 1050 Feet at Lake Mead***

In years when the 24-month study projects that the elevation of Lake Mead on January 1 will be below 1050 feet (minimum power pool absent the installation of low-pressure turbines), the Secretary will seek to conserve 600,000 acre-feet of water. Reclamation will preferentially seek to achieve this 600,000 acre-feet of savings by means of voluntary conservation agreements (including forbearance agreements) with Lower Basin delivery-contract holders. Additionally, Reclamation will, to the extent permitted by law and through the appropriate authorities, seek

forbearance or other such water conservation agreements with Colorado River users in Mexico. In the case of such agreements, U.S. deliveries of Colorado River water to Mexico at the Northerly International Boundary will be reduced by the total volume indicated by these binational agreements.

### **(C) Shortage Trigger**

#### ***Absolute Protection of Lake Mead Elevation 1000 Feet***

The Secretary shall not permit the elevation of Lake Mead to drop below elevation 1000 feet (minimum low-pressure power pool and Southern Nevada Water Authority intakes) at any time. Shortages to Colorado River contractors shall be implemented in the Lower Basin and in Mexico<sup>3</sup> to the extent necessary to prevent such declines.

### **(D) Funding Mechanisms**

In recognition of the federal government's continuing national obligation to replace the MODE bypass flow to Mexico, 43 U.S.C. § 1571(c), the federal government will assume responsibility for the cost of all conservation agreements up to the volume of the bypass flow that the Secretary has not otherwise replaced in the year that a conservation trigger becomes effective. Given the national interest in minimizing both environmental impacts and economic disruptions resulting from the involuntary curtailment of deliveries to Colorado River users, the federal government would also assume responsibility for half of the cost of any additional agreements required to generate conserved water for the "Conservation Before Shortage" policy, pursuant to the Secretary's authority under the Reclamation States Emergency Drought Relief Act of 1991 (Drought Relief Act),<sup>4</sup> conservation authorities in the Farm Bill, or other appropriate authority that may be granted by Congress.

To the extent that conservation of water is required beyond that to be funded by the federal government in the manner described above, conservation activities would be funded through one or both of the following:

#### ***Power Pool Protection Fund***

The priority of water used for power generation is considered to be tertiary to that of irrigation and domestic use under the Law of the River. As a result, Hoover and Glen Canyon Dams are operated to maintain deliveries to water users regardless of the impact of declining reservoir levels on power production. However, one of the more significant corollary benefits of the conservation program described in this proposal, beyond the primary benefit of protecting water users from involuntary and uncompensated shortages, would be the preservation of power production at Hoover Dam at higher levels and for longer durations by reducing deliveries for irrigation, domestic use, and underground storage in a manner that would not otherwise occur under current practices.

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<sup>3</sup> In the event that a shortage is declared and is also considered to be an extraordinary drought under the 1944 Treaty, deliveries to Mexico will be reduced in the same proportion as consumptive uses in the United States are reduced.

<sup>4</sup> The Reclamation States Emergency Drought Relief Act of 1991, 43 U.S.C. §§ 2201 *et seq.*, provides the Secretary of Interior the authority to purchase water "from willing sellers, including, but not limited to, water made available by Federal Reclamation project contractors through conservation or other means with respect to which the seller has reduced the consumption of water." 43 U.S.C. § 2211(c).

Given the significant loss in generating capacity that has already occurred as a result of declines in power pool elevations,<sup>5</sup> and the even more significant impacts that would be associated with a total loss of generating capacity, the implementation of "Conservation Before Shortage" would clearly benefit power purchasers and consumers. As such, it would seem reasonable to derive a percentage of the funding for the proposed voluntary conservation program from a modest, conditional surcharge on power rates under existing or renewed contracts for hydropower produced at Hoover Dam as a means to mitigate against the loss of power head and stave off the complete loss of power production at Hoover Dam.<sup>6</sup> This surcharge could be imposed in years when Reclamation's August 24-month study projects that the storage in Lake Mead falls below fifty percent of its active capacity. The revenues generated by this surcharge could be collected in a "power pool protection fund," to be maintained by Reclamation for expenditure when and if lake elevations reach a conservation "trigger."

### ***Temporary Cost Recovery/Delivery Surcharges***

Pursuant to the Drought Relief Act, the Secretary of Interior is authorized to engage in water purchases from willing sellers and to seek cost recovery for water delivered from the users of that water under temporary contracts. 43 U.S.C. §2211(c), §2212(a),(c). Reclamation could utilize this authority to purchase water through temporary, part-year following arrangements, dry-year options, or similar mechanisms, and would seek cost recovery from Colorado River users. In recognition of the Basin-wide interest in alleviating the impacts of drought and reducing uncertainty on the Lower Colorado, and in the interests of encouraging extraordinary conservation to minimize the likelihood of significant delivery interruptions, the cost of some portion of conservation agreements, including those with Colorado River users in Mexico, could be funded through a conservation surcharge imposed on a per-acre-foot basis on all Lower Basin contractors.

### ***Anticipated Cost of Conservation***

Current short-term leasing agreements between farmers and irrigation districts or municipal water agencies, as well as recent research on the net returns per acre-foot of irrigation water, suggest that "Conservation Before Shortage" water could be obtained for \$20 - 100 per acre-foot. To ensure that such water remains available in times of increased scarcity (when market forces might otherwise increase the cost), the Secretary should be granted the authority to enter into "Conservation Before Shortage option agreements," similar to existing dry-year leasing agreements/interruptible supply agreements that have been enacted within the basin states.

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<sup>5</sup> Largely as a result of declining reservoir elevations, power production at Hoover and Glen Canyon has declined steadily since the onset of drought conditions in the Colorado River Basin. Annual power production at Hoover fell from 5,697 gigawatt-hours (GWh) in 1998 to 4,094 GWh in 2003, according to Western Area Power Administration (WAPA) Annual Reports, 1998 - 2003. A portion of hydropower revenues currently supports the two Upper Basin endangered fish recovery programs, the Glen Canyon Adaptive Management Program, and the Colorado River Salinity Control Program; alternative sources of revenue should be identified and implemented to fully fund these recovery programs. The Department of the Interior should also work proactively with WAPA to identify alternative sources of power for those Indian tribes that have experienced power shortages, or drastic increases in power costs, due to the declining production associated with falling reservoir levels.

<sup>6</sup> The rates for power produced at Hoover Dam have increased as reservoir levels and power production have declined, but may still remain well below open market rates. Although annual revenues tend to vary from year to year, revenues from Hoover Dam power production have generally been in the range of \$50 million annually.

#### **IV. Analysis: Benefits of Conservation Before Shortage Policy**

To date, actual shortage criteria for the Colorado River have not been defined. For the purposes of comparison, a 'baseline' was defined as the current operating conditions for the Colorado River, with the addition of a policy requiring the absolute protection of Lake Mead at 1000 feet (that is, Hoover Dam would not release any water to cause the elevation of Lake Mead to drop below 1000 feet). The baseline policy does *not* provide for the implementation of conservation measures. These 'baseline' conditions, reflecting current operating conditions, are depicted in the following figures.

Analysis of the "Conservation Before Shortage" policy suggests that this policy could produce significant benefits for Basin water users by:

- Consistently maintaining reservoir storage and power head above baseline conditions in average to low flow conditions, resulting in increased power production and improved power revenues;
- Significantly reducing the likelihood of involuntary, uncompensated shortages in the Lower Basin and corresponding, unmitigated economic impacts;
- Significantly reducing the likelihood of involuntary and uncompensated shortages in the Lower Basin at levels above 500,000 acre-feet (the approximate level at which a shortage imposed by the Secretary would cut into CAP deliveries, by exceeding the ability of the Arizona Water Bank to readily buffer the shortage); and
- Eliminating the risk that elevations at Lake Mead will drop below minimum power head, improving the reliability of power production and associated revenues.

The analyses below show the impacts of the "Conservation Before Shortage" (CBS) policy on reservoir operations based on historic flows in the Colorado River Basin.

##### ***Modeling Assumptions***

The proposed "Conservation Before Shortage" policy was modeled using Reclamation's Riverware model, which is based on historical records of flows in the Colorado River Basin over approximately the past century. Conservation triggers, as described in Section III, were implemented at 1100 feet, 1075 feet and 1050 feet, with the assumption that required measures to reduce Lower Basin consumptive use by 200,000, 400,000, and 600,000 acre-feet, respectively, would be implemented in years when the January 1 elevation at Lake Mead is below the triggers. An absolute protection trigger was implemented at Lake Mead elevation 1000 feet, with releases from Lake Mead to meet delivery obligations to Lower Basin users reduced as necessary to maintain that level. To avoid even modestly under-predicting the elevations of Mead and Powell pools, particularly in the near term, this modeling has assumed that the schedule of Upper Basin depletions will effectively begin with the last reported actual level for CY 2000, will increase at a

slower rate than projected by the Upper Colorado River Basin Commission through CY 2009, and will increase at the rate projected by the Commission thereafter.<sup>7</sup>

For purposes of the model, the minimum objective release out of Lake Powell was assumed to be 8.23 maf per year (reflecting current operating conditions).<sup>8</sup> Alternative scenarios for conjunctive management were not modeled, and the protection of a minimum power pool at Lake Powell was not incorporated into this proposal; either or both of these assumptions would affect the elevation of Lake Powell. Model runs used end-of-year 2004 elevations at Lake Mead and Lake Powell to establish initial conditions for 2005, and were run through year 2025.

### ***Protection of Lake Mead***

Figures 1 -3 show the potential value of implementing the CBS policy, under a range of average to extremely low flow conditions. **These and following figures show that the CBS policy would greatly benefit the elevation of Lake Mead.**

As shown in Figure 1 below, under average conditions, the CBS policy would maintain reservoir elevations at Mead approximately 30 feet above the baseline policy. As shown by Figures 2 and 3, the CBS policy would significantly reduce the rate of decline in the lower 25<sup>th</sup> and in the very low 10<sup>th</sup> percentile reservoir elevations for Mead and maintain even these lower reservoir elevations above the 1000 foot protection level. Model runs showed essentially no impact of the CBS on the higher 90<sup>th</sup> percentile Mead elevations, so no figure is provided.

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<sup>7</sup> See "Estimates of Future Depletions in the Upper Division States," Upper Colorado River Commission Memorandum, December 23, 1999. This schedule predicts a 440,000 acre-foot increase in Upper Basin depletions between 2000 and 2010 and a 542,000 acre-foot increase over actual CY2000 depletions, as reported in Reclamation's Consumptive Uses and Losses 1996-2000 report (see Tables UC-1 & UC-6). Actual increases in Upper Basin depletions water may not keep pace with this schedule, because water that would otherwise have been utilized has been and may continue to be physically unavailable for depletion in the Upper Basin due to drought conditions, and in other cases, projects that were proposed to have been constructed during this period may not yet have been or will not be completed through CY 2009. A slower rate of increase from 2000 to 2009 was modeled by subtracting four increments of 100,000 acre-feet from the Commission's schedule from CY 2005 to 2009. This and all other Riverware modeling exercises should be revised to reflect actual increases in Upper Basin depletions as soon as more current information becomes available.

<sup>8</sup> This assumption is not intended to endorse or reject the Secretary's current use of 8.23 maf as the minimum release objective for Powell, the protection of a minimum power pool at Powell, or proposals for the conjunctive management of the combined storage of Mead and Powell. Alternative release scenarios should be incorporated into the modeling for this proposal as they are developed. As a general matter, none of the assumptions used in this proposal should be construed as an interpretation of the 1922 Colorado River Compact, the 1944 Treaty with Mexico, or any other aspect of the Law of the River.

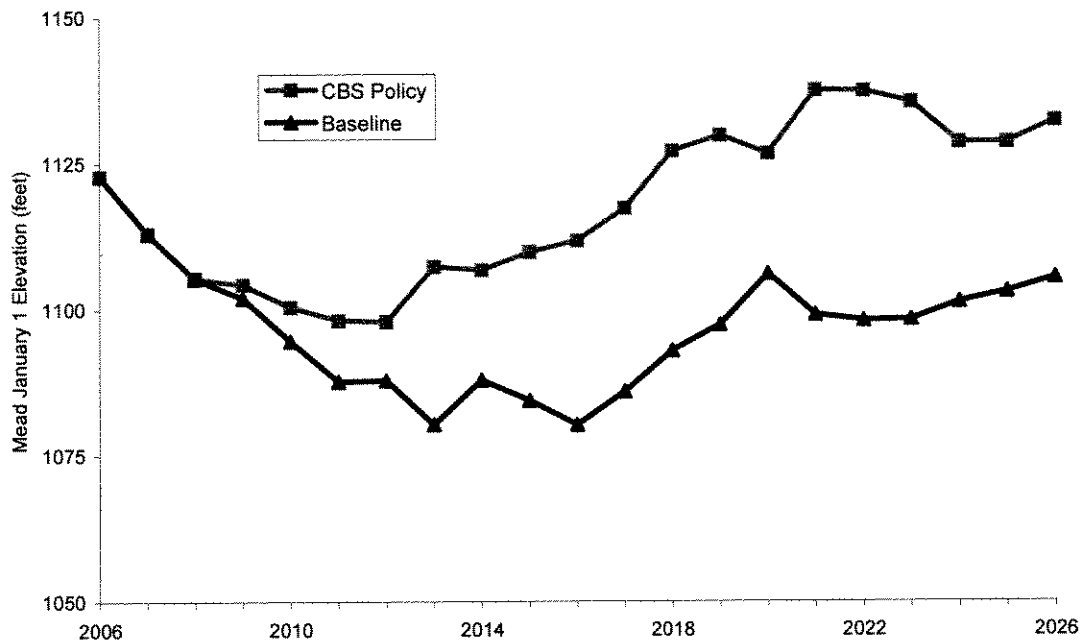


Figure 1. Impact of CBS policy on elevations at Lake Mead, at 50<sup>th</sup> percentile elevation.

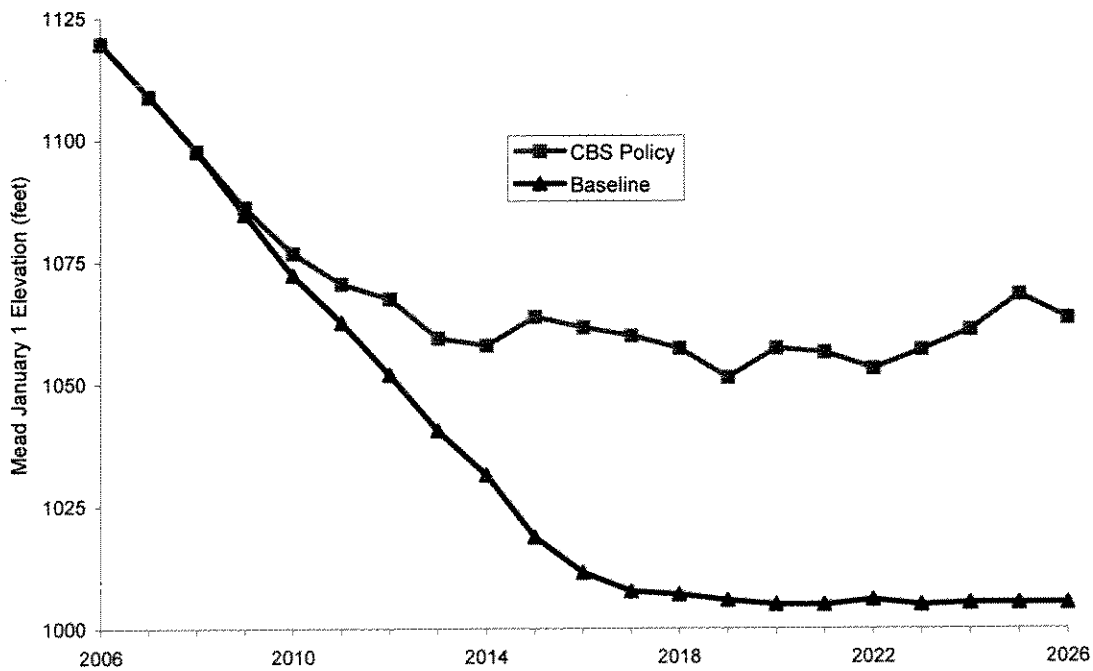


Figure 2. Impact of CBS policy on elevations at Lake Mead, at 25<sup>th</sup> percentile elevation.

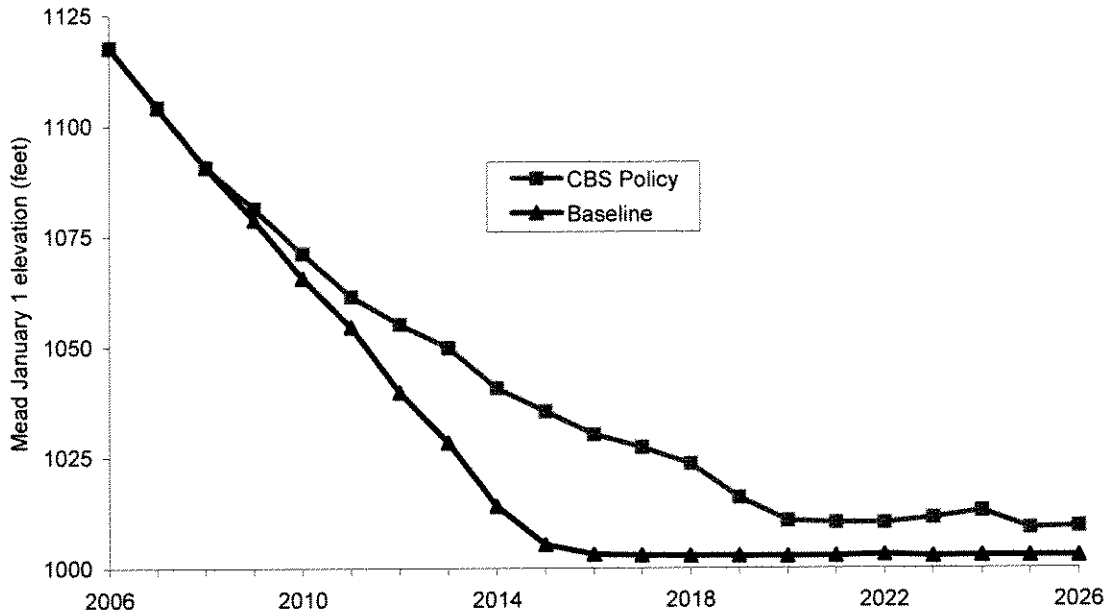


Figure 3. Impact of CBS policy on Lake Mead elevation, at 10<sup>th</sup> percentile elevation.

### Probability of Shortages

As noted above, a primary goal of the CBS policy is to significantly reduce the probability of an involuntary, uncompensated shortage in excess of 500,000 acre-feet (the approximate level at which CAP deliveries would be reduced beyond that currently utilized for water banking). As shown in Figure 4, below, the probability of shortages exceeding 500,000 acre-feet is reduced to 5% or less through the entire modeled period under the CBS policy. By contrast, the probability of shortage under the baseline policy rapidly approaches 30% during this same period. Furthermore, as shown in Figure 5, below, the CBS policy reduces the probability of any involuntary shortage by approximately 20% over the next 20 years.

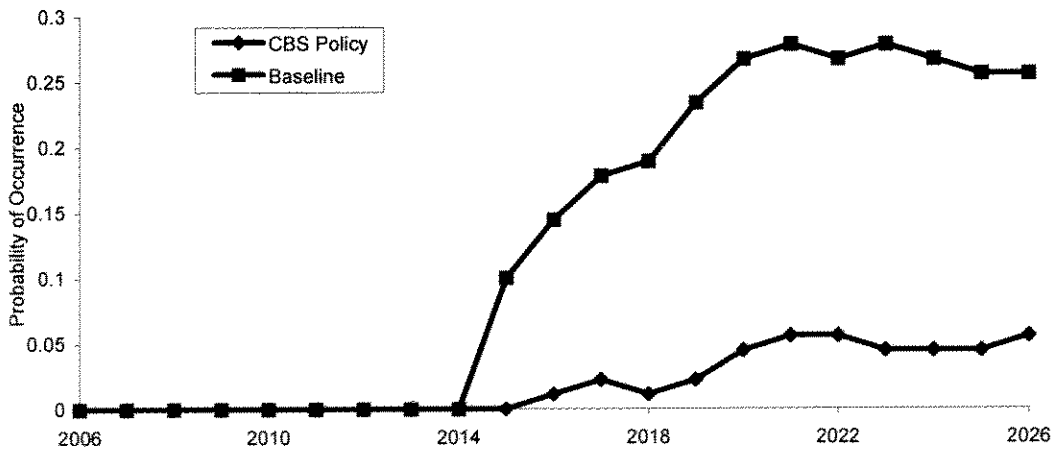


Figure 4. Impact of CBS policy on probability of involuntary Lower Basin shortage greater than 500,000 acre-feet.



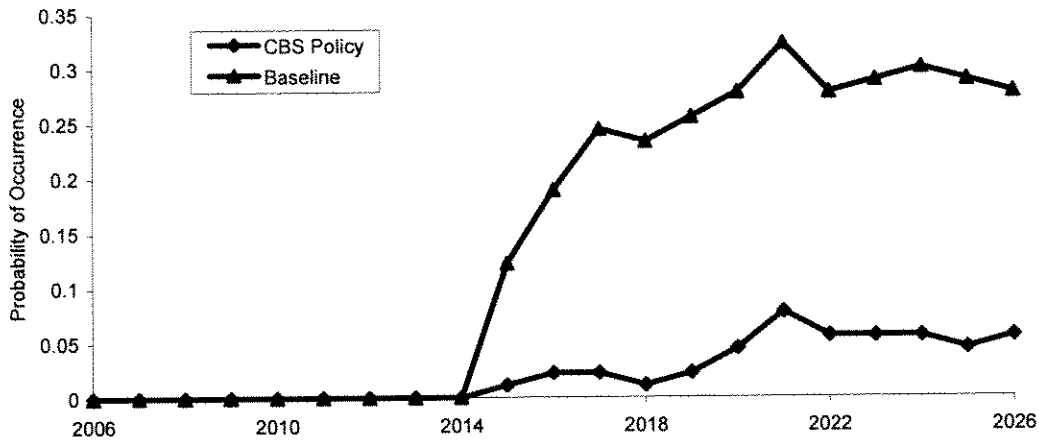


Figure 5. Impact of CBS policy on probability of any involuntary shortage in the Lower Basin.

### Probability of Reaching Conservation Triggers

Figures 6 - 8, below, show the relative probability of reaching or exceeding any of the proposed conservation triggers at 1100 feet, 1075 feet and 1050 feet. As one might expect, the probability of reaching the first two triggers is highest in the earlier years of the modeled period, while the probability of reaching the third trigger is higher towards the end of the modeled period. However, the probability of reaching and continuing to remain below a given trigger for an extended period of time appears to be low because of the conservation measures tied to the triggers. For obvious reasons, trigger levels are most likely to be reached under low or very low flow conditions, and are rarely (if ever) reached under high flow conditions.

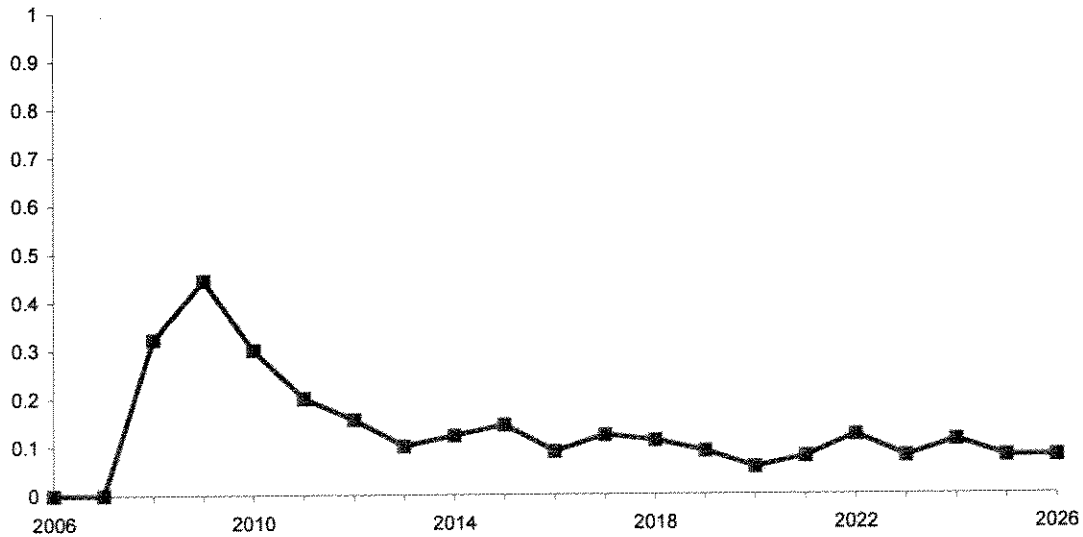


Figure 6. Probability of Lake Mead January 1 elevation occurring in a bounded range of 1100 feet to 1075 feet, with CBS policy in place.

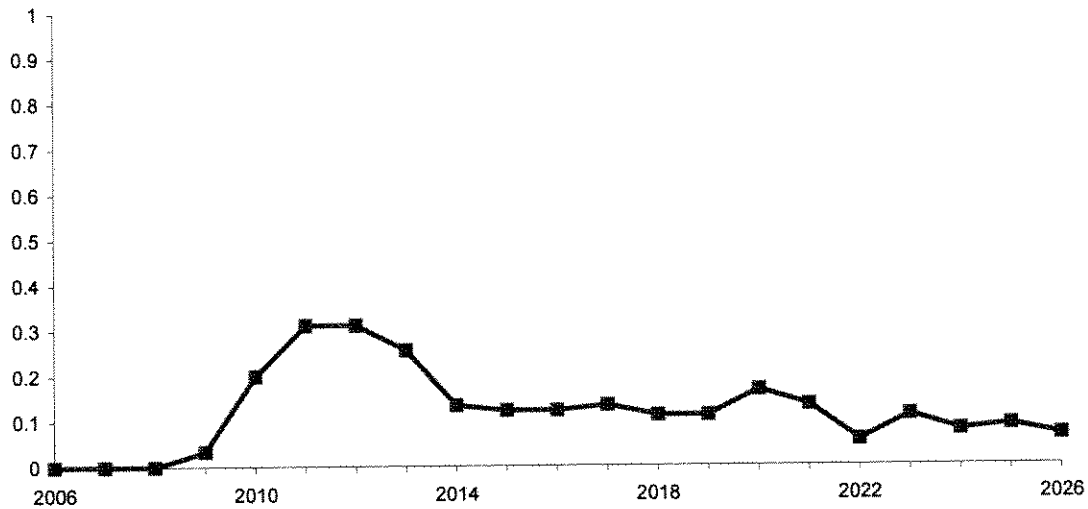


Figure 7. Probability of Lake Mead January 1 elevation occurring in a bounded range of 1075 feet to 1050 feet, with CBS policy in place.

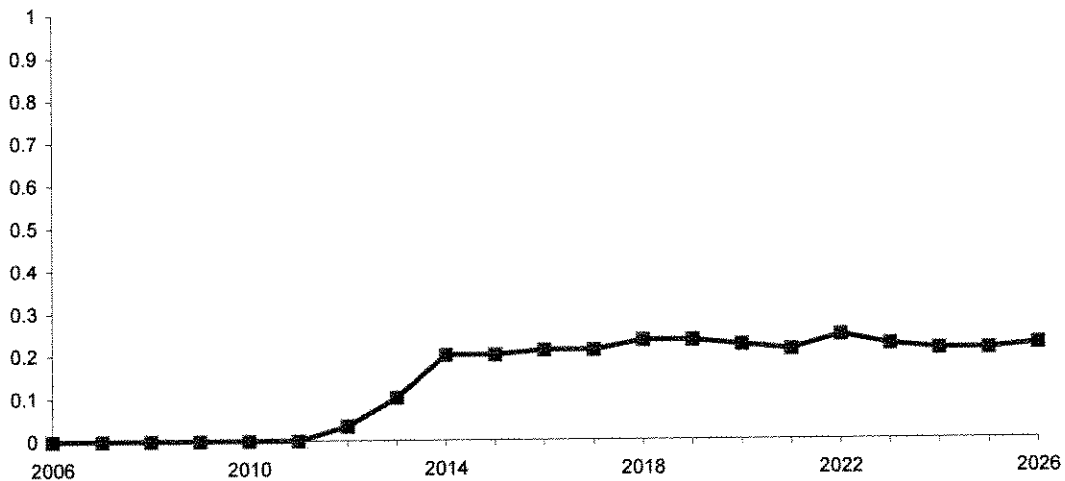


Figure 8. Probability of Lake Mead January 1 elevation occurring below 1050 feet, with CBS policy in place.

**Cost of Implementing Conservation Triggers**

The cost of implementing conservation triggers is directly related to the cost of obtaining water using the proposed voluntary, market-based conservation mechanisms. Recent purchases of water from farmers in the Lower Basin, as well as analysis of agricultural production in this area, suggest that there is a substantial volume of water used for irrigation which could potentially be obtained on a temporary basis for \$20 - 100 per acre-foot. For example, in 2004, the Imperial Irrigation District acquired water from its farmers for less than \$60 per acre-foot.

As shown in Figure 9, a recent economic study by Environmental Defense into the profits returned by field crops suggests that slightly more than 2.3 million acre-feet of agricultural water

is being used by Lower Basin farmers in California and Arizona to produce profits of less than \$100 per acre-foot; more than one million acre-feet of agricultural water is being used to produce profits of less than \$20 per acre-foot. (Figures are based on the average volume of water applied to produce a crop unit and market rates for each crop, less costs of production.)

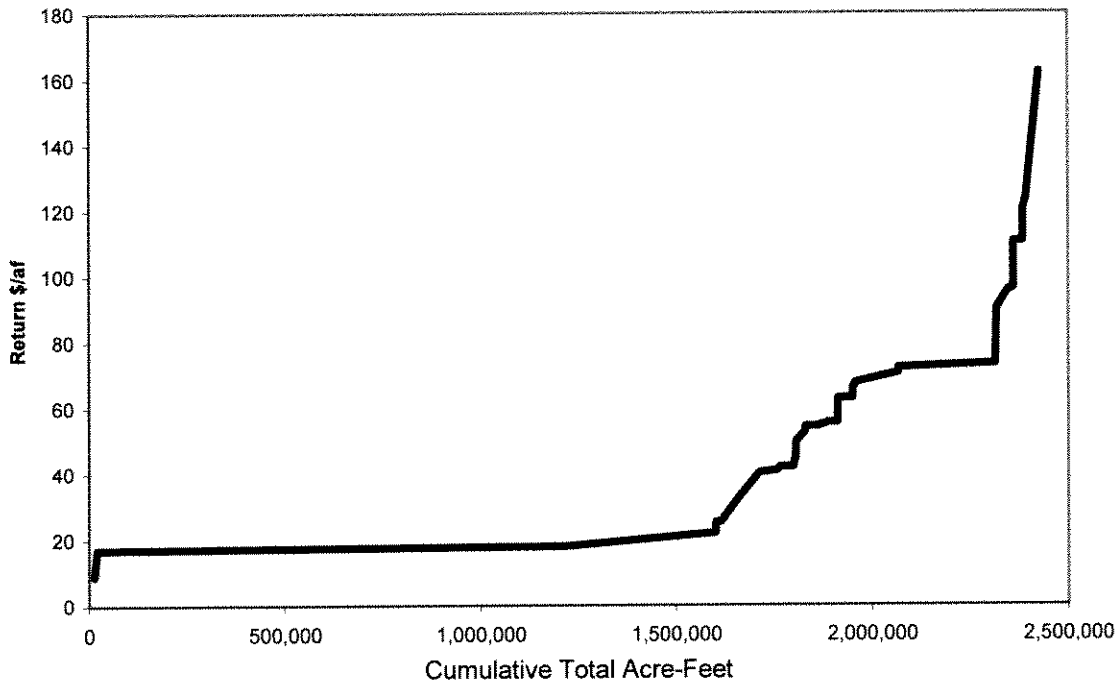


Figure 9. Profits per acre-foot returned on Colorado River water used in the production of selected crops in the Lower Colorado River Basin.<sup>9</sup>

While these figures do not necessarily reflect the amount at which any given water user would be willing to take part in a part-year fallowing program or agree to a dry-year option, they do suggest that if an open, market-based approach is used to identify potential participants, a number of water users in the Lower Basin would probably be willing to temporarily reduce or forgo the use of water for agricultural production in a price range between \$20 and \$100 per acre-foot (as the sale of water in this range would produce equal or greater monetary returns to the user than the use of water to irrigate crops).

In order to mitigate third-party impacts of fallowing, the federal government could establish a drought economic adjustment fund that would provide economic development grants to affected communities in the counties of origin. These funds preferentially would go to established county-based farm labor assistance programs to the extent that such programs exist, and could include lump sum payments to displaced workers based on a percentage of foregone annual income.

<sup>9</sup> This graph has not been published elsewhere. For methodology, please contact Jennifer Pitt at [jpitt@environmentaldefense.org](mailto:jpitt@environmentaldefense.org). A study using similar methodology, but limited to crop values in the Wellton-Mohawk Irrigation and Drainage District, has been published previously (Pitt et al., *New Water for the Colorado River: Replacing the Bypass Flow*, 6 U. Denver Water L. Rev. 68 (2002)). The study found a range of prices similar to that represented here for profits derived from water use in that area.

Using these assumptions for water acquisition costs, Table 1 suggests the approximate range of costs for implementing each of the conservation triggers under the CBS policy.

*Table 1. Approximate federal and power/water user cost of implementation of CBS policy conservation trigger levels (assumes that water can be acquired temporarily for \$20 - \$100/acre-foot, and that the annual federal bypass obligation of 110,000 acre-feet has not otherwise been satisfied).*

Trigger	Conservation required	Federal obligation (bypass + 50%)	Federal cost (millions)	Remaining Obligation	Water user cost (millions)	Power Surcharge (millions)	User cost per af (all Lower Basin users)
1075-1100	200,000 af	155,000 af	\$3 - \$15.4	45,000 af	\$0.45 - \$2.3	\$0.45 - \$2.3	\$0.06 - \$0.30
1050-1075	400,000 af	255,000 af	\$5 - \$25.4	145,000 af	\$1.5 - \$7.3	\$1.5 - \$7.3	\$0.19 - \$0.97
Below 1050	600,000 af	355,000 af	\$7 - \$35.4	245,000 af	\$2.5 - \$12.3	\$2.5 - \$12.3	\$0.33 - \$1.63

#### ***Cost of Not Implementing "Conservation Before Shortage" Policy***

Although the "Conservation Before Shortage" policy would impose notable costs on water and power users, and on taxpayers generally, these costs should be compared with the much larger financial costs that would occur if the Secretary were to impose involuntary, uncompensated shortages, as well as the costs due to the lack of certainty and reliability that would exist without the CBS policy. The recent drought and decrease in power production at both Hoover Dam and Glen Canyon Dam point to the dramatic costs imposed by the loss of reservoir storage.

If Lake Mead falls to 1050 feet, power rates will need to be increased to an approximate composite rate of 2.31 cents/kWh, which is a 44.3% increase over current rates. Replacement power purchases would be (depending on the user) 2.9 to 3.7 times the Hoover rate. In FY03, replacement power may have cost customers an additional \$24 million.



*Defending the Planet One Beat at a Time*

## FAX TRANSMITTAL SHEET

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**TO:**                    **Mr. Bob Johnson**                    **Mr. Rick Gold**  
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                             **Bureau of Reclamation**                    **Bureau of Reclamation**  
                             **Lower Colorado Region**                    **Upper Colorado Region**

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**FROM:**                **Marc A. Ross**  
                             **Executive Director**

**DATE:**                **November 22, 2005**

**TOTAL NO. OF PAGES:   9  , INCLUDING COVER SHEET**

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### COMMENTS:

Attached please find our comments to the Notice of Intent to prepare an EIS for the Development of Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions

**ORIGINAL TO FOLLOW BY MAIL: YES   X   NO**

**IF THERE IS ANY PROBLEM WITH THIS TRANSMISSION,  
PLEASE CALL 303-454-3304.**

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*Defending the Planet One Beat at a Time*

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Director*

November 22, 2005

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**VIA FACSIMILE & US MAIL**

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**Deanne Herman**

*Director*

**RE: NOTICE OF INTENT TO PREPARE AN EIS FOR THE  
DEVELOPMENT OF MANAGEMENT STRATEGIES FOR LAKE  
POWELL AND LAKE MEAD UNDER LOW RESERVOIR  
CONDITIONS [BCOO-1000; ADM-5.10]**

**Sean McNamara**

*Director*

**Lori Gray**

*Director*

Dear Regional Directors:

**Advisory Board**

**Matt Butler**

*Engene, OR*

**David Gans**

*Oakland, CA*

**Jon Gelbard**

*Berkeley, CA*

**Bob Hollis**

*El Dorado Hills, CA*

**Bob Lippman**

*Castle Valley, UT*

**Jason Mastrine**

*Portland, OR*

Rock the Earth ("RtE") is a Colorado nonprofit corporation with a national membership of concerned citizens. Like many other Americans, RtE members rely on the Colorado River Basin for a multitude of needs. RtE Members regularly seek the peace, quiet, and solitude of the national public lands for recreational, artistic, naturalist, and spiritual activities, including but not limited to hiking, camping, non-motorized water sports, photography, and meditation. Our members utilize the Colorado River as a source for drinking water as well as recreational activities and will be directly affected by the forthcoming Management Strategies for Lake Powell and Lake Mead under low reservoir conditions (the "Plan") as it will allow for changes in the way that the Colorado River is managed.

We appreciate this formal opportunity to comment on the matter of Colorado River Reservoir management, as we believe that an expanded, comprehensive, coordinated and forward-looking study and action plan for water management in the Colorado Basin is mandated by significantly changed, problematic conditions and needs. These include, but are not limited to, changing climatic and hydrological conditions, overallocation of the Colorado's water resources, outmoded legal and



Mr. Bob Johnson  
Mr. Rick Gold  
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administrative water rights infrastructures, increasingly expanding demands on the system, inequities and waste regarding Colorado River water appropriations, storage and delivery, overdeveloped and inefficient Colorado River water storage and delivery systems, continuously degrading ecological systems and health, increasing water pollution and salinity, the utter lack of planning regarding sedimentation and its effects (including the likelihood of reaching "deadpool" conditions at Lake Powell, hereafter referred to as Powell Reservoir), and the ongoing inability to bring the system into compliance with a number of environmental mandates. The Colorado River water management infrastructure is largely outmoded, unsustainable, and unable to accomplish even its originally intended purposes, under present and anticipated conditions. It fails to adequately address shortages and changing hydrological and climatological conditions, and exacerbates the already severe ecological impacts of the structural system.

Rock the Earth originally filed these comments with the Bureau on August 29, 2005, prior to the Bureau's decision to pursue an EIS and prior to the September 30, 2005 notice in the Federal Register regarding the same. Rock the Earth reasserts the following in response to the Bureau's request for Scoping comments in preparation of an EIS to address this important issue.

#### Observations.

##### 1. Diminishing returns and system inefficiency.

It is well documented that the historical average run-off in the Colorado is lower than the figure upon which the Colorado River Compact is predicated (1). Water from the Colorado is overallocated by at least 11% above the 400 year average (2). Rapid development in the Upper Basin has diminished the availability of surpluses, and the situation is further exacerbated by documented climatic change and resulting drought in the Western United States (3). Colorado River flows are expected to continue to decline (4). Even prior to the present drying trend, studies predicted the Colorado system would fail on the supply side by the year 2000 (5).

Compounding the problem and trend are factors involving the inefficiency of the system, due to tremendous evaporation losses (6). Under present scenarios, storage exceeds an "optimal," efficient level by 100% (7, 8). Because of this, the chances of Powell Reservoir filling again in the near future are negligible (9). It should also be noted that power generation is also compromised by, and may be discontinued by, continual low reservoir levels (10). Sedimentation is also reducing storage capacity and the system's lifespan at a rapid rate (11, 12). Draining Powell Reservoir as a rational response to these trends and problems would not jeopardize long term water delivery commitments to the Lower Basin (13).

##### 2. Ongoing ecological degradation.

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The environmental changes and decline in ecological health of the system are well documented (14). Powell Reservoir has not only inundated hundreds of miles of natural and free-flowing river ecologies and resources, but has also disrupted the riparian and riverine ecology of Grand Canyon National Park, with the erosion of beaches, changes in water characteristics, and extirpation and endangerment of approximately 6 species of fish(15). Present mitigation efforts to protect endangered species are failing (16), and the ecological impacts and disruptions under present infrastructure and management have devastated the formerly productive Colorado River delta (16). Present infrastructures, management strategies and agency priorities have raised ongoing issues regarding the inability of the Bureau of Reclamation to bring the system into compliance with the Endangered Species Act, the Clean Water Act, the Grand Canyon Protection Act, the Archeological and Historical Protection Act, the Colorado River Storage Project Act, and the National Environmental Policy Act(17).

Additionally, salinity and the accumulation of toxic materials and metals are increasing due to evaporation, leaching and sedimentation, resulting in water quality degradation, large scale agricultural damage, increased costs and compromised ecological systems and health (18). Human recreational and commercial uses, along with motorized recreation activities, have polluted the waters of the Colorado River with petroleum products and waste, and with harmful bacteria and coliforms (19).

The full scope of systemic impacts and management options for the Colorado River has never been properly addressed, and environmental studies have been unduly limited and narrowed (20).

### 3. Recreation and Tourism.

The factors noted above have also had a direct impact on recreational resources and tourism, as visitation to Glen Canyon NRA (Lake Powell) has been consistently declining (by nearly 50 percent over the past 15 years) (21), while reservoir navigation has become problematic, marina facilities have been closing, and Park Service costs for maintaining access have been increasing (22).

### 4. Safety.

In 1983 and 1984 high flows and a lack of adequate planning and management for flood control caused a near catastrophic occurrence/failure at Glen Canyon Dam. Spillway failure from the high flows required lowering releases, nearly causing overtopping of the dam by the rising, impounded waters; only a temporary, 8 foot plywood barrier prevented overtopping (23). The maximizing of power revenues and political pressure from the Colorado Basin states and recreational interests to maintain Powell Reservoir as full as possible seriously compromise flood control needs and priorities, as well as safety. Although recent hydrological studies indicate that the filling of Powell Reservoir is unlikely in the near future, a dam failure would result in the overtopping of Hoover Dam and all other downstream facilities, destroying water



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delivery systems and inundating communities in Arizona and California (24). The elimination of Powell Reservoir will actually increase flood control capability of the system, as Mead Reservoir levels would be drawn down to provide for Lower Basin water uses (25).

#### Recommendations.

Rock the Earth submits that the present, crisis situation provides an unprecedented opportunity for articulation and implementation of long-overdue changes in the management paradigm. Present and anticipated conditions and experience call for a new vision, and a goal of balancing present and future hydrological, ecological, social and technological realities with system resources and management options, through the development of a comprehensive plan for sustainable Colorado River water management.

1. A comprehensive and synergistic environmental impact statement should be immediately undertaken and placed on a fast track for implementation of sustainable water management and sound ecological practices. Management of the diverse interests and resources of the Colorado River must be coordinated and balanced in a long range view and plan. 1

2. The option of decommissioning Powell Reservoir should be fully examined (with a report and recommendation to Congress to remove any political impediments to this necessity) in a cost-benefit context, in terms of system and management inefficiencies, water losses, ecological impacts, and other externalities and diminishing returns. Issues surrounding the implementation of this option should be articulated, and solutions/alternatives crafted based upon defensible science and documented hydrological and climatological factors. 2

3. Maintain and manage Hoover Dam and Mead Reservoir as the primary storage and flood control facility in the system. Mead storage capacity is more than adequate to safeguard and provide the Lower Basin's "perfected rights." A fully maintained Mead allows for ecological restoration of Glen Canyon, Grand Canyon, and the Colorado delta, and is more efficient in terms of water and power delivery than two partially filled reservoirs. Mead is also better sited for implementing sediment transport access and technical solutions than Powell, and the removal of Powell Reservoir will decrease salinity and pollution impacts to the system, while increasing available water supply. 3

4. Bank any surplus water flows (enhanced by removal of Powell) in underground aquifers, accessible by existing aqueducts, most notably in Arizona (but also considering Utah, Nevada and California possibilities), for simple retrieval when needed. In addition to mitigating the evaporation loss problem, incidental benefits from such banking would 4

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inure to areas presently plagued with groundwater mining, subsidence, falling water tables, rising pumping costs, and habitat losses. These aquifers would also provide much more long-term storage capacity than reservoirs.

5. Implement aggressive water conservation strategies in the Colorado Basin, considering equity (Tribal and Mexican rights, balanced water priorities and uses, and fair allocations) efficiency, sustainability and growth issues. 5
6. Study and make firm recommendations to facilitate the updating and transformation of Western water law and the "Law of the River" to reflect the river system's limitations, present and anticipated future conditions, and the interests of sustainability, conservation, ecological health, and equity. The concepts of senior appropriators, beneficial use, and non-use triggered lapses need to be reassessed and replaced with a sustainable, conservative water management and allocation paradigm that recognizes and balances ecological and instream uses/benefits with sustainable and equitable water allocations and deliveries. 6
7. Embark on realistic and now-feasible restoration projects in the Colorado Basin. Glen Canyon has shown to be capable of short-term restoration through documented sediment transport. Recreational opportunities on a restored river system would offset the loss of the flatwater recreational economy of Powell Reservoir. Tribal interests (sacred sites, religious freedom, archaeological protection, etc.) would be respected and enhanced by restoration. Restoration efforts for Grand Canyon would require more creative and diligent efforts due to the complexity and cost of sediment transport and the potential problems involving environmental quality; however, a free-flowing Colorado through the Grand Canyon would provide the most hope and opportunity for species recovery and habitat restoration. Eliminating evaporative water losses and managing water delivery through banking and a single primary reservoir (Mead), will free up sufficient water for delta restoration, while providing a greater measure of equity and guarantee for Mexican interests as recognized by Treaty and Compact. 7
8. Study and develop plans for sediment transport/removal from Glen Canyon, Mead Reservoir and other impoundments. 8

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Again, Rock the Earth appreciates this opportunity to comment on this matter of such critical importance and impact. The failure to plan for a sustainable future for the American Southwest will result in devastating and insurmountable problems and contention; the vision to overcome political inertia and confront the challenges of climate change, unsustainable growth and declining environmental quality may allow us as a society and species to move towards the hope of a sustainable future.

For Rock the Earth:



Bob Lippman  
Member, Advisory Board

Marc A. Ross  
President & Executive Director

C: [Governors Offices of the 7 basin states]  
[Secretary of the Interior]  
[Colorado River Commissions of the United States, and Mexico]  
[Organizations concerned with the Colorado River, Western water and sustainability,  
etc. (Glen Canyon Inst., Living Rivers, Friends of the River, etc.)]  
[Selected media (High Country News, Sierra, etc.)]

Notes.

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2. See Note 1 (Stockton).
3. Bureau of Reclamation, Upper Colorado Region: Water Operations. "Operations Summary and Reservoir Status." Annual Operating Plan for the Colorado River System Reservoirs (2000 - 20006); Christensen, Niklas, Andrew Wood, Nathalie Voisin, Dennis Lettenmaier, and Richard Palmer. The Effects of Climate Change on the Hydrology and Water Resources of the Colorado River Basin (2004).
4. See Note 3 (Christensen).

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5. Government Accounting Office. Comptroller General's Report to the Congress. Colorado River Basin Water Problems: How to Reduce Their Impact. CED-79-11 (1979).
6. See Note 1 (Bureau of Reclamation).
7. Langbein, Walter B. Water Yield and Reservoir Storage in the United States. U. S. Geological Survey Circular No. 409 (1959).
8. Bureau of Reclamation. Upper Colorado Region: Water Operations. "Upper Colorado River Tributaries." Colorado River System Consumptive Uses and Losses Report (1996 - 2000); Bureau of Reclamation. Upper Colorado Region: Water Operations. 24 Month Study Reports.
9. See Note 3 (Christensen).
10. Myers, Thomas. Sediment Hydrology on the Colorado River: The Impacts of Draining Lake Powell. Glen Canyon Institute (1999).
11. Andrews, Edmund D. "Sediment Transport in the Colorado River Basin." Colorado River Ecology and Dam Management: Proceedings, May 24-25, 1990, Santa Fe, NM (Academy Press, Washington, D.C. (1991).
12. Myers, Thomas. Water Balance of Lake Powell: An Assessment of Ground Water Seepage and Evaporation. Glen Canyon Institute (1999); See also Note 10.
13. Morrison, J.I., S.L. Postel, and P.H. Gleick. The Sustainable Use of Water in the Lower Colorado River Basin. Pacific Institute, and Global Water Policy Project, joint report (November, 1996); See also Miller, Scott K. Undamming Glen Canyon: Lunacy, Rationality, or Prophecy? 19 Stan. Envtl.L.J. (2000).
14. See, e.g., Citizens Environmental Assessment (CEA) on the Decommissioning of Glen Canyon Dam: Report on Initial Studies. Glen Canyon Institute (December, 2000); The One Dam Solution: Preliminary Report to the Bureau of Reclamation on Proposed Reoperation Strategies for Glen Canyon and Hoover Dams Under Low Water Conditions.
15. U.S. Fish and Wildlife Service. Final Biological Opinion on the Operation of Glen Canyon Dam (January, 1995); National Park Service, Grand Canyon National Park. Endangered, Threatened and Sensitive Wildlife of Potential Occurrence Along the Colorado River in Grand Canyon (Online: <http://data2.itc.nps.gov/nature/documents/ACF18EB.doc>); See also Note 14.
16. Updike, Christopher N., and Steven P. Gloss. "Confronting Social Impediments to Adaptive Management: Lessons From the Grand Canyon Ecosystems." Grand Canyon Monitoring and Research Center: Colorado River Ecosystem Science Symposium (October 2003); See also Note 15, U.S. Fish and Wildlife Service.
16. See Note 14, p. 8.
17. See, e.g., Department of the Interior. Report to Congress: Operations of Glen Canyon Dam Pursuant to the Grand Canyon Protection Act of 1992, Water Years 1999 - 2001, Secretary of the Interior (May, 2002); See Note 15.
18. See Note 15, p. 7, 11.

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19. See Note 15, p. 11.

20. See, e.g., Note 15, p. 4; Clotworthy, Bruce. Parched: The Future of the Glen Canyon Dam in a Drier West. 17 Utah Bar Journal 8; Pub. L. No. 106-113, sec 1000(a)(3) (1999).

21. National Park Service: Public Use Statistics Office. Visitation (Online: <http://www2.nature.nps.gov/stats/>).

22. Aramark Corporation. Powell Resorts and Marinas Announces Seasonal Operating Schedule. Aramark Press Release (October 19, 2004); National Park Service. \$22 Million in Facility Improvement Projects Completed or Ongoing at Glen Canyon National Recreation Area. Glen Canyon NRA Press Release (October 4, 2004).

23. Carothers, Steven W., and Bryan T. Brown. The Colorado River Through Grand Canyon: Natural History and Human Change. University of Arizona Press, Tucson (1991).

24. Latham, Stephen E. Glen Canyon Dam, Arizona: Dam Failure Inundation Study. Bureau of Reclamation, Denver (1998).

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conditions. It fails to adequately address shortages and changing hydrological and climatological conditions, and exacerbates the already severe ecological impacts of the structural system.

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To: DIRECTOR RICK GOLO

Fax: 801-524-3858

From: JOHN WEISHEIT

Re: SHORTAGE GUIDELINES  
LAKES POWELL & MEAD

**Notes:** PLEASE DISREGARD EARLIER FAX AS IT DID NOT ACCOUNT CORRECTLY THE 142 SUPPORTING NGOs. THIS FAX IS CORRECT.

**People for the Integrity  
of Rivers & Watersheds**

# LIVING RIVERS

## COLORADO RIVERKEEPER<sup>®</sup>

November 30, 2005

Mr. Bob Johnson  
Regional Director  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000  
P.O. Box 61470  
Boulder City, NV 89006-1470

Mr. Rick Gold  
Regional Director  
Bureau of Reclamation, Upper Colorado Region  
Attention: UC-402  
125 South State Street  
Salt Lake City, Utah 84318-1147

Via Fax: 702.293.8156; 801.524.3858

Dear Mr. Johnson & Mr. Gold,

Living Rivers, Colorado Riverkeeper, and the 142 undersigned organizations submit the following report, *The One-Dam Solution*, as scoping comments for the development of management strategies for operations at Lake Powell and Lake Mead, on the Colorado River, under low reservoir conditions.

With current demand for Colorado River water nearly at the river's historical annual flow of 13.5 million-acre feet (MAF) and rising, and government-sponsored scientists anticipating average annual flows to decline 18 percent by 2040, the prospect of ongoing low water conditions for Colorado River reservoirs is a near certainty. The average flow of 60 percent into the system for the past six years is firm evidence of this.

For more than 25-years, government scientists and administrators have warned that shortages would be occurring now. This action is the first to reexamine the flawed operational strategies that have been in place as far back as 1922 when the Colorado River Compact allocated 11 percent more water than the Colorado River has to give.

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Regional Directors Johnson and Gold

Reexamining these two reservoirs is critical, as they constitute more than two-thirds of the system's storage capacity, which with declining inflows and increased demand are proving excessive.

Meanwhile, these two reservoirs can cause the loss of upwards of ten percent of the river's average annual flow due to evaporation—valuable water for critical habitats and water users downstream.

Furthermore, the challenges facing the future operations of these reservoirs go beyond water allocation and storage inefficiencies. Sediment entering Lake Powell will eventually compromise Glen Canyon Dam's safety. Despite recent warnings that this could happen sooner than the 40-year-old estimate of 2060, there has been no comprehensive monitoring or analysis conducted to address this inevitable problem.

Lastly, despite more than \$200 million already spent, no gains have been made to restore the critical habitat for endangered species in Grand Canyon National Park impacted by Glen Canyon Dam's operations. The mandates of the Grand Canyon Protection Act and the Endangered Species Act in particular are being ignored to maintain Lake Powell even though it is proving to be both wasteful and unnecessary for water storage.

It is therefore critical that the Bureau of Reclamation broadly reexamine the operations of these facilities in accordance with preparing an Environmental Impact Statement to address the following:

- 1) Pursue transfers of Lake Powell and Lake Mead storage to groundwater aquifers. 1
- 2) Develop a sustainable sediment management program for Lake Powell and Lake Mead. 2
- 3) Determine the costs and benefits of decommissioning Glen Canyon Dam to restore natural flows through Glen and Grand Canyons. 3
- 4) Identify new water allocation guidelines to reflect the amount of water the Colorado River actually provides, how it should be distributed and what amounts are needed to protect critical habitats in Grand Canyon and elsewhere. 4

A water management crisis is looming on the Colorado River. The federal government, as Water Master, has the responsibility to help avert this. Most of

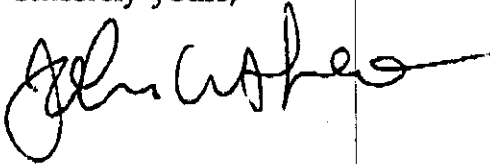


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the issues addressed in the attached report are not new, but continuing to ignore them will only worsen the impacts once the crisis arrives.

Thank you for the opportunity to submit these comments. We look forward to assisting the Bureau of Reclamation in developing this Environmental Impact Statement concerning the protection of water resources from the Colorado River in times of shortage.

Sincerely yours,



John Weisheit  
Conservation Director, Living Rivers  
Colorado Riverkeeper

Attachment: *The One-Dam Solution*  
Submitted July 26, 2005 at Henderson, Nevada

On behalf of the following groups:

A Critical Decision  
Alabama Environmental Council  
Alaska Coalition  
American Wildlands  
Animas Riverkeeper  
Appalachian Forest Coalition  
Audubon Society of Greater Denver  
Ballona Institute  
Black Warrior Riverkeeper  
Blackwater/Nottoway Riverkeeper  
Bluewater Network  
Boulder Regional Group  
Buckeye Forest Council  
Californians for Western Wilderness  
California Save Our Streams Council  
Casco Baykeeper  
Center for Biological Diversity  
Choqueyapu Riverkeeper  
Citizens of Lee Environmental Action Network

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Citizens Progressive Alliance  
Coalition for Jobs and the Environment  
Coastal Law Enforcement Action Network  
Cold Mountain, Cold Rivers  
Coloradans for Utah Wilderness  
Colorado Plateau River Guides  
Colorado White Water Association  
Columbia Riverkeeper  
Conservation Northwest  
Coosa River Basin Initiative  
Devil's Fork Trail Club  
Dogwood Alliance  
Earth Action Network  
Ecology Center  
Electors Concerned about Animas Water  
Endangered Habitats League  
Erie Canalkeeper  
Forest Guardians  
Forest Watch  
Forests Forever  
Foundation for Global Sustainability  
Four Corners School of Outdoor Education  
Free the Planet  
Friends of Living Oregon Waters  
Friends of the Animas River  
Friends of Blackwater Canyon  
Friends of the Earth  
Friends of the Eel River  
Friends of the Estuary at Morro Bay  
Friends of Hurricane Creek  
Friends of the Milwaukee River  
Friends of the Nanticoke River  
Friends of Yosemite Valley  
Gifford Pinchot Task Force  
Glen Canyon Institute  
Goods From The Woods  
Grand Canyon Private Boaters Association  
Grand Riverkeeper  
Great Egg Harbor Watershed Association  
Great Old Broads for Wilderness  
Greenaction for Health and Environmental Justice  
Green Delaware

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Green Party of Utah  
Green Party of York County  
Hells Canyon Preservation Council  
Hudson Riverkeeper  
Hurricane Creekkeeper  
Indiana Forest Alliance  
Inland Empire Waterkeeper  
International Rivers Network  
International Society for Preservations of the Tropical Rainforest  
Johnson County Green Party  
Jumping Frog Research Institute  
Kern Valley River Council  
Kettle Range Conservation Group  
Land Institute  
London Canalkeeper  
Lone Tree Council  
Los Alamos Study Group  
Louisiana Bayoukeeper  
Lower Neuse Riverkeeper  
Maricopa Audubon  
Milwaukee Riverkeeper  
Montana River Action  
Morava Riverkeeper  
National Organization for Rivers  
National Water Center  
New Riverkeeper  
New River Foundation  
Northwest Rafters Association  
Northwoods Wilderness Recovery  
Neuse River Foundation  
Ogeechee-Canoochee Riverkeeper  
Orange County Coastkeeper  
Oregon Natural Desert Association  
Outdoor Adventure River Specialists  
Outward Bound West  
Patapsco Coastkeeper  
Patrick Environmental Awareness Group  
Puerto Rico Coastkeeper  
Raritan Riverkeeper  
Red Rock Forests  
Restore: The North Woods  
Ridgeline & Open Space Coalition

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River Runners for Wilderness  
Riverhawks  
Rocky Mountain Peace and Justice Center  
Russian Riverkeeper  
Sacramento River Preservation Trust  
Salt Creek Watershed Network  
San Diego Coastkeeper  
San Luis Obispo Coastkeeper  
Santa Monica Baykeeper  
Satilla Riverkeeper  
Save the Illinois River  
Siskiyou Project  
Snake River Alliance  
South Riverkeeper  
South Yuba River Citizens League  
Southern Appalachian Forest Coalition  
Southern Utah Wilderness Alliance  
Spirit of Sage Council  
Swan View Coalition  
Taking Responsibility for the Earth and Environment  
Taxpayers for the Animas River  
The Clinch Coalition  
The River Project  
Umpqua Watersheds  
Upper Coosa Riverkeeper  
Upper Neuse Riverkeeper  
Ventura Coastkeeper  
Virginia Forest Watch  
Waterkeepers of Australia  
West/Rhode Riverkeeper  
Western Lake Erie Waterkeeper  
Western Lands Project  
Western Watersheds Project  
Wetlands Action Network  
Wild South  
Wild Virginia  
Wild Wilderness  
Wilderness Watch  
Wildlaw

Defenders of Wildlife ∞ Environmental Defense  
National Wildlife Federation ∞ Pacific Institute ∞ Sierra Club  
Sonoran Institute ∞ The Nature Conservancy

November 30, 2005

Rick Gold, Regional Director  
Bureau of Reclamation, Lower Colorado Region  
Attn: BCOO-1000  
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Boulder City, NV 89006-1470

*Via Mail and Facsimile* (702) 293-8156

Robert Johnson, Regional Director  
Bureau of Reclamation, Upper Colorado Region  
Attn: UC-402  
125 South State Street  
Salt Lake City, UT 84318-1147

*Via Mail and Facsimile* (801) 524-3858

Re: Colorado River Reservoir Operations: Development of Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions

Dear Sirs:

These scoping comments regarding Lower Basin shortage guidelines and coordinated management strategies for Lake Powell and Lake Mead are submitted on behalf of Defenders of Wildlife, Environmental Defense, National Wildlife Federation, Pacific Institute, Sierra Club, Sonoran Institute and The Nature Conservancy. We are glad to see that the Bureau of Reclamation (Reclamation) will be preparing an Environmental Impact Statement (EIS) on Lower Basin shortage guidelines and coordinated management strategies. An EIS will provide Reclamation and the public with analyses of the costs, benefits, and environmental implications of alternative guidelines and strategies. We urge Reclamation to consider a broad range of alternatives for introducing increased flexibility into river management, including that described below in the Conservation Before Shortage proposal (attached). Reclamation may also pursue additional actions to increase operational flexibility, maximize the beneficial use of water within the U.S., or delay the onset of shortage, such as the proposed Drop 2 Reservoir Project.<sup>1</sup> These

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<sup>1</sup> In addition to options already put forward, such as conjunctive reservoir management and water banking in Lake Mead, there are also less complicated measures available to Reclamation. For example, timely issuance of the Decree Accounting Report would ensure timely payback of inadvertent overruns and a smaller burden on system storage.

actions are also within the scope of Reclamation's EIS as they may inform the alternatives or they may be interrelated actions with environmental impacts.

While Reclamation is still developing alternatives for National Environmental Policy Act (NEPA) analysis, we note that the Federal Register notice states that any shortage guidelines are likely to be interim in nature. We urge Reclamation to follow the spirit of NEPA and consider a range of mechanisms as well as content in the EIS. Unlike the Interim Surplus Guidelines, shortage guidelines will be designed to satisfy a long-standing need – management during low reservoir conditions. Shortage guidelines should be designed to guide water management and use now and in the future, as the drought conditions that have prevailed in the Colorado River Basin for the past six years may continue, are certain to return in the future, and could well be more frequent than they have been in the last century. Mechanisms to increase flexibility in the river system and allocate potential shortfalls will thus need to be applicable for the long-term, particularly as the Upper Basin continues to develop its water supply and as water availability in the entire Basin is impacted by extended drought events or by climate change. While changes to shortage management strategies may well be necessary in the future to respond to changing demands associated with human and environmental needs in the Lower Basin, Upper Basin, and Mexico, it is critical that Reclamation establish a lasting framework within which long-term water planning can be conducted.

We understand that representatives of the Colorado River basin states are reluctant to support a permanent shortage policy. To address their concerns, we suggest that Reclamation incorporate a mechanism for the periodic review of the shortage guidelines, perhaps in conjunction with the five-year review of the Long-Range Operating Criteria, to provide an “off-ramp” if the shortage guidelines need to be revised or terminated. Such a review would afford a clear mechanism for changing the guidelines, if necessary, without forcing upon Reclamation the unreasonable burden of re-initiating the time-consuming process of developing new shortage guidelines. Long-term shortage guidelines will permit water users long-term certainty and predictability.

### ***Conservation Before Shortage***

The groups on this letter have already submitted a proposal for consideration as an alternative, entitled “Conservation Before Shortage,” as to the substance of a management strategy during shortage. The intent of the Conservation Before Shortage proposal is to suggest a method by which increased flexibility can be introduced into the management of river resources in order to increase the reliability and predictability of water deliveries under low reservoir conditions. Providing for increased levels of flexibility in river management will be critical to meeting the demands of both human and environmental water users in the future, particularly as Upper Basin use and the impacts of climate change decrease overall water availability in the Colorado River system.

The Conservation Before Shortage proposal would dramatically reduce the risk of large-scale, involuntary shortages to Lower Basin users and to Mexico, by implementing a series of increasing conservation targets linked to the declining elevation of Lake Mead. The required amount of water would be conserved by offering to pay Colorado River water users, located

anywhere in the Lower Colorado River basin or in Mexico, to voluntarily and temporarily forbear water use. Funds to pay for conservation could come from federal appropriations as well as from a surcharge applied to all Lower Basin water users and consumers of power generated at the Hoover Dam.

Conservation Before Shortage offers many benefits, such as increasing predictability for water users, protecting the environment, improving power production, and reducing the need for new water projects. The Conservation Before Shortage is a proactive approach that protects Colorado River water users and the environment from abrupt reductions in the amount of water available. Conservation Before Shortage will significantly reduce the likelihood of involuntary and uncompensated shortages in the Lower Basin at levels above 500,000 acre-feet (the approximate level at which a shortage exceeds the ability of the Arizona Water Bank to readily buffer the shortage).

In addition, fish, wildlife, and natural areas on the Colorado River do not, for the most part, have their own water rights. As such, they are “last in line” for water, and are the most vulnerable of all water users to drought. Conservation Before Shortage reduces overall water consumption in dry years, decreasing the risk of shortages that could disproportionately impact environmental uses in the future. Also, by increasing protection against shortage for water users that have inflexible demands, it will allow some water to remain in the river for the wildlife that needs it to survive while still meeting critical human needs.

Third, consistent maintenance of reservoir storage and power head above baseline conditions in average to low flow conditions will eliminate the risk that elevations at Lake Mead will drop below minimum power head, improving the reliability of power production. Lastly, the introduction of flexibility into Colorado River management will allow those who are willing and able to reduce their water use to be compensated for doing so, and avoid the need to impose reductions in water use on those who cannot. By eliminating the potential for water shortages where they cannot easily be accommodated, this policy will limit the need for costly new water projects to protect water users.

### ***Mexico and Shortage***

Article 10 of the 1944 Treaty with Mexico grants the International Boundary and Water Commission/ Comisión Internacional de Límites y Aguas (IBWC/CILA) the discretion to determine surplus and shortage flows to Mexico. It is therefore beyond the scope of the current process to set shortage criteria for Mexico.

If, however, in the development of shortage guidelines and management strategies, Reclamation moves beyond defining a shortage on the Lower Colorado River as referred to in *Arizona v. California*<sup>2</sup> and either defines drought (whether explicitly or implicitly) as referred to in the 1944 Water Treaty or affects the U.S. delivery obligation to Mexico, we urge Reclamation to initiate discussion and negotiation with and among the International Boundary and Water Commission, the Comisión Internacional de Límites y Aguas, and other appropriate entities in the U.S. and Mexico as soon as possible. Prompt inclusion of these parties will help ensure

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<sup>2</sup> 376 U.S. 340 (1964).

meaningful participation in the guidelines and strategies and proper consideration of their environmental impacts in the EIS.

In closing, thank you for this opportunity to offer the Conservation Before Shortage proposal and additional comments. Conservation Before Shortage would create a predictable, rational system for water users and distribute the costs between water and power users and the federal government. We are continuing to revise and refine the Conservation Before Shortage alternative. As Reclamation develops alternatives and a draft EIS, we intend to submit our revised proposal and supporting materials based on additional modeling and new information in any proposals from the basin states and others. Please contact us if you have any questions.

Sincerely,

/s/ Kara Gillon

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## Conservation Before Shortage

### Proposed Shortage Criteria for Colorado River Operations

#### I. Background/Context

The effects of a multi-year drought have had a tremendous impact on storage in the Colorado River basin. Although above-average precipitation in the Lower Basin has led to small recoveries in system storage over the winter of 2004-2005, total system storage on the Colorado River has decreased by more than 40% over the past several years. As a result, there is a real possibility that the Secretary of the Interior will declare an actual shortage on the lower Colorado River in the near future. A shortage declaration would reduce deliveries to the Central Arizona Project (CAP) and to southern Nevada (which are among the first in line for cuts in the event of a shortage).

The surface elevation of Lake Mead dropped more than 80 feet from the end of 2000 through the end of 2004; Lake Powell dropped by more than 115 feet in this period. The Bureau of Reclamation's (Reclamation's) Riverware model of the Colorado, based on historic flow records, projects that reservoir levels at Lake Powell could head quickly towards the minimum power pool if the drought continues, and reservoir levels at Lake Mead could fall below the elevation of southern Nevada's upper intakes or remain in a long-term decline that will be difficult to reverse until Powell begins to re-fill. In addition, the model predicts that even if precipitation levels returned to average today, it could take 10-20 years for the Colorado River reservoir system to recover fully (during which time continued development of water supplies in the Upper Basin will further shrink available supplies). As a result, it is time to begin a long-delayed discussion about the method for defining, mitigating, and sharing shortages on the Colorado River.

Although the Secretary of the Department of the Interior (Secretary) has the authority to declare a shortage on the Colorado River, thereby reducing deliveries to some Lower Colorado River contractors, to date no criteria exist for determining when such a shortage will be declared. In June 2005, the Department of the Interior (DOI) noticed its intent to begin a public scoping process for the development of "Lower Basin Shortage Guidelines," (70 Fed.Reg. 34794). In 2004, DOI initiated a series of technical meetings with the Colorado Basin states to discuss drought issues, and the seven Basin states met frequently among themselves throughout the winter of 2004-2005 to discuss potential shortage criteria. Non-governmental organizations (NGOs) were not invited to participate in these discussions; however, several NGOs with interest and expertise in Colorado River issues began meeting over the winter to develop an alternative shortage proposal. These organizations met with Reclamation staff to review the results of technical modeling runs developed in support of the states' discussions, and Reclamation has provided additional modeling data to these interested NGOs in response to their inquiries and to evaluate potential shortage criteria.

These meetings led to the development of this document, which proposes an approach to the management of shortages in the Lower Colorado through the implementation of a tiered conservation program that is tied to the surface elevation of Lake Mead.

## II. Rationale for this Proposal

The basic rationale behind this "Conservation Before Shortage" proposal is that shortage criteria should attempt to maximize the reliability and predictability of water deliveries on the Lower Colorado by introducing increased flexibility into the management of river resources when shortage conditions are imminent.

### *Principles:*

- It is desirable to protect the elevation of Lake Mead at 1050 feet (the current minimum power pool) to the extent feasible without implementing shortages that would involuntarily curtail deliveries to Lower Basin users.
- It is desirable to protect the elevation of Lake Mead at no less than 1000 feet under any condition in order to protect Southern Nevada Water Authority's lower intake structures, as well as the new minimum power pool if proposed low-pressure turbines are installed at Hoover Dam.
- It is desirable to avoid shortages in the Lower Basin above 500,000 acre-feet whenever possible (the approximate level at which shortages would cut into CAP's deliveries beyond those currently utilized for water banking).
- It is preferable for Lower Basin water users to voluntarily engage in predictable, small-scale reductions in use – and receive compensation for those reductions – rather than face large-scale, involuntary, and uncompensated disruptions in water deliveries that could cut into municipal and agricultural water supplies and create unmitigated economic impacts.
- Minimizing large, forced disruptions to normal deliveries as a result of shortage declarations will minimize the threat of unmitigated environmental impacts in the Lower Colorado River and Delta as a result of significantly decreased deliveries to low-priority users and corresponding return flows that support environmental values.
- Market-based programs, with low transaction costs and appropriate mitigation of third-party impacts, can offer a reasonable mechanism for minimizing the risk and impacts of shortage.<sup>1</sup>
- Users of Colorado River water in Mexico may wish to participate in short-term conservation agreements, to reduce the probability of larger, uncompensated future reductions due to a declaration of shortage under the 1944 Treaty with Mexico.
- Water can be obtained from agricultural users in the United States, and could be obtained in Mexico with an appropriate agreement,<sup>2</sup> through the use of voluntary, market-based forbearance programs. Economic studies of Lower Basin agricultural use, as well as recent leases of water from farmers in this area, suggest that there is a large volume of water in the basin that could be obtained for \$20 - 100 per acre-foot (see Figure 9).

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<sup>1</sup> Some 4.5 million acre-feet of Colorado River water are used to irrigate crops in the Lower Basin states, and more than 1 million acre-feet are used to irrigate crops in Mexico. Conservation of between 200,000 and 600,000 acre-feet through the use of part-year fallowing programs, dry year options, or other similar arrangements would constitute only 4-11% of total Lower Basin agricultural use in the United States and Mexico. (However, as even small-scale reductions in agricultural water use may have third-party impacts, some portion of funds accrued for the purchase of water should be set aside to support community economic development in affected areas.) Conversely, without these small-scale reductions, water users would likely be faced with the need to curtail large amounts of water quite abruptly, with significant economic consequences. (Shortages of nearly 2 million acre-feet in a single year are predicted by Reclamation's model when the 1000 feet elevation is protected at Lake Mead without conservation measures).

<sup>2</sup> Such an agreement would likely require a new Minute to the 1944 Treaty with Mexico. Fallowing agreements in Mexico would have to be administered by the appropriate authorities.

### **III. Conservation Before Shortage Policy**

The "Conservation Before Shortage" policy essentially consists of two sets of criteria tied to projected elevations at Lake Mead on January 1 of a given year, according to the Bureau of Reclamation's August 24-month study. These criteria consist of three "conservation triggers," which impose progressively increasing conservation goals as lake levels drop from 1100 feet to 1050 feet, and a "shortage trigger," which imposes involuntary shortages in the Lower Basin as are necessary to accomplish absolute protection of Lake Mead at a minimum elevation of 1000 feet.

#### **(A) Normal Conditions**

In years when the 24-month study projects the elevation of Lake Mead on January 1 will be at or above 1100 feet, the Secretary of the Interior (Secretary) shall determine a Normal or Surplus (as defined by the Interim Surplus Guidelines) year.

#### **(B) Conservation Triggers**

##### ***First Conservation Trigger: Below 1100 Feet at Lake Mead***

In years when the 24-month study projects the elevation of Lake Mead on January 1 will be at or above 1075 feet but below 1100 feet, the Secretary will seek to conserve 200,000 acre-feet of water. On behalf of the Secretary, Reclamation will preferentially seek to achieve this 200,000 acre-feet of savings by means of voluntary conservation agreements (including forbearance agreements) with Lower Basin delivery-contract holders. Additionally, Reclamation will, to the extent permitted by law and through the appropriate authorities, seek forbearance or other such water conservation agreements with Colorado River users in Mexico. In the case of such agreements, U.S. deliveries of Colorado River water to Mexico at the Northerly International Boundary will be reduced by the total volume indicated by these binational agreements.

##### ***Second Conservation Trigger: Below 1075 Feet at Lake Mead***

In years when the 24-month study projects that the elevation of Lake Mead on January 1 will be at or above 1050 feet but below 1075 feet, the Secretary will seek to conserve 400,000 acre-feet of water. Reclamation will preferentially seek to achieve this 400,000 acre-feet of savings by means of voluntary conservation agreements (including forbearance agreements) with Lower Basin delivery-contract holders. Additionally, Reclamation will, to the extent permitted by law and through the appropriate authorities, seek forbearance or other such water conservation agreements with Colorado River users in Mexico. In the case of such agreements, U.S. deliveries of Colorado River water to Mexico at the Northerly International Boundary will be reduced by the total volume indicated by these binational agreements.

##### ***Third Conservation Trigger: Below 1050 Feet at Lake Mead***

In years when the 24-month study projects that the elevation of Lake Mead on January 1 will be below 1050 feet (minimum power pool absent the installation of low-pressure turbines), the Secretary will seek to conserve 600,000 acre-feet of water. Reclamation will preferentially seek to achieve this 600,000 acre-feet of savings by means of voluntary conservation agreements (including forbearance agreements) with Lower Basin delivery-contract holders. Additionally, Reclamation will, to the extent permitted by law and through the appropriate authorities, seek

forbearance or other such water conservation agreements with Colorado River users in Mexico. In the case of such agreements, U.S. deliveries of Colorado River water to Mexico at the Northernly International Boundary will be reduced by the total volume indicated by these binational agreements.

### **(C) Shortage Trigger**

#### ***Absolute Protection of Lake Mead Elevation 1000 Feet***

The Secretary shall not permit the elevation of Lake Mead to drop below elevation 1000 feet (minimum low-pressure power pool and Southern Nevada Water Authority intakes) at any time. Shortages to Colorado River contractors shall be implemented in the Lower Basin and in Mexico<sup>3</sup> to the extent necessary to prevent such declines.

### **(D) Funding Mechanisms**

In recognition of the federal government's continuing national obligation to replace the MODE bypass flow to Mexico, 43 U.S.C. § 1571(c), the federal government will assume responsibility for the cost of all conservation agreements up to the volume of the bypass flow that the Secretary has not otherwise replaced in the year that a conservation trigger becomes effective. Given the national interest in minimizing both environmental impacts and economic disruptions resulting from the involuntary curtailment of deliveries to Colorado River users, the federal government would also assume responsibility for half of the cost of any additional agreements required to generate conserved water for the "Conservation Before Shortage" policy, pursuant to the Secretary's authority under the Reclamation States Emergency Drought Relief Act of 1991 (Drought Relief Act),<sup>4</sup> conservation authorities in the Farm Bill, or other appropriate authority that may be granted by Congress.

To the extent that conservation of water is required beyond that to be funded by the federal government in the manner described above, conservation activities would be funded through one or both of the following:

#### ***Power Pool Protection Fund***

The priority of water used for power generation is considered to be tertiary to that of irrigation and domestic use under the Law of the River. As a result, Hoover and Glen Canyon Dams are operated to maintain deliveries to water users regardless of the impact of declining reservoir levels on power production. However, one of the more significant corollary benefits of the conservation program described in this proposal, beyond the primary benefit of protecting water users from involuntary and uncompensated shortages, would be the preservation of power production at Hoover Dam at higher levels and for longer durations by reducing deliveries for irrigation, domestic use, and underground storage in a manner that would not otherwise occur under current practices.

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<sup>3</sup> In the event that a shortage is declared and is also considered to be an extraordinary drought under the 1944 Treaty, deliveries to Mexico will be reduced in the same proportion as consumptive uses in the United States are reduced.

<sup>4</sup> The Reclamation States Emergency Drought Relief Act of 1991, 43 U.S.C. §§ 2201 *et seq.*, provides the Secretary of Interior the authority to purchase water "from willing sellers, including, but not limited to, water made available by Federal Reclamation project contractors through conservation or other means with respect to which the seller has reduced the consumption of water." 43 U.S.C. § 2211(c).

Given the significant loss in generating capacity that has already occurred as a result of declines in power pool elevations,<sup>5</sup> and the even more significant impacts that would be associated with a total loss of generating capacity, the implementation of "Conservation Before Shortage" would clearly benefit power purchasers and consumers. As such, it would seem reasonable to derive a percentage of the funding for the proposed voluntary conservation program from a modest, conditional surcharge on power rates under existing or renewed contracts for hydropower produced at Hoover Dam as a means to mitigate against the loss of power head and stave off the complete loss of power production at Hoover Dam.<sup>6</sup> This surcharge could be imposed in years when Reclamation's August 24-month study projects that the storage in Lake Mead falls below fifty percent of its active capacity. The revenues generated by this surcharge could be collected in a "power pool protection fund," to be maintained by Reclamation for expenditure when and if lake elevations reach a conservation "trigger."

### *Temporary Cost Recovery/Delivery Surcharges*

Pursuant to the Drought Relief Act, the Secretary of Interior is authorized to engage in water purchases from willing sellers and to seek cost recovery for water delivered from the users of that water under temporary contracts. 43 U.S.C. §2211(c), §2212(a),(c). Reclamation could utilize this authority to purchase water through temporary, part-year following arrangements, dry-year options, or similar mechanisms, and would seek cost recovery from Colorado River users. In recognition of the Basin-wide interest in alleviating the impacts of drought and reducing uncertainty on the Lower Colorado, and in the interests of encouraging extraordinary conservation to minimize the likelihood of significant delivery interruptions, the cost of some portion of conservation agreements, including those with Colorado River users in Mexico, could be funded through a conservation surcharge imposed on a per-acre-foot basis on all Lower Basin contractors.

### *Anticipated Cost of Conservation*

Current short-term leasing agreements between farmers and irrigation districts or municipal water agencies, as well as recent research on the net returns per acre-foot of irrigation water, suggest that "Conservation Before Shortage" water could be obtained for \$20 - 100 per acre-foot. To ensure that such water remains available in times of increased scarcity (when market forces might otherwise increase the cost), the Secretary should be granted the authority to enter into "Conservation Before Shortage option agreements," similar to existing dry-year leasing agreements/interruptible supply agreements that have been enacted within the basin states.

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<sup>5</sup> Largely as a result of declining reservoir elevations, power production at Hoover and Glen Canyon has declined steadily since the onset of drought conditions in the Colorado River Basin. Annual power production at Hoover fell from 5,697 gigawatt-hours (GWh) in 1998 to 4,094 GWh in 2003, according to Western Area Power Administration (WAPA) Annual Reports, 1998 - 2003. A portion of hydropower revenues currently supports the two Upper Basin endangered fish recovery programs, the Glen Canyon Adaptive Management Program, and the Colorado River Salinity Control Program; alternative sources of revenue should be identified and implemented to fully fund these recovery programs. The Department of the Interior should also work proactively with WAPA to identify alternative sources of power for those Indian tribes that have experienced power shortages, or drastic increases in power costs, due to the declining production associated with falling reservoir levels.

<sup>6</sup> The rates for power produced at Hoover Dam have increased as reservoir levels and power production have declined, but may still remain well below open market rates. Although annual revenues tend to vary from year to year, revenues from Hoover Dam power production have generally been in the range of \$50 million annually.

#### **IV. Analysis: Benefits of Conservation Before Shortage Policy**

To date, actual shortage criteria for the Colorado River have not been defined. For the purposes of comparison, a 'baseline' was defined as the current operating conditions for the Colorado River, with the addition of a policy requiring the absolute protection of Lake Mead at 1000 feet (that is, Hoover Dam would not release any water to cause the elevation of Lake Mead to drop below 1000 feet). The baseline policy does *not* provide for the implementation of conservation measures. These 'baseline' conditions, reflecting current operating conditions, are depicted in the following figures.

Analysis of the "Conservation Before Shortage" policy suggests that this policy could produce significant benefits for Basin water users by:

- Consistently maintaining reservoir storage and power head above baseline conditions in average to low flow conditions, resulting in increased power production and improved power revenues;
- Significantly reducing the likelihood of involuntary, uncompensated shortages in the Lower Basin and corresponding, unmitigated economic impacts;
- Significantly reducing the likelihood of involuntary and uncompensated shortages in the Lower Basin at levels above 500,000 acre-feet (the approximate level at which a shortage imposed by the Secretary would cut into CAP deliveries, by exceeding the ability of the Arizona Water Bank to readily buffer the shortage); and
- Eliminating the risk that elevations at Lake Mead will drop below minimum power head, improving the reliability of power production and associated revenues.

The analyses below show the impacts of the "Conservation Before Shortage" (CBS) policy on reservoir operations based on historic flows in the Colorado River Basin.

##### ***Modeling Assumptions***

The proposed "Conservation Before Shortage" policy was modeled using Reclamation's Riverware model, which is based on historical records of flows in the Colorado River Basin over approximately the past century. Conservation triggers, as described in Section III, were implemented at 1100 feet, 1075 feet and 1050 feet, with the assumption that required measures to reduce Lower Basin consumptive use by 200,000, 400,000, and 600,000 acre-feet, respectively, would be implemented in years when the January 1 elevation at Lake Mead is below the triggers. An absolute protection trigger was implemented at Lake Mead elevation 1000 feet, with releases from Lake Mead to meet delivery obligations to Lower Basin users reduced as necessary to maintain that level. To avoid even modestly under-predicting the elevations of Mead and Powell pools, particularly in the near term, this modeling has assumed that the schedule of Upper Basin depletions will effectively begin with the last reported actual level for CY 2000, will increase at a

slower rate than projected by the Upper Colorado River Basin Commission through CY 2009, and will increase at the rate projected by the Commission thereafter.<sup>7</sup>

For purposes of the model, the minimum objective release out of Lake Powell was assumed to be 8.23 maf per year (reflecting current operating conditions).<sup>8</sup> Alternative scenarios for conjunctive management were not modeled, and the protection of a minimum power pool at Lake Powell was not incorporated into this proposal; either or both of these assumptions would affect the elevation of Lake Powell. Model runs used end-of-year 2004 elevations at Lake Mead and Lake Powell to establish initial conditions for 2005, and were run through year 2025.

### ***Protection of Lake Mead***

Figures 1 -3 show the potential value of implementing the CBS policy, under a range of average to extremely low flow conditions. **These and following figures show that the CBS policy would greatly benefit the elevation of Lake Mead.**

As shown in Figure 1 below, under average conditions, the CBS policy would maintain reservoir elevations at Mead approximately 30 feet above the baseline policy. As shown by Figures 2 and 3, the CBS policy would significantly reduce the rate of decline in the lower 25<sup>th</sup> and in the very low 10<sup>th</sup> percentile reservoir elevations for Mead and maintain even these lower reservoir elevations above the 1000 foot protection level. Model runs showed essentially no impact of the CBS on the higher 90<sup>th</sup> percentile Mead elevations, so no figure is provided.

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<sup>7</sup> See "Estimates of Future Depletions in the Upper Division States," Upper Colorado River Commission Memorandum, December 23, 1999. This schedule predicts a 440,000 acre-foot increase in Upper Basin depletions between 2000 and 2010 and a 542,000 acre-foot increase over actual CY2000 depletions, as reported in Reclamation's Consumptive Uses and Losses 1996-2000 report (see Tables UC-1 & UC-6). Actual increases in Upper Basin depletions water may not keep pace with this schedule, because water that would otherwise have been utilized has been and may continue to be physically unavailable for depletion in the Upper Basin due to drought conditions, and in other cases, projects that were proposed to have been constructed during this period may not yet have been or will not be completed through CY 2009. A slower rate of increase from 2000 to 2009 was modeled by subtracting four increments of 100,000 acre-feet from the Commission's schedule from CY 2005 to 2009. This and all other Riverware modeling exercises should be revised to reflect actual increases in Upper Basin depletions as soon as more current information becomes available.

<sup>8</sup> This assumption is not intended to endorse or reject the Secretary's current use of 8.23 maf as the minimum release objective for Powell, the protection of a minimum power pool at Powell, or proposals for the conjunctive management of the combined storage of Mead and Powell. Alternative release scenarios should be incorporated into the modeling for this proposal as they are developed. As a general matter, none of the assumptions used in this proposal should be construed as an interpretation of the 1922 Colorado River Compact, the 1944 Treaty with Mexico, or any other aspect of the Law of the River.

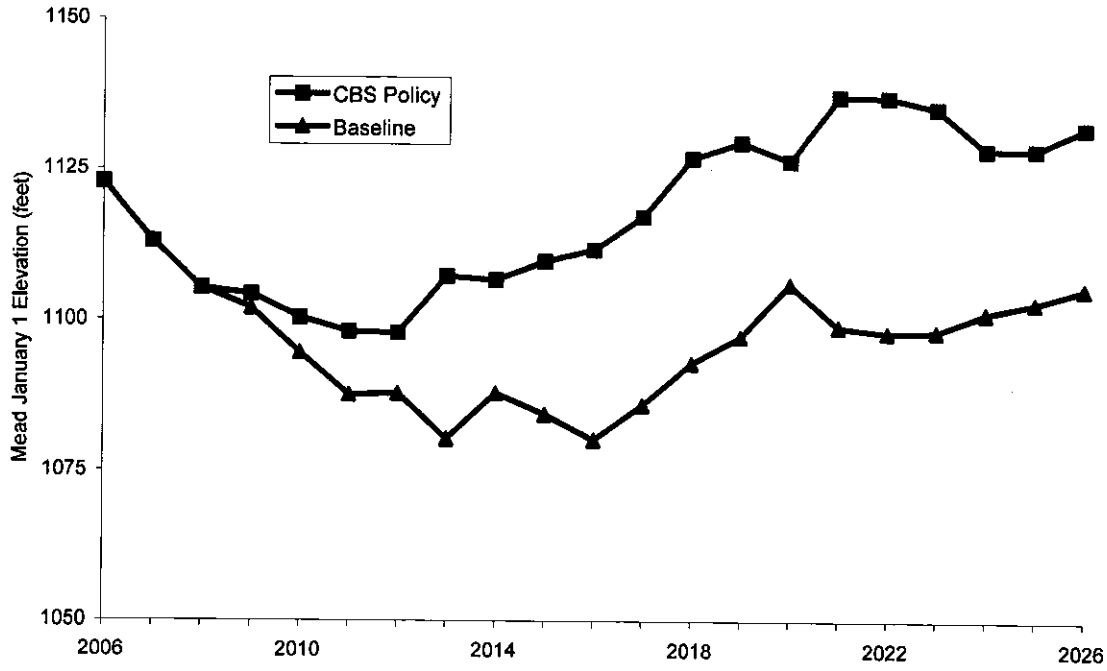


Figure 1. Impact of CBS policy on elevations at Lake Mead, at 50<sup>th</sup> percentile elevation.

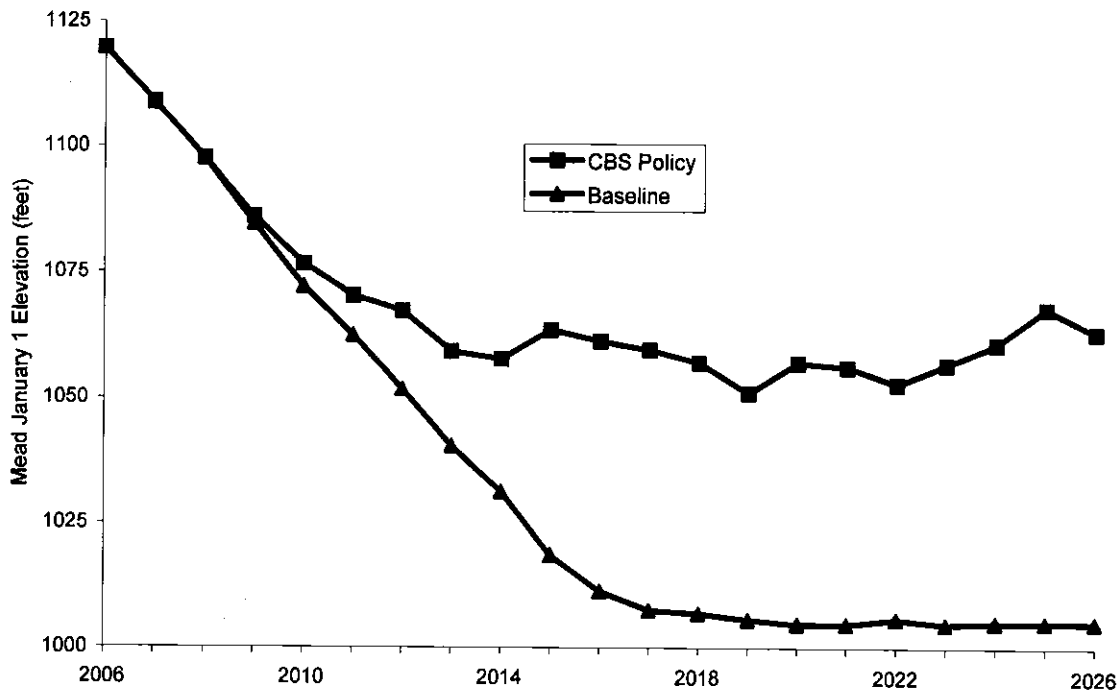


Figure 2. Impact of CBS policy on elevations at Lake Mead, at 25<sup>th</sup> percentile elevation.



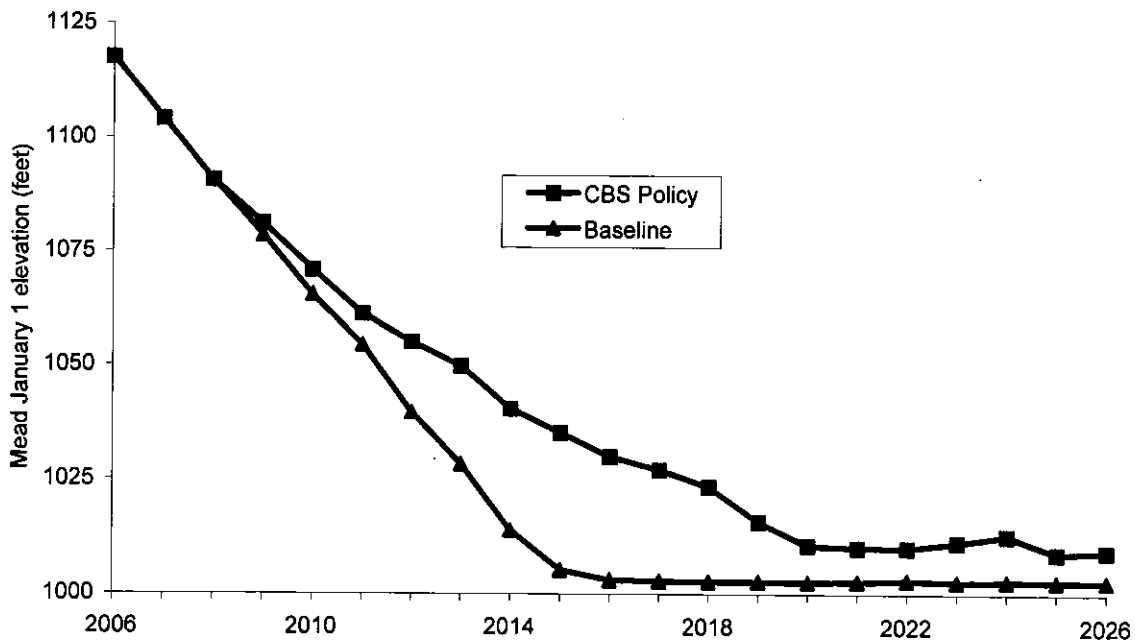


Figure 3. Impact of CBS policy on Lake Mead elevation, at 10<sup>th</sup> percentile elevation.

### Probability of Shortages

As noted above, a primary goal of the CBS policy is to significantly reduce the probability of an involuntary, uncompensated shortage in excess of 500,000 acre-feet (the approximate level at which CAP deliveries would be reduced beyond that currently utilized for water banking). As shown in Figure 4, below, the probability of shortages exceeding 500,000 acre-feet is reduced to 5% or less through the entire modeled period under the CBS policy. By contrast, the probability of shortage under the baseline policy rapidly approaches 30% during this same period. Furthermore, as shown in Figure 5, below, the CBS policy reduces the probability of any involuntary shortage by approximately 20% over the next 20 years.

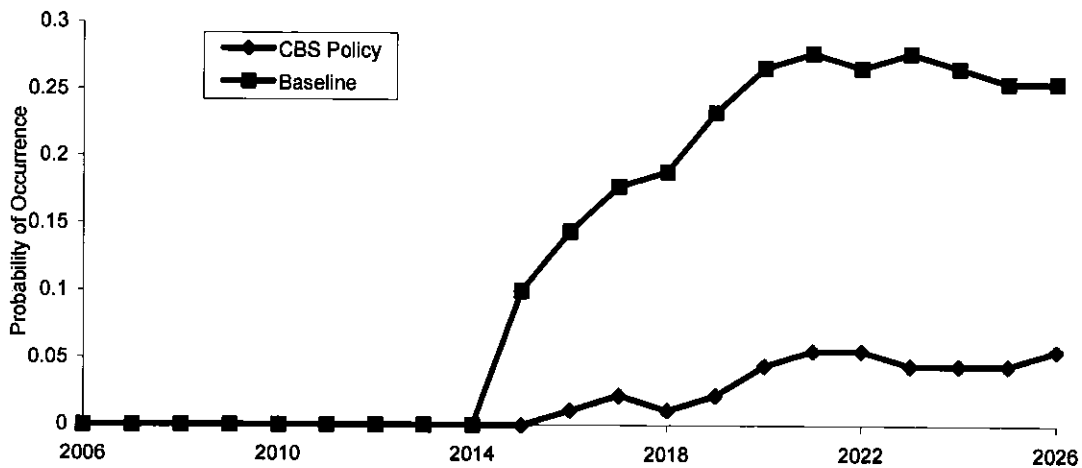


Figure 4. Impact of CBS policy on probability of involuntary Lower Basin shortage greater than 500,000 acre-feet.

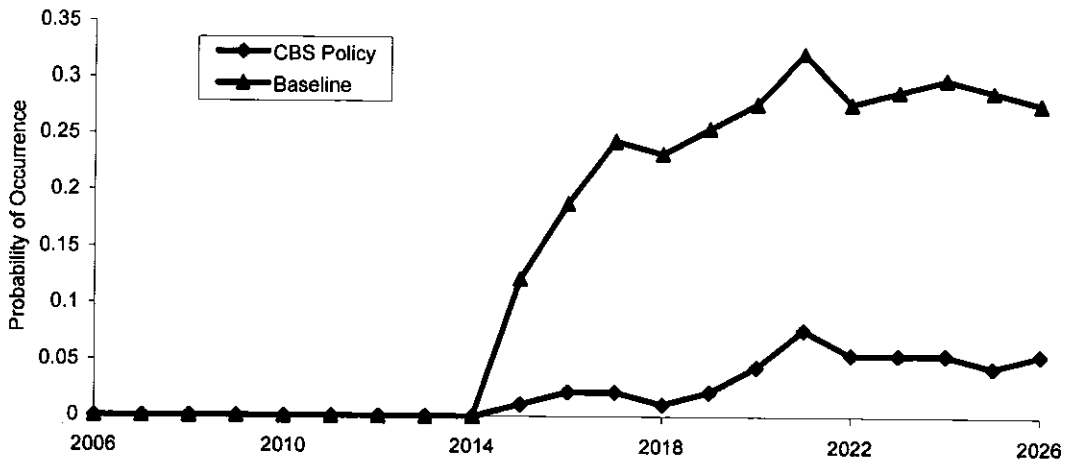


Figure 5. Impact of CBS policy on probability of any involuntary shortage in the Lower Basin.

**Probability of Reaching Conservation Triggers**

Figures 6 - 8, below, show the relative probability of reaching or exceeding any of the proposed conservation triggers at 1100 feet, 1075 feet and 1050 feet. As one might expect, the probability of reaching the first two triggers is highest in the earlier years of the modeled period, while the probability of reaching the third trigger is higher towards the end of the modeled period. However, the probability of reaching and continuing to remain below a given trigger for an extended period of time appears to be low because of the conservation measures tied to the triggers. For obvious reasons, trigger levels are most likely to be reached under low or very low flow conditions, and are rarely (if ever) reached under high flow conditions.

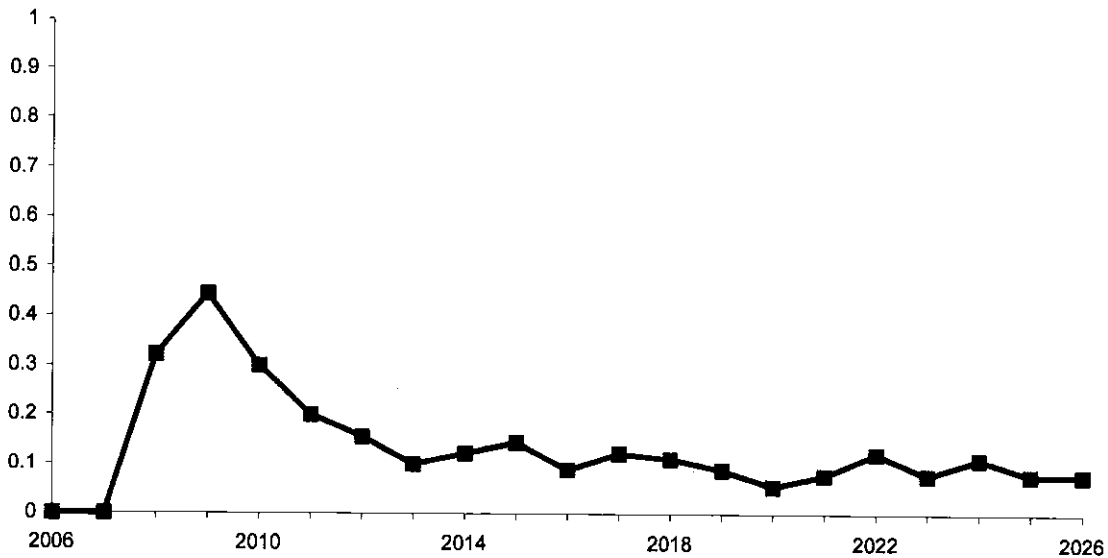


Figure 6. Probability of Lake Mead January 1 elevation occurring in a bounded range of 1100 feet to 1075 feet, with CBS policy in place.

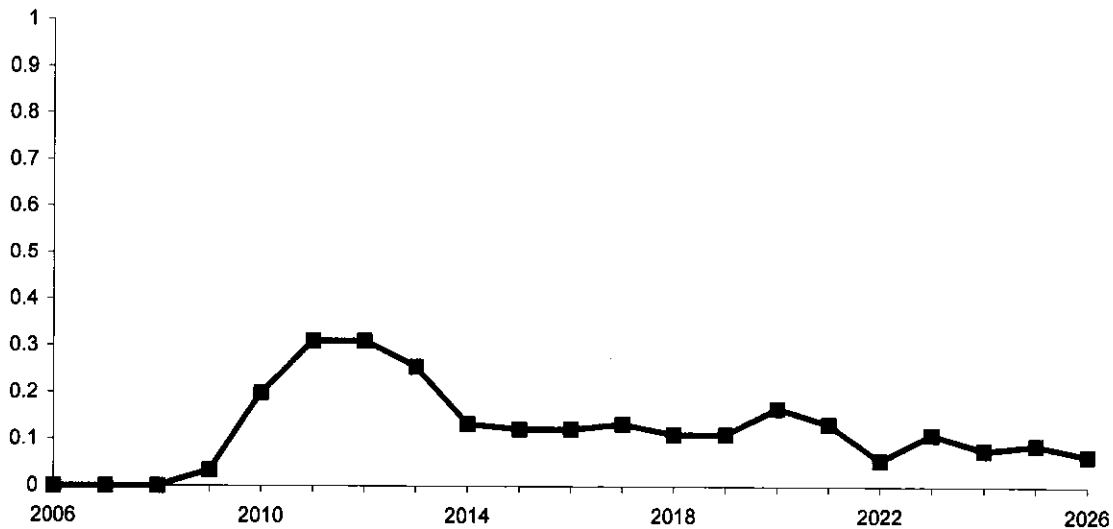


Figure 7. Probability of Lake Mead January 1 elevation occurring in a bounded range of 1075 feet to 1050 feet, with CBS policy in place.

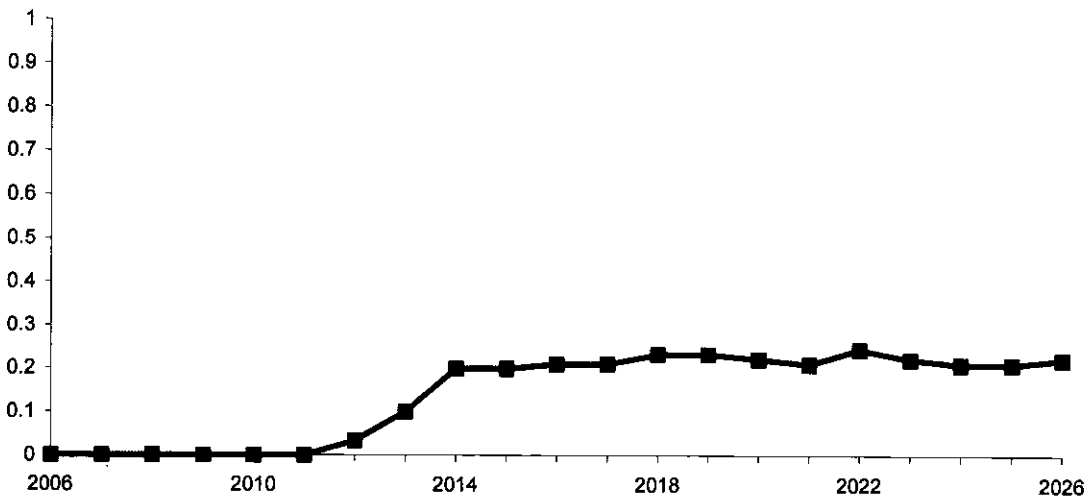


Figure 8. Probability of Lake Mead January 1 elevation occurring below 1050 feet, with CBS policy in place.

**Cost of Implementing Conservation Triggers**

The cost of implementing conservation triggers is directly related to the cost of obtaining water using the proposed voluntary, market-based conservation mechanisms. Recent purchases of water from farmers in the Lower Basin, as well as analysis of agricultural production in this area, suggest that there is a substantial volume of water used for irrigation which could potentially be obtained on a temporary basis for \$20 - 100 per acre-foot. For example, in 2004, the Imperial Irrigation District acquired water from its farmers for less than \$60 per acre-foot.

As shown in Figure 9, a recent economic study by Environmental Defense into the profits returned by field crops suggests that slightly more than 2.3 million acre-feet of agricultural water

is being used by Lower Basin farmers in California and Arizona to produce profits of less than \$100 per acre-foot; more than one million acre-feet of agricultural water is being used to produce profits of less than \$20 per acre-foot. (Figures are based on the average volume of water applied to produce a crop unit and market rates for each crop, less costs of production.)

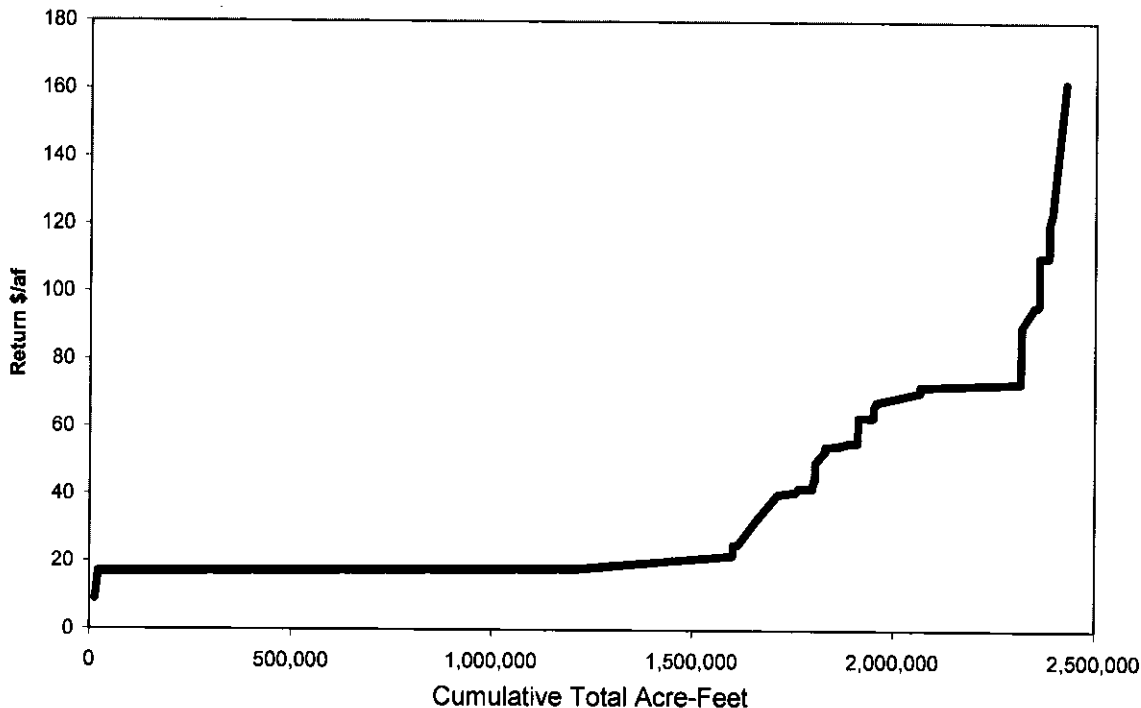


Figure 9. Profits per acre-foot returned on Colorado River water used in the production of selected crops in the Lower Colorado River Basin.<sup>9</sup>

While these figures do not necessarily reflect the amount at which any given water user would be willing to take part in a part-year fallowing program or agree to a dry-year option, they do suggest that if an open, market-based approach is used to identify potential participants, a number of water users in the Lower Basin would probably be willing to temporarily reduce or forgo the use of water for agricultural production in a price range between \$20 and \$100 per acre-foot (as the sale of water in this range would produce equal or greater monetary returns to the user than the use of water to irrigate crops).

In order to mitigate third-party impacts of fallowing, the federal government could establish a drought economic adjustment fund that would provide economic development grants to affected communities in the counties of origin. These funds preferentially would go to established county-based farm labor assistance programs to the extent that such programs exist, and could include lump sum payments to displaced workers based on a percentage of foregone annual income.

<sup>9</sup> This graph has not been published elsewhere. For methodology, please contact Jennifer Pitt at [jpitt@environmentaldefense.org](mailto:jpitt@environmentaldefense.org). A study using similar methodology, but limited to crop values in the Wellton-Mohawk Irrigation and Drainage District, has been published previously (Pitt et al., *New Water for the Colorado River: Replacing the Bypass Flow*, 6 U. Denver Water L. Rev. 68 (2002)). The study found a range of prices similar to that represented here for profits derived from water use in that area.

Using these assumptions for water acquisition costs, Table 1 suggests the approximate range of costs for implementing each of the conservation triggers under the CBS policy.

*Table 1. Approximate federal and power/water user cost of implementation of CBS policy conservation trigger levels (assumes that water can be acquired temporarily for \$20 - \$100/acre-foot, and that the annual federal bypass obligation of 110,000 acre-feet has not otherwise been satisfied).*

Trigger	Conservation required	Federal obligation (bypass + 50%)	Federal cost (millions)	Remaining Obligation	Water user cost (millions)	Power Surcharge (millions)	User cost per af (all Lower Basin users)
1075-1100	200,000 af	155,000 af	\$3 - \$15.4	45,000 af	\$0.45 - \$2.3	\$0.45 - \$2.3	\$0.06 - \$0.30
1050-1075	400,000 af	255,000 af	\$5 - \$25.4	145,000 af	\$1.5 - \$7.3	\$1.5 - \$7.3	\$0.19 - \$0.97
Below 1050	600,000 af	355,000 af	\$7 - \$35.4	245,000 af	\$2.5 - \$12.3	\$2.5 - \$12.3	\$0.33 - \$1.63

***Cost of Not Implementing “Conservation Before Shortage” Policy***

Although the “Conservation Before Shortage” policy would impose notable costs on water and power users, and on taxpayers generally, these costs should be compared with the much larger financial costs that would occur if the Secretary were to impose involuntary, uncompensated shortages, as well as the costs due to the lack of certainty and reliability that would exist without the CBS policy. The recent drought and decrease in power production at both Hoover Dam and Glen Canyon Dam point to the dramatic costs imposed by the loss of reservoir storage.

If Lake Mead falls to 1050 feet, power rates will need to be increased to an approximate composite rate of 2.31 cents/kWh, which is a 44.3% increase over current rates. Replacement power purchases would be (depending on the user) 2.9 to 3.7 times the Hoover rate. In FY03, replacement power may have cost customers an additional \$24 million.



November 29, 2005

Bureau of Reclamation  
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RE: Lower Colorado River Basin Shortage Criteria and Guidelines for Reservoir Operation.

Dear Sirs:

Thank you for the opportunity to provide scoping comments on the development of Lower Colorado River Basin Shortage Guidelines. The comments below are supplemental to the verbal comments I provided at the Henderson, NV scoping meeting.

This endeavor to develop criteria and plans for operation of the Lower Basin during times of shortage is a very important project with far-reaching implications. Based on the Bureau's projections for the future, the Colorado River will be in a condition of virtually permanent shortage as the Upper Basin States take more and more of their share of the River's flow. By definition, a shortage in the Lower Basin occurs when the Upper Basin is unable to supply the stipulated volume of water and the reservoir levels in the Lower Basin fall below a defined level. Hence, the Upper Basin States must be part of the discussion and the shortage plan. If, as projected, the future of the River is one of almost permanent shortage then the criteria and management plans you are developing will be the blueprint for management of River. This effort is much more than just a plan to regulate reservoir levels in times of shortage. Managing reservoir levels is really an exercise in managing downstream uses and demand for water. Although some will consider it heresy, the interests of society as a whole should be the paramount consideration, rather than the simple criteria of whose ancestors got to the courthouse first to file claims.

The final plan should be designed to minimize the long term negative impacts of decreased water deliveries. This might be best accomplished by providing for the sale, lease or trade of water rights among the seven States occupying the Basin. In this way any shortages will be voluntary, but with agreed upon compensation. I'm sure that established interests will be opposed to this idea, but it is already working on a limited scale in the Lower Basin and should logically be expanded to include the entire Basin.

The final plan should address the issue of alternative sources. For example, if water users turn to groundwater, especially that near the river or a tributary they are just taking the same water but through a different straw. If water is taken from basins which don't drain into the river then there will be impacts in those basins, which should be mitigated. In many instances groundwater is not a renewable resource and shifting from Colorado River water (a renewable resource) to groundwater (a non-renewable resource), merely delays a problem or shifts the problem to another segment of society and the environment upon which we all depend. Many will consider this suggestion to be beyond the purview

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of this planning effort but I believe that the water needs of the West must be managed cooperatively and as a total system, not just one source at a time.

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All legitimate stakeholders need to have a place at the table as the Plan is developed and negotiated. In addition to the seven States this would include the environmental community, which is concerned about the biological health of the River and its floodplain, as well as major power consumers who will be affected by changes in electric power output of Hoover and Glen Canyon Dams. I understand how difficult it is to deal with a large group of stakeholders and obtain agreement but it is essential in this case that it be done.

6

The presence of Las Vegas adjacent to Lake Mead and dependent upon the Lake for most of its water supply logically suggests that maintaining the water level in Lake Mead should take precedence over maintaining a given level in Lake Powell. The domestic water needs of a population of almost two million people, seems to me to be more important than the recreation values of boating on Lake Powell.

7

Sincerely,  
John E. Hiatt  
Conservation Chair  
Red Rock Audubon Society  
8180 Placid Street  
Las Vegas, NV 89123  
702-361-1171





**ENVIRONMENTAL DEFENSE**

finding the ways that work

February 1, 2006

Bob Johnson, Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
Attention: BCOO-1000  
PO Box 61470  
Boulder City, Nevada 89006-1470

via facsimile: (702) 293-8156

**Re: Development of Management Strategies for Lake Powell and Lake Mead under Low Reservoir Conditions**

Dear Mr. Johnson:

Environmental Defense has already submitted comments (along with several other organizations) regarding the development of Lower Colorado River Basin shortage guidelines, and this letter supplements our previous comments. Specifically, we are concerned that the Bureau of Reclamation is considering the initiation of multiple, independent NEPA analyses on numerous proposals for Colorado River management and mechanisms to develop "intentionally created surplus," including Development of Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions as well as Bypass Flow replacement, operation of the Yuma Desalting Plant, new regulatory storage facilities, forbearance agreements, and more, rather than evaluating these proposals collectively.

The language of the National Environmental Policy Act is clear. Proposals or parts of proposals which are related to each other closely enough to be, in effect, a single course of action shall be evaluated in a single impact statement (40 CFR 1502.4). To determine the scope of environmental impact statements, agencies shall consider... Actions (other than unconnected single actions) which may be:

- (1) Connected actions, which means that they are closely related and therefore should be discussed in the same Impact statement. Actions are connected if they:

(i) Automatically trigger other actions which may require environmental impact Statements. (ii) Cannot or will not proceed unless other actions are taken previously or simultaneously. (iii) Are interdependent parts of a larger action and depend on the larger action for their justification.


(2) Cumulative actions, which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement.

(3) Similar actions, which when viewed with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography. An agency may wish to analyze these actions in the same impact statement. It should do so when the best way to assess adequately the combined impacts of similar actions or reasonable alternatives to such actions is to treat them in a single impact statement. (40 CFR 1508.25)

In order to assess fully impacts of the numerous and varied approaches to managing the Colorado River system in times of limited water supply, analysis under NEPA needs to compare the impacts of all available options, including coordinated reservoir management, shortage trigger elevations, and any actions taken to generate intentionally created surplus. Not only will the different mechanisms for intentionally created surplus water have very different costs and environmental impacts (and thus must be compared against each other and not in independent environmental impact analyses), but they can be expected to result in "savings" of different volumes of water. The volume of intentionally created surplus water will bear on the probabilities that water in reservoir storage will be within defined "bands" or shortage trigger elevations.

We recognize that management of the Colorado River system is complex, perhaps never more so than in times of water shortage. However, the stakes in the development of management strategies for Lake Powell and Lake Mead under low reservoir conditions are high, not only for water users, but also for the environment. We encourage you to ensure that analysis of alternatives under the NEPA is complete.

Sincerely,



Jennifer Pitt

Public Comment Forum

1 SALT LAKE CITY, UTAH, November 1, 2005, 6:00 P.M.

19 MR. WECHSLER: Good, we get the delight of spelling  
20 my last name. Jim Wechsler, that's W-e-c-h-s-l-e-r.  
21 And I'm with the Sierra Club, but I'm part of a group  
22 that, Sierra is part of a group including Defender's of  
23 Wildlife, Environmental Defense, National Wildlife  
24 Federation, Pacific Institute, and the Senoras (sic) 1  
25 that have already submitted a proposal called  
1 Conservation Before Shortage. We're really pleased that  
2 an EIS is being done, and with a complete analysis of 2  
3 the cost and benefits and the environmental  
4 implications.

5 We also think that the shortage criteria should be  
6 crafted for the long haul, and implemented as a 3  
7 permanent policy. The recent drought is quite possibly  
8 only a preview of what's to come, given what we have  
9 learned from the long term record of the Colorado River,  
10 from what we know about long term drought periods in  
11 North America which appear to be the orders of  
12 centuries, and the probability of climate change to  
13 reduce inflows over the next several decades. And I  
14 don't know, is everybody in this room familiar with the  
15 CBS proposal? Because there's no reason for me to  
16 mention why it's good if everybody is familiar. All  
17 right.

18 I've only got one page, so it's not bad.

19           The Conservation Before Shortage proposal is much  
20           like some other proposals that are being considered by  
21           the states. It has triggers at which point there would  
22           be conservation within the lower basin. One of the  
23           differences is that the conservation is to be sort of  
24           prearranged voluntary conservation and compensated.

25           Monetary compensation for say a rancher who was  
1           conserving water or a farmer. Some of its benefits are  
2           reduced need for new water projects that introduces  
3           flexibility into Colorado River management and will  
4           allow those who are willing and able to reduce their  
5           usage to be compensated for doing so and avoids needing  
6           to impose restrictions in water use on those who cannot.

7           By eliminating the potential for water shortage is  
8           when they cannot easily be accommodated. This policy  
9           will limit the need for costly new projects. Of course  
10          the point that's -- would cause a group of environmental  
11          groups to come up with a proposal is we would like to  
12          see protection for the environment. The fish wildlife  
13          and natural areas on the Colorado do not, for the most  
14          part, have their own water rights, they are last in line  
15          for water. And they're the most vulnerable of all the  
16          water users to a drought. The Conservation Before  
17          Shortage proposal reduces overall water consumption in  
18          dry years, decreasing the risk of shortage that can  
19          disproportionately impact environmental uses in the  
20          future, and also by increasing protection against  
21          shortage for water users that have inflexible demands.

22           It will allow some water to stay there for the

23 fish and wildlife that need it to survive, and still  
24 meet critical human needs. It improves power  
25 production, consistent maintenance of the reservoir  
1 storage and power head above baseline conditions in  
2 average to low flow conditions. It will result in  
3 increased power production, improve power revenues as  
4 well as elimination of the risk if the elevations at  
5 Lake Mead will drop below the minimum power head, and  
6 thereby will improve the reliability of power  
7 protection. It gives an increased certainty for water  
8 users. And it will significantly reduce the likelihood  
9 of involuntary and uncompensated shortages in the lower  
10 basins at levels above 500,000 acre feet, which is the  
11 approximate level at which a shortage exceeds the  
12 ability of the Arizona water bank to buffer. I think  
13 the Conservation Before Shortage proposal is interesting  
14 because it offers an active anticipatory approach that  
15 protects Colorado River water users and the environment  
16 from abrupt reductions in the amount of water available.

17 The proposal would create a predictable rational  
18 system for water users and distribute the costs between  
19 water and power users and the federal government.

20 And finally, CBS, the Conservation Before Shortage  
21 proposal, includes Mexican water users in the solution,  
22 as they could be the ones conserving the water, and  
23 thereby reducing the need for conservation among US  
24 water users.

25 Finally, what's not in the typed up comments, is I

1       don't really expect our proposal to be adopted whole  
2       cloth, but I think it's an example, has a number of good  
3       things in it, is an example of the way we would like to  
4       see this approached, and hope it will be approached, and  
5       think that maybe when developing the alternatives it may  
6       be worth it to take some parts from one set of  
7       suggestions and some parts from others to make a final  
8       plan.

1 JENNIFER PITT: Hi. I'm Jennifer  
2 Pitt -- J-e-n-n-i-f-e-r P-i-t-t -- with  
3 Environmental Defense, and I have a few comments.

4 First of all, a full NEPA analysis is  
5 called for. I think we know that's coming. We  
6 want to see a complete analysis of costs, benefits,  
7 and environmental implications of each alternative.  
8 Also, we'd like to see these shortage criteria be  
9 enacted permanently. We think that permanent  
10 guidelines really would meet the nature of the  
11 scale of drought that -- the time scale that we're  
12 dealing with, and we've heard suggestions that the  
13 shortage criteria might be promulgated as  
14 coterminous with the surplus guidelines, which I  
15 think takes us out to 2015 or 2016, and I think  
16 that's probably inappropriate given what we know  
17 about projected water supply and demands going into  
18 the future.

19 I also wanted to talk a little bit about a  
20 proposal that Environmental Defense has developed  
21 in cooperation with another -- a number of other  
22 nonprofits. It's called Conservation Before  
23 Shortage -- and I've actually brought a stack of  
24 copies if anyone is interested. I think we've  
25 already submitted it to Reclamation for

G-2012

1 consideration. I just wanted to describe it very  
2 briefly and run through some of the benefits that  
3 we see of this kind of approach to developing  
4 shortage guidelines; and, specifically, this  
5 Conservation Before Shortage proposal addresses the  
6 need to look at how water is distributed in the  
7 Lower Basin. It doesn't address some of the other  
8 issues that Reclamation is seeking comment on right  
9 now.

10 To give you a very brief description of  
11 the program, it is a program of voluntary and  
12 compensated water conservation where the volume of  
13 conserved water is tied to lake elevations at Mead  
14 and increases -- in other words, conservation  
15 increases -- as water in storage decreases.

16 Funding for this program would be a combination of  
17 federal outlays and fees imposed on water and power  
18 users in the Lower Basin. So just quickly to run  
19 through some of the benefits that we see of this  
20 kind of approach -- and I have four main points to  
21 make . . .

22 Number 1, this would reduce the need for  
23 new storage projects. The introduction of  
24 flexibility into Colorado River management would  
25 allow those who are willing and able to reduce

G-2012



1 water use to be compensated for doing so and to  
2 avoid the need to impose reductions in water use  
3 for those who cannot. By eliminating the potential  
4 for water shortages where they cannot easily be  
5 accommodated, this policy would limit the need for  
6 costly new water projects to protect water users  
7 where they cannot tolerate interruptions in their  
8 water supplies. I'm thinking particularly about  
9 urban water users who are the juniors in the Lower  
10 Basin.

11           Number 2, we think that there are some  
12 benefits here in this proposal for the environment.  
13 Fish, wildlife, and natural areas on the Colorado  
14 River don't, for the most part, have their own  
15 water rights. As such, they are essentially last  
16 in line for water, and they're the most vulnerable  
17 of all water users to drought. The Conservation  
18 Before Shortage proposal would reduce overall water  
19 consumption in dry years, decreasing the risk of  
20 shortages that could disproportionately impact  
21 environmental uses in the future. Also, by  
22 increasing protection against shortage for water  
23 users who have inflexible demands, it will allow  
24 some water to remain in the river for wildlife that  
25 needs it to survive while still meeting critical

G-2012

1 human needs.

2           Number 3, we think there's a benefit here  
3 for improved power production. Consistent  
4 maintenance of reservoir storage and power head  
5 above baseline conditions in average to low-flow  
6 conditions would result in increased power  
7 production and improved power revenues, as well as  
8 the elimination of the risk that elevations at Mead  
9 would drop below the minimum power head, improving  
10 the reliability of power production.

11           And, finally, and perhaps most  
12 importantly, we think this proposal would increase  
13 certainty for water users. Conservation Before  
14 Shortage will significantly reduce the likelihood  
15 of involuntary and uncompensated shortages in the  
16 Lower Basin, particularly at levels of half a  
17 million acre feet, which is the level at which  
18 shortage exceeds the ability of the Arizona Water  
19 Bank to buffer shortages.

20           Conservation Before Shortage offers a  
21 proactive approach. It protects Colorado River  
22 water users and the environment from abrupt  
23 reductions in the amount of water available. You  
24 know, it's hard to reach a consensus when someone  
25 has to lose -- and this is really more a comment

G-2012

1 directed at Lower Basin water users. The current  
2 deadlock between the states reflects a zero-sum  
3 approach to river management, where one state or  
4 one water user is expected to shoulder the full  
5 burden of a drought by suffering a large and  
6 uncompensated shortage, while others are  
7 unaffected. Conservation Before Shortage suggests  
8 a more cooperative and even-handed approach to  
9 coping with drought. Conservation Before Shortage  
10 would create a predictable and rational system for  
11 water users and distribute the costs between water  
12 and power users and the federal government. And,  
13 finally, it could -- or we propose it could include  
14 Mexican water users in the solution, thereby  
15 reducing the need for conservation among U.S. water  
16 users. Thank you.

17 (There were no further comments.)  
18  
19  
20  
21  
22  
23  
24  
25

G-2012

19 MR. CULP: Thanks very much. And thanks for the  
20 opportunity to comment tonight. My name is Peter Culp,  
21 spelled C-U-L-P. I'm an attorney with the Sonoran Institute  
22 in Phoenix, Arizona. Sonoran Institute is a nonprofit  
23 organization that works throughout the intermountain west on  
24 issues related to land use and water policy.

25 I'm here today on behalf of a number of  
1 nongovernmental organizations that are working on issues  
2 related to the Colorado River. That includes Defenders of  
3 Wildlife, Environmental Defense, the National Wildlife  
4 Federation, Pacific Institute, Sierra Club, the Sonoran  
5 Institute, and the Nature Conservancy. All of these  
6 organizations take quite different approaches to the work  
7 that we do on the Colorado River, but we've come together on  
8 this issue because of the importance of the issue of  
9 shortage sharing on the river. And we all recognize that  
10 the combination of drought, the continued development of  
11 uses in the upper basin, Lower Basin, and Mexico, and  
12 potential climate change in the future mean that the  
13 Colorado River has probably entered a new era of management.

14 As an initial matter, I just wanted to make two  
15 comments with regard to the process that the Bureau is  
16 undertaking and also the outcomes we'll be getting to.  
17 First, we believe that a full NEPA analysis is called for  
18 with the shortage criteria. That would include complete  
19 analysis of the costs and benefits, environmental  
20 implications of each, the alternatives that are to be  
21 considered.

22                   Secondly, we think that the shortage criteria  
23 that the Bureau is going to be developed should really be  
24 crafted for the long haul and should hopefully be  
25 implemented as a permanent policy. The reason for that, as  
1 I think we recognize that -- and I think we all need to  
2 recognize, that the drought that we're in today is really  
3 just giving us a preview of the situation which we're all  
4 going to face in the future, particularly given what we  
5 know, given the long-term hydrologic record of the Colorado  
6 River and also the probability that climate change may  
7 reduce the amount of flow that's available to water users in  
8 the future.

9                   With that said, the organizations I'm here for  
10 tonight have been monitoring the discussions between the  
11 seven basin states for some time, and although we are not  
12 invited to participate directly in those discussions, a  
13 number of us have a strong interest in them and began  
14 meeting over this winter to try and develop an alternative  
15 shortage proposal that we hope would be constructed for the  
16 basin states process. We meet with reclamation staff  
17 several times to review the results of the technical  
18 modeling runs that have been done for the river using the  
19 Riverware model, and Reclamation has quite generously  
20 provided us some additional help in doing some modeling in  
21 order for us to evaluate potential shortage criteria. All  
22 that modeling work led to the development of a shortage  
23 proposal that we're calling Conservation Before Shortage.  
24 In essence, what the proposal does -- and I won't get into

25 excruciating detail here -- but it's basically proposing a  
1 set of voluntary market-based reductions in Lower Basin use  
2 that would be tied to specific tiers of lake levels in Lake  
3 Mead. As originally modeled, the proposal was that around  
4 1100 feet the Secretary would seek about 200,000 acre feet  
5 of reduction in Lower Basin use through voluntary payments  
6 to folks that forebear use of water; at 1075, 400,000 acre  
7 feet; at 1050, 600,000 acre feet. And for argument's sake  
8 we had assumed protection of 1,000 feet in Lake Mead with  
9 involuntary shortages being imposed after that point.

10           What we were suggesting was that this mechanism  
11 would be paid for via sort of a shortage mitigation fund  
12 that would involve federal contributions plus surcharges on  
13 water delivery and hydropower under low reservoir  
14 conditions, the result being that, instead of having  
15 involuntary shortages which would cause economic impacts to  
16 folks that have inflexible demand, we would instead have  
17 voluntary compensated shortages in advance of any  
18 involuntary loss of water and hopefully achieve a sort of a  
19 reduction in the probability of shortage, also delay the  
20 onset of shortage, and limit the extent of shortage in order  
21 to prevent any really significant losses in the Lower Basin  
22 to Lower Basin users.

23           The detail of that proposal is in the comment  
24 letter that we submitted in July to the Bureau. I've got  
25 brought some extra copies of it today tonight if folks would  
1 be interested. We're also in the process of developing a  
2 slightly revised version of that proposal based on what we  
3 learned through the Arizona stakeholders' process which we

4 will be submitting to the Bureau before November 30.

5           Regardless we're not really suggesting that the  
6 precise numbers conservation levels or the lake levels that  
7 we've suggested in the proposal are necessarily the right  
8 ones. We're also not suggesting that protecting 1,000 feet  
9 is the right decision or any other level. And note that  
10 actually the Arizona stakeholder proposal includes a tiered  
11 shortage strategy of their own which imposes progressively  
12 larger shortages in the Lower Basin as need drops past 1075.

13           That may be the right way to administer  
14 shortages. That's not what we're saying. The purpose of  
15 what we're doing is really to suggest and hopefully  
16 demonstrate some of the benefits that could be associated  
17 with the inclusion of a voluntary market-based mechanism for  
18 conservation as a part of a shortage strategy. And I hope  
19 we make the case that such a strategy should be part of  
20 whatever shortage criteria are ultimately adopted by the  
21 Bureau.

22           There are essentially three primary benefits in  
23 our view associated with doing a voluntary conservation  
24 strategy in advance of imposing the shortage. Number 1, it  
25 produces increased certainty for water users in the Lower  
1 Basin because it significantly reduces the likelihood of  
2 involuntary and uncompensated shortages in the Lower Basin.  
3 It also allows potentially for the inclusion of Mexico in  
4 that conservation strategy which reduces the need for  
5 conservation among the U.S. water users.

6           Secondly, it creates some benefits related to

7 power protection because it allows us to maintain reservoir  
8 storage in power head at higher levels than we would see  
9 under average to low flow conditions. That essentially  
10 eliminates the risk that Lake Mead drops below its minimum  
11 power head and thus increases the reliability of power  
12 production for the Lower Basin. Probably most importantly  
13 it creates some increased flexibility in river management  
14 because it allows those who are willing and able to reduce  
15 water use to be compensated for doing so during low flow  
16 conditions. And that has a couple of pretty important  
17 benefits.

18 First, it avoids the need to impose reduction in  
19 water use on the water users who have inflexible demands.  
20 And by eliminating the potential for shortages where they  
21 cannot easily be accommodated, that will hopefully eliminate  
22 the need for costly new projects to be undertaken to protect  
23 those folks that have those inflexible demands and thus  
24 cannot tolerate any interruption in water supply.

25 Secondly, it protects a series of environmental  
1 values because I think, as we all know, the fish and  
2 wildlife and environmental values on the river don't  
3 currently have their own water rights. As a result, they're  
4 essentially last in line for water and are thus the most  
5 vulnerable of all the users to the drought.

6 By reducing the overall water consumption in dry  
7 years, we can decrease the risk of larger shortages that  
8 will disproportionately hit environmental values throughout  
9 the basin. And finally by increasing the protection for  
10 folks that really have inflexible demand, particularly the



11 municipalities, we can reduce -- we can make it possible for  
12 some water to remain in the river to provide the needed  
13 support for those environmental values.

14           The overall intent is to provide sort of a  
15 proactive approach that will protect Colorado River water  
16 users and the environment from abrupt reductions in the  
17 amount of water that's available. The states, as we all  
18 know, are working very, very hard to try and come up with a  
19 consensus proposal on shortage criteria, conjunctive  
20 management, and other issues. I'd like to suggest though is  
21 that's it's very hard to reach consensus when somebody has  
22 to agree to lose. And I think in many ways the current  
23 deadlock within the states about how to approach shortage  
24 change may reflect in some sense that there is sort of  
25 zero-sum approach in which someone is ultimately going to  
1 bear the brunt of a large involuntary uncompensated  
2 shortage.

3           Our intent is to suggest that maybe by  
4 introducing some increased flexibility through the  
5 introduction of the market mechanism that allows people to  
6 voluntarily reduce use, we can create a more cooperative and  
7 also predictable system for water users and distribute the  
8 cost of the shortages between water and power users and the  
9 Federal Government.

10           So anyway I do have a few copies of our original  
11 proposal. There will be another one being submitted on or  
12 before November 30, and I appreciate the opportunity to  
13 speak tonight. Thank you.

1 HENDERSON, NEVADA, TUESDAY, NOVEMBER 8, 2005, 6:00 PM

17 MR. HIATT: I'm John Hiatt, H-I-A-T-T, and this  
18 opportunity to address shortage criteria is an  
19 historic opportunity to maybe relook at some of the  
20 things that have been done on the Colorado River  
21 system, starting in the 1920s.

22 The bureau's own projections suggest  
23 that shortage will be the norm in the future on the  
24 Colorado River, so therefore, what we are doing here  
25 with addressing shortage criteria is really looking  
1 at the future rules as to how we will divvy up the  
2 Colorado River.

3 It's very important that we not repeat  
4 the mistakes that were made in the 1920s, when it was  
5 done originally, so this is really the opportunity to  
6 do that.

7 One of the things that should happen  
8 here is that the range of interests at the table  
9 during these discussions should be expanded. In the  
10 1920s it was only the states at the table. At this  
11 point in time environmental interests need to be  
12 included as well and there can certainly be  
13 responsible environmentalists who can and would  
14 participate in terms of the procedures and in terms  
15 of deciding how the river should be divvied up. One  
16 needs to look at the impacts on users, and that  
17 includes wildlife, that includes every possible user  
18 of water and decisions made that will have the least

1

2

19 permanent or long-term impact. That would mean in  
20 terms of farmers, people growing wheat would be  
21 shorted before people growing oranges or dates or  
22 something that requires a long lead time to produce a  
23 crop.

24 We also need to look at the impacts of  
25 the shortage criteria on off-river resources because  
1 one of the things that will happen is when water from  
2 the river is not available, people will use ground  
3 water and that ground water in some cases will come  
4 from sources which drain directly into the river. In  
5 other cases it will come from places which drain into  
6 other basins, but we need to look at what will happen  
7 when people go to alternative sources, and those  
8 impacts may take place as much as, or more than 100  
9 miles away from the river itself, but they are going  
10 to be significant.

11 We need to look at the impact on some  
12 of the minor drainages in the lower basin as a result  
13 of what happens here in terms of shortage criteria.  
14 That would be things like the Virgin River, the Muddy  
15 River, and even as far away as the Amargosa River,  
16 which doesn't connect in any way to the Colorado, but  
17 ground water pumping to make up shortage on the  
18 Colorado River system could dramatically impact that  
19 very minor drainage, but one that is vital in its  
20 land area.

21 In terms of management of the lake,  
22 Lake Powell and Lake Mead, that's in some ways

23 relatively simple because it's really two big  
24 interests there. There's recreation, power  
25 generation. Wildlife interests are significant, but  
1 not nearly as great. And there are certainly  
2 mathematic formulas to figure out the most efficient  
3 way to generate power between the two reservoirs to  
4 maximize the amount of power generated.

5 Las Vegas is in a unique position in  
6 this scheme of things because it's the only large  
7 city on the river and it both takes water out of the  
8 river and it puts effluent back into the river. So  
9 therefore not only does it affect the river  
10 volumetrically, but it affects it water quality-wise,  
11 and that's very important.

12 So as we deal with shortage criteria  
13 and less water in the river, water quality becomes of  
14 greater and greater importance. Salinity, which has  
15 been on the back-burner for the last two decades,  
16 needs to come forward as a major. The more saline  
17 the water, the more water is required for irrigation.  
18 So it means that water used downstream will be less  
19 efficiently used. So all of the upstream people who  
20 put water into the river and all of the upstream  
21 sources of saline water need to be examined so that  
22 salinity and water quality are addressed as key  
23 components in terms of river management. This was  
24 started many years ago and essentially fell by the  
25 wayside.

1                   The other thing that needs to be looked  
2                   at is how states can trade water with one another.  
3                   This has been something which basically hasn't  
4                   happened until recently. There's still a number of  
5                   obstacles to the free trade of water between the  
6                   states, but in the final analysis as we are  
7                   addressing an over-committed river, we will have to  
8                   address how water can be traded between those who  
9                   need it, who need it most, and those who maybe can  
10                  find either other alternatives or can find that other  
11                  economic activities and other economic benefits, for  
12                  instance money, can be traded for water.

13                   That's all.

1

February 21, 2006

Regional Director  
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P.O. Box 61470  
Boulder City, NV 89006-1470

*Via E-Mail and Facsimile [strategies@lc.usbr.gov](mailto:strategies@lc.usbr.gov) and (702) 293-8156*

Regional Director  
Bureau of Reclamation, Upper Colorado Region  
Attn: UC-402  
125 South State Street  
Salt Lake City, UT 84318-1147

*Via E-Mail and Facsimile [strategies@uc.usbr.gov](mailto:strategies@uc.usbr.gov) and (801) 524-3858*

Re: Colorado River Reservoir Operations: Development of Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions

Dear Mr. Johnson and Mr. Gold:

The seven Colorado River Basin States recently submitted to the Department of the Interior a "Preliminary Proposal Regarding Colorado River Interim Operations." Before the Bureau of Reclamation (Reclamation) issues a scoping report in March, please consider these comments regarding the scope of NEPA analysis for Colorado River Reservoir Operations. Carrying all or part of the proposal forward as an alternative in the NEPA process will change the scope of Reclamation's proposed action as originally announced in the Federal Register. 70 Fed. Reg. 57322 (Sept. 30, 2005).

The Notice of Intent (NOI) stated that Reclamation was considering "(1) Specific guidelines that will identify those circumstances under which the Department of the Interior (Department) would reduce annual water deliveries from Lake Mead to the Lower Basin States below the 7.5 million acre-feet (maf) Lower Basin apportionment and the manner in which those deliveries would be reduced, and (2) coordinated management strategies for the operation of Lake Powell and Lake Mead." *Id.*

The Preliminary Proposal includes shortage guidelines and management strategies, but also includes recommendations regarding the Interim Surplus Guidelines and introduces new programs such as system efficiencies, extraordinary conservation and augmentation projects including tributary conservation, introduction of non-Colorado River System water and exchange

of non-Colorado River System water, and proposes the Intentionally Created Surplus program.

The scoping period is an “early and open” process for determining the scope of the issues to be addressed in the EIS and for identifying significant issues related to the action. 40 C.F.R. §§ 1501.7, 1508.25. Given the breadth and complexity of the Preliminary Proposal, Defenders urges Reclamation to reevaluate the scope of its proposed action to ensure that its environmental impact statement (EIS) encompasses the full suite of actions, alternatives and impacts. “Agencies shall use the criteria for scope to determine which proposal(s) shall be the subject of a particular statement. Proposals or parts of proposals which are related to each other closely enough to be, in effect, a single course of action shall be evaluated in a single impact statement.” *Id.* § 1502.4(a). If all or part of the Preliminary Proposal are connected actions<sup>1</sup>, or if Reclamation carries forward parts of the Proposal that do not fall within the action proposed in the September NOI, Reclamation must prepare one EIS and must rescope.

We appreciate that Reclamation has set out a firm timeline for completing this NEPA process. Any delay caused by offering another opportunity for public input on significant issues and impacts triggered by the basin states’ proposal will be insignificant in comparison to delay triggered by introducing new actions or alternatives during the draft EIS comment period rather than the scoping period. Reclamation has put forth great effort in making its development of shortage guidelines an informative and open process – the very purpose of NEPA – and we encourage you to continue this effort.

Sincerely,

/s/

Kara Gillon  
Staff Attorney

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<sup>1</sup> “To determine the scope of environmental impact statements, agencies shall consider 3 types of actions . . . They include: (a) Actions (other than unconnected single actions) which may be: (1) Connected actions, which means that they are closely related and therefore should be discussed in the same impact statement. Actions are connected if they: (i) Automatically trigger other actions which may require environmental impact statements. (ii) Cannot or will not proceed unless other actions are taken previously or simultaneously. (iii) Are interdependent parts of a larger action and depend on the larger action for their justification. (2) Cumulative actions . . . (3) Similar actions . . .” *Id.* § 1508.25(a).

**Friends of Lake Powell  
P.O. Box 7007  
Page, Arizona 86040  
928 645-0229**

August 29, 2005

Darryl Beckmann, Deputy Regional Director  
Bureau of Reclamation  
Upper Colorado Region,  
Attention: UC-402, 125 South State  
Street, Salt Lake City, Utah 84318-1147

**Subject: Colorado River Reservoir Operations - Development of Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions**

Dear Mr. Beckmann,

The Friends of Lake Powell appreciate the opportunity to provide comments on the development of management strategies for the operation of Lake Powell and Lake Mead under low water conditions.

Our organization recognizes the importance of maintaining the existing water infrastructures along the Colorado River system and efficiently operating them for the purposes of complying with provisions of the Colorado River Compact, the Upper Colorado River Basin Compact, and the Mexican Water Treaty, while balancing the stakeholder needs of water, power, recreational and environmental end users.

The current drought, however, has underscored the vulnerability of the existing system and created the need to develop low water criteria so as to proactively conserve water resources and more equitably share the burden of drought between the two water basins, as subject to the limitations contained in the Colorado River Compact.

The desired end result would be the creation of objective operating criteria for 'surplus', 'normal' and 'drought' determinations at both Lake Powell and Lake Mead. The development of criteria based on lake levels would facilitate efficient and equitable reservoir operations, would improve stakeholder planning, and would minimize political posturing in the Annual Operating Process (AOP).

We encourage the Secretary of the Interior to seek increased operating flexibility for water storage resources along the Colorado River when shortage conditions are imminent.

Although the existing operating guidelines for Lake Powell and Lake Mead have functioned reasonably well over the past few decades, we note that inefficiencies do exist and that:



- A major objective of the 1922 compact was to provide for the equitable division and apportionment of the use of the waters of the Colorado River system.
- There are presently no provisions in place for equalizing the level of Lake Powell with Lake Mead during times of drought (subject to the provisions and limitations contained in the Colorado River Compact) even though equalizing the level of Lake Mead with Lake Powell during times of surplus is a stated objective in the long range operating criteria for the two reservoirs.
- The Upper Basin apparently receives no credit for water deliveries made in excess of 8.23 million acre-feet (maf) on a 10-year rolling average.
- The inflexibility of the minimum 8.23 maf water release schedule from Lake Powell potentially jeopardizes the interests of the Upper Basin during drought periods and, additionally, can fail to protect power and recreational interests at Lake Powell.
- The existing reservoir operating criteria have resulted in large fluctuations in the level of Lake Powell, which have created multi-million dollar impacts to recreational users, concessionaires, and resource managers.
- It is prudent now to develop proactive low water management practices to soften the impact of water shortages and more equitably share the impact of drought between the two water basins, as allowed under existing water contract obligations.
- New objective measures are needed at Lake Powell to minimize the risk of losing power generation and recreational access.
- The evaporative losses at Lake Powell are lower than Lake Mead

Therefore, we urge the Secretary of the Interior to consider new management strategies for low water ‘drought’ conditions. Specifically, we request the Secretary to:

1. Develop new reservoir management criteria that are flexible and responsive to variations in hydrologic conditions. 1
2. Develop annual Upper Basin water delivery schedules that uphold the flexible intent of the 1922 Compact and allow modulated releases less than 8.23 maf from Glen Canyon Dam during declared ‘drought’ conditions. 2
3. Define new operating criteria that equitably share the burden of drought between the Upper and Lower Colorado River basins and define objective criteria used to equalize the level of Lake Powell with Lake Mead during declared drought periods, for so long as provisions of the 1922 Colorado River Compact can be maintained. 3

4. Declare 'drought' conditions at Lake Powell whenever the water storage drops to less than 50% of capacity (3600' msl) at the beginning of the Water Year. 4

The importance of developing low water criteria and maintaining critical water levels at Lake Powell is crucial to reducing impacts for various stakeholders including:

- The CRSP power customers, who include over 200 different customers and power marketing entities
- The City of Page and their drinking water supply
- The Navajo Generating Station and their cooling water supply
- Resource managers and concessionaires at the Glen Canyon National Recreational Area
- Lake Powell recreational interests

Additionally, there are other considerations for maintaining the level of Lake Powell above the minimal power pool elevation:

- The Colorado River Storage Project (CRSP) Basin Fund would become insolvent.
- Environmental Projects – 756 NEPA and ESA decisions could be reopened.
- Problems associated with increased salinity discharge due to low reservoir levels.
- Compromises to the electrical grid system including 'black start' capability, restricted power imports due to inadequate voltage support, the need to replace regulated power and spinning reserve and the termination of the Salt River Project transmission exchange agreement

In summary, we support the creation of new and objective low water 'drought' criteria that would provide increased management flexibility and improved operating response to actual hydrologic conditions on the Colorado River.

Thank you for your consideration of these matters and the opportunity for public comment.

Sincerely,

Paul M. Ostapuk  
Senior Board Member  
Friends of Lake Powell

# **Appendix W**

## **Copies of Unique Comment Letters**

### **W.4 Individual Comment Letters (I)**

Mark Belles  
9318 Willard Street  
Rowlett, Texas 75088

Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
Attention BCOO-1000  
P.O. Box 61470  
Boulder City, Nevada 89006-1470

16 June 2005

Dear Regional Director,

Regarding the "Notice to solicit comments and hold public meetings on the development of management strategies for Lake Powell and Lake Mead, including Lower Basin shortage guidelines, under low reservoir conditions.", please place my name on the mailing list for public notices related to this activity and for opportunities for public comment.

I will be unable to attend the public meetings to be held at Henderson, NV and Salt Lake City, UT, but I have a very strong interest in the outcome of the proposed process.

First of all, I commend the Secretary of the Interior and the Bureau of Reclamation in the strongest terms for facing the Lower Basin storage issues head-on and recommend the following objectives as guiding principals for the plans that will develop from this process.

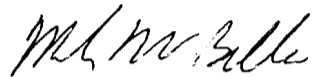
1. The first and foremost management objective should be our international treaty obligations. | 1
2. The second (and nearly as important as the first) management objective should be to maximize the beneficial use of the available water for domestic municipal and agricultural purposes in the United States. | 2
3. The third priority should be compliance with other Federal Laws such as the Endangered Species Act. | 3
4. The next priority should be consideration for the generation of electrical power. | 4
5. Finally, accommodation of the recreational industry (boating, etc...) should be considered. | 5

Considering the objectives noted above, I believe the most effective storage management plan would be to maximize storage at Lake Mead at the expense of Lake Powell for the following reasons, | 6

1. There will be less net seepage loss if the water is concentrated at Lake Mead.
2. Power generation will be more efficient if the generators are running with water at maximum head at one location rather than being located at two locations at respectively lower heads. Again, water must be held at Lake Mead to supply Las Vegas, so concentrating the water at Lake Mead is the most logical choice for electrical power generation.
3. Boating may be possible at one Lake, but most likely not both. Again, concentration of water at Lake Mead is meets this need best.

I hope the Bureau will undertake this task with a willingness to think completely out-of-the-box and settle on a storage plan that most fits the needs of society today.

Thank you for the opportunity to comment, I look forward to further information on this project.



**From:** Tiffany Mapel <tiffmapel@yahoo.com>  
**To:** <Strategies@lc.usbr.gov>, <Strategies@uc.usbr.gov>  
**Date:** 6/16/05 2:05PM  
**Subject:** Lake Powell management

Hello, and thank you for your time,

My name is Tiffany Mapel, and I reside in Durango, Colorado. Lake Powell is my favorite place on the planet, and I have been going there since 1986. It has never been the same lake twice, because of fluctuating lake levels--Lake Powell is doing exactly what it was designed to do. However, with our sixth year of drought, Lake Powell needs to be managed in accordance with yearly precipitation. Today we have the technology to forecast runoff, snowpack, and moisture content which feeds the Colorado River System. They did not have that knowledge back in 1922.

I realize that the Colorado River Compact of 1922 is virtually set in stone, and not open for negotiations. However, it only seems logical that during drought years, the flow should be slowed from Glen Canyon Dam. Instead, the upper basin's allocation of 8.23 million acre feet per year has been generously slipping beyond the dam, even though there is currently plenty of water in the lower basin states due to high precipitation this winter.

When Secretary of the Interior Gale Norton decided that water releases would continue from Lake Powell as scheduled, I did not agree with her decision. Arizona and California cried foul, believing they would miss out on their water. What was the difference in giving them their water now or later? It all flows downstream, and they'll get it anyway. Once it's out of the dam, you can't put it back. Arizona has been doing great in the area of water conservation. Last year, their usage was at levels comparable to 1969, when Phoenix was a lot smaller than it is today. Can the same be said for California? From what I hear, the motto in California is, "Drought? What drought?" There are no conservation measures in place for Californians to conserve water. Are they complacent, knowing they have senior rights on the Colorado River Compact? Maybe California needs to feel the effects of the drought before they can come up with a plan for change. At the rate the Western U.S. is growing, we all need to conserve water if the projected millions of people are to move here.

During drought years, we should be conserving water, not letting the water out of Lake Powell. In fact, we need more storage reservoirs. With the past few dry years, Lake Powell's level has plummeted because more water is going out of the dam than is coming into the lake. Isn't there a provision in the 1922 Compact that states both Lakes Mead and Powell should be managed with sustainable, and nearly equal levels? Why then is Lake Mead 85% full, while Lake Powell is only 45% full? Lake Powell is currently 100 feet low. The recent runoff was able to replenish the lake, raising it from the lowest it got in April, 144 feet down. We need to learn from the past 6 years of drought, and come up with better management for Lake Powell. It shouldn't be allowed to get that low again. | 1

The releases from Glen Canyon Dam need to be slowed significantly to bring Powell's level back up to a sustainable level. For a National Recreation Area that draws millions of visitors and over \$400 million in revenue, Lake Powell is worth saving. For them, and for the water and power needs of the west. SLOW THE FLOW.

Tiffany S. Mapel  
Durango, CO  
[www.LakePowell.org](http://www.LakePowell.org)

POWELL TO THE PEOPLE!!

---

Do You Yahoo!?

Tired of spam? Yahoo! Mail has the best spam protection around  
<http://mail.yahoo.com>

**CC:** <tiffmapel@yahoo.com>

**From:** "Steve" <wow2@rof.net>  
**To:** <strategies@uc.usbr.gov>  
**Date:** Thu, Jun 16, 2005 12:56 PM  
**Subject:** Please add this and me to your scoping process...the 7.5 maf annual maximum for Lake Powell releases

Dear Regional Directors, Bureau of Reclamation, Lower and Upper Colorado Region,

8.23 maf is not a good number; the maximum should be under 7.5 maf for annual releases from Lake Powell...

Steve Parmelee, PO Box 6922, Snowmass Village, Colorado, 81615

| 1

Released On: June 15, 2005

Reclamation Seeks Public Comment on Development of Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions

The Bureau of Reclamation today filed a Federal Register Notice requesting public comment on the development of management strategies for Lakes Powell and Mead, on the Colorado River, under low reservoir conditions. Among the management strategies anticipated are shortage guidelines for the Lower Colorado River Basin.

The strategies will likely identify those circumstances under which the Department of the Interior would reduce annual Colorado River water deliveries and the manner in which annual operations of the Colorado River reservoirs would be modified under low reservoir conditions.

The Department expects the strategies to provide guidance to the Secretary's Annual Operating Plan decisions, and provide more predictability to water users throughout the Basin, particularly the Lower Basin states of Arizona, California, and Nevada.

The Annual Operating Plan - developed in consultation with the Basin States, water and power users, Tribes, environmental and recreational groups and other interested parties - guides operation of the Colorado River. Among other elements, it specifies whether the amount of Colorado River water available to be released from Lake Mead to Lower Basin users in a given year will be "normal" (7.5 million acre-feet), "surplus" (more than 7.5 million acre-feet) or "shortage" (less than 7.5 million acre-feet).

Comments can be mailed, faxed, or e-mailed to:

Regional Director, Bureau of Reclamation, Lower Colorado Region, Attention: BCOO-1000, P.O. Box 61470, Boulder City, Nevada 89006-1470, (702) 293-8156, strategies@lc.usbr.gov; and/or Regional Director, Bureau of Reclamation, Upper Colorado Region, Attention: UC-402, 125 South State Street, Salt Lake City, Utah 84318-1147, (801) 524-3858, strategies@uc.usbr.gov.

The full Federal Register Notice is available on Reclamation's Web site, at

I.003



<http://www.usbr.gov/lc/region/g4000/docs/strategies.pdf>

**From:** "Sandra Reuther" <SandraReuther@cox.net>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 6/16/05 8:45AM  
**Subject:** water in the Colorado Basin

I believe one way water is wasted is open waterways to take water to CA farmers. Seems like farming in the desert and having uncovered water ditches and pipelines are impractical. Charge farmers more and use the surcharge to help fund changes. 1

Sandra Reuther  
Boulder City, NV

**From:** "Sandra Reuther" <SandraReuther@cox.net>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 6/17/05 8:29AM  
**Subject:** Fw: how to operate lake Mead strategies@lc.usbr.gov

----- Original Message -----

From: Jim Hobon  
To: Sandra Reuther  
Sent: Thursday, June 16, 2005 5:36 PM  
Subject: Re: how to operate lake Mead strategies@lc.usbr.gov

Keep all kinds of fuel operated water craft off the lakes, The lower water table is not going to be sufficient to dilute the hazard from the fuel and fumes. | 1

I know this will upset a lot of people, but if you ever noticed most of the boats that are their are from Calif., and they don't get their water from Lake Mead like we do. While they do get it from the Colorado River it is before it comes to lake mead.

-----Original Message-----

From: Sandra Reuther  
Date: 06/16/05 08:30:08  
To: forum  
Subject: how to operate lake Mead strategies@lc.usbr.gov

Thursday, June 16, 2005  
Copyright © Las Vegas Review-Journal  
Input sought on Colorado River

Federal officials want public comments on how to operate lakes Mead, Powell

By HENRY BREAN  
REVIEW-JOURNAL

Federal officials want your input as they prepare for discussions that could reshape how more than 25 million people in seven Western states share the Colorado River.

At issue is how best to operate the river's two key reservoirs, Lake Mead and Lake Powell, as water levels drop from drought and increased demand by water users.

A notice published Wednesday in the Federal Register notes that future "low reservoir conditions may not be limited to drought periods as additional development of Colorado River water occurs."

Demand for water along the river has continued to increase even in the face of what the notice calls "the worst five-year drought in recorded history," one that has left Lake Powell at 46 percent of capacity and Lake Mead at 60 percent of capacity.

The Federal Register notice announces a pair of public meetings the U.S. Bureau of Reclamation will hold next month to gather input on future management strategies for the river.

The first meeting will be July 26 at the Henderson Convention Center. The second will be July 28 in Salt Lake City. Both meetings are from 10 a.m. to noon.

<snip>

About 90 percent of the Las Vegas Valley's drinking water comes from the river by way of Lake Mead.

Nevada has mostly insulated itself from a shortage on the river through its water banking agreement with Arizona. But Brothers said Southern Nevada's water supply could be threatened should the drought force deep cuts by the basin states.

New ways of managing the river also could result in more dramatic changes in the water level at Lake Mead, Brothers said.

The Bureau of Reclamation will accept written comments through Aug. 31.

In the lower basin, comments can be submitted by mail to: Regional Director, Bureau of Reclamation, Lower Colorado Region, Attention: BCOO-1000, P.O. Box 61470, Boulder City NV 89006-1470; by fax to 293-8156; or by e-mail to [strategies@lc.usbr.gov](mailto:strategies@lc.usbr.gov)

In the upper basin, they can be mailed to: Regional Director, Bureau of Reclamation, Upper Colorado Region, Attention: UC-402, 125 South State St., Salt Lake City UT 84318-1147; faxed to 801-524-3858; or sent by e-mail to [strategies@uc.usbr.gov](mailto:strategies@uc.usbr.gov)

Story at [http://www.reviewjournal.com/lvrj\\_home/2005/Jun-16-Thu-2005/news/26727775.html](http://www.reviewjournal.com/lvrj_home/2005/Jun-16-Thu-2005/news/26727775.html)

**From:** "Kelly, Roy A." <roy.a.kelly.ii@hp.com>  
**To:** <strategies@uc.usbr.gov>  
**Date:** Sat, Jun 18, 2005 9:26 AM  
**Subject:** public comments on managing the Colorado water system

As a life-long resident of Colorado, the offspring of farmers, ranchers, and miners who helped build some of the water diversions in this state and use them, who owned the second-oldest right on the Arkansas River, I have learned more about water rights that I ever really wanted to learn at a tender age. My grandfather told my father when he was a child that more people had been killed over water in this state than over gold. Before he passed on, Granddad had predicted this situation.

This was a topic around the table as I grew up. We turned and twisted the topic to learn all the implications on each party. The cities need to ensure their end users have the water they need; the wildlife needs the natural flows, or the closest to it we can provide; the farmers and ranchers need the water to grow their crops; the streams also need water for recreation, fishing, rafting, kayaking, and boating; towns and cities downstream need clean water for their use. It is easy to see that there are more demands than can be answered, and any solution will require compromise from every party.

Thirty years of discussions did come up with one possible solution, but we finally decided what would be the best compromise would never be implemented because it is too simple. It is this simple... build a second pipeline that returns treated water back into the stream 100 feet upstream from the diversion point. This satisfies all users; the cities can take all the water they need, the streams have their natural flows, and downstream users have clean water for their own use.

1

Roy A. Kelly II

**From:** Diron Baker <dhb613@yahoo.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 6/21/05 11:44AM  
**Subject:** Glen Canyon

Dear Regional Director Robert Johnson,

The steadily dropping water levels at Lake Powell reservoir on the Colorado River revealed spectacular features not seen in decades. These cultural, biological, and scenic resources found only in Glen Canyon are now threatened by fluctuating reservoir levels..

Restored precious features such as Cathedral in the Desert, Register Rock, petroglyphs, and Fort Moqui are going right back under water, only to be uncovered once again later this year.

This fluctuation of water levels is unnecessary and destructive to these priceless emerging cultural, historic, and scenic sites in Glen Canyon.

All "surplus" water of the Colorado River can easily be stored at Lake Mead instead of in Glen Canyon. We urge the Bureau of Reclamation to protect these priceless treasures by storing "surplus" water in Lake Mead instead. Please uphold the established legal protections for priceless sacred and historical sites and emerging endangered species habitats. Please protect Glen Canyon for future generations.

Sincerely,

Diron Baker

13135 W. 2nd. Pl. apt. 3527

Lakewood, Co. 80228

303-914-1997

dhb613@yahoo.com

-----  
Yahoo! Sports  
Rekindle the Rivalries. Sign up for Fantasy Football

Date: *Varies, see Commenter List (see note below)*

Robert Johnson  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
Attention: BCOO-1000  
P.O. Box 61470  
Boulder City, Nevada 89006-1470

Dear Director Johnson,

The steadily dropping water levels at Lake Powell reservoir on the Colorado River revealed spectacular features not seen in decades. I visited GCNRA in May 2004 and discovered newly reemerging canyons that were in the process of renewal with regrowth of vegetation and flushing out the silt. What a spectacular sight it was! I am returning this coming September to continue the rediscovery. Unfortunately these cultural, biological, and scenic resources found only in Glen Canyon are now threatened by fluctuating reservoir levels.

Restored precious features such as Cathedral in the Desert, Register Rock, petroglyphs, and Fort Moqui are going right back under water, only to be uncovered once again later this year.

This fluctuation of water levels is unnecessary and destructive to these priceless emerging cultural, historic, and scenic sites in Glen Canyon.

All "surplus" water of the Colorado River can easily be stored at Lake Mead instead of in Glen Canyon. I urge the Bureau of Reclamation to protect these priceless treasures by storing "surplus" water in Lake Mead instead. Please uphold the established legal protections for priceless sacred and historical sites and emerging endangered species habitats. Please protect Glen Canyon for future generations.

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Sincerely,

This Form Letter A was received from approximately 15 individuals (Commenters). All the letters were identical. For efficiency purposes, the commenter contact information has been entered into a database and each different comment noted/identified on this letter are noted to have been received 931 times within the Comment database.

**From:** "mark pepper" <sparks11757@hotmail.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 6/21/05 4:24PM

Dear Mr. Johnson,

The steadily dropping water levels at Lake Powell reservoir on the Colorado River revealed spectacular features not seen in decades. Restored precious features such as Cathedral in the Desert, Register Rock, petroglyphs, and Fort Moqui are found only in Glen Canyon are now threatened by fluctuating reservoir levels. This fluctuation of water levels is unnecessary and destructive to these priceless emerging cultural, historic, and scenic sites in Glen Canyon.

All "surplus" water of the Colorado River can easily be stored at Lake Mead instead of in Glen Canyon. I urge the Bureau of Reclamation to protect these priceless treasures by storing "surplus" water in Lake Mead instead. Please uphold the established legal protections for priceless sacred and historical sites and emerging endangered species habitats. Please protect Glen Canyon for future generations.

1  
2

Sincerely,

Mark L. Pepper

2427 Franklin Ave.

Secane, PA 19018

610-541-0859

mlp93083@verizon.net<mailto:mlp93083@verizon.net>



**From:** "D. Riddle" <aqua4fun@hotmail.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 6/21/05 3:46PM  
**Subject:** Fill Lake Mead First

I think it was a mistake to build Glen Canyon Dam in the first place, but now that the combined downstream water usage and the drought make possible all surplus water to be stored in Lake Mead, you should not be re-filling Lake Powell and burying once more the cultural, biological, and scenic resources found only in Glen Canyon.

I am not only concerned with the cultural and scenic aspects of Glen Canyon.

From a practical water conservation perspective, there would be less loss by evaporation if all the water were stored in one reservoir...Lake Mead.

Sincerely,

Donna Riddle  
1238 Crest Dr.  
Eugene, OR 97405

1

**From:** <SuperMolar@aol.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 6/21/05 2:10PM  
**Subject:** Glen canyon

Dear Mr. Johnson; i have learned that with the declining level of lake powell there has become an option to fill lake meade and allow glen canyon to return to its pre lake powell beauty. Filling lake meade would be a better choice as a water use policy. Please consider not refilling lake powell, that is a losing proposition. Thank you-Robert Rosenfield

1

**From:** "Robert Rutkowski" <rutkowski@terraworld.net>  
**To:** <gale\_norton@ios.doi.gov>, <exsec@ios.doi.gov>, <strategies@lc.usbr.gov>, <strategies@uc.usbr.gov>  
**Date:** 6/21/05 5:05PM  
**Subject:** A sustainable water supply for the west

Gale Norton  
 Executive Secretary  
 Department of the Interior  
 1849 C Street, N.W.  
 Washington DC 20240  
 gale\_norton@ios.doi.gov  
 exsec@ios.doi.gov

Robert Johnson  
 Regional Director  
 Bureau of Reclamation  
 Lower Colorado Region  
 Attention: BCOO-1000  
 P.O. Box 61470  
 Boulder City, Nevada 89006-1470  
 (702) 293-8156  
 strategies@lc.usbr.gov

Rick Gold  
 Regional Director  
 Bureau of Reclamation  
 Upper Colorado Region  
 Attention: UC-402  
 125 South State Street  
 Salt Lake City, Utah 84318-1147  
 (801) 524-3858  
 strategies@uc.usbr.gov

Dear Secretary Norton and Regional Directors:

The steadily dropping water levels at Lake Powell reservoir on the Colorado River revealed spectacular features not seen in decades. These cultural, biological, and scenic resources found only in Glen Canyon are now threatened by fluctuating reservoir levels.

Restored precious features such as Cathedral in the Desert, Register Rock, petroglyphs, and Fort Moqui are going right back under water, only to be uncovered once again later this year.

This fluctuation of water levels is unnecessary and destructive to these priceless emerging cultural, historic, and scenic sites in Glen Canyon.

All "surplus" water of the Colorado River can easily be stored at Lake Mead instead of in Glen Canyon. We urge the Bureau of Reclamation to protect these priceless treasures by storing "surplus" water in Lake Mead instead. Please uphold the established legal protections for priceless sacred and historical sites and emerging endangered species habitats. Please protect Glen Canyon for future generations.

| 1  
 | 2

Thank you for the opportunity to bring these remarks to your attention.

Mindful of the enormous responsibilities which stand before you, I am,

Yours sincerely,  
Robert E. Rutkowski

cc:  
Nancy Pelosi  
President George W. Bush

2527 Faxon Court  
Topeka, Kansas 66605-2086  
P/F: 1 785 379-9671  
r\_e\_rutkowski@myrealbox.com

**CC:** "Nancy Pelosi" <sf.nancy@mail.house.gov>, "George W. Bush"  
<president@whitehouse.gov>

**From:** Steve Skinner <steve@aspdailynews.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 6/21/05 11:49AM  
**Subject:** Lake Powel/Lake Mead

Dear Robert Johnson-

I'm hoping that you will take this opportunity to help preserve and protect the Colorado River by filling Lake Mead and NOT "Lake" Powell. I have spent a lot of time on the Colorado River between Glenwood Springs, Colorado and the Glen Canyon Dam - I've seen first hand the destruction of the ecosystem through the Grand Canyon and been very excited by the drought as it reveals the revered and historical Glen Canyon.

1

Please lower "Lake" Powell.

Thanks very much,  
Steve Skinner  
1398 Rock Court  
Carbondale, CO 81611  
970 963-2126

PS - Did you know that you share a name with a blues legend?

**From:** john spezia <jspezia@yahoo.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 6/21/05 5:56PM  
**Subject:** Lake Powell

Robert,

Don't fill up Lake Powell with more water.

Fill up Lake Mead instead.

Its time to use the water more sustainably and wiser  
by filling up Lake Mead with this year's meager  
runoff. | 1

John Spezia

---

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**From:** "jesse call" <matkat148@hotmail.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 6/22/05 9:17AM  
**Subject:** Bower Flats

Hello Robert,

I'm a student and mother from Idaho. All my life my family, friends, and I have been fortunate enough to enjoy many of nature's beauty and wonders. I make a conscious effort to bring about my daughter's awareness of the natural resources we have and how to conserve and enjoy them.

The steadily dropping water levels at Lake Powell reservoir on the Colorado River revealed spectacular features not seen in decades. These cultural, biological, and scenic resources found only in Glen Canyon are now threatened by fluctuating reservoir levels..

Restored precious features such as Cathedral in the Desert, Register Rock, petroglyphs, and Fort Moqui are going right back under water, only to be uncovered once again later this year.

This fluctuation of water levels is unnecessary and destructive to these priceless emerging cultural, historic, and scenic sites in Glen Canyon.

All "surplus" water of the Colorado River can easily be stored at Lake Mead instead of in Glen Canyon. | 1  
We urge the Bureau of Reclamation to protect these priceless treasures by storing "surplus" water in | 2  
Lake Mead instead. Please uphold the established legal protections for priceless sacred and historical  
sites and emerging endangered species habitats. Please protect Glen Canyon for my daughter and our  
future generations.

Sincerely,

Jesse Naomi Call

264 N. 300 W.

Blackfoot, ID--83221

matkat148@hotmail.com<mailto:matkat148@hotmail.com>

208 785 4036

calljess@isu.edu<mailto:calljess@isu.edu>

Your future depends on many things, but mostly on you.  
-Frank Tyger-

If you hear a voice within you say 'you cannot paint,' then by all means paint, and that voice will be silenced.

-Vincent Van Gogh-



**From:** "Marcia Harvey" <mharvey@tcsn.net>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 6/22/05 10:24PM

Dear Mr. Johnson,  
Please help to restore Glen Canyon by filling Lake Mead first.  
Thank you,

| 1

Marcia Harvey  
5370 Morningstar Place  
Paso Robles, Ca. 93446

**From:** "Jean Hegland" <jhegland@sonic.net>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 6/22/05 9:19AM  
**Subject:** protect Glen Canyon

Please protect Glen Canyon by filling Lake Meade first. | 1  
Sincerely,  
Jean Hegland  
5450 Mill Cr Rd.  
Healdsburg, CA 95448

**From:** Charles W Howe <howec@colorado.edu>  
**To:** <Strategies@lc.usbr.gov>, <Strategies@uc.usbr.gov>  
**Date:** 6/22/05 12:03PM  
**Subject:** Colorado River Drought Plan: the use of interstate waterleases.

Ladies & Gentlemen: there have been several proposals for interstate water leasing that, under current conditions throughout the Basin, warrant further consideration. Water leasing would always be under "willing seller-willing buyer" conditions, subject to state oversight. Especially during drought, an organized water market can redirect water to the highest-valued uses, subject to state protections of other water users.

1

The proposals that should be considered are (1) Colorado River Board of California's 1991 proposal for water leasing ("Conceptual Approach for Reaching Basin States Agreement...and Implementation of an Interstate Water Bank", prepared by California for the Colorado River Basin States meeting in Denver, August 28th, 1001) and (2) Governor Roy Romer's proposal to contract with Lower Basin States for the 40 year non-development of part of Colorado's allotted water under the Compact (Denver Post news article, Oct. 24th, 1991).

2

The problem with fixed rules that may emerge interstate negotiations or from the Secretary of Interior's imposed rules is that they will not fit all future climatic, demographic and economic conditions. Interstate water markets remain responsive to emerging conditions and need to involve only water at the "tradable margin" (a small percentage of total available water) to produce substantial gains for the participating states.

Further information can be provided if these ideas are of interest.

Charles W. Howe  
 Professor of Economics (Emeritus)  
 Professional Staff, Institute of Behavioral  
 Science, University of Colorado-Boulder.

**From:** Jean Jackman <jljackma@dcn.davis.ca.us>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 6/22/05 2:18PM  
**Subject:** Glen Canyon

Dear Mr. Johnson,

In the 60's, I was a student at the University of Minnesota when I saw a movie about the Glen Canyon. It was breathtaking. I said to my husband, we have to go there. Near the end of the movie, the narration said this is how it looks now. It showed the flooded canyon.

I was so horrified, I began to be an environmental activist. Now in retirement from teaching, I advocate and write a nature column

Please restore Glen Canyon. I hope to visit it before I die and see us passing that correction, that legacy, to our grandchildren.

1

Please save Glen Canyon,  
Jean Jackman  
306 Del Oro Ave.  
Davis, CA 95616

**From:** "alayne meeks" <alayne@meeckshoney.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 6/22/05 6:53PM  
**Subject:** Glen Canyon

We have the chance to save what was once lost to us. Please take this chance to right an injustice to nature, and to those who love it, and save Glen Canyon from being flooded again. Thank you, Alayne Meeks | 1

**From:** ray walker <waterrdw@yahoo.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 6/22/05 5:51AM  
**Subject:** Comments on New Drought Plan for Water-sharing Agreement Requested By Department of Interior

June 22, 2005

TO: United States Bureau of Reclamation

Robert W. Johnson, Regional Director, Bureau of Reclamation, Lower Colorado River  
c/o rwalsh@lc.usbr.gov External Affairs Officer  
strategies@lc.usbr.gov & strategies@uc.usbr.gov  
John Keys, Commissioner, Bureau of Reclamation  
c/o mcollier@usbr.gov Executive Assistant to John Keys

FROM: Ray Walker, Colorado River Water Rights Analyst

SUBJECT: Response to Bureau of Reclamation's REQUEST TO COMMENT  
Re: Colorado River Drought Plan for Department of the Interior

On June 16, 2005, Jerd Smith of the Rocky Mountain News reported that Bureau of Reclamation Officials will take written comments for review, analysis, and consideration for inclusion into the new drought plan .

It was reported by Mr. Smith that, last week, at a University of Colorado conference on the Colorado River, several western water officials said,

"the only way to break the deadlock is to find new water supplies,..."

Please consider this as a formal response to comment on the new drought plan for a water-sharing agreement requested by US Secretary of the Interior, Gale Norton.

I have 35 years of experience as Colorado Water Rights analyst. My brother has 35 years of experience in construction and water delivery systems.

My brother and I have discovered & analyzed a vast new water supply source for the Colorado River.

It is our opinion that another 750,000 acre feet (AF) of water per year available for beneficial use and storage in Lake Mead should be considered for inclusion into the new drought plan for the Colorado River and / or, be developed by the hundreds of entities affected by water shortages on the Colorado River. | 1

The following is a brief description of the various aspects of the new SOURCE.

- 1) Yield; The SOURCE can be expected to yield, on average, 750,000 acre feet (AF) of fresh water per year.
- 2) Unappropriated; The SOURCE is unappropriated and available for appropriation. Appropriation of the Source will not damage any prior vested water rights of anyone, anywhere.
- 3) Water Quality; The SOURCE is fresh water and can be treated in the normal reasonable fashion to become potable water.
- 4) Non-tributary to the Colorado River; The SOURCE is non-tributary to the Colorado River and its tributaries.

Based on the administration of other Compacts in the Western U.S., non-tributary water entering the Colorado River will not be subject to the allocation described in the Colorado River Compact provided said non-tributary water is adequately measured into and out of the Colorado River to the satisfaction of the Department of the Interior and the compact signatory states.

5) Environmentally acceptable; Development of the SOURCE can be expected to be acceptable to the environmental community.

6) Economically feasible: The SOURCE is economically feasible to develop considering the range of the problems that can be solved and compared to existing projects of similar scope.

7) Job creation; Development of the SOURCE will create a substantial number of new jobs in several western states.

8) Electrical power ; Electrical power generation can be increased in Lake Mead by storing water from the SOURCE.

9) Water deliveries; The SOURCE is deliverable to all of the signatory states of the Colorado River Compact, either directly or by exchange.

10) Additional source of supply for Southern California; The SOURCE could be developed in such a manner that it can be considered viable as an additional source of water for Southern California in the event that the present delivery system to California from the Colorado River failed due to an earthquake or a terrorist attack.

We know you have a simple request: What exactly is the Source?

We want to immediately disclose the Source so that analysis, investigation and development of the source can proceed as quickly as possible. We welcome all input from the Department of the Interior, its agencies & its attorneys and all other entities interested in more water.

Our request is also simple:

We wish to enter into a contract with all entities, including the Bureau of Reclamation, who would be interested in receiving more water from the Colorado River either directly or by exchange. If upon disclosure, the contracting entities are completely satisfied that the source is as represented and meets with their expectations, they agree to compensate us pursuant to a written equitable agreement. If the entities to the agreement are not 100% satisfied, they owe us nothing, but they agree not to pursue development of the source.

We have previously proposed to disclose the source to the Bureau of Reclamation and others. We are continually told that with all of the legal expertise available, no entity can formulate a way to comply with our simple request, so that we can comply with theirs.

Considering the millions of people with water needs for municipal, domestic, agricultural, recreational & power purposes and scores of endangered species,....Is it not possible for one/all entities affected to be instrumental in solving this rather simple impasse ?

The Bureau of Reclamation and all other entities who are interested/concerned/committed to more water in/from the Colorado River, need to answer the following questions:

A) Is your entity genuinely interested in more water in/from the Colorado River ?

B) If your entity is interested in more water, how many acre feet per year does your entity want to own

and/or control ?

C) What beneficial uses does your entity want to make of additional water from/in the Colorado River ?

D) Does your entity have in place a procedure to fund its share of the development of the source, including the disclosure ?

E) What is an acre foot of water each year worth to your entity?

F) Does your entity have a legal staff that can formulate an agreement which will allow it to enter into an agreement for disclosure of the source ?

G) Does your agency have any legal prohibition against entering into an agreement in which it must be 100 % satisfied before distributing any consideration for an agreed upon disclosure of the source ?

H) How will your entity benefit from the storage of an additional 750,000 AF or more each year in Lake Mead ? What is the value of that additional storage to your entity ?

We respectfully request that the Bureau of Reclamation provide us with the name of any entity and their address including Email, to which you forward our comments.

Because of the enormous importance this source may have to California, we respectfully request that you provide us information so that we can directly contact by Email, Governor Arnold Schwarzenegger, Department of Interior Secretary Gail Norton, Senator Pete V. Domenici, Chairman Energy & Natural Resources Committee, and U.S. Representative George Radanovich, Chairman House Sub-Committee Water & Power.

Please have our comments read into the record at any and all upcoming meetings pursuant to a drought plan for the Colorado River.

Please feel free to provide a copy of our comments to all entities that you feel may have a need for more water from/in the Colorado River either directly or by exchange.

Also, it would be most helpful and courteous if all parties who receive these comments would acknowledge receipt by sending us an Email.

Respectfully submitted,

Ray Walker  
249 Coyatee Shores  
Loudon, TN 37774  
865 408-0041  
waterdw@yahoo.com

cc Senator Pete V. Domenici, Chairman Energy & Natural Resources Committee  
FAX 202 224-6163  
US Representative George Radanovich, Chairman Sub-Committee Water & Power  
FAX 202 226-6953 Kyle Weaver  
FAX 202 225-3402 Tricia Geringer  
George M. Caan, Executive Director, Colorado River Commission of Nevada  
gcaan@crc.nv.gov  
Patricia Mulroy, Manager, Southern Nevada Water Authority  
patricia.mulroy@lvvwd.com & john.entsminger@lvvwd.com Attorney.



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**CC:** <strategies@uc.usbr.gov>

## LC strategies - Glen Canyon

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**From:** "Diane Welles" <dianewelles@hotmail.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 6/22/2005 8:14 PM  
**Subject:** Glen Canyon

---

Please restore Glen Canyon by dismantling Reservoir Powell.

1

I.030

**From:** "Corin Wood" <cwood@ranchcreek.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** Wed, Jun 22, 2005 9:08 AM

Dear Director Johnson:

The fluctuating water levels in Glen Canyon are threatening some of the incredible features that have recently appeared. It makes no sense to have these cultural, biological and scenic resources continually covered and uncovered by water levels going up and down. It is merely destructive.

All "excess" water can easily be stored in Lake Mead. It does not need to be stored in Lake Powell. Please do the right thing by protecting these priceless sites and the emerging species habitat that the lower levels of water have uncovered. Future generations deserve no less. | 1  
| 2

Thank you.

~Corin Wood

Corin A. Wood

cwood@ranchcreek.com

**From:** Kim Johnson <wind\_river\_man2004@yahoo.com>  
**To:** <strategies@lc.usbr.gov>, <strategies@uc.usbr.gov>, <gail\_norton@ios.doi.gov>, <exsec@ios.doi.gov>  
**Date:** 6/23/05 10:33AM  
**Subject:** Restore Glen Canyon

Dear Mr. Johnson, Mr. Gold, and Ms. Norton;

Please allow Glen Canyon to be restored to its natural and cultural splendor by allowing a free-flowing Colorado River through Glen Canyon and the Grand Canyon, with any and all surplus water being stored in Lake Meade. Lake Meade can easily hold all of this water while allowing Glen Canyon to revert back to its original glory and rejuvenating the ecology of the Grand Canyon back to its original state. | 1  
| 2

It only makes sense.

Thank you very much.

Regards,  
Mr. Kim Johnson  
1 Wood Avenue  
PO Box 1461  
Fort Washakie, WY 82514-1461

-----  
Yahoo! Sports  
Rekindle the Rivalries. Sign up for Fantasy Football

**From:** Greg Reis <gregorreis@yahoo.com>  
**To:** <exsec@ios.doi.gov>, <strategies@lc.usbr.gov>  
**Date:** 6/23/05 7:09AM  
**Subject:** Fill Mead First

To: Gale Norton, Robert Johnson, Rick Gold

The Colorado River is filling Powell Reservoir right now, and that water could be released instead to Lake Mead. The rising waters are inundating and damaging the spectacular features of the Glen Canyon National Recreation area unnecessarily.

I am planning a September trip to some of the formerly-inundated reaches of the Escalante River, and it is very disappointing that just as some of these riparian resources are given a chance to recover, they are flooded again.

Meanwhile Las Vegas must build a deeper pipe in Lake Mead. This type of water management benefits no one. It damages natural resources and increases costs of water users.

Please use this opportunity to drain the rest of the storage from Powell Reservoir and decommission Glen Canyon Dam. Eliminating Powell from the system will save as much water as the City of Los Angeles uses in a year. Right now you are converting a scarce resource (water) into an abundant resource in the region (electricity). Is it worth evaporating 600,000 AF per year to generate more of an already abundant resource? When you look at the costs to Glen Canyon National Recreation Area and Grand Canyon National Park, and all downstream water users, I think not.

1

I implore you to return sanity to water management on the Colorado River, for the benefit of all Americans.

Thank you for your time,  
Greg Reis  
P.O. Box 41  
Lee Vining, CA 93541

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**From:** "Barry Wolf" <bwolf213@earthlink.net>  
**To:** <gale\_norton@ios.doi.gov>, <exsec@ios.doi.gov>, <strategies@lc.usbr.gov>, <strategies@uc.usbr.gov>  
**Date:** 6/25/05 1:50PM  
**Subject:** Glen Canyon

Secretary Norton and Gentlemen:

Due to the prolonged drought, the water levels at Lake Powell reservoir on the Colorado River have dropped steadily and have revealed spectacular features not seen in decades. These cultural, biological and scenic resources are national treasures and are found only in Glen Canyon. They are now threatened by the fluctuating reservoir levels.

Restored precious treasures such as Cathedral Rock, petroglyphs and Ft. Moqui are going back under water only to be uncovered again later this year. These fluctuations are not only unnecessary but destructive to these priceless cultural, historic and scenic sites.

All "surplus" water of the Colorado River can easily be stored at Lake Mead instead of in Glen Canyon. I | 1  
 urge the Bureau of Reclamation to protect these national treasures by storing "surplus" water in Lake Mead instead. Please uphold the established legal protections for these priceless, sacred and historical | 2  
 sites and emerging endangered species habitats. Please restore and protect Glen Canyon for future generations.

Sincerely,

Barry Wolf

**From:** "Avram Chetron" <avram\_chetron@hotmail.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 6/26/05 11:18PM  
**Subject:** Lake Powell

Dear Regional Director of the Bureau of Reclamation,

Please do not attempt to raise the water level of Powell Lake Reservoir unless the storage capacity of Lke Meade has been exhausted. Many of the features of invaluable character in Glen Canyon shold not be resubmerged for no reason at all.

| 1

Avram Chetron

**From:** "John Nutting" <jnutting@austin.rr.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 6/30/05 10:19PM  
**Subject:** Lake Powell

Robert Johnson

Regional Director

Bureau of Reclamation

Lower Colorado Region

Attention: BCOO-1000

P.O. Box 61470

Boulder City, Nevada 89006-1470

Dear Mr. Johnson,

I wish to express my opinion regarding the management of Lake Powell and Lake Mead.

When I found out the level of Lake Powell had fallen low enough to expose beautiful side canyons and ancient rock art that had been hidden for over 35 years, I was delighted. Now that the lake is filling back up, I am disappointed.

It seems to me that there are many good reasons to fill up Lake Mead, which is also at a low level, and allow Lake Powell to remain at its low level. In particular, it would reduce the surface area exposed to evaporation, and would therefore conserve precious water resources. Equally importantly, it would avoid causing Lake Powell's level to fluctuate up and down over the rock art, which does more damage than either full exposure or full submersion.

1

I hope you will take whatever steps are necessary to protect the treasures in the Glen Canyon NRA as well as to conserve water.

2

John Nutting

10612 Scotland Well Drive



Austin, TX 78750

Stephen R. Cole  
5 Deerwood  
Aliso Viejo, CA 92656

7/2/05

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July 1, 2005

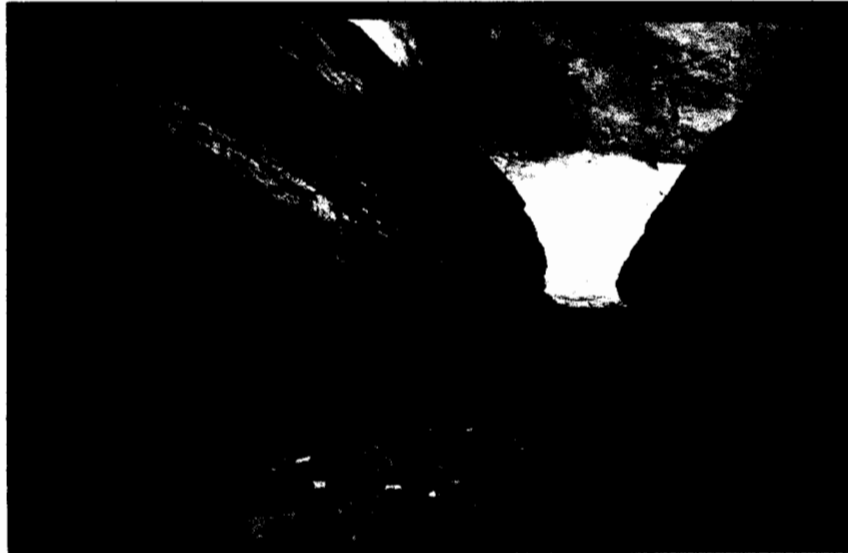
Robert Johnson  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
Attention: BCOO-1000  
P.O. Box 61470  
Boulder City, Nevada 89006-1470

Re: Development of Management Strategies for Lake Powell and Lake Mead

Dear Director Johnson,

I am writing to comment on the development of management strategies for Lake Powell and Lake Mead under low reservoir conditions. Please do not allow Lake Powell reservoir to re-fill and flood Glen Canyon again.

I have spent a great deal of time in Glen Canyon NRA since 1991. Over the past five years I have made 30-40 visits there, and I have personally witnessed the effects of the steadily dropping water levels at Lake Powell reservoir. Formerly impounded side canyons have been drained for the first time in 40 years and there is some incredibly spectacular scenery in there. Below you will find photos from Fiftymile Creek and Twilight Canyon. Both of these photos were taken at a point that is BELOW the normal high water mark of Lake Powell (3700'). In other words, these are scenes that have not been seen in 40 years. Incredible!



Stephen R. Cole  
5 Deerwood  
Aliso Viejo, CA 92656

At the end of March this year, I went into Cathedral in the Desert via an overland route from Hole-in-the-Rock Road and rappelled to the floor of the Cathedral. (See photos below.) It was a very emotional experience. This magnificent alcove in the Navajo sandstone was made famous by photographs by Eliot Porter and others, long before Lake Powell reservoir existed. Please don't let this place be re-flooded...to me that would be like purposely flooding a church.



I urge you to manage the reservoirs at Lake Mead and Lake Powell such that the level of Lake Powell reservoir is at a minimum. Please fill Lake Mead reservoir to its maximum safe level before allowing Powell reservoir to rise. This will help protect the real Glen Canyon and its myriad side-canyon wonderlands.

1

Thank you for considering my comments.

Sincerely,

Stephen R. Cole  
5 Deerwood  
Aliso Viejo, CA 92656

**From:** <puttin47@comcast.net>  
**To:** <strategies@uc.usbr.gov>  
**Date:** 7/8/05 4:50PM

TO: DEPARTMENT OF THE INTERIOR  
Bureau of Reclamation

I would like to thank the Department for the opportunity to use this forum in submitting concerns and ideas regarding the Colorado River Reservoir Operations. For many decades the water management strategies have served both public and private needs in helping the west develop and prosper. It is because of the great vision and the ability to forecast demands that you have this success. I continue to admire the infrastructure to supply so many, with what seems so little at times. Our predecessors - architects and builders of our system of dams and hydroelectric facilities had this same vision, mostly of necessity and perceived need at the time. It seems to be without mention that our lives would be very different if the system had not been built.

It is my opinion that we augment the existing flows into the Upper Colorado River by building new water storage facilities. The continued growth in the region and present demands on the system indicate this. Future generations would prosper instead of subside. New additions to the system could not only supply needed water and electricity that we immediately can't fully deliver, but would suffice long into the future. These new storage facilities could then supply continued growth in the west, as well as export electricity and possibly water to other areas in need. | 1

Again, thank you for your consideration of both public and private viewpoints on this critical issue. I have great faith in the Department of the Interior and the United States to successfully implement solutions with foresight and diligence.

Sincerely,

Andrew J. Mueller  
1703 Center Ave.  
Martinez, Calif. 94553

**CC:** <Strategies@lc.usbr.gov>

7/10/05  
Dan Kozarsky  
366 Sierra Vista Ave., #12  
Mountain View, CA 94043

Robert Johnson  
Regional Director, Bureau of Reclamation, Lower Colorado Region  
Boulder City, NV

Dear Director Johnson,

I am writing to urge you to allow water levels in Lake Powell to continue to lower, and to fill Lake Mead first. | 1

Glen Canyon and the rivers that feed into it are a spectacular national treasure, deserving of national park status. My wife and I spent a week hiking and backpacking this May in the Escalante River area and just love this spectacular but fragile redrock and canyon country. It is without question deserving of national park status. It was encouraging to see that portions of some of the canyons have been reclaimed from their underwater burial. We would love to have an opportunity in the near future to hike to fantastic, sacred places such as the Cathedral in the Desert that are gradually being unearthed (but the water was too high this year). These places are threatened by the fluctuating water levels.

During high runoff years such as this year it makes a lot more sense to store excess water at Lake Mead instead of Lake Powell. Please respect that the Glen Canyon NRA is one of the world's most spectacular and sacred areas, <sup>and</sup> allow it to restore itself! We owe this to ourselves and to our children.

Thank you for your consideration of my comments.



**From:** "Sean Hill" <seanmichelle@gobrainstorm.net>  
**To:** <strategies@uc.usbr.gov>  
**Date:** Thu, Jul 14, 2005 8:32 PM  
**Subject:** Lake Powell and Lake Mead

Outflow should not exceed inflow once the critical level is obtained. Stop wasting water by excessive "flushing of the river". If people upstream are in a drought why maintain flows that suggest that there is no drought? If reservoir levels are below 50% then discharges should be restricted. What were the procedures when both reservoirs were first filled? California is way too greedy and will take all of our water if we allow it to happen.

1

Sean Hill  
505-320-7198

Susan Maida, Ph.D.  
131 Pine Ridge Loop  
Durango, Colorado 81301  
970-259-5257

June 21, 2005

Robert Johnson  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
Attention: BCOO-1000  
P.O. Box 61470  
Boulder City, Nevada 89006-1470

Dear Mr. Johnson:

The steadily dropping water levels at Lake Powell reservoir on the Colorado River are revealing spectacular features that have not been seen in decades. Unfortunately, fluctuating reservoir levels are now threatening these cultural, biological, and scenic resources that are unique to Glen Canyon.

More specifically, precious features such as Cathedral in the Desert, Register Rock, Fort Moqui and numerous petroglyphs are being re-submerged as spring runoff raises the reservoir level, only to be uncovered once again later this year as the lake level declines. This fluctuation of water levels is unnecessary and destructive to these priceless emerging cultural, historic, and scenic sites in Glen Canyon.

An alternative that makes sense is to store all "surplus" Colorado River water in Lake Mead instead of in Glen Canyon. I urge the Bureau of Reclamation to protect these priceless treasures by storing "surplus" water in Lake Mead. Please uphold the established legal protections for priceless sacred and historical sites and emerging endangered species habitats. Please protect Glen Canyon for future generations.

1

2

Sincerely,

  
Susan Maida

**From:** "Gracia Barr" <gracia@localnet.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 7/25/05 10:45AM  
**Subject:** Halt the operation of Glen Canyon Dam

[call2drain:] ACTION ALERT: Comments needed to halt the ore: The Bureau of Reclamation is accepting public comments on the reoperation of the nation's two largest reservoirs, Lake Powell and Lake Mead.

- 1. There is no longer a need for a single-use dam at Glen Canyon | 1
- 2. It's time for more efficient storage, with Lake Powell and Lake Mead losing to evaporation upwards of 17 percent of the water that flows into them | 2
- 3. Revive Grand Canyon: Four of eight native fish have gone extinct and the dam has trapped the sediment necessary to maintain habitat and beaches for wildlife and recreation, as well as the stabilization of archeological sites. | 3
- 4. Manage the sediment | 4
- 5. Revise the Colorado River Compact: The Colorado River Compact of 1922, which largely governs the discharge of flows from Lake Powell to Lake Mead, cannot meet its intended purpose of sharing Colorado River water equitably between the Upper and Lower Basin states. | 5

gracia barr  
 900 n switzer canyon, 126  
 flagstaff az 86001



**From:** <kijohnson1@aol.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 7/25/05 3:32PM  
**Subject:** Decommission Glen Canyon Dam

To: Regional Director, BLM  
Fr: Kim Johnson  
Re: Decommissioning Glen Canyon Dam

Dear Sir,

As a resident of Arizona for 43 years, and now living in Wyoming, I still hold a sincere desire to see Glen Canyon Dam decommissioned and a free-flowing Colorado River restored throughout Glen Canyon.

| 1  
| 2

The "usefulness" of Powell Reservoir is obviously limited, and at this point, meaningless. The damage created by impounding Colorado River water behind Glen Canyon Dam greatly outweighs any "benefits" derived from the reservoir.

By allowing a free-flowing Colorado River, Glen Canyon and the Grand Canyon ecosystems will be allowed to rejuvenate back to their original splendor.

Lake Meade can easily hold the water required for power generation and water reserves for the lower Colorado River states.

Please seriously consider decommissioning Glen Canyon Dam in the near future. It was a bad idea that can be erased for all time.

Thank you.

Regards,

Mr. Kim Johnson  
PO Box 978  
Thayne, WY 83127

**From:** Shaylih Muehlmann <shaylih@gmail.com>  
**To:** <strategies@uc.usbr.gov>  
**Date:** Mon, Jul 25, 2005 9:09 PM  
**Subject:** Public Comment on Lake Powell and Lake Mead

Will there only be the two public meetings soliciting comments? I'm an Arizona resident and would very much like to attend a public meeting on the development of these reservoirs. Will there be a meeting in Arizona? Please let me know.

Sincerely,  
Shaylih Muehlmann

1

**From:** "Robert Rutkowski" <rutkowski@terraworld.net>  
**To:** <strategies@lc.usbr.gov>, <strategies@uc.usbr.gov>  
**Date:** 7/25/05 11:55AM  
**Subject:** Operation of Glen Canyon Dam

Regional Director  
 Bureau of Reclamation, Lower Colorado Region  
 Attention: BCOO-1000  
 P.O. Box 61470  
 Boulder City, Nevada 89006-1470  
 Fax (702) 293-8156

strategies@lc.usbr.gov

Regional Director  
 Bureau of Reclamation  
 Upper Colorado Region  
 Attention: UC-402  
 125 South State Street  
 Salt Lake City, Utah 84318-1147  
 Fax (801) 524-3858

strategies@uc.usbr.gov

Dear Regional Directors:

Please accept these comments on the reoperation of the nation's two largest reservoirs, Lake Powell and Lake Mead. I ask the BLM to examine the viability of permanently ceasing operations at Lake Powell and employing just one reservoir to capture and manage the bulk of Colorado River flows.

I write in calling for The One-Dam Solution: Preliminary report by Living Rivers to the Bureau of Reclamation on proposed reoperation strategies for Glen Canyon and Hoover Dam under low water conditions as outlined in Living Rivers' new report prepared for this reoperation public scoping process. <http://www.livingrivers.org/pdfs/TheOne-DamSolution.pdf>.

1. No longer is there a need for a single-use dam at Glen Canyon | 1

It was not until the fall of 2004, more than 40 years after Glen Canyon Dam began impounding Lake Powell that Lake Powell water storage actually augmented water storage downstream. But with climate change already causing long-term flow reductions, and water consumption levels near the river's historic average flow and rising, it's unlikely that Lake Powell will fill again. The surplus water that filled it during 17 years the first time is no longer there to build a storage cushion. Even should surplus water accumulate, Lake Mead on its own could accommodate it.

2. It's time for more efficient storage | 2

With Lake Powell and Lake Mead losing to evaporation upwards of 17 percent of the water that flows into them, it's time that more efficient means be explored for storing this precious water. Vacant space in underground aquifers on, or accessible to, existing Colorado River infrastructure could accommodate more water than these two reservoirs combined-and with far greater efficiency. Upwards of 810,000 acre-feet of water annually-enough water for 1.6 million households of four people each-could be saved by eliminating Lake Powell and operating Lake Mead principally for distribution to groundwater recharge

facilities.

### 3. Revive Grand Canyon

3

Between Lake Powell and Lake Mead lies one of the world's most famous and geologically and ecologically unique river canyons, Grand Canyon National Park. The operation of both these reservoirs has impacted the Canyon, but Glen Canyon Dam has been far more devastating. Since its completion four of eight native fish have gone extinct and the dam has trapped the sediment necessary to maintain habitat and beaches for wildlife and recreation, as well as the stabilization of archeological sites.

### 4. Manage the sediment

4

Sediment is a major unresolved problem threatening the long-term operations of Lake Powell and Lake Mead. Ultimately, sediment will have to be removed from one or both of these reservoirs. Removing sediment from Lake Mead rather than Lake Powell is the most feasible and least expensive likely alternative. While original estimates projected that sediment would not effect the safe operations of Glen Canyon Dam for another 60 years, scientists now warn that major problems could occur sooner.

### 5. Revise the Colorado River Compact

5

The Colorado River Compact of 1922, which largely governs the discharge of flows from Lake Powell to Lake Mead, cannot meet its intended purpose of sharing Colorado River water equitably between the Upper and Lower Basin states. The Compact allocated 11 percent more water than the river has to give, and affords the Lower Basin 20 percent more water than the upper basin. With river flows expected to decline 18 percent by 2040, this inequity will worsen as the Upper Basin is required to deliver to the Lower Basin its full share regardless of declines in river flow.

While the Bureau of Reclamation will state that its present focus is developing strategies solely for low reservoir conditions, stress that given the growing challenges and looming shortages facing Colorado River water users as a result of these dams, that a far more comprehensive assessment addressing the issues above is fully warranted, and should be done through an Environmental Impact Statement.

Thank you for the opportunity to bring these remarks to your attention.

Mindful of the enormous responsibilities which stand before you, I am,

Yours sincerely,  
Robert E. Rutkowski

cc:  
Nancy Pelosi  
President George W. Bush

2527 Faxon Court  
Topeka, Kansas 66605-2086  
P/F: 1 785 379-9671  
r\_e\_rutkowski@myrealbox.com

**CC:** "Nancy Pelosi" <sf.nancy@mail.house.gov>, "George W. Bush" <comments@whitehouse.gov>

**From:** Tom K <wb2tk@optonline.net>  
**To:** <Strategies@lc.usbr.gov>  
**Date:** 7/25/05 7:00AM  
**Subject:** WATER LEVEL ON LAKE MEAD

Although weather patterns appear to be the cause of the lack of water in lake mead, I suspect that the tremendous building expansion in the Las Vegas area must also impact on the water. | 1

If a reduction in building projects were put in place and home owners were required to conserve water | 2  
I believe this too would have a positive effect on the water problem

**From:** <pwellner@getupstandup.net>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 7/25/05 12:19PM  
**Subject:** Lake Powell

Please examine the viability of permanently ceasing operations at Lake Powell and employing just one reservoir to capture and manage the bulk of Colorado River flows.

#### 1. No longer a need for a single-use dam at Glen Canyon

1

It was not until the fall of 2004, more than 40 years after Glen Canyon Dam began impounding Lake Powell that Lake Powell water storage actually augmented water storage downstream. But with climate change already causing long-term flow reductions, and water consumption levels near the river's historic average flow and rising, it's unlikely that Lake Powell will fill again. The surplus water that filled it during 17 years the first time is no longer there to build a storage cushion. Even should surplus water accumulate, Lake Mead on its own could accommodate it.

#### 2. It's time for more efficient storage

2

With Lake Powell and Lake Mead losing to evaporation upwards of 17 percent of the water that flows into them, it's time that more efficient means be explored for storing this precious water. Vacant space in underground aquifers on, or accessible to, existing Colorado River infrastructure could accommodate more water than these two reservoirs combined-and with far greater efficiency. Upwards of 810,000 acre-feet of water annually-enough water for 1.6 million households of four people each-could be saved by eliminating Lake Powell and operating Lake Mead principally for distribution to groundwater recharge facilities.

#### 3. Revive Grand Canyon

3

Between Lake Powell and Lake Mead lies one of the world's most famous and geologically and ecologically unique river canyons, Grand Canyon National Park. The operation of both these reservoirs has impacted the Canyon, but Glen Canyon Dam has been far more devastating. Since its completion four of eight native fish have gone extinct and the dam has trapped the sediment necessary to maintain habitat and beaches for wildlife and recreation, as well as the stabilization of archeological sites.

#### 4. Manage the sediment

4

Sediment is a major unresolved problem threatening the long-term operations of Lake Powell and Lake Mead. Ultimately, sediment will have to be removed from one or both of these reservoirs. Removing sediment from Lake Mead rather than Lake Powell is the most feasible and least expensive likely alternative. While original estimates projected that sediment would not effect the safe operations of Glen Canyon Dam for another 60 years, scientists now warn that major

problems could occur sooner.

#### 5. Revise the Colorado River Compact

5

The Colorado River Compact of 1922, which largely governs the discharge of flows from Lake Powell to Lake Mead, cannot meet its intended purpose of sharing Colorado River water equitably between the Upper and Lower Basin states. The Compact allocated 11 percent more water than the river has to give, and affords the Lower Basin 20 percent more water than the upper basin. With river flows expected to decline 18 percent by 2040, this inequity will worsen as the Upper Basin is required to deliver to the Lower Basin its full share regardless of declines in river flow.

Pamela Wellner  
1009 DeHaro St.  
San Francisco, CA 94107



**From:** "Crista Worthy" <crisaworthy@hotmail.com>  
**To:** <strategies@lc.usbr.gov>, <strategies@usbr.gov>  
**Date:** 7/25/2005 9:21 PM  
**Subject:** Glen Canyon Dam

**LC strategies - Glen Canyon Dam**

I understand that the Bureau of Reclamation is accepting public comments on the future operation of the nation's two largest reservoirs, Lake Powell and Lake Mead.

I spend a lot of time in the Glen Canyon area, and have an active interest in what happens there. For the most part, my activities consist of hiking in the canyons. I also operate a houseboat on Lake Powell.

The Bureau should start thinking long-term, not just how to deal with the current drought emergency. Until 2004, the Glen Canyon Dam was not even needed. In the future, we will have even drier weather, and a larger population using more water. It is likely that the dam will not even fill. Lake Mead can easily hold the water, but underground storage via aquifers is preferable to Lake Powell, with its ridiculous evaporation rate. | 1

The dam is a waste.

I understand the dam generates electricity, which is worth millions of dollars. But how many millions of dollars does Los Angeles or the entire state of Nevada pay for all its water each year? Because that's how much water the Glen Canyon Dam wastes.

In the future, water will cost more.

We can generate electricity in other ways and in other places, but we can't create more water.

The amount of sediment that arrives in Glen Canyon each day is hard to comprehend.

This sediment is being prevented from continuing its journey into the Grand Canyon, and the lack of sediment combined with the unnaturally cold water released from the depths of Lake Powell is destroying the ecosystem of a National Park. This is illegal.

Should sediment removal become necessary, it is easier to remove it from Lake Mead. | 2

The creation of Lake Powell wiped out the vast majority of all life along a 200-mile stretch of the Colorado River through the heart of the Colorado Plateau. Birds, plants, insects, mammals, fish and amphibians--gone.

But just the last few years of lowered water levels due to the drought has shown that this life will return, as it is now returning in the side canyons along Glen Canyon, the San Juan, and the Escalante. I have seen it myself.

The Colorado River Compact of 1922, which largely governs the discharge of flows from Lake Powell to Lake Mead, is totally outdated and based a few years where the Colorado River carried an unusually large volume of water. The Compact allocated 11% more water than the river has to give, and affords the Lower

Basin 20% more water than the upper basin. With river flows expected to decline 18% by 2040, this inequity will worsen as the Upper Basin is required to deliver to the Lower Basin its full share regardless of declines in river flow.

Considering the looming shortages facing Colorado River water users and the massive environmental damage created by Glen Canyon Dam, a more comprehensive assessment addressing the issues above is fully warranted, and should be done through an **Environmental Impact Statement**.

3

If Lake Powell disappears, I will lose my houseboat, and several thousand people will lose their jobs. However, many of these jobs can be converted into new jobs managing what ought to be the GLEN CANYON NATIONAL PARK, a thriving ecological community, at the center of which is the free-flowing Colorado River. I would gladly convert to pure hiking or even stay out of Glen Canyon forever, knowing the ecosystem is restoring itself.

4

There are lots of places to hike, and there are lots of other reservoirs. BUT THERE WAS ONLY ONE GLEN CANYON!

Sincerely,

Crista Worthy

16664 Calle Brittany

Pacific Palisades, CA 90272

(310)454-4329

**From:** <Meapeak@aol.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 7/26/05 6:32AM  
**Subject:** Glen Canyon Dam

Dear BOR:

As an Arizona resident, former river guide in the Grand Canyon and citizen concerned with water and environmental issues, I would like to suggest that there is no longer a need for a single-use dam at Glen Canyon. I'd like to see more efficient storage at Lake Mead and further restoration of Grand Canyon, one of the world's most famous and geologically and ecologically unique river canyons. The operation of both these reservoirs has impacted the Canyon, but Glen Canyon Dam has been far more devastating. Since its completion four of eight native fish have gone extinct and the dam has trapped the sediment necessary to maintain habitat and beaches for wildlife and recreation, as well as the stabilization of archeological sites.

1  
2  
3

Sediment is a major unresolved problem threatening the long-term operations of Lake Powell and Lake Mead. Ultimately, sediment will have to be removed from one or both of these reservoirs. Removing sediment from Lake Mead rather than Lake Powell is the most feasible and least expensive likely alternative.

4

Thank you,

Mary Ellen Arndorfer  
 Flagstaff, AZ

**From:** Atwood Carl-E11745 <catwood@motorola.com>  
**To:** "strategies@lc.usbr.gov" <strategies@lc.usbr.gov>  
**Date:** 7/26/05 10:43AM  
**Subject:** FW: Las Vegas Review Journal on Living Rivers' Glen Canyon Dam proposal

For the record, I stand opposed to the dismantling of the Glen Canyon Dam. I believe it's presence | 1  
during the recent/current drought has proven it's worth as the conditions would have probably been worse  
than the dust bowl earlier last century. The reservoir, know as Lake Powell, continues to work as planned  
as a buffer for these conditions, contributing to water delivery as needed to folks dependant on it's flow.

But beyond being a resource for water storage, delivery and electrical output, Lake Powell serves as a  
great resource and value for recreation and contributes to the overall economy.

I recommend that the dam remains and all efforts made to keep water releases to the minimum | 2  
contracted amounts during the years until the drought is proven to be out of cycle.

Sincerely,

Carl Atwood  
16432 Santa Cristobal  
San Diego, CA 923127  
619/890-7905  
catwood@motorola.com <mailto:catwood@motorola.com>

-----  
From: posting@livingrivers.org [mailto:posting@livingrivers.org]  
Sent: Tuesday, July 26, 2005 8:17 AM  
To: listserv@livingrivers.org  
Subject: Las Vegas Review Journal on Living Rivers' Glen Canyon Dam proposal

[http://www.reviewjournal.com/lvrj\\_home/2005/Jul-26-Tue-2005/news/26940665.html](http://www.reviewjournal.com/lvrj_home/2005/Jul-26-Tue-2005/news/26940665.html)  
Future of Colorado River subject of meeting

Utah environmental group seeks dismantling of Glen Canyon Dam, proposes pumping reserve water into  
aquifers

By HENRY BREAN  
LAS VEGAS REVIEW-JOURNAL  
July 26, 2006

The Bureau of Reclamation will hold a public meeting in Henderson today on the future of the Colorado  
River, and a Utah environmental group plans to be there to call for an end to North America's second  
largest man-made reservoir.

<Stuff cut...blah...blah, blah.....>

Comments can be sent by fax to 702-293-8156, by e-mail to strategies@lc.usbr.gov, or by surface mail to  
Regional Director, Bureau of Reclamation, Lower Colorado Region, Attention: BCOO-1000, P.O. Box  
61470, Boulder City, NV 89006-1470.

|||||  
LIVING RIVERS & COLORADO RIVERKEEPER  
Electronic Information Services

PO BOX 466  
Moab, UT 84532  
Tel: 435.259.1063  
Fax: 435.259.7612

info@livingrivers.org  
www.livingrivers.org

To unsubscribe to this listserv, please send a message to listserv@livingrivers.org and type UNSUBSCRIBE into the subject line.

|||||

**From:** scottbennett <scottbennett@mynuskin.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 7/26/05 8:27AM  
**Subject:** Save Lake Powell

To Whom it make concern:

I think that doing anything to the detriment of Lake Powell would be a travesty. Lake Powell is an incredible place of Nature that is only enjoyed by people because of the Lake. If you close Lake Powell you will be hurting communities, human lives, and one of the worlds greatest recreational areas.

1

Sincerely,  
Scott Bennett  
801.403.7027  
scottbennett@mypharmanex.com  
SKYPE username: scottbennettotg

July 26, 2005

Regional Director  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000  
P.O. Box 61470  
Boulder City, Nevada 89006-1470

Dear Director:

This is in response to your request for public comments concerning the operations of Lake Mead and Lake Powell reservoirs.

Lake Powell is an anachronism and Glen Canyon Dam should be de-commissioned. Adequate storage capability exists in Lake Mead. The continued existence of Lake Powell is no longer needed and, indeed, increases threats to the health of the river, the native fish, and the general environment in Glen Canyon. | 1

Demands on river water already meet or exceed what can be provided. This situation will only get worse. Evaporation from Lake Powell is significant, is wasteful in the extreme, and cannot be justified.

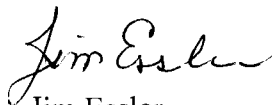
Freeing the river to again flow freely through Glen Canyon Dam will promote the return and survival of native, endangered fish in the Grand Canyon.

Glen Canyon is a truly special place, even on a global scale. It is rich in environmental, geological, and architectural treasures. Allowing it to be periodically flooded is destructive to all of these and, worse, does little to nothing to advance the reason for the dam in the first place. | 2

The Colorado River Compact is in sore need of revision to address the fact that the river is overcommitted and that this is only likely to get worse. Indeed, I would recommend a full Environmental Impact Statement be prepared to address all the ramifications of allowing Glen Canyon Dam to continue to operate. | 3  
| 4

Thank you for your attention.

Sincerely,



Jim Essler  
1905 W. 32<sup>nd</sup> Street  
Austin, Tx. 78703

**From:** "Mr. Chad Evans" <cevens@siprep.org>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 7/26/05 10:52AM  
**Subject:** One Dam Solution

Regional Director

Bureau of Reclamation, Lower Colorado Region

Attention: BCOO-1000

P.O. Box 61470

Boulder City, Nevada 89006-1470

To Whom It May Concern:

I am writing to you today to urge you to consider the viability of permanently ceasing operations at Lake Powell and employing just one reservoir to capture and manage the bulk of Colorado River flows. A number of factors contribute to this suggestion.

1. No longer a need for a single-use dam at Glen Canyon

| 1

It was not until the fall of 2004, more than 40 years after Glen Canyon Dam began impounding Lake Powell that Lake Powell water storage actually augmented water storage downstream. But with climate change already causing long-term flow reductions, and water consumption levels near the river's historic average flow and rising, it's unlikely that Lake Powell will fill again. The surplus water that filled it during 17 years the first time is no longer there to build a storage cushion. Even should surplus water accumulate, Lake Mead on its own could accommodate it.

2. It's time for more efficient storage

| 2

With Lake Powell and Lake Mead losing to evaporation upwards of 17 percent of the water that flows into them, it's time that more efficient means be explored for storing this precious water. Vacant space in underground aquifers on, or accessible to, existing Colorado River infrastructure could accommodate more water than these two reservoirs combined-and with far greater efficiency. Upwards of 810,000 acre-feet of water annually-enough water for 1.6 million households of four people each-could be saved by eliminating Lake Powell and operating Lake Mead principally for distribution to groundwater recharge facilities.

3. Revive Grand Canyon

| 3

Between Lake Powell and Lake Mead lies one of the world's most famous and geologically and ecologically unique river canyons, Grand Canyon National Park. The operation of both these reservoirs has impacted the Canyon, but Glen Canyon Dam has been far more devastating. Since its completion four of eight native fish have gone extinct and the dam has trapped the sediment necessary to maintain habitat and beaches for wildlife and recreation, as well as the stabilization of archeological sites.



#### 4. Manage the sediment

4

Sediment is a major unresolved problem threatening the long-term operations of Lake Powell and Lake Mead. Ultimately, sediment will have to be removed from one or both of these reservoirs. Removing sediment from Lake Mead rather than Lake Powell is the most feasible and least expensive likely alternative. While original estimates projected that sediment would not effect the safe operations of Glen Canyon Dam for another 60 years, scientists now warn that major problems could occur sooner.

#### 5. Revise the Colorado River Compact

5

The Colorado River Compact of 1922, which largely governs the discharge of flows from Lake Powell to Lake Mead, cannot meet its intended purpose of sharing Colorado River water equitably between the Upper and Lower Basin states. The Compact allocated 11 percent more water than the river has to give, and affords the Lower Basin 20 percent more water than the upper basin. With river flows expected to decline 18 percent by 2040, this inequity will worsen as the Upper Basin is required to deliver to the Lower Basin its full share regardless of declines in river flow.

Thank you for your attention to this matter. I look forward to action on your behalf for the benefit of the Colorado River.

Sincerely,  
Chad Evans

Chad Evans  
Religious Studies Department  
St. Ignatius College Preparatory  
San Francisco, CA

**CC:** "Mr. Paul Totah" <ptotah@siprep.org>, <info@livingrivers.org>

**From:** "David Kapell" <davek@dreamscape.com>  
**To:** <strategies@lc.usbr.gov>, <strategies@uc.usbr.gov>  
**Date:** 7/26/05 9:19AM  
**Subject:** Glen Canyon Dam

Gentlemen:

I have heard that the Bureau of Reclamation is accepting public comments on the reoperation of Lake Powell and Lake Mead.

I have followed the recent news of the drought which has pushed water levels in Lake Mead to record lows. It is unlikely that the lake will ever rise to its prior height. With the sediment build-up behind the dam, and the low water levels, new intake pipes will be required to use the water impounded there.

Further, I do not believe that there was ever a logical need for this dam. Water lost to evaporation has reduced the amount available to satisfy the Compact, and prevented states along the Colorado River from receiving the water they need.

I believe that the best solution would be to breach the dam and let the river run its natural course through Glen Canyon.

1

David

**From:** "Peter LaMorte" <lamorte@sopris.net>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 7/26/05 10:58AM  
**Subject:** Lake Powell

Pie Charts To Whom It May Concern,  
We need Lake Powell more than ever. Please rework the Colorado River Compact, as to put more emphasize on conversation and lower the release of waters so we continue to manage the resources in a logical way.

Thank You

Peter LaMorte  
LaMorte and Company, Limited  
0477 Lions Ridge Rd  
Carbondale, Colorado 81623  
office 970-963-1776 Fax 970-963-1072  
(e) lamorte@sopris.net

--

No virus found in this outgoing message.

Checked by AVG Anti-Virus.

Version: 7.0.338 / Virus Database: 267.9.5/58 - Release Date: 7/25/2005

**From:** <runningbears@comcast.net>  
**To:** <Strategies@uc.usbr.gov>  
**Date:** Tue, Jul 26, 2005 4:23 PM  
**Subject:** Colo River Draught Plan

Gentlemen:

I have read on more than one occasion that the original compact dividing up the Colorado River water was based on an assumption that there was in excess of 17 million acre feet of water available for distribution and use. It has been proven over time that this 17 million acre feet was overstated.

Why are we still using the 17 million acre foot amount? The first thing that should be done in the draught plan is to use a base of 15 million acre feet (or 14-1/2 million) to be divided. I suggest that the base should be reduced and each state then receive the current percentage; that is, the same percentage as contained in the 1922 compact, but utilizing the lower number. 1

Sincerely,

Jay R. Lower  
runningbears@comcast.net  
9636 Silver Hill Circle  
Lone Tree, CO 80124-5418

**From:** <DesertRox913@aol.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 7/26/05 5:15PM  
**Subject:** Colorado Water Shortage

My first suggestion is to impose limits on growth. It's out of control and we don't have the resources to support the growth.

| 1

Second suggestion - a pipeline to the California coast and a desalinization plant contract. Expensive yes but a solution.

| 2

Sandra Needham  
Henderson, NV

**From:** "Steve" <wow2@rof.net>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 7/26/05 2:04PM  
**Subject:** The dam also provides another benefit: electricity.

Regional Director  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000  
P.O. Box 61470  
Boulder City, Nevada 89006-1470

"Glen Canyon Dam is an insurance policy for the Upper Basin," said Larry Anderson, director of the State of Utah's Division of Water Resources. "It allows us to meet our downstream commitment without having to cut off any of our water users."

"The dam also provides another benefit: electricity. With a capacity for nearly 1300 megawatts of electricity, enough power for about a quarter-million homes, the dam provides power to rural electrical co-ops, municipalities, irrigation and electrical districts, Indian reservations and governmental facilities throughout the southwest. This power, produced by the U.S. Bureau of Reclamation (Bureau) and marketed by the Western Area Power Administration (WAPA), an agency of the Department of Energy, is the primary source of revenue for paying back the dam's capital costs, and operation and maintenance costs."

"Until 1991, water releases out of Glen Canyon Dam for downstream users were orchestrated to maximize power production..."

"People need to understand that Glen Canyon Dam has gone from a 1,300 megawatt resource, to a 900 megawatt resource and even down to 330 megawatts this past summer," said Leslie James, executive director of the Colorado River Energy Distributors Association, an organization representing over 130 power providers in the Colorado River Basin and member of the Adaptive Management Work Group. "You take that amount of capacity out of the western wholesale market and its going to have a serious impact on prices."

<<http://www.water-ed.org/rrwinter0001.asp>> Life after NEPA, ESA, and AMP

Thank you , Steve Parmelee, Snowmass, Colorado

Storing water at the higher elevation means less evaporation. Thus keeping Lake Powell nearly full will be the better storage location. | 1

We support 7.5 MAF released annually from Lake Powell as the Maximum...per your request : | 2

=====  
Reclamation Seeks Public Comment on Development of Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions

The Bureau of Reclamation today filed a Federal Register Notice requesting

public comment on the development of management strategies for Lakes Powell and Mead, on the Colorado River, under low reservoir conditions. Among the management strategies anticipated are shortage guidelines for the Lower Colorado River Basin.

The strategies will likely identify those circumstances under which the Department of the Interior would reduce annual Colorado River water deliveries and the manner in which annual operations of the Colorado River reservoirs would be modified under low reservoir conditions.

The Department expects the strategies to provide guidance to the Secretary's Annual Operating Plan decisions, and provide more predictability to water users throughout the Basin, particularly the Lower Basin states of Arizona, California, and Nevada.

The Annual Operating Plan - developed in consultation with the Basin States, water and power users, Tribes, environmental and recreational groups and other interested parties - guides operation of the Colorado River. Among other elements, it specifies whether the amount of Colorado River water available to be released from Lake Mead to Lower Basin users in a given year will be "normal" (7.5 million acre-feet), "surplus" (more than 7.5 million acre-feet) or "shortage" (less than 7.5 million acre-feet).

<http://www.usbr.gov/newsroom/newsrelease/detail.cfm?RecordID=6061>

**CC:** <joshua.perry.house@state.co.us>

**From:** "Nancy Rader" <nrader@igc.org>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 7/26/05 10:39AM  
**Subject:** Colorado River operations during low reservoir conditions

Dear Regional Director, Bureau of Reclamation for the Lower Colorado Region:

Regarding the above-mentioned subject, I would like to urge the Bureau to commission an independent evaluation of the solution proposed by Living Rivers, which I read about in the Las Vegas Review Journal on July 26. Living Rivers' proposal makes a lot of sense: (1) the Glen Canyon Dam will become full of silt at some point in any case; (2) the alternative of pumping the water into groundwater aquifers has the added benefit of reducing losses from evaporation; and (3) decommissioning Glen Canyon Dam will restore natural habitat along the Colorado and protect wildlife, recreation and cultural resources within the Grand Canyon.

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I am a frequent visitor to the Glen Canyon area and recently traveled to Lake Powell to see land revealed by the drought. As numerous stories in the press nationwide attest, America is just discovering this marvelous area. Decommissioning the dam will draw many recreationalists and reveal God's creation once again. Though the value is not quantifiable, it should be considered in addition to any cost-benefit evaluations.

Nancy Rader  
 1198 Keith Avenue  
 Berkeley, CA 94708  
 510-845-5359



**From:** "Tim and Anna" <timnanna@cox.net>  
**To:** <strategies@lc.usbr.gov>  
**Date:** Tue, Jul 26, 2005 6:32 PM  
**Subject:** water shortage

Maybe we to start thinking about desalinization!

| 1

**From:** "VegasBilly" <vegasbilly@cox.net>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 7/26/05 9:28PM  
**Subject:** Eliminate ALL grass

People are using precious drinking water to water grass.  
Use Artificial grass like the new Wynn Casino in Las Vegas.. It looks beautiful

| 1

**From:** <Rduba513@aol.com>  
**To:** <gale\_norton@ios.doi.gov>, <strategies@lc.usbr.gov>, <strategies@uc.usbr.gov>  
**Date:** 7/27/05 4:03PM  
**Subject:** Water Fluctuations in Lake Powell

Dear Secretary Norton and Directors Johnson & Gold:

I am writing to express my thoughts about water storage in Lake Powell. Since I am a member of the Glen Canyon Institute, ultimately, I would like to see Lake Powell drained completely and the magnificent Glen Canyon fully restored. Practically, however, I recognize this may not happen in my lifetime. | 1

It is stirring, however, to read about how all of those beautiful treasure of Glen Canyon are being restored to human view because of dropping water levels. While I know that due to my health and advanced age, I will never see the Cathedral in the Desert, Register Rock, Fort Moqui and the thousands of petroglyphs in the canyon, just to know that they have once again been viewed by other people is enough to give me great satisfaction. And better yet is knowing there is a chance that those that follow will have access to these magnificent sites!

Please, don't keep the waters fluctuating in Lake Powell. Use Lake Mead to store all of the "surplus" waters of the Colorado and let nature take its course with the water levels of Lake Powell. And ultimately, I hope that all of you will consider restoring Glen Canyon to all its splendor! | 2  
| 3

Yours truly,  
 Roger L. Duba  
 2802 Las Gallinas Ave.  
 San Rafael, CA 94903  
 (415) 479-6758

**From:** Paul Fretheim <paul@inyopro.com>  
**To:** <strategies@uc.usbr.gov>, <strategies@lc.usbr.gov>, <posting@livingrivers.org>  
**Date:** 7/27/05 4:17PM  
**Subject:** Comment on Operation of Glen Canyon and Hoover Dams

Dear Director:

I have read the arguments below regarding the operation of Glen Canyon and Hoover Dams and the water storage policies related to their operation. I agree with the argument that keeping Lake Mead as full as possible and no longer filling Lake Powell is the best policy to follow.

I make my living selling my photography to tourists who visit the National Parks, and I have a product that includes the Glen Canyon National Recreation Area. I believe that times have changed so much since the 1950s that the sort of solitude and colorful scenery found on the Kaiparowitz plateau and along the Colorado river in the Glen Canyon area and its tributaries that today tourism could be equally attracted by Glen Canyon National Park, which could provide recreation of a different type that is not so oil dependent as boating on Lake Powell is. The tourism business of the Page area will just evolve, not disappear if the lake is allowed to drain completely.

You probably know that a small houseboat has a 600 gallon fuel tank and that it is possible to empty such a tank in a trip to Rainbow Bridge and back from Wahweap. With fuel at the Marina nearing \$5 a gallon, that is \$3000 to fill the tank for a couple of days of cruising. That can't go on forever either.

Please decommission Glen Canyon dam.

| 1

Thank you.

Paul Fretheim  
Owner, Inyo Pro - Publishers of Interpretive Products on the National Parks

Living Rivers & Colorado Riverkeeper  
A C T I O N A L E R T  
July 25, 2005

Comments needed to Change the operation of Glen Canyon Dam  
Submit by: Wednesday, August 31, 2005

The Bureau of Reclamation is accepting public comments on the reoperation of the nation's two largest reservoirs, Lake Powell and Lake Mead. Your voice is needed to demand that they examine the viability of permanently ceasing operations at Lake Powell and employing just one reservoir to capture and manage the bulk of Colorado River flows. Join in calling for The One-Dam Solution as outlined in Living Rivers' new report prepared for this reoperation public scoping process.

Let the Bureau of Reclamation know that:

1. No longer a need for a single-use dam at Glen Canyon

It was not until the fall of 2004, more than 40 years after Glen Canyon

Dam began impounding Lake Powell that Lake Powell water storage actually augmented water storage downstream. But with climate change already causing long-term flow reductions, and water consumption levels near the river's historic average flow and rising, it's unlikely that Lake Powell will fill again. The surplus water that filled it during 17 years the first time is no longer there to build a storage cushion. Even should surplus water accumulate, Lake Mead on its own could accommodate it.

## 2. It's time for more efficient storage

With Lake Powell and Lake Mead losing to evaporation upwards of 17 percent of the water that flows into them, it's time that more efficient means be explored for storing this precious water. Vacant space in underground aquifers on, or accessible to, existing Colorado River infrastructure could accommodate more water than these two reservoirs combined-and with far greater efficiency. Upwards of 810,000 acre-feet of water annually-enough water for 1.6 million households of four people each-could be saved by eliminating Lake Powell and operating Lake Mead principally for distribution to groundwater recharge facilities.

## 3. Revive Grand Canyon

Between Lake Powell and Lake Mead lies one of the world's most famous and geologically and ecologically unique river canyons, Grand Canyon National Park. The operation of both these reservoirs has impacted the Canyon, but Glen Canyon Dam has been far more devastating. Since its completion four of eight native fish have gone extinct and the dam has trapped the sediment necessary to maintain habitat and beaches for wildlife and recreation, as well as the stabilization of archeological sites.

## 4. Manage the sediment

Sediment is a major unresolved problem threatening the long-term operations of Lake Powell and Lake Mead. Ultimately, sediment will have to be removed from one or both of these reservoirs. Removing sediment from Lake Mead rather than Lake Powell is the most feasible and least expensive likely alternative. While original estimates projected that sediment would not effect the safe operations of Glen Canyon Dam for another 60 years, scientists now warn that major problems could occur sooner.

## 5. Revise the Colorado River Compact

The Colorado River Compact of 1922, which largely governs the discharge of flows from Lake Powell to Lake Mead, cannot meet its intended purpose of sharing Colorado River water equitably between the Upper and Lower Basin states. The Compact allocated 11 percent more water than the river has to give, and affords the Lower Basin 20 percent more water than the upper basin. With river flows expected to decline 18 percent by 2040, this inequity will worsen as the Upper Basin is required to deliver to the Lower Basin its full share regardless of declines in river flow.

While the Bureau of Reclamation will state that its present focus is developing strategies solely for low reservoir conditions, stress that given the growing challenges and looming shortages facing Colorado River

water users as a result of these dams, that a far more comprehensive assessment addressing the issues above is fully warranted, and should be done through an Environmental Impact Statement.

All comments must be received by close of business (4:00 p.m. Mountain Daylight or Pacific Daylight Time) on Wednesday, August 31, 2005.

Comments can be mailed, faxed, or e-mailed to:

Regional Director  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000  
P.O. Box 61470  
Boulder City, Nevada 89006-1470

Fax (702) 293-8156  
[strategies@lc.usbr.gov](mailto:strategies@lc.usbr.gov)

Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
Attention: UC-402  
125 South State Street  
Salt Lake City, Utah 84318-1147  
Fax (801) 524-3858

[strategies@uc.usbr.gov](mailto:strategies@uc.usbr.gov)

For Additional Information:  
The One Dam Solution: Preliminary report by Living Rivers to the Bureau of Reclamation on proposed reoperation strategies for Glen Canyon and Hoover Dam under low water conditions.  
<http://www.livingrivers.org/pdfs/TheOne-DamSolution.pdf>

Reclamation Seeks Public Comment on Development of Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions  
<http://www.usbr.gov/newsroom/newsrelease/detail.cfm?RecordID=6061>

Federal Registry Notice announcing public comment period on reoperation of the reservoirs  
<http://www.usbr.gov/lc/region/g4000/docs/strategies.pdf>

Living Rivers & Colorado Riverkeeper  
Electronic Information Services

PO BOX 466  
Moab, UT 84532  
Tel: 435.259.1063  
Fax: 435.259.7612

[info@livingrivers.org](mailto:info@livingrivers.org)  
[www.livingrivers.org](http://www.livingrivers.org)

To unsubscribe to this listserv, please send a message to [listserv@livingrivers.org](mailto:listserv@livingrivers.org) and type UNSUBSCRIBE into the subject line.



**From:** David Hoch <dfhoch@yahoo.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 7/27/05 8:21AM  
**Subject:** Lake Mead

Dear Folks,

I have been a resident of Las Vegas since 1979 and have boated on Lake Mead nearly the entire time. It is a wonderful resource for recreation and millions enjoy the vistas and innumerable coves and beaches.

I was here when Lake Mead overflowed the spillways at Hoover Dam in 1983 and have watched the levels decline ever since, to the present level of 1139 feet. I've seen the Las Vegas Bay marina go dry and move to the present location south of Heminway harbor. I am gratified to see the levels increase this year and that the total storage has risen to 60%, up from 50% in January. I realize we are still in a drought and caution is needed.

It's no secret that Las Vegas is growing rapidly and its water consumption is growing daily. I also know that we have a small fraction of the overall allotment from the Colorado river.

I think we need some clear and enforceable regulations on use of water from the Colorado so local entities can make plans for their futures as respects water use. It appears to me that there is a free-for-all when it comes to water from the Colorado, with no well-defined agreements for water conservation. At a time when water is so scarce, the southwest needs to act quickly to put effective conservation measures in place until the drought is clearly over and our system is full of water. There is way too much grass being grown, for example. I think aggressive conservation measures are needed now.

1

I would leave the decision respecting conservation measures to the political process, hoping that reasonable limits could be agreed upon by all states and tribes. Once we all know how much we can use, plans can be made to adjust our environment to live within the boundaries of our allotment. If this resource goes dry, the consequences would be horrendous, even for the entire United States. No one knows when or if, the drought will abate. The answer to when the drought will end may depend upon whether or not global warming is a root cause.

David Hoch



**From:** Darik N <darik702@yahoo.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 7/27/05 8:20AM  
**Subject:** save Lake Powell!!!

It would be an utter tragedy to dismantle Glen Canyon Dam. Lake Powell is one the most beautiful places in the United States and without the lake, no one could enjoy such beauty. It is unfortunate that certain ratical special interest groups waste so much time and effort trying to destroy things that mean so much to many people.... Most of these people wanting to destroy Lake Powell probably have not even been on the lake. Let's not make a disasterous mistake in losing such a national treasure.

1

-- D. Nielson

-----  
Start your day with Yahoo! - make it your home page

**From:** "Steve" <wow2@rof.net>  
**To:** <strategies@uc.usbr.gov>  
**Date:** Wed, Jul 27, 2005 10:04 AM  
**Subject:** Please add this and me to your scoping process on Development of Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions

Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
Attention: UC-402  
125 South State Street  
Salt Lake City, Utah 84318-1147  
Fax (801) 524-3858

Tamarisk eradication efforts

Dave Augustine of the U.S. Forest Service presented the biology and history of the water-robbing phreatophyte, noting that it was first imported from central Asia in the 1800s for use as an ornamental plant, to create windbreaks, and to provide stability for erosion-prone stream banks. Augustine, a biologist for the Cimarron and Comanche National Grasslands, noted that a single Tamarisk plant can consume up to 200 gallons more water per day than the native vegetation it replaces and can produce up to 250 million seeds a year. They have now spread to cover some 1.5 million acres in the western USA, are moving into Canada, and are blamed for using some 170,000 acre feet more water per year than native plants would have used just in Colorado alone.

They are blamed for lowering water tables, crowding out native vegetation and wildlife habitat, increasing soil salinity and destroying riparian grazing areas. A combination of mechanical cutting, prescribed burns, and herbicide applications are used to control them along the Purgatoire and Cimarron Rivers, he said.

Ken Lair of the U.S. Bureau of Reclamation noted...loss of water, water quality, and habitat... They exude "brine" - a salty solution of up to 41,000 parts per million into nearby soil.

Katy Fitzgerald of the U.S. Fish and Wildlife Service, outlined other negative impacts of Tamarisks. Not only do they destroy wildlife habitat, but they are also responsible for altering the structure of rivers and increasing flooding risks. They slow the flow in a river and diminish its ability to do stream restructuring on its own. They produce a heavy fuel load in a river bed and Tamarisk fires burn hotter and create more frequent fires, further damaging other native species.

There is a loss of plant diversity and animal food sources, a loss of visibility which increases predator risk to species like deer, a loss of native vegetative stratification, a decrease in available nesting habitat for species like wild turkeys, and a retention of heat within Tamarisk's vegetation which decreases the ability of many birds to reproduce. They are bad for fish, bad for birds, and bad for the rivers themselves, she said.

...The National Park Service (NPS) uses a combination of chainsaw removal and chemical herbicides and achieves about a 95 percent kill rate. But it is expensive, said Carl Zimmermann of the NPS.

"You can't afford to wait," Zimmerman said. "The longer you wait, the worse it gets. The cost of chemicals and labor (to remove them) goes up." Zimmerman said the NPS uses no special revegetation techniques. The native vegetation naturally returns on its own.

Cost for removal can vary from about \$170 per acre in a project along the Canadian River in New Mexico to \$500 per acre plus labor costs at the Bent's Old Fort project to a range between \$150 and \$300 per acre for mechanical plus follow-up chemical removal.

<<http://www.lamardaily.com/Stories/0,1413,121~7979~2938829,00.html>> You can't afford to wait...it only gets worse

This one way to help the lower and upper Basin States get more water from the NON-Native "water-robbing phreatophyte" Tamarisks

1

Thank you, Steve Parmelee, Snowmass, Colorado

Reclamation Seeks Public Comment on Development of Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions

<<http://www.usbr.gov/newsroom/newsrelease/detail.cfm?RecordID=6061>>  
<http://www.usbr.gov/newsroom/newsrelease/detail.cfm?RecordID=6061>

**CC:** <joshua.penry.house@state.co.us>, <senator\_allard@senate.gov>

1288 Campus Drive  
Berkeley, CA 94708  
July 27, 2005

Regional Director  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000  
P.O. Box 61470  
Boulder City, Nevada 89006-1470

Dear Sir,

I first visited the lower Escalante River in the spring of 1965 as Lake Powell was filling. The fabulous places on the mainstem of the Colorado were gone by then, but we were able to see the Cathedral in the Desert and many other amazing places before they were needlessly drowned. I returned this past spring to pay a visit to the Cathedral once again. It is much diminished by the sediment in its bottom, but it's still there—just as all the original features are still there—just awaiting liberation. I urge you to act swiftly to decommission the dam, drain the reservoir, and let Glen Canyon live once again.

1

I'm no technical expert on these matters, but I've seen it argued persuasively that the reservoir is not needed either for water storage (the wastage from evaporation is said to be enormous) or for electricity generation. Lake Mead has plenty of storage capacity. The power can be replaced from other sources or conservation. Glen Canyon can only be replaced by Glen Canyon.

Thank you for your attention and please keep me informed of your progress.

Sincerely,



Tom Turner

**Subject:** [Fwd: 0405 Desalt.pdf]  
**Date:** Thu, 28 Jul 2005 11:17:47 -0700  
**From:** Mark Bird <mark\_bird@ccsn.edu>  
**To:** sfategies@lc.usbr.gov

To whom it concerns:

The following are comments regarding the July 26 Henderson meeting on the future of the Colorado River:

- 1) Please include the forwarded magazine article on the current costs to desalt water for the Colorado River in a report that may be prepared. | 1
- 2) Please increase the BOR desalting research and development budget at least fivefold. | 2
- 3) Please go to the Friends of Lake Powell website. This website has a list of 25 reasons why Lake Powell should not be dismantled. If appropriate, please include these 25 reasons in your report. | 3
- 4) I believe the current farm-urban water allocation is a hideous inequity. In the future, I hope you report and publicize what percent of river water goes to farms and what percent goes to cities. I also hope you report and publicize the current acre-foot cost of river farm water and the current acre-foot cost of water for residents in cities like LA, San Diego, Phoenix, and Las Vegas. The public, press, and politicians can not make informed decisions on this issue until they are aware of such farm and city data. | 4
- 5) Please mail me the Bureau's latest report having to do with the future of the Colorado River and the report that may result due the public comment on these meetings. | 5
- 6) Please inform me by email if you can mail me by U.S. mail a report on the future of the Colorado River and whether or not you can include or reference the forwarded desalting article in your report.

Cordially,  
Mark Bird, mail code W1D  
CCSN  
6375 W. Charleston  
Las Vegas, NV 89146

**Subject:** 0405 Desalt.pdf  
**Date:** Fri, 20 May 2005 11:55:06 -0700  
**From:** Mark Bird <mark\_bird@ccsn.edu>  
**To:** mark\_bird@ccsn.edu

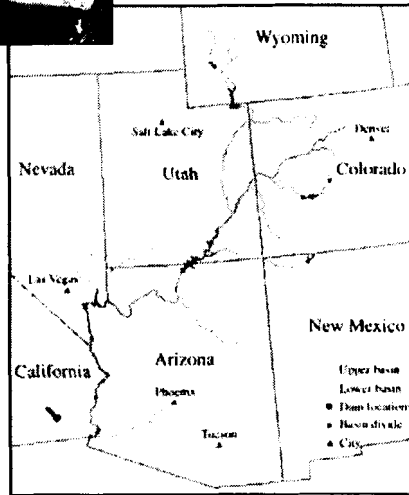
<http://www.wcponline.com/PDF/0405%20Desalt.pdf>

# \$000 Current Seawater Desalting Costs?

By Mark Bird



Photo and map courtesy of Colorado River Commission



## Introduction

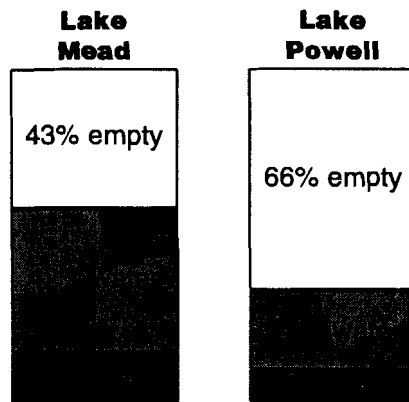
Can nations now desalinate a million—or a billion—gallons of seawater at no real cost? Could \$000 be the real cost to purify an acre/foot of desalted ocean water? This article answers these questions in the affirmative if the indirect desalting benefits are considered.

The United States Colorado River system will be used as an example of 19 benefits that are derived from desalination. Similar results would apply to multiple water shortage locations around the world. Most of these 19 benefits would be applicable to nations adjacent to an ocean. For example, clean water benefits would apply to a far greater extent to nations other than the U.S.

## An example

Lakes Mead and Powell on the Colorado River are the two largest reservoirs in the U.S. As the only large river system in the southwest, the Colorado is a life-line for over 25 million people. Almost every year for the past 25 years, no river water has entered the ocean.

It took from 1963 to 1980 (17 years) for Lake Powell to fill completely. The water now remaining in Lake Powell could all fit into Lake Mead and Lake Mead would still be far from being full. Insofar as the Colorado River system now provides water to around 10 million more people than when Lake Powell was filling, it appears likely that it will take more than 17 years for both lakes to fill under normal river flow conditions.



Population growth, possible plans by the state of Colorado to pipe water to the east side of the Continental Divide, Native American water claims, increased reservoir evaporation from global warming and other factors will intensify wa-

ter shortages in the southwest. Exacerbating the problem will be rising temperatures: the five warmest years in over a century, in order, have been 1998, 2002, 2003, 2004 and 2001.

Global warming may be the cause of less annual snowfall, vegetation needing more water, more evaporation from all Colorado River reservoirs and more evaporation from over 1,000 miles of river canals. That evaporation is no trivial matter as it is estimated as much as 20 percent of river flow evaporates under normal conditions. If global warming is the primary or a leading contributor to low river flows for the past five years, there is the distinct likelihood that these reservoirs will never fill from river flow.

If the U.S. government had pursued desalination research and development more vigorously during the past 30 years, the following 19 factors would now be less severe. If the U.S. pursues desalination R&D and other remedies to restore these lakes now, these factors will become less severe. As over 200 cities including the largest cities in Arizona, Nevada and California are highly dependent on the Colorado River, if the U.S. ignores desalination R&D and other remedies, the worst case scenario is the economic collapse of these three states.

## 19 Factors

### Inland Areas

California desalting potentially allows more river water for reservoirs and the other six Colorado River states. Ac-

According to the U.N., about half of the world's rivers are depleted and polluted. Major rivers, including the Ganges, Yellow and Rio Grande, now regularly run dry. Coastal desalting at these or other river deltas would provide water for inland areas.

#### **Pollutants**

In 2004, the non-profit organization American Rivers designated the Colorado as the "Number One Most Endangered River in the U.S.," a rank earned more because of pollutants than because of water scarcity.

As an example of one pollutant, American Rivers noted that 400 pounds of rocket fuel flow toward Lake Mead each day. Among the over 100 pollutants and chemical compounds found in the two lakes are arsenic, chlorine compounds, cow manure, *Cryptosporidium*, lead, mercury, medical waste, paint derivatives, parasites, pesticides, phosphates, plane exhaust derivatives from the nearby Las Vegas airport (that now hosts 40 million passengers per year), plastics, septic tank discharge, sewage sludge, ski boat gasoline and urban storm runoff. Last but not least is residue from the years of atmospheric nuclear testing at Nevada test sites. This water flows untreated to farms in Arizona and California. Fruits and vegetables from these farms are shipped to all 50 states.

California desalting plants would mean people would be ingesting higher quality water. If the U.S. had vigorously pursued desalination over the past few decades, both lakes would likely be at a higher water level today. These pollutants are concentrated in the lower levels of the lakes. Now that both lakes have declined considerably, there is a very real chance that higher concentrations of these pollutants are entering our food supply and will continue to do so.

#### **Groundwater deterioration**

Subsurface water is far more subject to contamination from mining, agriculture and industry than desalted water. Higher concentrations of metals, pesticides, toxins and human and non-human fecal matter are contained in groundwater than desalted water. Subsurface water is likely to experience declining water quality in the decades to come. Desalting can help prevent further groundwater deterioration by giving cities and nations less justification for groundwater withdrawal.

#### **Diseases**

Cancer, birth defects, internal organ malfunctions and over a dozen other dis-

eases are partly attributable to low quality water. Seventy percent of the human body and 90 percent of blood is water. The thousands of waterborne disease deaths from the December Asian tsunami catastrophe is a global reminder of the necessity of clean water.

#### **Electricity**

Glen Canyon Dam at Lake Powell has lost 25 percent of its power generation capacity. Hoover Dam at Lake Mead has lost 17 percent of its power generation capacity. Increased power costs have already been passed on to some consumers. Glen Canyon Dam may lose 100 percent of its power capacity in another three years.

#### **Recreation**

According to National Park Service records, in 2004 Lake Mead had roughly one million less visitors than in the year prior to the last five low flow years. Some people incorrectly think Lake Mead is closed to recreation as they have seen the low water levels on major news networks. In the past five years, tens of millions of recreation dollars have been lost to the region. Millions have been spent just from marinas having to repeatedly relocate due to the declining water levels.

#### **Food prices**

A significant portion of the food consumed in the United States is grown in Southern California. Coastal desalination would increasingly assist farms, allowing Colorado River water to be used for prudent inland agriculture.

#### **Water shortage preparation**

Desalination far better prepares arid regions for probable future periods of water shortages. It gives water agencies and states more flexibility. The National Weather Service is forecasting that the inflow to Lake Powell from April to July will be 114 percent of average. It would probably take ten consecutive years of inflow to fill Lakes Powell and Mead.

#### **Global warming**

Climatologists are nearly unanimous in their belief that global warming is occurring and that it will intensify in the future. A few years ago, an iceberg the size of Delaware chipped off of Antarctica. In the past 30 years, an area of ice larger than Texas has been lost in the Arctic. Alaskan villages have already been relocated due to rising water levels. Desalting plants currently in operation—over 10,000 of them—have already re-

duced damages caused by global warming by taking water out of the oceans.

The dollar value of inundated an Florida or Southern California coastal land could be considered an asset for desalination. Relative to the Colorado River states, desalination further reduces global warming damages as millions of people in the southwest are being urged to undergo turf conversion, eliminate lawns and generally water less with the partial consequence that less cooling and less oxygen enter the warming atmosphere.

#### **Environmental damages**

Substantially less adverse ecological destruction to wildlife, endangered species, national parks, flora, public land, roads and utilities would occur with desalination than with comparable groundwater development.

#### **Litigation**

Since there is a relatively infinite amount of ocean water and less impact with desalination as compared to land-based water development, the cost of litigation (calibrated in both time and money) would be substantially reduced. A previous legal dispute between Arizona and California lasted for over a decade before being decided by the U.S. Supreme Court. Recent news stories have indicated most river states, many Native American tribes, environmentalists representing the parched river delta and others all thought their water interests were shortchanged before the last five low flow years.

Currently, given the water scarcity in the Colorado River system, there is talk of the potential for litigation between the lower basin Colorado River states, and possible disputes between the lower and upper basin states. If states do not reach agreement on how future water reductions will be managed, it is probable that such litigation will be in the courts for years.

#### **Mexico**

Mexico has an annual legal entitlement to 1.5 million acre-feet of water from the Colorado River. In 1974, Congress authorized the construction of a desalting plant at Yuma Arizona to ensure water quality going to Mexico. As the U.S. recognizes these obligations, ocean desalination thereby reduces probable costs, salinity damages and international embarrassment by helping to maintain Mexico's water supply. Colorado River salinity damages are not trivial; they typically range from \$500 to \$750 million dollars per year. Besides being lethal to

crops, river salt is harmful to machinery, fish and wildlife. In this context, desalination is not only an interstate solution but also fosters positive international relations.

#### Incentives

The federal government can develop conservation contingent desalting funding agreements with cities and states, and this can work on an international scale in the same fashion. Desalting can be legislatively contingent upon EPA-type monitoring of farm wastewater and per capita water consumption rates. This would promote conservation as well as reduce the time and quantity of desalination.

#### Coastal aquifers

Cities in Southern California and around the world are subject to seawater intrusion into municipal aquifers. Desalting reduces seawater intrusion and groundwater withdrawal-induced subsidence because if a coastal aquifer is near normal capacity, the substantial water pressure prevents seawater intrusion.

#### Mineral development

Desalting is likely to lead to cheaper development of the abundance of gold and dozens of other minerals in the oceans. Salt has hundreds of uses besides the small percentage used as table salt. In the virtually impossible event that desalting costs do not continue to rapidly decline, new chemical separation techniques applied to saline residue could make desalting a literal goldmine.

#### Trade imbalance

If the U.S. does not pursue desalting, Japan or other countries will assume leadership. Such neglect is likely to cost the U.S. tens of billions of trade dollars in the 21st century. By the middle of the century, the U.S.-Japan desalting trade imbalance could be as large as the highest U.S.-Japan auto trade imbalance. Unlike just three decades ago when the U.S. was on the cutting-edge in desalination development, Japan now produces and sells about three times as much desalination technology as the United States, according to former U.S. Senator Paul Simon (deceased).

#### War prospects reduced

Israel has engaged in several armed disputes over water. Prior to Iraq's invasion of Kuwait, Turkey and Syria were making vigorous plans to build upstream dams on the Tigris and Euphrates rivers.

Both rivers flow through the center of Iraq for hundreds of miles. As Kuwait has some of the best desalting facilities, this was suggested as a crucial motive for the invasion. Similarly, strife in Somalia was attributed both to drought and to Ethiopia preventing water from flowing into Somalia. Egypt has threatened to go to war if several downstream nations try to divert water from Nile River tributaries. Desalting reduces future prospects for conflict in these and other locations with scarce water. What if U.S. and Israeli scientists assisted Middle East countries in building desalting plants as a means of promoting political stability?

#### One billion people

Over a billion people now have inadequate drinking water, according to the United Nations. This includes millions of children whose lives are measurably shortened or ended by poor quality water. Given auspicious desalting cost trends and global ocean-land distribution, desalting helps to bequeath to posterity an infinite clean water source.

#### Future costs

People buy homes, stocks and land because of an anticipated higher future value of these commodities. Governments regularly make decisions based on a future economic value. Hence, governments should also consider not only the present price of desalination but also the future price.

The following table depicts historic and future costs of desalting ocean water. Costs increased in the 1980s due to escalating energy costs. It appears certain to this writer that future less-energy-intensive desalting technology will accelerate a decrease in costs. The following table was adapted and updated from former Senator Simon's book, *Tapped Out*, page 123.

Decade	Cost per 1,000 gallons
1950s	\$ 15- 20
1960s	\$ 6- 9
1970s	\$ 2- 7
1980s	\$ 4- 7
1990s	\$ 4- 6
2000s	\$ 2- 5
2010s	\$ 1- 2 ?
2020s	\$ ??

Future desalting costs are also likely to decline given anticipated advances in pre-treatment, membranes and computer monitoring of desalination functions. Some scholars anticipate major theoretical desalting discoveries in the near future. Four types of potential innovations are tidal-solar desalting, vertical desalt-

ing, microbial desalting and environmentally benign fusion desalting. Conventional plants may also be modified to serve a vastly less expensive innovation. While desalting costs are certain to decline, the price of land-based water development is certain to increase.

#### Conclusion

According to the U.N. Commission on Sustainable Development, between three and four million people annually die from waterborne diseases. According to Water Partners International, "Water-related diseases are the leading causes of death in the world. This killer takes the lives of more than 14,000 people each day and is responsible for 80 percent of all sickness in the world."

Many water experts would contend that desalting is an impossibility for poor countries. But millions of people subsist on 10 gallons or less per day. At a current desalting rate of \$3 per 1,000 gallons, the lives of millions would improve at a cost of three cents per day.

The world's current desalting plants save thousands of lives per year. By the end of the 21st century, with vastly improved desalting technology in use all over the planet, desalting is likely to save over a million lives per year. By governments not explicitly recognizing the current life-enhancing properties of desalting, are they not implicitly placing a low value on life?

A proper scientific analysis of desalting entails estimating the dollar and human value of the above 19 factors, and then using this value when evaluating the costs of ocean desalting. If all or even half of the above cost factors were considered, ocean desalting becomes an increasingly attractive option. Given these 19 factors, could the current real cost of ocean desalting be less than \$000 per billion gallons for the U.S. Southwest?

#### About the author

◆ Mark Bird is a faculty member at the Community College of Southern Nevada. He is a former federal water planner and author of over 30 water-related articles. Bird can be reached via email at [mark\\_bird@ccsn.edu](mailto:mark_bird@ccsn.edu)





**From:** <Dazzlingdodads@aol.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 7/28/05 12:27AM  
**Subject:** WATER SHORTAGE IN LAS VEGAS

Suggestions:

Stop growth ordinance NOW | 1  
 All golf courses go artificial turf NOW | 2  
 All new building projects: no water features NOW | 3  
 Red Rock Station advertises a wall of water will flow continually.  
 Of course these are pipe dreams of mine, as we all know these  
 features have been approved and are "grandfathered-in".  
 Someone needs to tell the Governor, the Senators, and anyone  
 else with authority that, THERE WILL BE NO WATER!!!  
 Will it be YOU?

**From:** Russell Blalack <russell@OutsideTestingServices.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** Fri, Jul 29, 2005 9:29 AM  
**Subject:** Comment on the Reoperation of Lake Powell and Lake Mead

Regional Director  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000  
P.O. Box 61470  
Boulder City, Nevada 89006-1470

Dear Regional Director,

While the Bureau of Reclamation is developing strategies for low reservoir conditions, I wish to point out that the growing challenges and looming shortages facing Colorado River water users can be mitigated by removing Glen Canyon Dam, an impoundment that is one of the main causes of the present water shortages.

For more than 40 years, Glen Canyon Dam did nothing to augment water storage downstream. Now, with climate change already causing long-term flow reductions, and water consumption levels near the river's historic average flow and rising, it's unlikely that Lake Powell will fill again. If there ever were to be a water surplus in the future, Lake Mead on its own could accommodate it without Lake Powell.

Lake Powell and Lake Mead lose upwards of 17 percent of the water that flows into them to evaporation . It's time that more efficient means be explored for storing this precious water. Vacant space in underground aquifers on, or accessible to, existing Colorado River infrastructure could accommodate more water than these two reservoirs combined-and with far greater efficiency. Upwards of 810,000 acre-feet of water annually-enough water for 1.6 million households of four people each-could be saved by eliminating Lake Powell and operating Lake Mead principally for distribution to groundwater recharge facilities.

1

Sediment is a another unresolved problem that threatens the long-term operations of Lake Powell and Lake Mead. Ultimately, sediment will have to be removed from one or both of these reservoirs. Removing sediment from Lake Mead rather than Lake Powell is the most feasible and least expensive likely alternative. While original estimates projected that sediment would not effect the safe operations of Glen Canyon Dam for another 60 years, scientists now warn that major problems could occur sooner.

2

I live in the West, so let's put this in simple terms. The West has long, hot, dry summers that dry up surface waters. Dams accumulate sediment and lose water. Aquifers purify water and lose nothing to evaporation. Halt the operation of Glen Canyon Dam.

3

Thank you for accepting my comments.

Best regards,

Russell Blalack  
1081 Milky Way

I.076

Cupertino, CA 95014.

**From:** "Iris Daley" <iris4268@cascadeaccess.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** Fri, Jul 29, 2005 9:23 AM  
**Subject:** lake powell

I believe it is time to drain Lake Powell, which is now called Lake Fowl.

1

Let the waters flow!!

There will be thousands of volunteers to clean up the "junk" left by boaters over the years.

You should listen to the people not to the politicians.

Iris Daley  
702-346-4268

**From:** <FredHF@aol.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 7/29/05 4:09PM  
**Subject:** Comments on Water Worries

#### Water worries

I keep hearing that all we need to do is conserve water. This is based on thinking that the water that fills the Colorado River and Lake Mead is a renewable resource, constantly renewable. Unfortunately, it is not constantly renewed. The last time I know of that Lake Mead had a surplus of water that had to be released was in the early 1980s.

If you picture our water supply, electrical supply, or any other critical resource as a pie, you can visualize conservation. If you make a pie and slice it into eight pieces for eight guests, all is well. Now if four more people are coming in for pie, you must slice the pieces smaller. Now you can "conserve" your pie until each slice is infinitely small and serve an infinitirely small slice to each guest, but pretty soon you are serving mostly a slice of nothing. This will only work if you keep adding pies. We can add generating capacity but we can't add new rivers or new lakes without new sources of water. In Nevada's case of taking water from upstate Nevada is robbing Peter to pay Paul. Water is rare in the southwest. Everyone treasues it, not just Nevadans

It is time to wake up and sneeze because of the dust. We live in a desert and the climate will not change drastically enough to make us a lush tropical rainforest for a long time. It is time to start conserving the State of Nevada, not its resources.

1

**From:** <Gaileyviolin@aol.com>  
**To:** <strategies@lc.usbr.gov.>  
**Date:** Fri, Jul 29, 2005 12:26 PM  
**Subject:** (no subject)

RE: dismantling of Glen Canyon Dam:

The subject of dismantling Glen Canyon Dam is an old subject--there was great pressure brought to bear to prevent the building of the dam, and also since its construction. the prospect has been brought up many times. Fortunately, cool heads prevailed .

I was with the Visitor Services Division at Hoover Dam for 17+ years and was well aware of the operation of facilities on the Colorado River. A number of times, I was told by visitors who had been at the Grand Canyon that they had been informed by some Park Ranger(s) that those dumb people with the Bureau of Reclamation had built Hoover Dam and they were really dumb because it would be silted up in 50 years. When the 50th anniversary arrived, Hoover Dam was as it is 20 years later, a functioning facility. And the last report that I received was that it would be functioning for many, many years to come before silting would become a problem. Now, I read that John Weisheit says that Glen Canyon Dam will not last forever. He and we will be long gone before silt becomes a problem and the solution of the problem is far, far away, but I am sure it will be addressed then. As for Glen Canyon itself, there are many

beautiful canyons and areas that are reachable by any of us. It appears that the whole idea of destroying Glen Canyon Dam would not improve anything but would certainly disrupt the entire Colorado River system--just to please a few people and certainly not to be in the best interest of the people of the Southwest nor in the best interest of the people of the United States.

Having lived in Southern California and Southern Nevada for 59 years (I am now 80), I have thoroughly enjoyed the benefits of living in those areas. Now, as a concerned citizen, I can only hope that cool heads again will prevail and that we can make the necessary adjustments to our life-styles to live with the possibilities of droughts as well as with an over-supply of waters. Cycles of drought and plenty have existed throughout history. Because we have a drought during this period does not signify that we will have a drought next period.

Now retired, I am thankful for the benefits of what was accomplished when the whole Colorado River system has brought to us in the Southwest as well as to the rest of our Country---a well-controlled water supply, a considerable amount of hydro-electric power, the low cost of fruits and vegetables thanks to irrigation, and the recreational facilities behind the dams and between the lakes.

These and other benefits of living here in the Southwest have made life enjoyable for me and my family

The people who developed and have operated the Upper and Lower Colorado Regions of the

U.S. Bureau of Reclamation have done and will continue to do an outstanding job. It has long been apparent that they really know what they are doing. The fact that we have had

5 years of drought, the longest period on record is a predictable occurrence on the desert,

one that has been studied for years by people who know how to handle whatever may arise.

The people who would destroy the Colorado River system have talked the same talk for years--maybe they could spend some effort on improving things instead.

The idea of using aquifers and other devices sounds great, but the results and the costs would be prohibitive. The suggested loss of 6% through

1

evaporation and seepage is probably in greater than through the use of aquifers--why consider it? The stated loss of 800,000 acre feet of water of Lake Powell sounds like a well-inflated figure to me. And the suggestion "improvement of the Grand Canyon" would be the floods that would tear up the banks of the Colorado. It would be nice to hear some positive words instead of the negative ones!

Tom Gailey 702) 897 2573 gaileyviolin@aol.com  
July 29, 2005

**From:** "Richard HILLS" <RHILLS@weber.edu>  
**To:** <strategies@lc.usbr.gov>  
**Date:** Fri, Jul 29, 2005 8:30 AM  
**Subject:** Caution on Filling Lake Powell Reservoir

Do not add any additional water to Lake Powell Reservoir until Lake Mead is full to its appropriate capacity. This will without question minimize loss due to evaporation. In addition, loss due to leakage may be reduced.

| 1

Richard G Hills  
787 E Center St  
Centerville, UT 84014



Dennis Portnoy MFT  
1537 Franklin St. #310  
San Francisco, CA 94109  
415/922-3567

Regional Director  
Bureau of Reclamation  
Upper Colorado  
ATTN: UC-402

JULY 29, 2005

I URGE YOU TO CEASE OPERATIONS AT LAKE POWELL AND EMPLOY JUST ONE RESERVOIR TO CAPTURE AND MANAGE THE BULK OF COLORADO RIVER FLOWS

\* Since climate change is already causing long-term flow **reductions**, and water consumption levels near the river's historic average flow and **rising**, it's unlikely that Lake Powell will fill again.

\* Vacant space in underground aquifers **on**, or accessible to, existing Colorado River infrastructure could accommodate **more** water than these two reservoirs **combined**—and with far greater efficiency. Upwards of 810,000 **acre-feet** of water **annually**—enough water for 1.6 million households of four people **each**—could be saved by eliminating Lake Powell and operating Lake Mead principally for distribution to groundwater recharge **facilities**.

\* Native fish have gone extinct and Lake Powell dam has trapped the sediment necessary to maintain habitat and beaches for wildlife and **recreation**, as well as the stabilization of archeological sites.

\* Sediment is a major unresolved problem threatening the **long-term** operations of Lake Powell and Lake Mead. **Ultimately**, sediment will have to be removed from one or both of these reservoirs. Removing sediment from Lake Mead rather than Lake Powell is the most feasible and least expensive likely alternative,

Given the growing challenges and looming shortages facing Colorado River water users as a result of these **dams**, a comprehensive assessment addressing the issues above is **needed**, and should be done through an **ENVIRONMENTAL IMPACT STATEMENT**.

Dennis Portnoy

**From:** <Crowl95@aol.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 7/31/05 6:59AM  
**Subject:** Reoperation of Lake Powell and Lake Mead

Regional Director  
 Bureau of Reclamation, Lower Colorado Region

We are writing to provide comments on the reoperation of Lake Powell and Lake Mead. We live in Chandler, Arizona with our two young children and hope a solution can be found which provides much needed water for the citizens of this region while at the same time demonstrates good stewardship of the Colorado River and Glen Canyon. We believe The One-Dam Solution as outlined in Living Rivers' latest report is a solution which addresses these two, seemingly incompatible goals.

There is no longer a need for a single-use dam at Glen Canyon. There is massive yearly evaporation of stored Colorado River water from Lake Powell. We believe 800,000 feet of water could be available to the lower basin. With Lake Powell and Lake Mead losing to evaporation upwards of 17 percent of the water that flows into them, it's time that more efficient means be explored for storing this precious water. Vacant space in underground aquifers on, or accessible to, existing Colorado River infrastructure could accommodate more water than these two reservoirs combined-and with far greater efficiency. Upwards of 810,000 acre-feet of water annually-enough water for 1.6 million households of four people each-could be saved by eliminating Lake Powell and operating Lake Mead principally for distribution to groundwater recharge facilities.

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Between Lake Powell and Lake Mead lies one of the world's most famous and geologically and ecologically unique river canyons, Grand Canyon National Park. The operation of both these reservoirs has impacted the Canyon, but Glen Canyon Dam has been far more devastating. Since its completion four of eight native fish have gone extinct and the dam has trapped the sediment necessary to maintain habitat and beaches for wildlife and recreation, as well as the stabilization of archeological sites.

Sediment is a major unresolved problem threatening the long-term operations of Lake Powell and Lake Mead. Ultimately, sediment will have to be removed from one or both of these reservoirs. Removing sediment from Lake Mead rather than Lake Powell is the most feasible and least expensive likely alternative. While original estimates projected that sediment would not effect the safe operations of Glen Canyon Dam for another 60 years, scientists now warn that major problems could occur sooner.

3

Your present focus is developing strategies solely for low reservoir conditions, but given the growing challenges and looming shortages facing Colorado River water users as a result of these dams, a far more comprehensive assessment addressing the issues above is fully warranted, and should be done through an Environmental Impact Statement.

4

You have an opportunity to develop a solution which provides water to the citizens of this region and demonstrates good stewardship of this great land, please take it.

Sincerely,  
Chris and Aileen Crowl  
Chandler, Arizona

**From:** "Vince Specht" <vmspecht@earthlink.net>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 7/31/05 3:32PM  
**Subject:** Water Shortages

The only feasible solution (which may already be too late) is to put an immediate stop to building more residences and businesses. Even a fifth grade student knows when you are out of water you stop additional uses. | 1

Vince Specht  
Henderson, NV 89074-1210  
(702)361-5834

Vince Specht  
vmspecht@earthlink.net

**From:** "Robert E. Warnick" <rwarnick@burgoyne.com>  
**To:** <strategies@uc.usbr.gov>  
**Date:** Sun, Jul 31, 2005 10:26 AM  
**Subject:** Lake Powell proposals

This dam was built at a large expense and manpower. Can we abandon it for the whims of a few?

What would be the cost of Living Rivers proposal? And are the American people once again willing to foot the bill?

When are those bent upon tearing down the dam going to stop their foolishness?

This dam has been a blessing to many who have benefited from it's storage and a tourist haven for many. Are they willing to give up what they have enjoyed for so many years? It is a foolish and impractical proposal to me.

Carol Warnick 310 South 400 East, Ephraim, Utah 84627

rwarnick@burgoyne.com

1



**From:** "Robert Rutkowski" <rutkowski@terraworld.net>  
**To:** <strategies@lc.usbr.gov>, <strategies@uc.usbr.gov>  
**Date:** 8/4/05 8:11AM  
**Subject:** Operation of Glen Canyon Dam

Mr. Bob Johnson, Regional Director  
 Bureau of Reclamation, Lower Colorado Region  
 Attention: BCOO-1000  
 P.O. Box 61470  
 Boulder City, NV 89006-1470  
 Fax (702) 293-8156  
 strategies@lc.usbr.gov

Mr. Rick Gold, Regional Director  
 Bureau of Reclamation, Upper Colorado Region  
 Attention: UC-402  
 125 South State Street  
 Salt Lake City, Utah 84318-1147  
 Fax (801) 524-3858  
 strategies@uc.usbr.gov

Dear Regional Directors:

The Bureau of Reclamation is accepting public comments on the reoperation of the nation's two largest reservoirs, Lake Powell and Lake Mead. I urge you to examine the viability of permanently ceasing operations at Lake Powell and employing just one reservoir to capture and manage the bulk of Colorado River flows.

1

Please accept these comments.

\* There is no longer a need for a single-use dam at Glen Canyon

It was not until the fall of 2004, more than 40 years after Glen Canyon Dam began impounding Lake Powell that Lake Powell water storage actually augmented water storage downstream. But with climate change already causing long-term flow reductions, and water consumption levels near the river's historic average flow and rising, it's unlikely that Lake Powell will fill again. The surplus water that filled it during 17 years the first time is no longer there to build a storage cushion. Even should surplus water accumulate, Lake Mead on its own could accommodate it.

\* It's time for more efficient storage

With Lake Powell and Lake Mead losing to evaporation upwards of 17 percent of the water that flows into them, it's time that more efficient means be explored for storing this precious water. Vacant space in underground aquifers on, or accessible to, existing Colorado River infrastructure could accommodate more water than these two reservoirs combined-and with far greater efficiency. Upwards of 810,000 acre-feet of water annually-enough water for 1.6 million households of four people each-could be saved by eliminating Lake Powell and operating Lake Mead principally for distribution to groundwater recharge facilities.

2

\* Revive Grand Canyon

Between Lake Powell and Lake Mead lies one of the world's most famous and geologically and ecologically unique river canyons, Grand Canyon National Park. The operation of both these reservoirs has impacted the Canyon, but Glen Canyon Dam has been far more devastating. Since its completion four of eight native fish have gone extinct and the dam has trapped the sediment necessary to maintain habitat and beaches for wildlife and recreation, as well as the stabilization of archeological sites.

3

\* Manage the sediment

Sediment is a major unresolved problem threatening the long-term operations of Lake Powell and Lake Mead. Ultimately, sediment will have to be removed from one or both of these reservoirs. Removing sediment from Lake Mead rather than Lake Powell is the most feasible and least expensive likely alternative. While original estimates projected that sediment would not effect the safe operations of Glen Canyon Dam for another 60 years, scientists now warn that major problems could occur sooner.

4

\* Revise the Colorado River Compact

The Colorado River Compact of 1922, which largely governs the discharge of flows from Lake Powell to Lake Mead, cannot meet its intended purpose of sharing Colorado River water equitably between the Upper and Lower Basin states. The Compact allocated 11 percent more water than the river has to give, and affords the Lower Basin 20 percent more water than the upper basin. With river flows expected to decline 18 percent by 2040, this inequity will worsen as the Upper Basin is required to deliver to the Lower Basin its full share regardless of declines in river flow.

5

Thank you for the opportunity to bring these remarks to your attention.

Mindful of the enormous responsibilities which stand before you, I am,

Yours sincerely,  
Robert E. Rutkowski

cc:  
Nancy Pelosi  
President George W. Bush

2527 Faxon Court  
Topeka, Kansas 66605-2086  
P/F: 1 785 379-9671  
r\_e\_rutkowski@myrealbox.com

**CC:** "Nancy Pelosi" <sf.nancy@mail.house.gov>, "George W. Bush"  
<comments@whitehouse.gov>

**From:** Mark Bird <mark\_bird@ccsn.edu>  
**To:** <strategies@lc.usbr.gov>  
**Date:** 8/8/05 11:06AM  
**Subject:** water future

This is a repeat of Comment  
Letter I.074, Bird

Note: I sent the following by U.S. mail about 10 days ago. Can you answer items " 5 and 6" below by email? Also, when is the last day one can submit comments?

To whom it concerns:

The following are comments regarding the July 26 Henderson meeting on the future of the Colorado River:

- 1) Please include the forwarded magazine article on the current costs to desalt water for the Colorado River in a report that may be prepared.
- 2) Please increase the BOR desalting research and development budget at least fivefold.
- 3) Please go to the Friends of Lake Powell website. This website has a list of 25 reasons why Lake Powell should not be dismantled. If appropriate, please include these 25 reasons in your report.
- 4) I believe the current farm-urban water allocation is a hideous inequity. In the future, I hope you report and publicize what percent of river water goes to farms and what percent goes to cities. I also hope you report and publicize the current acre-foot cost of river farm water and the current acre-foot cost of water for residents in cities like LA, San Diego, Phoenix, and Las Vegas. The public, press, and politicians can not make informed decisions on this issue until they are aware of such farm and city data.
- 5) Please mail me the Bureau's latest report having to do with the future of the Colorado River and the report that may result due the public comment on these meetings.
- 6) Please inform me by email if you can mail me by U.S. mail a report on the future of the Colorado River and whether or not you can include or reference the forwarded desalting article in your report.

Cordially,  
Mark Bird, mail code W1D  
CCSN  
6375 W. Charleston  
Las Vegas, NV 89146

<http://www.wcponline.com/PDF/0405%20Desalt.pdf>



**From:** <SuperMolar@aol.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** Wed, Aug 10, 2005 8:28 PM  
**Subject:** (no subject)

I am asking you to please consider the vision the Glen Canyon Institute has for the Glen canyon dam. I believe their plan is the best chance for sustainable use of the river. Thank you-Bob Rosenfield

1

**From:** "The Old Book Shop" <oldbkshp@earthlink.net>  
**To:** <strategies@lc.usbr.gov>  
**Date:** Wed, Aug 10, 2005 1:55 PM  
**Subject:** RE: Glen Canyon Dam

With the serious water shortage facing us in the southwest now and in the future, it hardly makes sense to keep the Glen Canyon Dam when millions of gallons of water are lost from Lake Powell each year to evaporation...water that then goes east and causes flooding and other excess water woes.

1

If that same water was in the river as it should be, the loss to evaporation would be a manageable level, possibly 99% less, meaning Arizona and other southwestern states could have access to much more water. Not to mention the benefit to the midwestern states who would no longer have to cope with the rains from the evaporation.

Barbara Young  
Tubac, AZ

**From:** "Steve Gliva" <sgliva@tmglink.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** Thu, Aug 11, 2005 10:05 AM

1.Fill Lake Mead First

Consumptive water use in the Upper and Lower Basins has increased significantly since Glen Canyon Dam was built. There is not enough water in the system to fill both of these reservoirs. It is essential that we first fill Lake Mead to maximize power generation and maintain water supply for large cities in the lower basin such as Las Vegas, Los Angeles and Phoenix. There is no need for Lake Powell.

1  
2

2. Storage in Lake Mead is enough to capture surplus water

Lake Mead, combined with downstream aquifer-recharge projects, has sufficient storage capacity to hold all surplus Colorado River water. More water will be available to those dependent on Colorado River water by storing all surplus water in Lake Mead. There will be less water lost to evaporation when Lake Mead is full than when both Lake Mead and Powell are kept at half capacity.

3

3. Ensure maximum generation of electricity

More power can be generated by running Hoover Dam at full capacity than by running Hoover and Glen Canyon Dams at half capacity.

4. Restore Two International Treasures

Decisions made regarding the operations of these reservoirs present an historic opportunity to create a better water delivery system for the West while restoring Glen and Grand Canyons. The negative environmental consequences that dams have on rivers are becoming increasingly known. We now have the opportunity to protect Glen and Grand Canyons from further environmental and cultural degradation by moving all water storage out of Glen Canyon and into Lake Mead.

4



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8-15-05		
Class	WTR-110	
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Conr #	3780020	
Fldr #	UC 9744	
Date	Initial	To
		402

August 11, 2005

Regional Director  
Bureau of Reclamation, Upper Colorado Region  
Attention: UC-402  
125 S State St  
SLC, UT 84318-1147

To Whom It May Concern,

Thank you for the opportunity to give my input on the management of low water reservoirs on the Colorado River.

As the demand for water continues to grow and the possible supply of water decreasing, we will be faced with more low water reservoirs in the future. The good news is there will be less loss to evaporation. With this in mind, perhaps we should keep only one reservoir near full and use Lake Powell to deliver historic type flows through the Grand Canyon to mimic natural flows (similar to Flaming Gorge) along with a moderate silt load using some of the sediment of the San Juan River. The target would be to keep a one year supply of water in Lake Powell rather than a wasteful two year supply. Recreation on Lake Powell would continue as it is today only with less sediment coming in, boating on Lake Powell would last longer.

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Demand for more water needs to be controlled and conservation needs to happen immediately. The compact of 1922 needs a reality check and should be re-written.

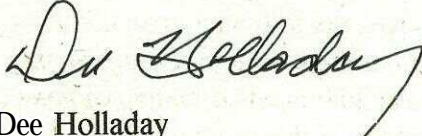
3  
4

It has been suggested that underground storage is feasible. This should be studied as a viable alternative to store water on the years that Lake Powell could be filled. Lake Powell should not be filled above the 3600' level (it's already near-full with silt in the upper reaches). Whatever the gain would be wiped out by the evaporation factor.

5

I attended the public meeting in SLC and I thought the Living Waters group made a lot of sense. I was a little puzzled to read in the Tribune the next morning that the Bureau was trashing their input. I hope the media made a mistake.

Sincerely,

  
Dee Holladay

**From:** Melissa <melissa@infusion-design.com>  
**To:** <strategies@lc.usbr.gov>, <strategies@uc.usbr.gov>  
**Date:** Thu, Aug 11, 2005 5:19 AM  
**Subject:** Glen Canyon

Storing water in Lake Mead and underground aquifers in the lower basin will allow for the restoration of Glen and Grand Canyons. The Glen Canyon Institute proposes that operations at Glen Canyon Dam cease allowing full use of Lake Mead storage capacity and power generation at Hoover Dam. The following are some talking points for your comments.

1. Fill Lake Mead First

Consumptive water use in the Upper and Lower Basins has increased significantly since Glen Canyon Dam was built. There is not enough water in the system to fill both of these reservoirs. It is essential that we first fill Lake Mead to maximize power generation and maintain water supply for large cities in the lower basin such as Las Vegas, Los Angeles and Phoenix. There is no need for Lake Powell.

1  
2

2. Storage in Lake Mead is enough to capture surplus water

Lake Mead, combined with downstream aquifer-recharge projects, has sufficient storage capacity to hold all surplus Colorado River water. More water will be available to those dependent on Colorado River water by storing all surplus water in Lake Mead. There will be less water lost to evaporation when Lake Mead is full than when both Lake Mead and Powell are kept at half capacity.

3

3. Ensure maximum generation of electricity

More power can be generated by running Hoover Dam at full capacity than by running Hoover and Glen Canyon Dams at half capacity.

4. Restore Two International Treasures

Decisions made regarding the operations of these reservoirs present an historic opportunity to create a better water delivery system for the West while restoring Glen and Grand Canyons. The negative environmental consequences that dams have on rivers are becoming increasingly known. We now have the opportunity to protect Glen and Grand Canyons from further environmental and cultural degradation by moving all water storage out of Glen Canyon and into Lake Mead.

4



**From:** todd runck <azdback2000@yahoo.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** Thu, Aug 11, 2005 7:26 AM  
**Subject:** Colorado River

I am writing to encourage sustainable water management decisions for the Colorado River by filling lake Mead, resulting in more efficient storage, to maximize generation of power & restore Glen & Grand Canyons.  
Thank you,  
Todd Runck

1

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Start your day with Yahoo! - make it your home page  
<http://www.yahoo.com/r/hs>

**From:** Grant <grantzzz@yahoo.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** Sun, Aug 14, 2005 12:08 PM  
**Subject:** Drain Lake Powell

I have long been a supporter of emptying Lake Powell to restore the scenic marvels that were submerged so needlessly several decades ago. Now that both Lake Powell and Lake Mead are 1/2 to 2/3's full, it makes sense to drain Lake Powell and fill up Lake Mead. We here in the southwest can certainly use the millions of gallons of water lost to evaporation in Lake Powell and we can also use the extra electric power that can be generated by a full Lake Mead. Common sense dictates that we should begin immediately to effect this change. The ONLY downside might be dislocation to the few small businesses in the area. As future tourist traffic to the area will likely increase maybe lawmakers can offer long term/low interest government loans to help the affected small businesses transition to accomodate the new, increased tourist traffic.

1

Sincerely,  
Grant Durante  
4517 E Rock Wren Rd  
Phoenix Az 85044

---

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<http://mail.yahoo.com>

**From:** Drake Bloebaum <dbloebaum@yahoo.com>  
**To:** <strategies@lc.usbr.gov>  
**Date:** Mon, Aug 15, 2005 9:08 AM  
**Subject:** Lake Powell

Dear sir,

As you plan for the storage and use of the waters of the Colorado river please keep in mind a few thoughts:

1)Filling lake mead to capacity before filling lake powell will allow for maximum power generation. Running one dam at full capacity is more efficient than running two dams at half.

2)Most efficient storage of water can be achieved if the surface area exposed to the harsh desert climate is minimized. Filling one lake, Mead, will limit evaporation as well as bank seepage and ultimately save water.

3)We have a chance to rethink delivery and storage of western water while restoring and protecting two national treasures: Glen and Grand Canyons.

Please take these ideas into consideration when planning for the storage and use of colorado river water. Please consider filling lake mead to capacity first. Thank you for your time.

1

Drake Bloebaum

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Tired of spam? Yahoo! Mail has the best spam protection around  
<http://mail.yahoo.com>



**From:** "spectrumcabinets@netzero.net" <spectrumcabinets@netzero.net>  
**To:** <strategies@lc.usbr.gov>  
**Date:** Tue, Aug 16, 2005 6:33 AM  
**Subject:** Drought conditions at Lake Powel and Lake Mead

It hardly seems feasible to remove an existing dam the size of Glenn Canyon. The assumption of this being a viable option is absurd. It is also illogical to argue less overall storage translates into better water management. 1

This is an unfortunate attempt by environmental groups to remove a structure they couldn't stop from being built 40+ years ago. However, they were successful in stopping Marble and Bridge Canyon Dams which would have added another 40% in overall storage to the lower Colorado system.

The more rational approach is to work with Glenn Canyon Dam as it stands without removing it. Misleading and false information by these environmental groups is hardly aiding in a solution to the water problems we currently have. Furthermore, dams and extensive water systems are the only way we can live in the west.

I have yet to see someone from one of these environmental groups volunteer to go without water or electricity to save the environment. The hypocrisy from these groups is over the top. The old saying stands true, "you can't have it all".

Lake Powell and Lake Mead are functioning exactly how they were intended. \*Without Lake Powell the draw down condition on Lake Mead last summer would have been so low generation of electricity would not have been possible.

\*This assumes all of the water in Lake Powell was never impounded and flowed as flood water through Hoover Dam in wetter years, for example 1983-1985 and 1997-2000

Without Lake Powell the ability to store as much water as possible in wet years is diminished by half. Historically Lake Mead water levels fluctuated dramatically before the construction of Glenn Canyon Dam.

The demand on Hoover prior to the construction of Glenn Canyon Dam was a fraction of today's needs and the fluctuation of water in the reservoir did not create water and power delivery issues. This is not the case today.

Hoover dams' power and water delivery is at capacity most of the year. The dramatic fluctuation of Lake Powell allows the level of Lake Mead to remain relatively stable most of the year with minimal content change.

Granted, Lake Mead would be at or near full pool this year if Lake Powell did not exist. What would happen if we get another year of above normal snow in the Rockies? Lake Mead has no capacity for flood control with reservoir capacity above 75% in an above normal weather year. If we were to have several years of wet weather the excess water would be runoff without the additional storage at Lake Powell.

Since the Colorado river was over apportioned and all interested parties are now in need of the water from the river. The only viable solution is efficient use of the existing resource.

The only way this can be done is to stop the waste by the agricultural industry in the west. Agriculture accounts for more than half of all the water that flows through the Colorado. The irrigation practices used in the western United States are deplorable.

The use of flood irrigation in such an arid climate is foolish along with the multitude of water intensive

crops being irrigated. 15% evaporation of loss due to reservoir storage is hardly an issue in comparison.

If agriculture changed its irrigation practice to drip systems and grew less water intensive plants Mead and Powell would most likely not be in a drought condition today.

2

Perhaps the incentive is to charge the agricultural user what the municipal user pays! This would assure the implementation of water conservation by the agricultural industry in the west.

Sincerely, Scott A. Grogan

**From:** llaitner@charter.net  
**To:** <strategies@uc.usbr.gov>  
**Date:** Tue, Aug 16, 2005 6:33 PM  
**Subject:** Glen canyon dam operations

I support the One Dam Solution. The Glen Canyon Dam only wastes water while it provides doubtful benefits and entombs one of the greatest canyons on earth. Remove the damn. Raffle off the right to push the plunger that blows the thing to smithereens. The raffle would pay for the entire demolition project. The reservoir is nearly empty now, so it wouldn't take long to empty it. Act now.

Larry Laitner  
801 Pinecrest  
Ashland, OR 97520

CONNIE DEWITT  
5844 Shasta Circle  
Littleton, Colorado 80123

August 17, 2005

Regional Director j j  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000  
P.O. Box 61470  
Boulder City, Nevada 89006-1470  
Fax (702) 293-8156

Regional Director  
Bureau of Reclamation, Upper Colorado Region  
Attention: UC-402  
125 South State Street  
Salt Lake City, Utah 84318-1147  
Fax (801) 524-3858

Dear Regional Directors:

My understanding is that the Bureau of Reclamation is accepting public comments on the **reoperation** of the nation's two largest reservoirs, Lake Powell and Lake Mead.

We oppose the concept of one reservoir to capture and manage the bulk of Colorado River flows. !

1. There is a need for the dam at Glen Canyon

Lake Powell is needed now more than ever. Some "environmental groups" make unsubstantiated claims that it is unlikely that Lake Powell will fill again. This statement is simply untrue, where is the science, Lake Powell does not have to fill to its brim to be a **substantial** asset to the country. ;

Another statement made by "**environmental** groups" is that Lake Mead on its own could accommodate the water in both Lake Mead and Lake Powell. Again, this is simply untrue. Lake Powell holds a tremendous amount of water that cannot be held by Lake Mead. This is a ludicrous and untrue **statement**. i



2. Lake Powell is a reasonable and efficient storage device.

At the present time and for the foreseeable future the Dam at Glen Canyon is the most efficient store device for water in the west

"Environmental groups" claim that there is more efficient storage available, such as the use of under ground aquifers. There is no scientific documentation of this and no cost benefit analysis of this opinion. Again the "environmental groups" have made untrue and unfounded statements that defy logic. The impact of Lake Powell on the country far exceeds this representation by "environmental groups". It is interesting that "environmental groups" acknowledge that Lake Powell holds at least 810,000 acre-feet of water annually -enough water for 1,6 million households of four people each,

3. Grand Canyon is doing just fine, thank you.

Between Lake Powell and Lake Mead lies one of the world's most famous and geologically and ecologically unique river canyons, Grand Canyon National Park. The operation of these reservoirs has not negatively impacted the Grand Canyon.

Again where is the scientific evidence to support the statements of the proponents of the single reservoir plan. ;

4. Sediment - is it really a problem? No.

"Environmental groups" claim that sediment is a major unresolved problem threatening the long-term operations of Lake Powell and Lake Mead. The fact is that sediment is not a major factor in the long term operation of Lake Powell or Lake Mead. It will be in the range of approximately 600 years before Lake Powell will be filled with sediment. Given that time frame, and technology, how can any plan be implemented.

Although there are always differences among scientists, it is clear that reputable scientists and engineers do not now warn that major problems could occur sooner, i



## 5. The Colorado River Compact

While everyone has **different** interests in the Colorado River and everyone might like a different agreement than The Colorado River Compact of 1922, which largely governs the discharge of flows from Lake Powell to Lake Mead, it works and has worked for many years.

## 6. Recreational Uses:

Lake Powell presently is visited by up to 3 million visitors annually. The use Lake Powell for much needed water **recreation**. It serves recreational users from west of the Mississippi to the Pacific Ocean and receives many visitors from rest of the country as well as foreign guests. It is truly one of the "wonders of the world" and would be sorely missed if drained.

## 7. Power production:

Glen Canyon Dam is a significant **source** of clean, reliable and efficient energy. The single dam concept would reduce power production from Glen Canyon Dam to zero. This is a waste of a significant natural resource.


## Conclusion;

One of the significant aspects of Lake Powell is that it is doing just **fine**, in **fact** great. It is providing water during the times of **drought**, it is producing efficient and clean power and providing recreation to millions of **citizens** and visitors.

A new environmental impact statement is not **warranted**. To call for such a document is a waste of a huge amount of taxpayer money. Glen Canyon Dam and Lake Powell proved their worth and viability during the latest drought cycle.

Thank you for a job well done.

Sincerely,

  
Connie DeWitt



RICK DEWITT  
5844 Shasta Circle  
Littleton, Colorado 80123

Regional Director  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000 I  
P.O. Box 61470 i  
Boulder City, Nevada 89006-1470

Fax (702) 293-8156

Regional Director  
Bureau of Reclamation, Upper Colorado Region  
Attention: UC-402 |  
125 South State Street |  
Salt Lake City, Utah 84318-1147 !

Fax (801) 524-3858

Dear Regional Directors;

My understanding is that the Bureau of Reclamation is accepting public comments on the reoperation of the nation's two largest reservoirs, Lake Powell and Lake Mead.

We oppose the one reservoir to capture and manage the bulk of Colorado River flows.

1. There is a need for the dam at Glen Canyon

Lake Powell is needed now more than ever. Some "environmental groups" make unsubstantiated claims that it is unlikely that Lake Powell will fill again. This statement is simply untrue, where is the science, Lake Powell does not have to fill to its brim to be a substantial asset to the country.

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1



and Lake Powell. Again, this is simply **untrue**. Lake Powell holds a tremendous amount of water that cannot be held by Lake Mead, this is a ludicrous and untrue statement

2. Lake Powell is a reasonable and efficient storage **device**.

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"Environmental groups" claim that there is more efficient storage available, such as the use of under ground aquifers. There is no scientific documentation of this and no cost benefit analysis of this opinion. Again the "environmental **groups**" have made untrue and unfounded statements that defy logic. It is interesting that "environmental groups" acknowledge that Lake Powell holds at least **810,000** acre-feet of water annually-enough water for 1.6 million households of four people each. The impact of Lake Powell on the country far exceeds this representation by "**environmental groups**."

3. Grand Canyon is doing just fine, thank you.

Between Lake Powell and Lake Mead lies one of the **world's** most famous and geologically and ecologically unique river canyons, Grand Canyon National Park. The operation of these reservoirs has not **negatively impacted** the Grand Canyon.

Again where is the scientific evidence to support the statements of the proponents of the single reservoir plan.

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"Environmental **groups**" claim that sediment is a major unresolved problem threatening the long-term operations of Lake Powell and Lake Mead, The fact is that sediment is not a major factor in the long term operation of **Lake** Powell or Lake Mead. It will be in the range of approximately 600 years before Lake Powell will be filled with sediment. Given **that** time frame, and **technology**, how can any plan be implemented

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that reputable scientists and **engineers** do not now warn that major problems could occur sooner.

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While everyone has different interests in the Colorado River and everyone might like a different agreement than The Colorado River Compact of 1922, which largely governs the discharge of flows from Lake Powell to Lake Mead, it works and has **worked** for many years.

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#### 7. Power production:

Glen Canyon Dam is a significant source of clean, reliable and efficient energy. The single dam concept **would** reduce power production from Glen Canyon Dam to **zero**. This is a waste of a significant natural resource.

One of the **significant aspects** of Lake Powell is (hat it is doing just **fine**, in fact great It is providing water during the times of **drought**, it is producing efficient and clean power and providing recreation to millions of citizens and visitors.

Thank you for a job well done.

Sincerely,

  
Rick DeWitt



Mr, Rick Gold, Regional Director  
 Bureau of Reclamation, Upper Colorado Region  
 Attention: UC-402  
 125 South State Street  
 Salt Lake City, Utah 84318-1147

August 24, 2005

Dear Mr. Gold:

I am **writing** to **express** my concerns **about the** management of the Colorado **River** water and the management of it in Lake **Powell** and Lake Mead,

I would encourage you to **give** serious **consideration** to the possibility of ceasing operations at the Glen Canyon Dam, There are several reasons that this scenario **would be beneficial**.

Water consumption **levels** for the Colorado **River** are near the **river's** historic **average** flow and are expected **to rise**. It is unlikely that Lake Powell will fill again. The surplus water that filled it **during 17 years** the first time is no **longer** there to **build a storage cushion**. Even should surplus water **accumulate**, Lake **Mead** on its own could accommodate it.

There **is** evaporation of about **17 percent** of the water that **flows** into the se reservoirs; **it's time that a** more efficient **means** is **explored** for storing this precious **water**. Vacant space in underground **aquifers** on, or accessible to, **existing** Colorado River infrastructure could accommodate more **water** than these **two reservoirs combined—and with** far greater efficiency

Lake **Powell's** water storage capacity diminishes yearly as the **sediments accumulate** in the **slack water**. Maintaining **Powell** as an efficient reservoir would require the **implementaton** of an expensive dredging **program**.

**Removing** sediment from Lake **Mead** rather **than** Lake **Powell** is the most **feasible** and least expensive likely **alternative**. While original estimates **projected** that **sediment** would not effect the **safe operations** of Glen Canyon **Dam** for another 60 **years**, scientists now warn that major problems could **occur sooner**. The **sediments** accumulating behind the Glen Canyon dam will **resume** their original beneficial role **in the** maintenance of the natural ecology of the Colorado River in our Grand Canyon National Park when they are **allowed** to continue on past the dam. **Allowing** the flowing water to **begin** restoring a **healthy** ecosystem to the Grand Canyon River corridor is reason enough, I **feel**, to **seriously** consider the possibility of **decommissioning** the **Glen** Canyon Dam.

The growing challenges and looming shortages facing **Colorado** River water users as a **result** of these dams requires that a far more comprehensive **assessment** addressing **the** issues above **is** fully **warranted**, and should be done through an Environmental Impact **Statement**. **Thank-you** for **considering** my **comments**.

Sincerely,



Tom Ferguson  
 826 West **Howe** Street  
**Tempe, AZ.**  
 85281  
 489-966-5418

To Robert Johnson of the Bureau of Reclamation:

The dropping of Mead and Powell reservoirs greatly concerns boaters like me. Only God can send more rain. But you have the power to send any excess water in the Colorado to where it is really needed – Lake Mead. It doesn't make good boating or fishing to have two half full lakes and twice the evaporation! Lake Mead should be highest (and oldest priority) for the runoff. It is closest to the population centers and it is a better boating lake by far. Let the second priority be Lake Powell to fill only when Mead is full. Otherwise leave Powell's skinny little canyons to the kayakers and muddy hikers.

Sincerely,

*Guy Cloutier*

GUY CLOUTIER  
KATHERINE ANDERSON  
4426 E LINDEN ST  
TUCSON, AZ 85712

520-881-7476

*guycloutier@cox.net*

Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
Attn: BCOO-1000

**Background**

As a protestant in the matter of jurisdiction, the State Water Resources Control Board's attorney concluding statement was:

—"The Secretary of the Interior is the watermaster of the Colorado River, and that ought to tell you something."

With the powers of the Rivermaster run responsibilities. And I commend the Secretary for initiating the development of management strategies for Lake Powell and Lake Mead, and particularly the development of Lower Basin shortage guidelines under low reservoir conditions.

**Requests:**

1. Based on the technical operating data, I request that the criteria for determining "shortage flow status" shall be as clear and concise as possible. | 1
2. I request that there be several levels of shortage flow status, e.g. | 2
  - a. "Level one" which would affect the Central Arizona Project
  - b. "Level two" which would affect other lower Basin States contractors

**Comments**

It is my understanding that IID's present perfected rights are recognized within the Boulder Canyon Project Act, and, whether it is now or later, I look to the Imperial Irrigation District to submit to you information concerning its present perfected and contractual rights.

I support IID and the other lower Basin States contractors establishing contingency plans for equitable distribution under a shortage flow allocation, as applicable. | 3



Cliff Hurley

Robert Johnson  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
Attention: BCOO-1000  
P.O. Box 61470  
Boulder City, Nevada 89006-1470

Dear Robert-

I wanted to write and share my thoughts on the Glen Canyon/Lake Powell debate. I have witnessed the reservoir full, and now have been watching as drought and water demands have brought about lower water levels. The low water levels have revealed a beautiful landscape and it's amazing to see features like Fort Moqui, Cathedral in the Desert, and the many side canyons emerge. I feel that raising water levels threatens the cultural, biological, and scenic resources that can be found in Glen Canyon. I am advocating that we keep water levels low and send spring run-off to Lake Mead to be captured there while we truly re-consider the ramifications of Glen Canyon Dam and it's necessity.

1

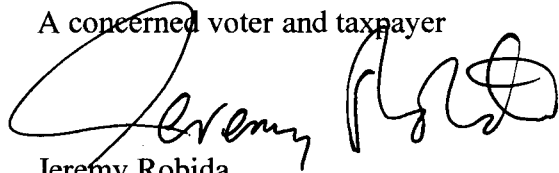
I am gravely concerned with the massive ecosystem changes that the dam has brought about in the Grand Canyon. I realize that an environmental impact statement (EIS) was prepared in the mid 90's. It was nice to see this long-overdue effort. This document showed that there was (and still are) issues related to the dam and offered solutions to fix them. I waited very excited to see the results of simulated seasonal flooding in the Grand Canyon. Unfortunately, these tactics showed little promise as a long run solution.

At this point I think we need to seriously consider the decommissioning of the dam as an option. The original EIS failed to do this. I have tried to do my research carefully, and my concerns about sedimentation, evaporation, and long-term water delivery demands always lead me back to the question whether or not draining the lake is for the best. When I add in my other concerns about cultural, biological, and scenic assets affected... the choice become clear. I feel we need to keep lake levels low, research options related to decommissioning of the dam, and then move in that direction. I want Glen Canyon to resurface. Thank you.

2

3

A concerned voter and taxpayer



Jeremy Robida  
539 W 18<sup>th</sup> St.  
Tempe, AZ  
85281

FAX TO: 702-293-8156

"REBUILD LAKE POWELL & THINKING FOR THE FUTURE"

? HOW MANY PEOPLE WILL MOVE TO NEVADA AFTER A MAJOR QUAKE. SINCE NEVADA HAS THE HIGHEST MORTAL RATE IN THE U.S. 5 YEARS RUNNING? GLEN CANYON DAM IS UNSAFE & WILL FAIL CAUSING A MEGA TSUNAMI (REBUILD IT) ? WHAT HAPPENS TO ALL THE WATER AFTER THE DROIT. (NO CONTROL)

ABOVE GROUND LAKES & UNDERGROUND AQUIFERS ARE THE ONLY SOLUTION. (BRING ALL NUCLEAR TO NEW MEXICO SALT MINES)

RADIATION LEAKAGE AIR & WATER & RIVER

YUCCA MOUNTAIN: THE SO CALLED REPOSITORY IS NOTHING BUT A DUMP W/ WINDOW DRESSING & WILL NOT AND SHOULD NOT BE THE PLACE FOR DEADLIEST SUBSTANCE KNOWN TO MAN. THE MOUNTAIN IS ONLY STABLE FOR 200 YEARS ACCORDING TO FOUR ENGINEERS. THE DOE HAS NOTHING BUT FAILS, MEANING HAS NEVER BEEN ABLE TO BUILD A SAFE HOLDING FACILITY ANYWHERE IN THE U.S. THE TESTS SHOWN TO THE PUBLIC ON HOW SAFE THE CONTAINERS COULD BE ARE FICTION. THE WEIGHT OF THE MOUNTAIN WILL CRUSH THE CONTAINERS BY 999 BILLION P.S.T. ITS A MATTER OF WHEN? MINUTES, HOURS, WEEKS, MONTHS, YEARS ITS A MATTER OF WHEN? YUCCA ALSO SITS ON THE 9450 LINE FAULT THAT WILL PRODUCE A MAGNITUDE 7.5 OR GREATER, AND WHAT ABOUT THE UNDERGROUND AQUIFERS OR LAKES THAT CONTAIN 10% TO 40 OR 50 PERCENT OF FUTURE POPULATION NEEDS. ACCORDING TO SCIENTIST ~~THE~~ ANSWER WHERE THE WATER TABLES BEGIN OR END YUCCA WILL DESTROY THE SOUTHWEST AS WE NEED IT. CLARK & NO OTHER COUNTY IN THE SOUTH WILL BE ABLE TO EXPAND NOR EXIST DUE TO THE DECEPTION OF THE D.O.E. & CORRUPT POLITICAL FERRIES, COMMON SENSE OR &

U.S. A. BARRERS U.S. A. SECURE



Mr. Bob Johnson, Regional Director  
 Bureau of Reclamation, Lower Colorado Region  
 Attention: BCOO-1000  
 P.O. Box 61470 Boulder City, NV 89006-

This is a duplicate letter to I.099, Ferguson. Commenter and comments are the same.

August 24, 2005

Dear Mr. Johnson:

I am writing to express my concerns about the management of the Colorado River water and the management of it in Lake Powell and Lake Mead.

I would encourage you to give serious consideration to the possibility of ceasing operations at the Glen Canyon Dam. There are several reasons that this scenario would be beneficial.

Water consumption levels for the Colorado River are near the river's historic average flow and are expected to rise. It is unlikely that Lake Powell will fill again. The surplus water that filled it during 17 years the first time is no longer there to build a storage cushion. Even should surplus water accumulate, Lake Mead on its own could accommodate it.

There is evaporation of about 17 percent of the water that flows into the se reservoirs; it's time that a more efficient means is explored for storing this precious water. Vacant space in underground aquifers on, or accessible to, existing Colorado River infrastructure could accommodate more water than these two reservoirs combined—and with far greater efficiency.

Lake Powell's water storage capacity diminishes yearly as the sediments accumulate in the slack water. Maintaining Powell as an efficient reservoir would require the implementation of an expensive dredging program.

Removing sediment from Lake Mead rather than Lake Powell is the most feasible and least expensive likely alternative. While original estimates projected that sediment would not effect the safe operations of Glen Canyon Dam for another 60 years, scientists now warn that major problems could occur sooner. The sediments accumulating behind the Glen Canyon dam will resume their original beneficial role in the maintenance of the natural ecology of the Colorado River in our Grand Canyon National Park when they are allowed to continue on past the dam. Allowing the flowing water to begin restoring a healthy ecosystem to the Grand Canyon River corridor is reason enough, I feel, to seriously consider the possibility of decommissioning the Glen Canyon Dam.

The growing challenges and looming shortages facing Colorado River water users as a result of these dams requires that a far more comprehensive assessment addressing the issues above is fully warranted, and should be done through an Environmental Impact Statement. Thank-you for considering my comments.

Sincerely,



Tom Ferguson  
 826 West Howe Street  
 Tempe, AZ  
 85281  
 489-966-5418

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1025 Jasmine St. #7  
Denver, CO 80220

August 25, 2005

Mr. Bob Johnson, Regional Director  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000  
P.O. Box 61470  
Boulder City, NV 89006-1470  
Fax (702) 293-8156

RE: Colorado River Dam Operations

Dear Mr. Johnson:

I am writing to encourage that you consider discontinuing use of Lake Powell and consolidate all water storage at one location on the Colorado River. It is clear that Lake Powell is no longer needed in order to achieve water storage and that the surface area of storage water at this site only leads to evaporative losses. In addition, the presence of Lake Powell is destructive to the environment of the Grand Canyon and drowns beautiful and valuable landscape in Glen Canyon. Additionally, the silt buildup can be much better addressed at Lake Mead.

I appreciate your consideration of this matter.

Sincerely,

*Adam Strunk*  
Adam Strunk

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**Edward B. Kirsten, Ph.D**  
**Miriam J. Kirsten**  
**2720 W. Coyote Moonrise Dr.**  
**Tucson, AZ 85742-8309**

**e-mail: edwrdrkr@aol.com**

**August 25, 2005**

**Subject: Colorado River Reservoir Operations - Comments**

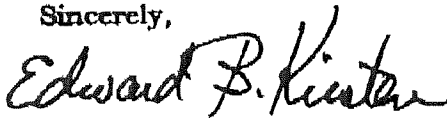
Dear Regional Director, Bob Johnson, Boulder City, NV FAX: (702) 293-8166  
 Regional Director, Rick Gold, Salt Lake City, UT FAX: (801) 524-3858  
 (Bureau of Reclamation, Lower & Upper Colorado Regions.)

The Colorado River through Glen Canyon and Grand Canyon National Park is dying under current dam management operations. Attempted mitigation to preserve the river ecology has failed. The Bureau of Reclamation's solicitation for comments on the development of management strategies that only address low reservoir conditions is not getting at the fundamental problem.

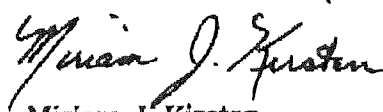
The reservoir behind Glen Canyon Dam was only recently filled and subsequently reduced by drought. With Lake Powell and Lake Mead losing to evaporation upwards of 17 percent of the water that flows into them, it's time that more efficient means be explored for storing this precious Arizona water. Vacant space in underground aquifers on, or accessible to, existing Colorado River infrastructure could accommodate more water than these two reservoirs combined-and with far greater efficiency. Upwards of 810,000 acre-feet of water annually-enough water for 1.6 million households of four people each-could be saved by eliminating Lake Powell and operating Lake Mead principally for distribution to groundwater recharge facilities.

Given the looming shortages facing Colorado River water users (including Tucson!) as a result of these dams, a far more comprehensive assessment should be done through an Environmental Impact Statement.

Sincerely,



Edward B. Kirsten, Ph.D



Miriam J. Kirsten

CC: **Senator John McCain**, Senate Office Bldg. Washington, DC.  
**FAX: (202) 228-2862**

**Kucera, Cindy**

---

**From:** Sandstoneone@aol.com  
**Sent:** Friday, August 19, 2005 3:45 PM  
**To:** strategies@lc.usbr.gov  
**Subject:** Glen Canyon Dam

Robert Johnson  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region

Dear Mr. Johnson,

I am a physician living in California but I have visited the Glen Canyon/Lake Powell area many times. As you know the situation in this area is in a state of flux and changes are imminent. I would urge that you consider filling Lake Mead before attempting to re-fill Lake Powell. The demands for water and power in the Southwest has grown so much since the lake was last filled that it is doubtful that it can be filled again, and by filling Mead instead, the evaporation loss will be minimized and power generation will be maximized, since more power can be generated by a full Lake Mead than by the two lakes at half full levels. This would limit the damage to and enhance access to one of the greatest of God's gifts to man, Glen Canyon. Lake Mead has the capacity to hold all the water that is available. Please take this opportunity to leave a lasting mark on this country that will reflect most favorably on you and your Bureau. Thank You  
Jack E Miller MD

1

**Kucera, Cindy**

---

**From:** Bill Wolverton [canyonratbw@scinternet.net]  
**Sent:** Saturday, August 20, 2005 6:40 PM  
**To:** strategies@lc.usbr.gov; strategies@uc.usbr.gov  
**Subject:** Colorado River operations

Regional Director  
 Bureau of Reclamation, Lower Colorado Region  
 Attention: BCOO-1000  
 P.O. Box 61470  
 Boulder City, Nevada 89006-1470  
 Regional Director  
 Bureau of Reclamation, Upper Colorado Region  
 Attention: UC-402  
 125 South State Street  
 Salt Lake City, Utah 84318-1147

Subject: Operation of Colorado River Dams

It is time that the Bureau of Reclamation seriously consider whether all of the dams on the Colorado River are really necessary to serve the objective of providing a dependable water supply. It has been known for decades that the Compact of 1922 overallocated the river, and that it cannot deliver the full amount of water provided for in the compact. It is also well known what the consequences of the dam in Glen Canyon have been for the river through the Grand Canyon, and that these consequences are simply not acceptable. It has also been fairly well demonstrated that no changes in the operation of the dam in Glen Canyon in order to alleviate these consequences are going to be successful. The benefits derived from the artificial flood releases from the dam have been temporary at best. Sediment continues to accumulate in all of the many tributaries of Glen Canyon - the Colorado River, the San Juan, the Escalante, the Dirty Devil, and all, of the innumerable minor tributaries, while it continues to disappear from the Grand Canyon. Nothing can ever change this. There is not likely any way that it can ever be removed from Glen Canyon and transported past the dam into the Grand Canyon, and it will ultimately result in the end of the reservoir in Glen Canyon. However, if it were not for the dam in Glen Canyon, all of this sediment would be accumulating in just one major location in Lake Mead, where it would be much more accessible for removal, instead of being dispersed in numerous, nearly inaccessible canyons. Something MUST ultimately be done about the sediment accumulation in these reservoirs. Western society cannot go on indefinitely relying on these reservoirs to supply water, all the while growing recklessly and irresponsibly and demanding and consuming ever more water. Something has to change.

It is also well known that both of these reservoirs, and all other reservoirs, lose significant amounts of water to evaporation. In the case of the reservoir in Glen Canyon it is estimated to be enough to supply a city the size of Salt Lake, no small amount. It is also well known that upstream consumptive use has been steadily increasing in the years since the dam in Glen Canyon was built, and that there is significantly less water coming down the river into Glen Canyon than there was. This is not going to change, and is only going to continue. The result will be that there will be ever less water to be stored in Glen Canyon, making the reservoir there increasingly unnecessary.

It is time to find other ways of storing water than in open, onstream reservoirs that are destined to fill in with sediment, all the while losing huge amounts of precious water to evaporation. One reservoir of the size of either Glen Canyon or Mead is enough to control the flow of the river.

It is time to start seriously studying how to do something about the sediment accumulation in order to make Lake Mead last. Given the impracticality of removing any significant amount of sediment from the reservoir in Glen Canyon, it is time to seriously consider decommissioning it, allow the sediment to begin to move on down into and replenish what has been lost from the Grand Canyon, and let it enter Lake Mead where it can be removed. Lake Mead and the other dams downstream must be used as a diversion system to other, offstream storage facilities, such as underground aquifers where evaporative losses are minimal. 2

I realize that Congress has prohibited the use of any federal funds to study the possibility of decommissioning the dam in Glen Canyon. This was done by Utah Congressman Jim Hansen, in a knee jerk reaction to efforts by citizens to restore Glen Canyon. He has since retired, but the prohibition has remained in place, supported by other members of the Utah delegation. I believe that the Bureau of Reclamation now knows the folly of the present system and that the reservoir in Glen Canyon is not necessary. I have heard from several reliable sources that a few officials of the Bureau have actually admitted, privately, that the dam in Glen Canyon is not necessary. It is time that the Bureau face up to this and confront Congress in order to allow a full study of all options regarding management of the Colorado River, including the decommissioning of the dam in Glen Canyon. Prohibiting this possibility is a classic case of behaving like an ostrich sticking its head in the sand, in effect simply saying, "I don't want to know". 3

Quite frankly, I DO want to know.

Sincerely,

William H. Wolverton  
Box 393  
Escalante, UT 84726

## Kucera, Cindy

---

**From:** Mark Bird [mark\_bird@ccsn.edu]  
**Sent:** Monday, August 22, 2005 12:49 PM  
**To:** strategies@lc.usbr.gov  
**Subject:** [Fwd: 0405 Desalt.pdf]

**Attachments:** 0405 Desalt.pdf



0405 Desalt.pdf

To whom it concerns:

Earlier, I sent you folks a black and white version of this April 2005 magazine article. The article contends \$000 is the current acre-foot cost of desalted seawater for the Colorado River. This version is in color and is easier to read. I hope you print out this 3-page article and include it the document you are preparing. I also hope you will inform me whether or not you can include or reference my article in the document you are preparing.

Cordially,  
Mark Bird

**Duren, Sabre**

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**From:** LarryLaitner [llaitner@charter.net]  
**Sent:** Tuesday, August 23, 2005 10:46 PM  
**To:** strategies@lc.usbr.gov

I would like you to remove the Glen Canyon Dam. I support the one canyon option. It seems to be the only thing that makes sense economically and enviromentally. | 1

Karen L. Salley  
801 Pincrest Terrace  
Ashland. OR 97520

Date: *Varies, see Commenter List (see note below)*

Regional Director Bob Johnson  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000, P.O. Box 61470  
Boulder City, NV 89006-1470

Dear Regional Director Johnson,

The Colorado River through Glen Canyon and Grand Canyon National Park--a magnificent resource for water, wildlife, aesthetic beauty and recreational opportunities--is dying under current dam management operations. Attempted mitigation to preserve the river ecology has failed. The Bureau of Reclamation's solicitation for comments on the development of management strategies that only address low reservoir conditions is fundamentally flawed.

The reservoir behind Glen Canyon Dam was only recently filled and subsequently reduced by drought. Water at Lakes Powell and Mead is subject to significant evaporation. More than 17% of the water that flows into the reservoirs is then lost to evaporation due to the expansion of surface water through impoundment.

Groundwater recharge is a far more efficient way to store Colorado River water. | 1

The river's beaches, wildlife and archaeological sites have been devastated by the operation of Glen Canyon Dam. Four of eight native fish no longer exist in this section of the river. Beach habitat has been significantly reduced by scouring, while sediment necessary to restore those beaches remains trapped behind dams. This sediment affects dam operations as well as wildlife and must be removed at both dams, but could be more effectively handled at Hoover Dam in the near and long terms. | 2

River flows have been declining over time, and the Colorado River Compact of 1922 requires revision. The Compact set up an inequitable distribution of water between Upper and Lower Basin states, and allocated more water than exists in the system. In an effort to deal rationally and honestly with our water resources, this Compact must be revisited. | 3

Colorado River reservoir operations must be given a comprehensive assessment that addresses all of these issues.

Current low reservoir conditions, increasing demands and looming shortages require that every alternative be considered. I respectfully request that the Bureau prepare an Environmental Impact Statement that includes decommissioning Glen Canyon Dam. | 4  
| 5

Sincerely,

This Form Letter B was received from approximately 931 individuals (Commenters). All the letters were identical. For efficiency purposes, the commenter contact information has been entered into a database and each different comment noted/identified on this letter are noted to have been received 931 times within the Comment database.

I.111 to I.1079  
same letter times 931

## Kucera, Cindy

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**From:** scubadive1@prodigy.net  
**Sent:** Thursday, August 25, 2005 3:56 AM  
**To:** strategies@lc.usbr.gov  
**Subject:** Colorado River Reservoir Operations Comments

Regional Director Bob Johnson  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000, P.O. Box 61470  
Boulder City, NV 89006-1470

Dear Regional Director Johnson,

The Colorado River is dying through Glen Canyon and Grand Canyon National Park under current dam management operations.

Attempted mitigation to preserve the river ecology has failed.

The Bureau of Reclamation's solicitation for comments on the development of management strategies that only address low reservoir conditions is fundamentally flawed.

The reservoir behind Glen Canyon Dam was only recently filled and subsequently reduced by drought. Water at Lake Powell and Lake Mead is subject to significant evaporation. More than 17% of the water that flows into the reservoirs is then lost to evaporation due to the expansion of surface water through impoundment. Groundwater recharge is a far more efficient way to store Colorado River water. 1

The river's beaches, wildlife and archaeological sites have been devastated by the operation of Glen Canyon Dam.

Four of eight native fish no longer exist in this section of the river.

Beach habitat has been significantly reduced by scouring, while sediment necessary to restore those beaches remains trapped behind dams. This sediment affects dam operations as well as wildlife and must be removed at both dams, but could be more effectively handled at Hoover Dam in both the near and long terms. 2

River flows have been declining over time, and the Colorado River Compact of 1922 requires revision. The Compact set up an inequitable distribution of water between Upper and Lower Basin states, and allocated more water than exists in the system. In an effort to deal rationally and honestly with our water resources, this Compact must be officially revisited. 3

Colorado River reservoir operations must be given a comprehensive assessment that addresses all issues. Current low reservoir conditions, increasing demands, and looming shortages require that every alternative be considered.

I respectfully request that the Bureau prepare an Environmental Impact Statement that 4



includes the decommissioning of Glen Canyon Dam.

Sincerely,

ERIC PIHL  
129 NORTH WILKE ROAD  
ARLINGTON HEIGHTS, Illinois 60005

## Kucera, Cindy

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**From:** sheathelm@msn.com  
**Sent:** Thursday, August 25, 2005 5:04 AM  
**To:** strategies@lc.usbr.gov  
**Subject:** Colorado River Reservoir Operations Comments

Regional Director Bob Johnson  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000, P.O. Box 61470  
Boulder City, NV 89006-1470

Dear Regional Director Johnson,

I recently had the opportunity to raft through the Grand Canyon for six and one-half days. It was one of the great experiences of my life. We must do whatever we can to preserve this treasure and bring it back to its natural state. I was able to speak with some of the officials studying fish and wildlife in the canyon.

The Colorado River through Glen Canyon and Grand Canyon National Park--a magnificent resource for water, wildlife, aesthetic beauty and recreational opportunities--is dying under current dam management operations. Attempted mitigation to preserve the river ecology has failed. The Bureau of Reclamation's solicitation for comments on the development of management strategies that only address low reservoir conditions is fundamentally flawed.

The reservoir behind Glen Canyon Dam was only recently filled and subsequently reduced by drought. Water at Lakes Powell and Mead is subject to significant evaporation. More than 17% of the water that flows into the reservoirs is then lost to evaporation due to the expansion of surface water through impoundment.

Groundwater recharge is a far more efficient way to store Colorado River water. | 1

The river's beaches, wildlife and archaeological sites have been devastated by the operation of Glen Canyon Dam. Four of eight native fish no longer exist in this section of the river. Beach habitat has been significantly reduced by scouring, while sediment necessary to restore those beaches remains trapped behind dams. This sediment affects dam operations as well as wildlife and must be removed at both dams, but could be more effectively handled at Hoover Dam in the near and long terms. | 2

River flows have been declining over time, and the Colorado River Compact of 1922 requires revision. The Compact set up an inequitable distribution of water between Upper and Lower Basin states, and allocated more water than exists in the system. In an effort to deal rationally and honestly with our water resources, this Compact must be revisited. | 3

As a resident of Tucson I am very concerned about the efficient use of Colorado River water. We are very proud of the conservation work in the Tucson area but much more needs to be done. For example, why can't Las Vegas and some of the California cities be forced to discontinue the excessive water use? Why not a per capita limit on distribution? | 4

I.236

Colorado River reservoir operations must be given a comprehensive assessment that addresses all of these issues.

Current low reservoir conditions, increasing demands and looming shortages require that every alternative be considered. I respectfully request that the Bureau prepare an Environmental Impact Statement that includes decommissioning Glen Canyon Dam.

5

6

Sincerely,

Herbert Sheathelm  
38117 S Canada del Oro Dr  
Tucson, Arizona 85739

## Kucera, Cindy

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**From:** aoyama@swva.net  
**Sent:** Thursday, August 25, 2005 5:11 AM  
**To:** strategies@lc.usbr.gov  
**Subject:** Colorado River Reservoir Operations Comments

Regional Director Bob Johnson  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000, P.O. Box 61470  
Boulder City, NV 89006-1470

Dear Regional Director Johnson,

I formerly worked at Glen Canyon in 1982, the year they purportedly "filled" the lake to meet the obligation to Mexico on water rights. Even then, it was so obvious what a tragedy this dam was all about and many people fought to have the dam restored to its prior state. I photographed many petroglyphs and Indian sites that are now wiped out by the filling of the dam.

Sadly, it was to avail and now, the Colorado River through Glen Canyon and Grand Canyon National Park--a magnificent resource for water, wildlife, aesthetic beauty and recreational opportunities--is dying under current dam management operations.

Attempted mitigation to preserve the river ecology has failed.

The Bureau of Reclamation's solicitation for comments on the development of management strategies that only address low reservoir conditions is fundamentally flawed.

The reservoir behind Glen Canyon Dam was only recently filled and subsequently reduced by drought. Water at Lakes Powell and Mead is subject to significant evaporation. More than 17% of the water that flows into the reservoirs is then lost to evaporation due to the expansion of surface water through impoundment.

Groundwater recharge is a far more efficient way to store Colorado River water. | 1

The river's beaches, wildlife and archaeological sites have been devastated by the operation of Glen Canyon Dam. Four of eight native fish no longer exist in this section of the river. Beach habitat has been significantly reduced by scouring, while sediment necessary to restore those beaches remains trapped behind dams. This sediment affects dam operations as well as wildlife and must be removed at both dams, but could be more effectively handled at Hoover Dam in the near and long terms. | 2

River flows have been declining over time, and the Colorado River Compact of 1922 requires revision. The Compact set up an inequitable distribution of water between Upper and Lower Basin states, and allocated more water than exists in the system. In an effort to deal rationally and honestly with our water resources, this Compact must be revisited. | 3

Colorado River reservoir operations must be given a comprehensive assessment that addresses all of these issues.

Current low reservoir conditions, increasing demands and looming shortages require that every alternative be considered. I respectfully request that the Bureau prepare an

Sincerely,

Suki Mahar  
724 Hale Road NE  
Check, Virginia 24072

## Kucera, Cindy

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**From:** ncampion@aol.com  
**Sent:** Thursday, August 25, 2005 6:38 AM  
**To:** strategies@lc.usbr.gov  
**Subject:** Colorado River Reservoir Operations Comments

Regional Director Bob Johnson  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000, P.O. Box 61470  
Boulder City, NV 89006-1470

Dear Regional Director Johnson,

Do not cave in to the demands of the powerful extreme environmental groups such as the Center for Biological Diversity with regards to the Colorado River dam management. These dams such as the Glenn Canyon and Hoover are vital to the economic and social wellbeing of the country. Flood management and water distribution that these dams provide must be continued.

Do not consider the elimination of Glenn Canyon Dam in any program designed to manage the water flow of the Colorado. Every and all alternatives should be considered.

Thank you for listening to the views and concerns of an ordinary citizen.

Sincerely,

Nick Campion  
27681 paseo barona  
san juan capistrano, California 92675

## Kucera, Cindy

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**From:** gaia@citcom.net  
**Sent:** Thursday, August 25, 2005 7:24 AM  
**To:** strategies@lc.usbr.gov  
**Subject:** Colorado River Reservoir Operations Comments

Regional Director Bob Johnson  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000, P.O. Box 61470  
Boulder City, NV 89006-1470

Dear Regional Director Johnson,

The Colorado River through Glen Canyon and Grand Canyon National Park--a magnificent resource for water, wildlife, aesthetic beauty and recreational opportunities--is dying under current dam management operations. Attempted mitigation to preserve the river ecology has failed. The Bureau of Reclamation's solicitation for comments on the development of management strategies that only address low reservoir conditions is fundamentally flawed. 1

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The river's beaches, wildlife and archaeological sites have been devastated by the operation of Glen Canyon Dam. Four of eight native fish no longer exist in this section of the river. Beach habitat has been significantly reduced by scouring, while sediment necessary to restore those beaches remains trapped behind dams. This sediment affects dam operations as well as wildlife and must be removed at both dams, but could be more effectively handled at Hoover Dam in the near and long terms. 3

River flows have been declining over time, and the Colorado River Compact of 1922 requires revision. The Compact set up an inequitable distribution of water between Upper and Lower Basin states, and allocated more water than exists in the system. In an effort to deal rationally and honestly with our water resources, this Compact must be revisited. 4

Colorado River reservoir operations must be given a comprehensive assessment that addresses all of these issues.

Current low reservoir conditions, increasing demands and looming shortages require that every alternative be considered. I respectfully request that the Bureau prepare an Environmental Impact Statement that includes decommissioning Glen Canyon Dam. 5, 6

I've been telling Floyd Elgin Dominy for years that it should never have been built and now we should blow the SOB up.

Dominy's gone now, so let's get on with the demolition.

Sincerely,

DON RICHARDSON  
525 WINDOVER DRIVE  
BREVARD, North Carolina 28712



## Kucera, Cindy

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**From:** susan\_zakin@yahoo.com  
**Sent:** Thursday, August 25, 2005 7:56 AM  
**To:** strategies@lc.usbr.gov  
**Subject:** Colorado River Reservoir Operations Comments

Regional Director Bob Johnson  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000, P.O. Box 61470  
Boulder City, NV 89006-1470

Dear Regional Director Johnson,

Dear Mr. Johnson and Mr. Gold:

The Colorado River is probably the most meaningful natural resource in the West. It is both symbolically important and, of course, important as a source of water.

To many of us, Glen Canyon dam is also symbolic, as the ultimate symbol of the worst example of old-style Western water policy.

With so many dams coming down around the country, it is time to signal that change has come by dismantling Glen Canyon dam. Glen Canyon and Grand Canyon National Park--a magnificent resource for water, wildlife, aesthetic beauty and recreational opportunities-- are dying under current dam management operations. Attempted mitigation to preserve the river ecology has failed. The Bureau of Reclamation's solicitation for comments on the development of management strategies that only address low reservoir conditions is fundamentally flawed.

The reservoir behind Glen Canyon Dam was only recently filled and subsequently reduced by drought. Water at Lakes Powell and Mead is subject to significant evaporation. More than 17% of the water that flows into the reservoirs is then lost to evaporation due to the expansion of surface water through impoundment.

Groundwater recharge is a far more efficient way to store Colorado River water. | 1

The river's beaches, wildlife and archaeological sites have been devastated by the operation of Glen Canyon Dam. Four of eight native fish no longer exist in this section of the river. Beach habitat has been significantly reduced by scouring, while sediment necessary to restore those beaches remains trapped behind dams. This sediment affects dam operations as well as wildlife and must be removed at both dams, but could be more effectively handled at Hoover Dam in the near and long terms. | 2

River flows have been declining over time, and the Colorado River Compact of 1922 requires revision. The Compact set up an inequitable distribution of water between Upper and Lower Basin states, and allocated more water than exists in the system. In an effort to deal rationally and honestly with our water resources, this Compact must be revisited. | 3

Colorado River reservoir operations must be given a comprehensive assessment that

addresses all of these issues.

Current low reservoir conditions, increasing demands and looming shortages require that every alternative be considered. I respectfully request that the Bureau prepare an Environmental Impact Statement that includes decommissioning Glen Canyon Dam.

4,5

Sincerely,

SUSAN ZAKIN  
P.O. Box 87515  
Tucson, Arizona 85754

## Kucera, Cindy

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**From:** forests@ucla.edu  
**Sent:** Thursday, August 25, 2005 8:46 AM  
**To:** strategies@lc.usbr.gov  
**Subject:** Colorado River Reservoir Operations Comments

Regional Director Bob Johnson  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000, P.O. Box 61470  
Boulder City, NV 89006-1470

Dear Regional Director Johnson,

Lake Powell is a mess. What would John Wesley Powell say to this sticky, muddy, ugly mess of a Lake that loses vast amounts of water through evaporation and through pressure into the sponge-like rock basin. It's an aesthetic mess. It's a biological mess. it's a geologic mess.

Rethink this project. Conduct a comprehensive EIS on the operations of Glen Canyon and Hoover Dams. Glen Canyon Dam has been around a long time, but that doesn't mean it has been a success, or that it should be around any longer.

1  
2

Sincerely,

MELISSA SAVAGE  
1477 1/2 CANYON ROAD  
SANTA FE, New Mexico 87501

**Figueroa, Amanda**

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I - 480

**From:** PrimatePerson2004@yahoo.ca  
**Sent:** Thursday, August 25, 2005 8:53 AM  
**To:** strategies@lc.usbr.gov  
**Subject:** Colorado River Reservoir Operations Comments

Regional Director Bob Johnson  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000, P.O. Box 61470  
Boulder City, NV 89006-1470

Dear Regional Director Johnson,

Please help protect the beautiful river and canyon that GOD has created!

Colorado River reservoir operations must be given a comprehensive assessment that addresses all of these issues.

Current low reservoir conditions, increasing demands and looming shortages require that every alternative be considered. I respectfully request that the Bureau prepare an Environmental Impact Statement that includes decommissioning Glen Canyon Dam. 1,2

Sincerely,

Bassam Imam  
1625 Maisonneuve W #1109  
Montreal, H3H 2N4  
Canada

**Kucera, Cindy**

---

**From:** brazenking@earthlink.net  
**Sent:** Thursday, August 25, 2005 9:13 AM  
**To:** strategies@lc.usbr.gov  
**Subject:** Colorado River Reservoir Operations Comments

Regional Director Bob Johnson  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000, P.O. Box 61470  
Boulder City, NV 89006-1470

Dear Regional Director Johnson,

The Colorado River through Glen Canyon and Grand Canyon National Park--a magnificent resource for water, wildlife, aesthetic beauty and recreational opportunities--is dying under current dam management operations. Attempted mitigation to preserve the river ecology has failed. The Bureau of Reclamation's solicitation for comments on the development of management strategies that only address low reservoir conditions is fundamentally flawed.

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Groundwater recharge is a far more efficient way to store Colorado River water. | 1

The river's beaches, wildlife and archaeological sites have been devastated by the operation of Glen Canyon Dam. Four of eight native fish no longer exist in this section of the river. Beach habitat has been significantly reduced by scouring, while sediment necessary to restore those beaches remains trapped behind dams. This sediment affects dam operations as well as wildlife and must be removed at both dams, but could be more effectively handled at Hoover Dam in the near and long terms. | 2

River flows have been declining over time, and the Colorado River Compact of 1922 requires revision. The Compact set up an inequitable distribution of water between Upper and Lower Basin states, and allocated more water than exists in the system. In an effort to deal rationally and honestly with our water resources, this Compact must be revisited. | 3

Colorado River reservoir operations must be given a comprehensive assessment that addresses all of these issues.  
Current low reservoir conditions, increasing demands and looming shortages require that every alternative be considered. I respectfully request that the Bureau prepare an Environmental Impact Statement that includes decommissioning Glen Canyon Dam. | 4,5  
HAYDUKE LIVES.....I PROTESTED THE DAM BEING BUILT AND NOW I WANT IT  
TAKEN DOWN.....FOR EDWARD ABBEY

Sincerely,

I.499

ALLEN DECKER  
4250 BEULAH DR.  
LACANADA, California 91011

## Kucera, Cindy

---

**From:** kev1nomi@aol.com  
**Sent:** Thursday, August 25, 2005 9:14 AM  
**To:** strategies@lc.usbr.gov  
**Subject:** Colorado River Reservoir Operations Comments

Regional Director Bob Johnson  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000, P.O. Box 61470  
Boulder City, NV 89006-1470

Dear Regional Director Johnson,

DON'T BE LITTLE GIRL EMEN, GET THIS GOING AND GET RID OF GLEN CANYON DAM. The Colorado River through Glen Canyon and Grand Canyon National Park--a magnificent resource for water, wildlife, aesthetic beauty and recreational opportunities--is dying under current dam management operations. Attempted mitigation to preserve the river ecology has failed. The Bureau of Reclamation's solicitation for comments on the development of management strategies that only address low reservoir conditions is fundamentally flawed.

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Colorado River reservoir operations must be given a comprehensive assessment that addresses all of these issues.

Current low reservoir conditions, increasing demands and looming shortages require that every alternative be considered. I respectfully request that the Bureau prepare an Environmental Impact Statement that includes decommissioning Glen Canyon Dam. | 4,5

Sincerely,

KEVIN FURLONG  
103 EBENEZER DR.  
WEST SENECA, New York 14224



## Kucera, Cindy

---

**From:** jimbo@tetonmountainhome.com  
**Sent:** Thursday, August 25, 2005 9:33 AM  
**To:** strategies@lc.usbr.gov  
**Subject:** Colorado River Reservoir Operations Comments

Regional Director Bob Johnson  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000, P.O. Box 61470  
Boulder City, NV 89006-1470

Dear Regional Director Johnson,

I spend many weeks on the Colorado river each year. The devastation of the dam is quite evident in the Grand Canyon. We must bring back the warmer water and the sediment to the canyon!

There are alternatives to the resevoir in order to provide water for the region. Glen canyon must be restored, it's beauty and potential recreation opportunities far outweigh whats being done on the current resevoir. America needs to consume less gas. Gas guzzling fuels terrorism. By restoring Glen Canyon, recreational activities in the area would consume far less gasoline. The Colorado River through Glen Canyon and Grand Canyon National Park--a magnificent resource for water, wildlife, aesthetic beauty and recreational opportunities--is dying under current dam management operations. Attempted mitigation to preserve the river ecology has failed. The Bureau of Reclamation's solicitation for comments on the development of management strategies that only address low reservoir conditions is fundamentally flawed.

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Groundwater recharge is a far more efficient way to store Colorado River water. | 1

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Colorado River reservoir operations must be given a comprehensive assessment that addresses all of these issues.

Current low reservoir conditions, increasing demands and looming shortages require that every alternative be considered. I respectfully request that the Bureau prepare an Environmental Impact Statement that includes decommissioning Glen Canyon Dam.

4,5

Sincerely,

Jimbo Collins  
1190 murphy ln  
Moab, Utah 84532

## Duren, Sabre

---

**From:** letterip@hotmail.com  
**Sent:** Thursday, August 25, 2005 9:36 AM  
**To:** strategies@lc.usbr.gov  
**Subject:** Colorado River Reservoir Operations Comments

Regional Director Bob Johnson  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000, P.O. Box 61470  
Boulder City, NV 89006-1470

Dear Regional Director Johnson,

These people that want the damm decomissioned are nuts. Please do not give them any credence at all. | 1

Thank you for your attention to this matter!

Sincerely,

Joe Cuccio  
447 West Leadora Ave  
Glendora, California 91741

**Kucera, Cindy**

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**From:** aqua4fun@hotmail.com  
**Sent:** Thursday, August 25, 2005 9:44 AM  
**To:** strategies@lc.usbr.gov  
**Subject:** Colorado River Reservoir Operations Comments

Regional Director Bob Johnson  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000, P.O. Box 61470  
Boulder City, NV 89006-1470

Dear Regional Director Johnson,

I urge you to consider decommissioning Glen Canyon Dam and utilize Lake Mead or recharge aquifers for water storage instead.

1  
2

With global warming and the forecast of a continuing drought it doesn't make sense for water to be evaporating from two large bodies of water when Lake Mead can hold it all.

An added advantage to decommissioning the dam would be the restoration of Glen Canyon with its 1500 native sites and the incredible beauty of the slot canyons.

The Colorado River reservoir operations should be given a comprehensive assessment that addresses all of these issues.

Current low reservoir conditions, increasing demands and looming shortages require that every alternative be considered. I respectfully request that the Bureau prepare an Environmental Impact Statement that includes decommissioning Glen Canyon Dam.

3,4

Sincerely,

DONNA RIDDLE  
61240 PRESCOTT TR  
JOSHUA TREE, California 92252

## Kucera, Cindy

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**From:** jrexcoyote@aol.com  
**Sent:** Thursday, August 25, 2005 1:34 PM  
**To:** strategies@lc.usbr.gov  
**Subject:** Colorado River Reservoir Operations Comments

Regional Director Bob Johnson  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000, P.O. Box 61470  
Boulder City, NV 89006-1470

Dear Regional Director Johnson,

The Colorado River through Glen Canyon and Grand Canyon National Park--a magnificent resource for water, wildlife, aesthetic beauty and recreational opportunities--is dying under current dam management operations. Attempted mitigation to preserve the river ecology has failed. The Bureau of Reclamation's solicitation for comments on the development of management strategies that only address low reservoir conditions is fundamentally flawed.

The reservoir behind Glen Canyon Dam was only recently filled and subsequently reduced by drought. Water at Lakes Powell and Mead is subject to significant evaporation. More than 17% of the water that flows into the reservoirs is then lost to evaporation due to the expansion of surface water through impoundment.

Groundwater recharge is a far more efficient way to store Colorado River water.

1

The river's beaches, wildlife and archaeological sites have been devastated by the operation of Glen Canyon Dam. Four of eight native fish no longer exist in this section of the river. Beach habitat has been significantly reduced by scouring, while sediment necessary to restore those beaches remains trapped behind dams. This sediment affects dam operations as well as wildlife and must be removed at both dams, but could be more effectively handled at Hoover Dam in the near and long terms.

2

River flows have been declining over time, and the Colorado River Compact of 1922 requires revision. The Compact set up an inequitable distribution of water between Upper and Lower Basin states, and allocated more water than exists in the system. In an effort to deal rationally and honestly with our water resources, this Compact must be revisited.

3

Colorado River reservoir operations must be given a comprehensive assessment that addresses all of these issues.

Current low reservoir conditions, increasing demands and looming shortages require that every alternative be considered. I respectfully request that the Bureau prepare an Environmental Impact Statement that includes decommissioning Glen Canyon Dam.

4,5

We cannot pretend anymore that we understand river and riparian ecology enough to manage this vital river. Let's allow the river manage itself -- please study how to create an exit strategy for the Glen Canyon Dam.

1.583

Sincerely,

Jan Garton  
219 WESTWOOD RD  
Manhattan, Kansas 66502-3850

## Kucera, Cindy

---

**From:** coner@telus.net  
**Sent:** Thursday, August 25, 2005 1:34 PM  
**To:** strategies@lc.usbr.gov  
**Subject:** Colorado River Reservoir Operations Comments

Regional Director Bob Johnson  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000, P.O. Box 61470  
Boulder City, NV 89006-1470

Dear Regional Director Johnson,

Examine the science of removing the dam- you will see that the benefits far outweigh the negatives. Listen to all the arguments, not just those of entrenched economic interests. The Colorado River through Glen Canyon and Grand Canyon National Park--a magnificent resource for water, wildlife, aesthetic beauty and recreational opportunities--is dying under current dam management operations. Attempted mitigation to preserve the river ecology has failed. The Bureau of Reclamation's solicitation for comments on the development of management strategies that only address low reservoir conditions is fundamentally flawed. 1

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Current low reservoir conditions, increasing demands and looming shortages require that every alternative be considered. I respectfully request that the Bureau prepare an Environmental Impact Statement that includes decommissioning Glen Canyon Dam. 5,6

Sincerely,

1.592

james mackay  
7205 fitsimmons road  
whistler, V0N1B7  
Canada



## Kucera, Cindy

---

**From:** thecoffeebug@yahoo.com  
**Sent:** Thursday, August 25, 2005 5:47 PM  
**To:** strategies@lc.usbr.gov  
**Subject:** Colorado River Reservoir Operations Comments

Regional Director Bob Johnson  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000, P.O. Box 61470  
Boulder City, NV 89006-1470

Dear Regional Director Johnson,

Attempted mitigation to preserve the river ecology of the Colorado River through Glen Canyon and Grand Canyon National Park has failed. The Bureau of Reclamation's solicitation for comments on the development of management strategies that only address low reservoir conditions is fundamentally flawed.

Water at Lakes Powell and Mead is subject to significant evaporation. Groundwater recharge is a far more efficient way to store Colorado River water.

1

In the river corridor, beaches and wildlife have been devastated by the operation of Glen Canyon Dam. Four of eight native fish no longer exist in this section of the river. Beach habitat has been significantly reduced by scouring, while sediment necessary to restore those beaches remains trapped behind dams.

The Colorado River Compact of 1922 requires revision. The Compact set up an inequitable distribution of water between Upper and Lower Basin states, and allocated more water than exists in the system.

2

Colorado River reservoir operations must be given a comprehensive assessment that addresses all of these issues.

Current low reservoir conditions, increasing demands and looming shortages require that every alternative be considered. I request that the Bureau prepare an Environmental Impact Statement that includes decommissioning Glen Canyon Dam.

3,4

Sincerely,

B. FRANK  
P. O. BOX 152  
HESPERUS, Colorado 81326

## Kucera, Cindy

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**From:** seth@sethhenry.com  
**Sent:** Thursday, August 25, 2005 5:47 PM  
**To:** strategies@lc.usbr.gov  
**Subject:** Colorado River Reservoir Operations Comments

Regional Director Bob Johnson  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000, P.O. Box 61470  
Boulder City, NV 89006-1470

Dear Regional Director Johnson,

I am writing to ask you, as you evaluate reoperation of Lake Powell and Lake Mead, to consider carefully the option of ceasing operations at Lake Powell and decommissioning Glen Canyon Dam. For many reasons, I believe the time has come to adopt a single reservoir approach to managing Colorado River flows. 1

By limiting the reoperation assessment to only address low reservoir conditions, the Bureau of Reclamation is inviting failure. Demands are increasing, and shortages are looming. The river already can't meet the flows allocated in the 1922 Colorado River Compact, and flows are expected to decline further. It is time to give reservoir operations on the river a full analysis that addresses all of these issues.

If such an analysis were undertaken, I think it would point to decommissioning Glen Canyon Dam as the best solution. Lake Powell is notoriously inefficient water storage. Existing aquifer space that is accessible to existing Colorado River infrastructure could accommodate more water than Lake Powell and Lake Mead combined, with far greater efficiency. Lake Mead on its own could accommodate any surplus water that may accumulate. 2

Glen Canyon Dam has had devastating impacts on native fish, habitat, and archeological sites. Sediment is a major threat to long-term operations, and removing sediment from Lake Mead is more feasible and less expensive than from Lake Powell. 3

I am a native of Colorado and have nurtured a relationship with the Colorado River for over thirty years. I urge you to prepare an Environmental Impact Statement that includes an option to decommission Glen Canyon Dam. Thank you for considering these comments. 4  
5

Sincerely,

Seth Henry  
232 Gay St  
Longmont, Colorado 80501

## Kucera, Cindy

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**From:** spotts@infowest.com  
**Sent:** Thursday, August 25, 2005 5:47 PM  
**To:** strategies@lc.usbr.gov  
**Subject:** My Comments on Colorado River Reservoir Operations

Regional Director Bob Johnson  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000, P.O. Box 61470  
Boulder City, NV 89006-1470

Dear Regional Director Johnson,

Please accept these comments in response to your Federal Register Notice on possible changes in operations for the Colorado River reservoirs (Lake Powell and Lake Mead).

As you know, the Colorado River through Glen Canyon and Grand Canyon National Park--a magnificent resource for water, wildlife, aesthetic beauty and recreational opportunities--is dying under current dam management operations. Attempted mitigation to preserve the river ecology has failed. The Bureau of Reclamation's solicitation for comments on the development of management strategies that only address low reservoir conditions is fundamentally flawed.

The reservoir behind Glen Canyon Dam was only recently filled and subsequently reduced by drought. Water at Lakes Powell and Mead is subject to significant evaporation. More than 17% of the water that flows into the reservoirs is then lost to evaporation due to the expansion of surface water through impoundment.

Groundwater recharge is a far more efficient way to store Colorado River water. | 1

The river's beaches, wildlife and archaeological sites have been devastated by the operation of Glen Canyon Dam. Four of eight native fish no longer exist in this section of the river. Beach habitat has been significantly reduced by scouring, while sediment necessary to restore those beaches remains trapped behind dams. This sediment affects dam operations as well as wildlife and must be removed at both dams, but could be more effectively handled at Hoover Dam in the near and long terms. | 2

River flows have been declining over time, and the Colorado River Compact of 1922 requires revision. The Compact set up an inequitable distribution of water between Upper and Lower Basin states, and allocated more water than exists in the system. In an effort to deal rationally and honestly with our water resources, this Compact must be revisited. | 3

Colorado River reservoir operations must be given a comprehensive assessment that addresses all of these issues.

Current low reservoir conditions, increasing demands and looming shortages require that every alternative be considered.

I respectfully request that the Bureau prepare an Environmental Impact Statement that | 4

evaluates a reasonable range of alternatives to address these issues. These alternatives should

include: 1) more stringent water conservation requirements for those government entities receiving future Colorado River water;

5

2) more use of groundwater recharge with less surface storage to reduce high evaporation losses; 3) decommissioning Glen Canyon Dam; 4) aggressive tamarisk removal along Colorado River system waterways to capture more water now lost to evapotranspiration; and 5) an eclectic combination of these alternatives to maximize water savings and require the most efficient water uses.

6,7

It is myopic, incremental, and ineffective to only look at reservoir operations without addressing these larger issues.

There is NEPA law stating that an EIS can consider an alternative outside of the agency's current legal authorization if it may offer a feasible solution to a serious problem. This EIS analysis may persuade Congress to change the authorization to solve the problem.

Please do not hide behind the existing legal authorizations, and start thinking creatively about how to solve these problems. The status quo is not working, and new thinking to find solutions is urgently needed.

Thank you very much for your consideration.

Sincerely,

Richard Spotts  
1125 W. Emerald Drive  
St. George, Utah 84770-6026

## Kucera, Cindy

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**From:** mailmanage@fastmail.fm  
**Sent:** Thursday, August 25, 2005 6:36 PM  
**To:** strategies@uc.usbr.gov; strategies@lc.usbr.gov  
**Subject:** Colorado River Dams

G'day and thank you for your time. I will keep this short and just voice my desire that the One Dam proposal be adopted to restore the Colorado river and Glen Canyon to their more natural states and to save water storages overall.

1

Thank you,  
E Lokey  
Colorado Voter

--

<http://www.fastmail.fm> - I mean, what is it about a decent email service?

## Kucera, Cindy

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**From:** cknuth@aol.com  
**Sent:** Friday, August 26, 2005 3:49 AM  
**To:** strategies@lc.usbr.gov  
**Subject:** Colorado River Reservoir Operations Comments

Regional Director Bob Johnson  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000, P.O. Box 61470  
Boulder City, NV 89006-1470

Dear Regional Director Johnson,

The Colorado River through Glen Canyon and Grand Canyon National Park--a magnificent resource for water, wildlife, aesthetic beauty and recreational opportunities--is dying under current dam management operations. Attempted mitigation to preserve the river ecology has failed.

Groundwater recharge is a far more efficient way to store Colorado River water.

1

The river's beaches, wildlife and archaeological sites have been devastated by the operation of Glen Canyon Dam. Four of eight native fish no longer exist in this section of the river. This sediment affects dam operations as well as wildlife and must be removed at both dams, but could be more effectively handled.

2

River flows have been declining over time, and the Colorado River Compact of 1922 requires revision. The Compact set up an inequitable distribution of water between Upper and Lower Basin states, and allocated more water than exists in the system.

3

Colorado River reservoir operations must be given a comprehensive assessment that addresses all of these issues.

Current low reservoir conditions, increasing demands and looming shortages require that every alternative be considered. I respectfully request that the Bureau prepare an Environmental Impact Statement that includes decommissioning Glen Canyon Dam.

4,5

Sincerely,

Cynthia Fischer  
956 Conner Rd.  
West Chester, Pennsylvania 19380

## Kucera, Cindy

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**From:** dartley@connectwireless.us  
**Sent:** Friday, August 26, 2005 9:20 AM  
**To:** strategies@lc.usbr.gov  
**Subject:** Colorado River Reservoir Comments

Regional Director Bob Johnson  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000, P.O. Box 61470  
Boulder City, NV 89006-1470

Dear Regional Director Johnson,

The Colorado River through Glen Canyon and Grand Canyon National Park is being ecologically harmed under current dam management operations. The managers know that all mitigation to preserve the river ecology has been a failure.

The Bureau of Reclamation's solicitation for comments on the development of management strategies that only address low reservoir conditions is also flawed. The Bureau of Reclamation has something to hide from the public. That's obvious.

Much of the water that flows into Lakes Powell and Mead is lost to evaporation due to the expansion of surface water through the dams.

Groundwater recharge is a far more efficient way to store Colorado River water. Your hydrologists know this and tell you this, yet you ignore them. Why?

1

River flows have been declining significantly over time.  
Something must be done.

The Colorado River Compact of 1922 requires a revision. The Compact itself is flawed, since it set up an inequitable distribution of water between Upper and Lower Basin states, and allocated more water than exists in the system.

2

This Compact must be redone!!

The compact must also address:

1) Current low reservoir conditions,

2) increasing demands and water shortages (including the needs for fish and wildlife).

I demand that the Bureau prepare a full EIS that includes tearing out Glen Canyon Dam.

3,4

If this isn't done soon, my next letter will be to my Senator and Representative asking them why the Bureau is not doing its job.

Sincerely,

Richard Artley  
415 EN 2nd  
Grangeville, Idaho 83530



**Wilde, Rebecca**

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**From:** avatar11@rediffmail.com  
**Sent:** Friday, August 26, 2005 7:15 AM  
**To:** strategies@lc.usbr.gov  
**Subject:** Colorado River Reservoir Operations Comments

Regional Director Bob Johnson  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000, P.O. Box 61470  
Boulder City, NV 89006-1470

Dear Regional Director Johnson,

Colorado River reservoir operations must be given a comprehensive assessment that addresses all of these issues.

Current low reservoir conditions, increasing demands and looming shortages require that every alternative be considered. I respectfully request that the Bureau prepare an Environmental Impact Statement that includes decommissioning Glen Canyon Dam. 1,2

Sincerely,

Ravi Grover  
PO Box 802103  
Chicago, Illinois 60680

I-783

## Duren, Sabre

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**From:** Denayone@yahoo.com  
**Sent:** Friday, August 26, 2005 1:35 PM  
**To:** strategies@lc.usbr.gov  
**Subject:** Colorado River Reservoir Operations Comments

Regional Director Bob Johnson  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000, P.O. Box 61470  
Boulder City, NV 89006-1470

Dear Regional Director Johnson,

I remember the first 'Ecology' class I took back in the early 60's at Merrit Jr. collage in Oakland, CA. We saw photos of the Exquisite wildness of Glen Canyon Before it was ruined by the Dam. It was incomprehensible to me then that Anybody could destroy this incredible place and it's beauty and magic! I have never forgotten this impact on the environment or on 'me'. I became an Advocate for the Environment then and am 100% committed to doing all possible to address the Restoration of Glen Canyon now.

River flows have been declining over time, and the Colorado River Compact of 1922 requires revision. The Compact set up an inequitable distribution of water between Upper and Lower Basin states, and allocated more water than exists in the system. In an effort to deal rationally and honestly with our water resources, this Compact must be revisited. 1

Colorado River reservoir operations must be given a comprehensive assessment that addresses all of these issues. Current low reservoir conditions, increasing demands and looming shortages require that every alternative be considered. I respectfully request that the Bureau prepare an Environmental Impact Statement that includes decommissioning Glen Canyon Dam. 2,3

Sincerely,

Demelza Costa  
28626 Ridgeway Rd.  
Sweet Home, Oregon 97386

I-832

**Kucera, Cindy**

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**From:** Joan Falconer [joan-falconer@uiowa.edu]  
**Sent:** Friday, August 26, 2005 1:48 PM  
**To:** strategies@lc.usbr.gov  
**Subject:** Lakes Mead & Powell--Comment

Regional Director  
 Bureau of Reclamation, Lower Colorado Region  
 Attention: BCOO-1000

*\*\*I am sending this same comment to the Regional Director of the Upper Colorado Region\*\**

I support the *One-Dam Solution* as proposed by "Living Rivers." You have those arguments already, so I am not repeating them, but speaking instead as a "river runner" who has made leisurely trips through Cataract Canyon, on the San Juan, and twice down the Colorado through Grand Canyon. I have also taken a commercial trip on Lake Powell to Rainbow Bridge, in the course of which we navigated through several of what remained of Glen Canyon's renowned slot canyons. All this I've done within the past decade, and as I am now in my mid-seventies, I speak chiefly out of concern for future generations of Americans.

Grand Canyon has been put at increasing risk by Glen Canyon Dam. Along with the fish extinctions, the difference in the river shores between my two trips in 1996 and 2000 was striking, especially in the amount of tamarisk that is crowding out what is left of the sandy beaches. The NPS will soon have to impose further restrictions on those who want to make river trips, as there simply won't be enough camp sites. There's scarcely space for the 23,000 who go there now. A consequence will be the pricing out of the market (i.e. off the river) all but the wealthiest--the class of citizens that already can afford to run around Lake Powell in polluting power boats. --Actually, that's already happening. Those of us who are single can manage the Canyon trip, but a family of four (for example) would have to be wealthy indeed. Between the spread of the tamarisk (no longer kept in check by annual runoff) and the erosion of the beaches, there will be ever less place for people to set foot on the shore.

Another reason for "shutting down" Lake Powell is the huge water loss by evaporation, and absorption into the sandstone walls, as well as that lost to thirsty tamarisk. I've been to Zion National Park, where climbers are not permitted on the walls of that same sandstone when it is wet, due to its tendency to spall off. We all know what almost happened in 1983. The dam is really not a secure structure.

Shut down the dam, start waging war against the tamarisk, store water in the aquifers as Arizona is already doing, and perhaps Nevada will be able to afford Las Vegas a while longer. And you will have restored one of God's most beautiful creations.

Thank you for your consideration.

Sincerely yours,

Joan O. Falconer

**The trouble with the world is that the stupid are cocksure and the intelligent are full of doubt. --Bertrand Russell**

**Kucera, Cindy**

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**From:** Thomas Elliott [trelliott1@mindspring.com]  
**Sent:** Friday, August 26, 2005 4:36 PM  
**To:** strategies@lc.usbr.gov  
**Cc:** strategies@uc.usbr.gov  
**Subject:** Glen Canyon dam/Lake Powell comment

Dear Directors,

I am writing as a long time member of the Center for Biological Diversity to express my strong OPPOSITION to the Center's newly announced position supporting the de-commissioning of Glen Canyon dam and Lake Powell. I am embarrassed by the decision and saddened that the Center will allow its efforts and energies to be distracted from their usual environmental work for this counterproductive and foolish quest. 1

Although I would certainly protest the building of Glen Canyon dam now if it were not already built, I think we all need to recognize what a tremendous asset the dam has created in Lake Powell. The access to wild and beautiful terrain and wonderful vacations afforded by the lake is unmatched by any public facility in the nation.

Aside from the obvious water storage and flood control issues that would be problematic without the dam (the 1983 floods were not that long ago, and could happen again), the loss of the recreational value of the lake would be enormous.

Please resist efforts currently underway to evaluate decommissioning of the dam. Hopefully the Center (along with the Sierra Club) will return to their fundamental mission of resisting the gradual degradation of our ecosystems and loss of biodiversity, and refrain from promoting these futile and counterproductive "radical" projects.

Thank you for your consideration.

Thomas R. Elliott

**Kucera, Cindy**

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**From:** YesRobin@aol.com  
**Sent:** Saturday, August 27, 2005 8:42 AM  
**To:** strategies@lc.usbr.gov  
**Subject:** (no subject)

PLEASE, remove Glen Canyon dam. I have read the environmental reports and feel this is the responsible course of action. Remove the dam. Thank you.

Robin Brooke  
Ashland, Oregon

1

## Kucera, Cindy

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**From:** steve.okane@cfu.net  
**Sent:** Saturday, August 27, 2005 8:33 AM  
**To:** strategies@lc.usbr.gov  
**Subject:** Colorado River Reservoir Operations Comments

Regional Director Bob Johnson  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000, P.O. Box 61470  
Boulder City, NV 89006-1470

Dear Regional Director Johnson,

I am one of the authors of the upcoming Flora of the Four Corners (a joint project between San Juan College, Farmington and the Missouri Botanical Garden). I am writing to support the restoration of Glen Canyon because it has been my observation that the "lake" system is contributing seriously to a growing weed problem in the American West. Fluctuating water levels create an ideal seed bed and source of dispersal for exotic plant species. Once established, weed populations can easily move through the canyon system by floating seeds and by seeds that hitch a ride on boaters that land on beaches formed by low water levels.

I'd be happy to provide more detail should you so wish.

Sincerely,

Steve O'Kane, Ph.D.  
Department of Biology  
Cedar Falls, Iowa 50614-0421

## Kucera, Cindy

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**From:** haseltin@u.arizona.edu  
**Sent:** Saturday, August 27, 2005 1:00 PM  
**To:** strategies@lc.usbr.gov  
**Subject:** Colorado River Reservoir Operations Comments

Regional Director Bob Johnson  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000, P.O. Box 61470  
Boulder City, NV 89006-1470

Dear Regional Director Johnson,

Restoring the Glen Canyon to its natural beauty is something I've long dreamed of, and I think the time has come that is feasible. Please make this a possibility!

The Colorado River through Glen Canyon and Grand Canyon National Park--a magnificent resource for water, wildlife, aesthetic beauty and recreational opportunities--is dying under current dam management operations. Attempted mitigation to preserve the river ecology has failed. The Bureau of Reclamation's solicitation for comments on the development of management strategies that only address low reservoir conditions is fundamentally flawed.

The reservoir behind Glen Canyon Dam was only recently filled and subsequently reduced by drought. Water at Lakes Powell and Mead is subject to significant evaporation. More than 17% of the water that flows into the reservoirs is then lost to evaporation due to the expansion of surface water through impoundment.

Groundwater recharge is a far more efficient way to store Colorado River water.

1

The river's beaches, wildlife and archaeological sites have been devastated by the operation of Glen Canyon Dam. Four of eight native fish no longer exist in this section of the river. Beach habitat has been significantly reduced by scouring, while sediment necessary to restore those beaches remains trapped behind dams. This sediment affects dam operations as well as wildlife and must be removed at both dams, but could be more effectively handled at Hoover Dam in the near and long terms.

2

River flows have been declining over time, and the Colorado River Compact of 1922 requires revision. The Compact set up an inequitable distribution of water between Upper and Lower Basin states, and allocated more water than exists in the system. In an effort to deal rationally and honestly with our water resources, this Compact must be revisited.

3

Colorado River reservoir operations must be given a comprehensive assessment that addresses all of these issues.

Current low reservoir conditions, increasing demands and looming shortages require that every alternative be considered. I respectfully request that the Bureau prepare an Environmental Impact Statement that includes decommissioning Glen Canyon Dam.

4,5



Sincerely,

MICHAEL HASELTINE  
710 N ALAMO AVE  
TUCSON, Arizona 85711

## Kucera, Cindy

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**From:** erindart12@yahoo.com  
**Sent:** Saturday, August 27, 2005 3:02 PM  
**To:** strategies@lc.usbr.gov  
**Subject:** Colorado River Reservoir Operations Comments

Regional Director Bob Johnson  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000, P.O. Box 61470  
Boulder City, NV 89006-1470

Dear Regional Director Johnson,

I hope things are going well for you in your life but unfortunately the Colorado River through Glen Canyon and Grand Canyon National Park is deteriorating under current dam management operations. The attempted mitigation to preserve the river ecology has failed. The Bureau of Reclamation's development of management strategies only address low reservoir conditions...this is not enough.

Water at Lakes Powell and Mead is subject to significant evaporation. More than 17% of the water that flows into the reservoirs is lost to evaporation due to the expansion of surface water through impoundment-groundwater recharge is a more efficient way to store Colorado River water. | 1

The river's beaches, wildlife and archaeological sites have been devastated by the operation of Glen Canyon Dam. River flows have been declining over time, and the Colorado River Compact of 1922 requires revision. Current low reservoir conditions, increasing demands and looming shortages require that every alternative be considered. I respectfully request that the Bureau prepare an Environmental Impact Statement that includes decommissioning Glen Canyon Dam. Thankyou for your time. Please think about what is happening to the beautiful environment!! :) | 2  
| 3,4

Sincerely,

Erin Dart  
55 Kensington Dr.  
Canton, Massachusetts 02021

**Kucera, Cindy**

---

**From:** Charles M. Ewing [cmewing@mail.jhmi.edu]

**Sent:** Saturday, August 27, 2005 12:40 PM

**To:** strategies@lc.usbr.gov

Dear Robert Johnson,

The steadily dropping water levels at Lake Powell reservoir on the Colorado River revealed spectacular features not seen in decades. These cultural, biological, and scenic resources found only in Glen Canyon are now threatened by fluctuating reservoir levels..

Restored precious features such as Cathedral in the Desert, Register Rock, petroglyphs, and Fort Moqui are going right back under water, only to be uncovered once again later this year.

This fluctuation of water levels is unnecessary and destructive to these priceless emerging cultural, historic, and scenic sites in Glen Canyon.

All "surplus" water of the Colorado River can easily be stored at Lake Mead instead of in Glen Canyon. We urge the Bureau of Reclamation to protect these priceless treasures by storing "surplus" water in Lake Mead instead. Please uphold the established legal protections for priceless sacred and historical sites and emerging endangered species habitats. Please protect Glen Canyon for future generations.

Sincerely,

Your Name Charles M. Ewing  
Address 17420 Masemore Road  
Phone number  
Email address cmewing@jhmi.edu

## Kucera, Cindy

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**From:** robburson@hotmail.com  
**Sent:** Sunday, August 28, 2005 5:11 PM  
**To:** strategies@lc.usbr.gov  
**Subject:** Colorado River Reservoir Operations Comments

Regional Director Bob Johnson  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000, P.O. Box 61470  
Boulder City, NV 89006-1470

Dear Regional Director Johnson,

Leave the Glen Canyon Dam as it is.

| 1

Sincerely,

Robert Burson  
31930 SE Pipeline Rd.  
Gresham, Oregon 97080

## Kucera, Cindy

---

**From:** bdonnyboy@aol.com  
**Sent:** Sunday, August 28, 2005 9:41 PM  
**To:** strategies@lc.usbr.gov  
**Subject:** Colorado River Reservoir Operations Comments

Regional Director Bob Johnson  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000, P.O. Box 61470  
Boulder City, NV 89006-1470

Dear Regional Director Johnson,

The Colorado River through Glen Canyon and Grand Canyon National Park--a magnificent resource for water, wildlife, aesthetic beauty and recreational opportunities is fine the way they are.

I feel that draining lake powell will adversely affect the natural river flow in the grand canyon. Please don't bow down to the cbd group. They do not have the publics best interest's in mind.

sincerely, Don Bedford carlsbad, ca

Sincerely,

don bedford  
1953 swallow lane  
carlsbad, California 92009

1

## Kucera, Cindy

---

**From:** lobuck@adelphia.net  
**Sent:** Sunday, August 28, 2005 10:03 PM  
**To:** strategies@lc.usbr.gov  
**Subject:** Colorado River Reservoir Operations Comments

Regional Director Bob Johnson  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000, P.O. Box 61470  
Boulder City, NV 89006-1470

Dear Regional Director Johnson,

As a person living in Yuma, AZ, at the end of the Lower Colorado River, I am in complete opposition of the recommendation solicited by the Center for Biological Diversity and actionnetwork.org to request that the Bureau prepare an Environmental Impact Statement that includes decommissioning Glen Canyon Dam.

1

I do however FULLY SUPPORT the decision by DOI Secretary Gale Norton in May 2005 to maintain Colorado River water releases from Lake Powell at their scheduled level for the next five months because drought conditions in the Colorado River Basin have eased during the 2005 water year.

The safety and livelihood of our area greatly depends on proper regulation and releases of water from all of the dams and reservoirs on the Colorado River, including Glen Canyon and Lake Powell.

Futhermore, many people throughout the world rely on the agribusiness in the Lower Colorado River Area, which would not be possible without the proper management of water.

Here is a link to a DOI press release announcing Secretary Norton's decision.  
[http://www.doi.gov/news/05\\_News\\_Releases/050502c](http://www.doi.gov/news/05_News_Releases/050502c)

I respectfully request that the DOI and Bureau of Reclamation continue this path of good judgment and keep the water that we so desperately need accurately regulated.

Sincerely,

Glenn Montgomery  
4480 W. 17th Place  
Yuma, Arizona 85364

1.977

## Kucera, Cindy

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**From:** Lisa Grob [lisagrob@verizon.net]  
**Sent:** Monday, August 29, 2005 12:48 PM  
**To:** strategies@lc.usbr.gov  
**Subject:** Comments for Operations at Lake Powell & Lake Mead under Low Reservoir Conditions

Dear Mr. Johnson and Mr. Gold:

Lake Powell and Lake Mead lose 17 percent of the water that flows into them through evaporation. Vacant space in underground aquifers near existing Colorado River water recharge facilities could store more water than these two reservoirs combined. Upwards of 810,000 acre-feet of water annually could be saved by eliminating Lake Powell and operating Lake Mead principally for distribution to groundwater recharge facilities.

After more than 40 years of operation, it was not until the fall of 2004 that Lake Powell's water storage actually augmented downstream water use. And with the impacts of climate change and rising water consumption, it is unlikely that there will be sufficient surplus water to fill Lake Powell again. Even should surplus water accumulate, Lake Mead alone could provide sufficient storage.

Between Lake Powell and Lake Mead lies Grand Canyon National Park. The operation of both these reservoirs has impacted the Canyon, but Glen Canyon Dam at Lake Powell has been far more devastating. Since the dam's completion four of eight native fish have gone extinct and the dam has trapped the sediment necessary to maintain habitat and beaches for wildlife and recreation, as well as the stabilization of archeological sites.

Sediment is a major unresolved problem threatening the long-term operations of Lake Powell and Lake Mead. Ultimately, sediment must be removed to ensure public safety. Removing sediment from Lake Mead downstream, rather than Lake Powell upstream is the most technically feasible, least costly and environmentally advantageous approach.

The Colorado River Compact of 1922, which largely governs the operations of Lake Powell for Lake Mead, cannot meet its intended purpose of equitably sharing Colorado River water between the Upper and Lower Basin states. With River flows expected to decline 18 percent by 2040, this inequity will worsen, furthering the need for Compact amendments while highlighting the benefits of eliminating Lake Powell to fulfill the Compact's primary objective.

Lisa Grob  
4609 Beechwood Rd

College Park, MD 20740

## Kucera, Cindy

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**From:** Richard Schwartz [richard@mtperson.com]  
**Sent:** Tuesday, August 30, 2005 2:42 PM  
**To:** strategies@lc.usbr.gov; strategies@uc.usbr.gov  
**Subject:** Comments on low water conditions in Powell and Mead: UC-402 and BCOO-1000

**Attachments:** BuRec Powell comments.doc



BuRec Powell  
omments.doc (50 ..

Regional Director  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000  
P. O. Box 61470  
Boulder City, NV 89006-1470  
strategies@lc.usbr.gov

Regional Director  
Bureau of Reclamation, Upper Colorado Region  
Attention: UC-402  
125 South State Street  
Salt Lake City, UT 84318-1147  
strategies@uc.usbr.gov

Dear Sir or Madam:

Attached are comments on the development of management strategies for low reservoir conditions on Lakes Powell and Mead.

Please let me know if you have trouble opening the Word attachment.

Sincerely,

Richard Schwartz  
HC 64 Box 2503  
Castle Valley, UT 84532  
richard@mtperson.com



Regional Director  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000  
P. O. Box 61470  
Boulder City, NV 89006-1470  
[strategies@lc.usbr.gov](mailto:strategies@lc.usbr.gov)

Regional Director  
Bureau of Reclamation, Upper Colorado Region  
Attention: UC-402  
125 South State Street  
Salt Lake City, UT 84318-1147  
[strategies@uc.usbr.gov](mailto:strategies@uc.usbr.gov)

Dear Sir or Madam:

These comments are provided to you in response to the solicitation of comments on the development of management strategies for low flow regimes into Lakes Powell and Mead.

While the solicitation specifically requests comments on management for low reservoir conditions, the challenges of urban and agricultural growth in the Colorado River Basin and the likelihood of low flows as the norm rather than the exception make it imperative that a more wide-ranging Environmental Impact Statement be undertaken. Dams, reservoirs, water delivery systems, and urban infrastructure have lifetimes measured in decades or centuries and it is essential that management strategies adopted today be far-sighted enough to guide prudent stewardship of the arid West's water for many decades.

The scientific evidence indicates several salient facts that should be taken into account in the development of any management strategies for the two lakes:

- The river flows used to allocate Colorado River water between the upper and lower basin states in the Colorado River Compact of 1922 were based on unusually wet years. The result, after 80 years of intensive development in the two regions, is that the Colorado River system is over-allocated
- Climate change due to human and cyclic factors will likely reduce the amount of water in the Colorado Basin in the future.
- Water consumption for agricultural and urban development is already at the Colorado River's historic flow levels and is rising.
- Given the low level of and reduced flows into Lake Powell, it is unlikely that Lake Powell will refill to maximum pool elevation for many decades, if ever..
- Restoration of the Colorado River riparian environment, particularly in Grand Canyon National Park, cannot be expected, and, indeed, will continue to deteriorate, unless significant changes are made in the way Lake Powell and Glen Canyon Dam are managed.

Management strategies for both the upper and lower basins should be based on the following:

- The Colorado River Compact must be revised so that it is based on realistic flows, including an adjustment for likely flow reductions due to climate change. 2
- The amount of water allocated between the upper and lower basin states should reflect these realistic flows and should result in an equitable division of water between the two basins.
- The price of water as delivered to end users should reflect the actual cost of providing the water. Specifically, agricultural users should not receive water whose price is subsidized by taxpayers and urban users. 3
- Lake Powell is not an efficient storage mechanism for water. Its large surface area and porous surrounding rock means that many thousands of acre-feet of water are lost each year to evaporation and seepage. Much greater efficiency could be achieved by eliminating Lake Powell and using Lake Mead as a buffer for water that is then distributed to groundwater recharge facilities. Storing water in underground aquifers is both feasible and efficient. 4
- Restoration of the Grand Canyon ecosystem appears to be impossible as long as Glen Canyon Dam impounds natural water flows. Over the last several years attempts at restoring fish habitat, sand and gravel bars, and riparian habitat by replicating natural floods not been successful. 5
- A major reason for the failure of restoration attempts in Grand Canyon National Park, a planetary jewel, is the sediment trapped behind Glen Canyon Dam. The role of Glen Canyon Dam exacerbates the sediment problem in two ways. First, by trapping the sediment in Lake Powell, it is removed from the downstream river environment. This has major impacts on fish, riparian ecosystems, recreational beaches, archeological structures, and virtually every aspect of the Grand Canyon. Second, by trapping the sediment, Glen Canyon Dam is destroying the ability of Lake Powell to store water. 6

Thank you for the opportunity to provide comments on this critical subject.

Sincerely,

Richard Schwartz  
HC 64 Box 2503  
Castle Valley, UT 84532  
richard@mtperson.com

## Kucera, Cindy

---

**From:** Pat Palmer [ppalmer@aoc.nrao.edu]  
**Sent:** Wednesday, August 31, 2005 2:57 PM  
**To:** strategies@lc.usbr.gov  
**Cc:** ppalmer@nrao.edu  
**Subject:** Lake Powell

Greetings,

I writing because I am concerned about the future of Lake Powell. I spend about 2 weeks per year in that vicinity, mostly on the Dirty Devil River and the Escalante River. I have done this for a number of years.

Last Fall, I made a trip down the Escalante River (Coyote Gulch) onto Lake Powell for a couple of days using small inflatable boats that we carried to the Escalante River. That is the first time I got to see the areas uncovered as Lake Powell fell more than 130 feet below full pool. It was amazing how fast the areas uncovered by the recent drought had restored themselves and how much we had lost by covering these regions.

I have read up on the problems caused by drought because we have been suffering from this in New Mexico also. It is clearly better to move away from this old type reservoirs which store water so that evaporation is about maximum. Steadily more people seem to be moving to the southwest, and water is going to be in short supply any way, and with a drought, it will require all of our ingenuity to get by. One logical way to minimize losses is to concentrate all of the water in Lake Meade. Even if we scrape by through this drought, population increase in the region will make it much more difficult next time. Therefore I urge you to think ahead and get as much head start as you can on conserving water. That will make things awkward for some now, but not intolerable as a future drought will make it for an increased population.

I strongly favor options that would remove Lake Powell, concentrate all of the water in Lake Meade and restore Glen Canyon.

Patrick Palmer  
302 Eaton Avenue  
Socorro, NM 87801

**From:** "Enriquez, Armando" <Armando.Enriquez@Nissan-Usa.com>  
**To:** <strategies@uc.usbr.gov>, <strategies@lc.usbr.gov>  
**Date:** Thu, Aug 11, 2005 9:28 AM  
**Subject:** Cease operations at Glen Canyon Dam!

Dear Mr. Gold and Mr. Johnson,

It is imperative that you consider the proposal to cease operations at Glen Canyon Dam and allow full use of Lake Mead's storage capacity, and power generation at Hoover Dam. As you are aware, recent Hydrologic studies have reflected the fact that Lake Powell will probably never be at full pool again. 1

The drowning of the Colorado River through Glen Canyon has to be one of the biggest mistakes ever made by mankind. The incredible beauty and archaeological sites that seem forever lost beneath hundreds of feet of water are re-exposing themselves and begging for a chance to be restored by nature, only to be thwarted by the unnecessary fluctuations of Lake Powell.

Please consider the following actions:

1. Fill Lake Mead First

Consumptive water use in the Upper and Lower Basins has increased significantly since Glen Canyon Dam was built. There is not enough water in the system to fill both of these reservoirs. It is essential that we first fill Lake Mead to maximize power generation and maintain water supply for large cities in the lower basin such as Las Vegas, Los Angeles and Phoenix. There is no need for Lake Powell. 2

2. Storage in Lake Mead is enough to capture surplus water

Lake Mead, combined with downstream aquifer-recharge projects, has sufficient storage capacity to hold all surplus Colorado River water. More water will be available to those dependent on Colorado River water by storing all surplus water in Lake Mead. There will be less water lost to evaporation when Lake Mead is full than when both Lake Mead and Powell are kept at half capacity. 3

3. Ensure maximum generation of electricity

More power can be generated by running Hoover Dam at full capacity than by running Hoover and Glen Canyon Dams at half capacity. 4

4. Restore Two International Treasures

Decisions made regarding the operations of these reservoirs present an historic opportunity to create a better water delivery system for the West while restoring Glen and Grand Canyons. The negative environmental consequences that dams have on rivers are becoming increasingly known. We now have the opportunity to protect Glen and Grand Canyons from further environmental and cultural degradation by moving all water storage out of Glen Canyon and into Lake Mead. 5

Thank you for your time,

Armando Enriquez

Nissan North America, Inc.

I.1075

Specialist, Product Training

Managing Editor, SalesTalk Magazine

armando.enriquez@nissan-usa.com

ph. 310.771.6315

fax 310.771.6176

**From:** "Tom Herschelman" <tombwca@intella.net>  
**To:** <strategies@uc.usbr.gov>, <strategies@lc.usbr.gov>  
**Date:** Thu, Aug 11, 2005 5:21 PM  
**Subject:** Glen Canyon Dam Comments

Regional Director,  
Bureau of Reclamation, Lower Colorado Region  
Attention BC00-1000  
and  
Regional Director  
Bureau of Reclamation, Upper Colorado Region  
Attention UC-402

Glen Canyon Dam Comments

Greetings. I wish to thank the BLM for the opportunity provided to share these comments concerning the decommissioning of the Glen Canyon Dam. Please enter these into the official record of comments.

I, Tom Herschelman of Sheboygan Falls, WI. am past Forestry-Biodiversity Chair of the John Muir Chapter (Wisconsin) of the Sierra Club, and was a member of the Lands Management Committee of the national Sierra Club. Other activities were undertaken in the Sierra Club and other organizations.

My focus has now turned from secular environmentalism to sacred creation care. I am a member of the Religious Campaign for Forest Conservation and the Religious Campaign for Wilderness.

My particular interest has changed to the sacred perspective because of my search to find my own spirituality and to attempt to comprehend a Christian Ethics on how we are to relate to the creation based on sound theology. I am currently working on a Masters Degree in Theology (Lakeland College). This spiritual journey has resulted in a revelation that as a species we have profound challenges before us, many of which can only be decided from a moral-ethical (Christian-Jewish, and others) position. I am referring to the issues of carrying capacity of humans on the earth, global warming, deforestation, desertification, loss of native biodiversity, land conversion, sprawl, homogenization, peak oil, pervasive population increases everywhere, etc. etc. My Christian religion I find is a vehicle for possible answers to these ethical-moral questions. To the contrary, though, I perceive secular environmentalism as focusing on science and anthropocentric perspectives, which I feel do not always provide answers to complex issues based on the deepest of ethical considerations and the spirituality within me.

So, the bottom line is, that as a Christian who believes the Psalm statement that "The earth is the Lord's, and all within", and who adheres to the common creation and the Genesis creation stories, and believes in the creation being a blessing to humankind, and who recognizes in God's plan the diversity of life and evolution of matter and time from the big bang on, that we humans have an obligation, being created in the image of God and being given dominion over the earth, to cherish the creation. We are to care for it and for all of life to flourish as God intended; we must not alter rivers. Therefore, I propose the decommissioning of the Glen Canyon Dam based on my Christian beliefs that it is in God's plan for rivers to flow freely and for the life therein to be left to flourish. There are practical and secular reasons to decommission the dam also, such as the fact that the amount of water evaporated from the lake each year is enough to furnish the water needs of Los Angeles.

Although this position is based on faith and therefore does not have to be proven as perhaps a scientific perspective would be, I wish to briefly explain a small part of where my belief on creation care in general and of the needed reconstitution of this area of God's earth of the Colorado comes from. It is obvious in reading the first Genesis Creation account in Genesis 1 that God created the universe, started matter, set up relationships among plants, the soil, animals, the atmosphere, water and humans. God called all these creations and relationships "good". God blessed the creation, and holds the matter created by God as

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"good". God set in order the generation of the progeny of all these life forms. Therefore we must respect the creation, nourish it, protect it, and preserve it, and the decommissioning of this dam is the way to do so. The protection and preservation, and reestablishment of a flourishing creation does not just serve anthropocentric ends but also is to serve the animals and plants, the interrelationships that God created in a profound and immeasurably complex web that we humans cannot comprehend.

Please do what is right, what is ethical and what is moral and best for the creation, and decommission this dam and allow this portion of the Colorado to return to its original state.

Shalom,

Tom Herschelman

W3238 Woodland Rd

Sheboygan Falls, WI 53085

**CC:** "Tom Herschelman" <tombwca@intella.net>

**Wilde, Rebecca**

---

**From:** GC-GENERAL@LISTS.SIERRACLUB.org  
**Sent:** Thursday, August 25, 2005 5:47 PM  
**To:** strategies@lc.usbr.gov  
**Subject:** Colorado River Reservoir Operations Comments

Regional Director Bob Johnson  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000, P.O. Box 61470  
Boulder City, NV 89006-1470

Dear Regional Director Johnson,

The Colorado River through Glen Canyon and Grand Canyon National Park--a magnificent resource for water, wildlife, aesthetic beauty and recreational opportunities--is dying under current dam management operations. Attempted mitigation to preserve the river ecology has failed. The Bureau of Reclamation's solicitation for comments on the development of management strategies that only address low reservoir conditions is fundamentally flawed.

The reservoir behind Glen Canyon Dam was only recently filled and subsequently reduced by drought. Water at Lakes Powell and Mead is subject to significant evaporation. More than 17% of the water that flows into the reservoirs is then lost to evaporation due to the expansion of surface water through impoundment.  
Groundwater recharge is a far more efficient way to store Colorado River water.

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The river's beaches, wildlife and archaeological sites have been devastated by the operation of Glen Canyon Dam. Four of eight native fish no longer exist in this section of the river. Beach habitat has been significantly reduced by scouring, while sediment necessary to restore those beaches remains trapped behind dams. This sediment affects dam operations as well as wildlife and must be removed at both dams, but could be more effectively handled at Hoover Dam in the near and long terms.

2

River flows have been declining over time, and the Colorado River Compact of 1922 requires revision. The Compact set up an inequitable distribution of water between Upper and Lower Basin states, and allocated more water than exists in the system. In an effort to deal rationally and honestly with our water resources, this Compact must be revisited.

3

Colorado River reservoir operations must be given a comprehensive assessment that addresses all of these issues.

Current low reservoir conditions, increasing demands and looming shortages require that every alternative be considered. I respectfully request that the Bureau prepare an Environmental Impact Statement that includes decommissioning Glen Canyon Dam.

4



I-2000 MillerP.txt

From: Nan Yoder [NYODER@lc.usbr.gov]  
Sent: Friday, September 23, 2005 11:48 AM  
To: Kucera, Cindy; Zubi a, Ruben; Duren, Sabre; HGIines@j sanet.com  
Subject: Fwd: add to mailing list

Ruben,

Would you please add them to the database for future mailings.  
thanks, nan

>>> Jayne Harkins 09/22/05 01:57PM >>>  
The following gentleman expressed interest in being placed on the  
mailing list for shortage guidelines.

Paul F. Miller  
P.O. Box 47146  
Phoenix, AZ 85068-7146

I'll send his business card over.

Thanks.

Regards,

Jayne Harkins, PE  
Deputy Regional Director  
Lower Colorado Region  
Boulder City, Nevada  
Phone 702-293-8411  
Fax 702-293-8614  
Cell 702-528-0754

1

**From:** Richard Merdyk [info@pilgrimagebikes.com]  
**Sent:** Tuesday, October 11, 2005 4:44 PM  
**To:** strategies@lc.usbr.gov

Dear Gail Norton

The steadily dropping water levels at Lake Powell reservoir on the Colorado River revealed spectacular features not seen in decades. These cultural, biological, and scenic resources found only in Glen Canyon are now threatened by fluctuating reservoir levels.

Restored precious features such as Cathedral in the Desert, Register Rock, petroglyphs, and Fort Moqui are going right back under water, only to be uncovered once again later this year.

This fluctuation of water levels is unnecessary and destructive to these priceless emerging cultural, historic, and scenic sites in Glen Canyon.

All "surplus" water of the Colorado River can easily be stored at Lake Mead instead of in Glen Canyon. We urge the Bureau of Reclamation to protect these priceless treasures by storing "surplus" water in Lake Mead instead. Please uphold the established legal protections for priceless sacred and historical sites and emerging endangered species habitats. Please protect Glen Canyon for future generations.

| 1

Sincerely,

Angela Meredyk  
3306 E 54<sup>th</sup> St, Minneapolis MN 55417  
rmeredyk@pilgrimagebikes.com

Richard Meredyk

[www.pilgrimagebikes.com](http://www.pilgrimagebikes.com)

I-2002 DeMayJ.txt

From: santi deva [santi deva@sbcglobal.net]  
Sent: Saturday, October 15, 2005 12:43 PM  
To: gale\_norton@ios.doi.gov; exsec@ios.doi.gov;  
strategies@ic.usbr.gov;  
strategies@uc.usbr.gov  
Subject: Glen Canyon

Dear Sirs and Madam:

The steadily dropping water levels at Lake Powell reservoir on the Colorado River have revealed spectacular features not seen in decades. These cultural, biological, and scenic resources found only in Glen Canyon are now threatened by fluctuating reservoir levels.

Restored precious features such as Cathedral in the Desert, Register Rock, petroglyphs, Fort Moqui, and hundreds of miles of wondrously scenic side canyons are going right back under water, only to be uncovered once again later this year.

This fluctuation of water levels is unnecessary and destructive to these priceless emerging cultural, historic, and scenic sites in Glen Canyon.

All "surplus" water of the Colorado River can easily be stored at Lake Mead instead of in Glen Canyon. We urge the Bureau of Reclamation to protect these priceless treasures by storing "surplus" water in Lake Mead instead.

Please uphold the established legal protections for priceless sacred and historical sites and emerging endangered species habitats. Please protect Glen Canyon for future generations!  
Sincerely,

Jim DeMay  
341 S. Orchard St., Apt. 1  
Wallingford, CT 06492  
(203) 949-0689  
(santi deva@sbcglobal.net)

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Regional Director  
 Bureau of Reclamation  
 Lower Colorado Region  
 Attention: BCOO-1000  
 PO Box 61470  
 Boulder City, Nevada 89006-1470

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DATE:	INITIALS:	OFFICE:
10/20/05	[Signature]	1003
CLASSIFICATION		
PROJECT		
CONTROL NO.		
FOLDER NO.		
REMOVED		

Mark W. Belles  
 9318 Willard Street  
 Rowlett, TX 75088

16 October 2005

Dear Regional Director,

Regarding the Notice of Intent to prepare an environmental impact statement (EIS) and notice to solicit comments and hold public scoping meetings on the development of Lower Basin shortage guidelines and coordinated management strategies for the operation of Lake Powell and Lake Mead under low reservoir conditions, as published in the Federal Register (Volume 70, Number 189) dated 30 September 2005, please place my name on the mailing list for this project.

The NOI specifically requested comments from the public at this early stage. My comments are as follows,

1. I am very concerned with the suggestion in the NOI that the Bureau is considering delivery of less than the legally required 7.5 maf of water to the Lower Basin. Even though this legal requirement is for delivery of an **average** of 7.5 maf over a ten-year period, the premise of the NOI is that low water conditions are expected to persist for the foreseeable future and under these conditions it is not reasonable to expect that once the delivery gets behind the average that it will somehow be able to “catch-up” and eventually meet the legal requirement.

Recommendation – Delivery of 7.5 maf to the Lower Basin should be of prime importance, secondary only the meeting our international treaty obligations to the Republic of Mexico.

2. The delivery of water to meet legal obligations must supercede the generation of electrical power. Energy, while of obvious value, is clearly obtainable from other sources. There being no substitute for agricultural and culinary water, these uses must trump the need for power generation.
3. Consideration of the environmental impact of any shortage guidelines must be founded on the realization that neither Hoover nor Glen Canyon Dams were evaluated for their environmental impact at the time of their construction. The impacts from the proposed guidelines should be evaluated to determine how well they restore the waterways to the pre-dam conditions, not how well they maintain current conditions.
4. Serious consideration must be given to the seepage and evaporative losses at Lake Powell. Recovery of this lost water by minimizing the storage at Lake Powell and maximizing the storage at Lake Mead should be a primary goal.

5. Consideration of the socio-economic impact of the low levels of Lake Meads and Powell should be considered. It is rapidly coming to the point where boat access will be severely limited at both reservoirs. Maximum delivery to Lake Mead will allow for these recreation activities at that location. One useful reservoir for recreation is better than none.

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Thank you for the opportunity to comment and participate in this process,



I-2004 FayadJ.txt

From: LC strategies [strategies@lc.usbr.gov]  
Sent: Monday, November 07, 2005 11:11 AM  
To: jmfayad1970@aol.com  
Cc: Kucera, Cindy; Terry Fulp  
Subject: Response to Inquiry: Reclamation Scoping  
of Shortage/Management  
Strategies Project

Mr. Fayad,

In response to your email inquiry, a summary of the public meetings and comments received (Scoping Report) will be issued in February 2006. A timeline of the project process is in the public meeting presentation.

In response to the September 30, 2005 Federal Register Notice of Intent to prepare an Environmental Impact Statement that identifies guidelines and strategies under which the Department of the Interior would reduce annual water deliveries from Lake Mead to Lower Basin States below the 7.5 million acre-foot Lower Basin apportionment and coordinate the operation of Lakes Powell and Mead under low reservoir conditions, comments are due by November 30, 2005.

Comments can be mailed, faxed, or e-mailed to: Regional Director, Bureau of Reclamation, Lower Colorado Region, Attention: BC00-1000, P. O. Box 61470, Boulder City, NV 89006-1470, fax (702) 293-8156, strategies@lc.usbr.gov; and/or Regional Director, Bureau of Reclamation, Upper Colorado Region, Attention: UC-402, 125 South State Street, Salt Lake City, UT 84138-1147, fax (801) 524-3858, strategies@uc.usbr.gov.

Project information is available on our website, <http://www.usbr.gov/lc/region/g4000/strategies/index.html>, and also by direct mail/email. Please provide me with your mailing and/or email information to be included in Project material distributions.

Nan Yoder  
Program Manager  
Boulder Canyon Operations Office

>>> <jmfayad1970@aol.com> 11/07/05 10:43AM >>>  
Hi Dr. Terrance,

I am a graduate student at the University of Maryland University College. My group has been assigned the Colorado River allocation. We have started our research and found out that there were four public meetings scheduled to address similar concerns and three were held on November 1st, 2nd, 3rd and one tomorrow. We intend to send our opinion about the (EIS) and we would also like to know the outcome of the past meetings if possible. Have they been published? As part of the project our group is to develop alternative strategies for resource management. We would like to share our views and receive the public's view. Thanks

Jacob M. Fayad

**From:** Steve Bollock [rembrandt@finestplanet.com]  
**Sent:** Thursday, November 10, 2005 4:50 PM  
**To:** strategies@lc.usbr.gov; ÃÂ strategies@uc.usbr.gov  
**Subject:** Colorado River

Dear Sirs, I am in agreement with those who believe that the "One Dam Solution" is the best option for regulating and dispersing the water that flows through the Colorado River drainage. It's reasoning is sound and findings are as follows:

**The One-Dam Solution: Hoover Dam alone the solution for managing dwindling Colorado River water.**

As the Bureau of Reclamation begins developing plans for re-operating the nation's two largest dam and reservoir complexes with public meetings at Las Vegas and Salt Lake City this week, a new report released by Living Rivers reveals that Southwestern water users and the ecological health of the Colorado River would both be better served if one dam were removed.

"Hoover and Glen Canyon Dams may have been icons of 20th century civil engineering, but continuing to operate them in their present fashion is wasting water that could support more than six million people. In addition, Glen Canyon Dam is devastating the ecological integrity of the Grand Canyon and is creating a dam safety problem due to advancing sedimentation in Lake Powell," says John Weisheit, Living Rivers conservation director.

The analysis reveals that increased water use and decreasing supplies raise questions about the need for both dams, especially in light of their tremendous evaporation losses. The report concludes that it would be more efficient to eliminate Glen Canyon Dam from the system and utilize Hoover Dam and adjacent underground storage to capture the limited amounts of surplus water that may be available in the future.

More efficient water storage strategies are needed.

When Glen Canyon Dam was built, nearly 2.6 million acre feet (MAF) of surplus water flowed into Lake Powell annually, allowing the reservoir to fill in 17 years. However, increasing demand upstream has nearly eliminated these reserves. Demand has risen 100 percent since the dam was built and is projected to increase another 23 percent by 2020--placing demand well above the rivers' 13.5 MAF average annual flow.

I-2005

Since 1979 there have been warnings that the Colorado River would fail on the supply-side because 11 percent more water has been allocated than the river can historically provide. Even more problematic is that Department of Energy research forecasts that climate change will cause Colorado River flows to decline 18 percent by 2040.

Precious water is being lost from the system

On average, Lake Powell and Lake Mead lose 1.3 MAF of water annually to evaporation, nearly ten percent of the river's annual flow.

It was not until the Autumn of 2004 that Lake Powell's storage actually factored into the water usage of people downstream. Prior to this time it caused the loss of 36 MAF due evaporation and to seepage into the surrounding sandstone. Underground Storage should be more widely utilized

Depleted groundwater aquifers along the Colorado River represent a storage solution that could eliminate much of the water now being lost. In California and Arizona alone it is estimated that suitable sites containing a total of 41 MAF of storage are available along the system, and potentially another 46 MAF nearby. Aquifer recharge infrastructure in place now have the capacity to recharge 1.4 MAF of Colorado River water annually.

There is one dam too many in the Southwest desert.

Removing Glen Canyon Dam from the system, using Hoover Dam to capture annual flows while expanding groundwater storage could recover 810,000 acre feet annually now being lost to evaporation. This is enough water to support 1.6 million households of four people each.

The Destruction of Grand Canyon Resources must be stopped.

More than \$200 million has been spent in failed efforts to halt the demise of Grand Canyon National Parks's river ecosystem due to the impacts of Glen Canyon Dam. Four native fish are now extinct, one is in jeopardy and another is of special concern. Glen Canyon Dam has trapped the sediment necessary to maintain habitat and beaches for wildlife and recreation, as well as the stabilization of archeological sites.

Accumulating Sediment Presents a Serious Looming Problem.

I-2005

Sediment is a major unresolved problem threatening the long-term



operations of both Hoover and Glen Canyon Dams. Ultimately, sediment will have to be removed from one or both of these reservoirs. Removing sediment from Lake Mead rather than Lake Powell is the most feasible and least expensive likely alternative. While original estimates projected that sediment would not effect the safe operations of Glen Canyon Dam for another 60 years, scientists now warn that major problems could occur sooner.

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#### Hydropower and Recreation are Incidental Benefits

Lower reservoir levels have already resulted in reducing Glen Canyon's power production by 40 percent. This loss has been seamlessly absorbed elsewhere in the energy market. The same is true of recreation, which at Lake Powell has dropped 50 percent in the past 15 years. Such uses were deemed "incidental" to water management when these dam were authorized, and should be treated similarly as new management strategies are developed.

"There will be no efficient solution to managing the growing crisis in Colorado River water management without seriously rethinking how these dams are used, or not," adds Weisheit. "And when doing so, it's clear than when it comes to saving precious water, and restoring Grand Canyon in the process, one dam is better than two."

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**From:** Philsimtpr@aol.com  
**Sent:** Monday, November 14, 2005 10:44 AM  
**To:** strategies@lc.usbr.gov  
**Subject:** Shutdown Glen Canyon Dam  
I urge the decommissioning of Glen Canyon Dam.

The Hoover Dam is adequate to store the Colorado River flows, and will actually improve the water retained, due to avoided evaporation from Lake Powell.

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revise the Colorado River Compact.

2

Philip Simon

**From:** Robert Keck [rsuboc1@yahoo.com]  
**Sent:** Sunday, November 20, 2005 10:59 AM  
**To:** strategies@lc.usbr.gov  
**Subject:** Glen Canyon National Recreation Area

Robert Johnson  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
Attention: BCOO-1000  
P.O. Box 61470  
Boulder City, Nevada 89006-1470  
(702) 293-8156

Mr. Johnson,

The steadily dropping water levels at Lake Powell reservoir on the Colorado River revealed spectacular features not seen in decades. These cultural, biological, and scenic resources found only in Glen Canyon are now threatened by fluctuating reservoir levels..

Restored precious features such as Cathedral in the Desert, Register Rock, petroglyphs, and Fort Moqui are going right back under water, only to be uncovered once again later this year.

This fluctuation of water levels is unnecessary and destructive to these priceless emerging cultural, historic, and scenic sites in Glen Canyon.

All "surplus" water of the Colorado River can easily be stored at Lake Mead instead of in Glen Canyon. We urge the Bureau of Reclamation to protect these priceless treasures by storing "surplus" water in Lake Mead instead. Please uphold the established legal protections for priceless sacred and historical sites and emerging endangered species habitats. Please protect Glen Canyon for future generations.

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Sincerely,

Robert Keck  
7350 Silver Lake Road, #39B  
Reno, NV 89506  
(775)247-5564  
rsuboc1@yahoo.com

---

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**From:** Howie Marion [hman@astro.as.utexas.edu]

**Sent:** Tuesday, November 22, 2005 5:53 AM

**To:** strategies@lc.usbr.gov

**Subject:** Glen Canyon - please help

Dear Director Johnson,

The steadily dropping water levels at Lake Powell reservoir on the Colorado River revealed spectacular features not seen in decades. These cultural, biological, and scenic resources found only in Glen Canyon are now threatened by fluctuating reservoir levels.

My father took me to see these sublime places when I was young and it is very important to me to take my children and others to experience the beauty of God's earth that is so tangibly present in Glen Canyon.

Restored precious features such as Cathedral in the Desert, Register Rock, petroglyphs, and Fort Moqui are going right back under water, only to be uncovered once again later this year.

This fluctuation of water levels is unnecessary and destructive to these priceless emerging cultural, historic, and scenic sites in Glen Canyon.

All "surplus" water of the Colorado River can easily be stored at Lake Mead instead of in Glen Canyon. We urge the Bureau of Reclamation to protect these priceless treasures by storing "surplus" water in Lake Mead instead. Please uphold the established legal protections for priceless sacred and historical sites and emerging endangered species habitats. Please protect Glen Canyon for future generations.

1  
2  
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Sincerely,

George H. Marion  
2403 Rollingwood Dr.  
Austin, TX 78746

(512) 347-9925  
[hman@astro.as.utexas.edu](mailto:hman@astro.as.utexas.edu)

Regional Director  
Lower Regional Region  
8000-1000  
P. O. Box 61470  
Boulder NV 89006-

In managing the Glen Canyon and Hoover  
Dam, you should minimize sediment.  
Removing it from Lake Mead would help.

Also, you should plan for the ultimate  
~~ATT~~ removal of the Glen Canyon Dam

Alan Bradley  
2208 Pacific St  
Alameda CA 94501

1

2

6706 Mooser Lane  
El Cerrito CA 94530  
November 15, 2005

Regional Director, Bureau of Reclamation  
Lower Colorado Region ATTN BC00-1000  
P.O. Box 61470  
Boulder City NV 89006-1470

I wish to comment on the direction of decisions I would favor regarding future management of Glen Canyon Dam and Hoover Dam, and their respective reservoirs.

Essentially I am very concerned that these dams have seriously and negatively affected the ecology of their watersheds and canyons. It would be highly desirable to reverse these consequences to the extent possible, by decommissioning Glen Canyon Dam and ceasing operations at Lake Powell.

I would urge that the Colorado River Compact be revised, and that the major problem of sediment and silting be mitigated and - to the extent possible - reversed.

Thank you very much for considering my interests.

Cordially -

Stephen Brown

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Nov. 15, 2005.

Regional Director, Bureau of Reclamation  
Lower Colorado Region  
P.O. Box 61470  
Boulder City, NV  
89006-1470

Re: Glen Canyon Dam Operations.

ATTN: BCOO-1000,

Fish in the Lake Powell ecosystem are being threatened, and in fact, endangered, due to over-siltation in the lake.

I strongly urge you to act on sediment management in Lake Mead as this also compromises water quality + complicates water use issues.

I will be following this matter in the news + trust that you will be proactive on this vital issue.

Sincerely,  
Dyptika Kostyniuk.

To Regional Director, Bureau of Reclamation  
Lower Colorado Region:

For management of the sediment in  
Glen Canyon Dam and Hoover Dam which  
is a problem threatening long-term  
operations; removing sediment from Lake  
Mead rather than Lake Powell is the  
most feasible and least expensive alternative.  
Thank you for considering this alternative.

Sincerely,  
Cassie Beals  
Cassie Beals  
3668 38th Ave  
Oakland CA 94619

BUREAU OF RECLAMATION		
REPLY FILED		
NOV 21 1968		
DATE	OFFICE	CODE
CLASSIFICATION		
PROJECT		
CONTROL NO.		
FOLDER NO.		
KEYWORD		



Ron Roubert  
El Cerrito, CA

Nov. 15, 2005

To Whom it may concern:

The building of the Glen Canyon Dam has created many environmental ~~and~~ problems, including the alteration of the Grand Canyon ecosystem due to lack of silt & the cold temperature of the water released from the reservoir. This causes beach & shoreline erosion & alters the habitat of native fish species.

I understand you are soliciting public input on operation of the Lake Powell and Lake Mead reservoirs. I support removing the sediment from Lake Mead rather than Lake Powell. This is the least expensive solution, and it is feasible.

Thank you for your consideration,

Ron Roubert

Ron Roubert  
El Cerrito, CA

**From:** Hendrickson, Belinda [bhendrickson@mpowercom.com]

**Sent:** Tuesday, November 29, 2005 12:18 PM

**To:** strategies@lc.usbr.gov

**Subject:** Colorado River Drought Induced Cuts

Dear Sir or Madam:

This is not a technical comment, but more of a logical, philosophical one.

1. All states that take water from the Colorado should have strict conservation laws. California has abused the Colorado River ever since Mulholland. Prior to his interventions, Southern California was an arid, desert environment. It should be returned to the desert via conservation. If Southern Californians want palm trees and gardens they should move to Hawaii or Louisiana. Las Vegas is turning into the same water hog that Southern Cal is, again, strict conservation should be the norm for all states that use water from the Colorado.

1

2. Endangered species and natural wonders (like the Grand Canyon) are much more important than whether some idiot who wants a palm tree in his backyard in the desert. Please take into account both of these and make your decision based on their best interests.

2, 3

3. Remove the dams - Glen Canyon and Hoover. They don't provide much electricity and do create an enormous, negative environmental impact. Again, the animals and natural wonders are much more important than some guy with a boat...tell him to take it to the ocean (boating in the desert is ludicrous).

4

Dinosaurs couldn't adapt to their changing environment and died. Man is more flexible and can adapt, but just because we are lazy and stupid as a species doesn't mean it is correct for us to destroy our environment. We need to learn to live within our means (with water, air, other species, etc.) or we won't last any longer than the dinosaurs.

ORIGINAL

October 29, 2005

Regional Director, Bureau of Reclamation, Upper Colorado Region,  
Attention: UC-402, 125 South State Street, Salt Lake City, Utah 84318-1147

Subject: Scoping: Colorado River Reservoir Operations: Development of Lower Basin  
Shortage Guidelines and Coordinated Management Strategies for Lake  
Powell and Lake Mead Under Low Reservoir Conditions.

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It is very disappointing, but certainly no surprise, to see that "The Department does not intend to evaluate the decommissioning of Glen Canyon Dam." Under "Supplementary Information" in the scoping announcement it is stated that "In the future, low reservoir conditions may not be limited to drought periods as additional development of Colorado River water occurs". All of the studies I have heard of lately make it pretty clear that low reservoir conditions are destined to be normal rather than the exception. Water development in the upper basin states is not going to abate. It is only going to increase, and there is going to be less and less water flowing downstream into the reservoir in Glen Canyon as the years pass. Eventually there will be no need for two huge reservoirs on the Colorado River simply because there will not be enough water to fill them. That point may already have been reached.

Any fair, objective, and open minded study of the Colorado River system must include consideration of whether both the reservoir in Glen Canyon and the Mead reservoir are actually needed, or if one of them is adequate. Even if one were not quite enough, and there were years in which one alone could not store all of the runoff, then that surplus, ideally, should be released downstream to help allow the Colorado River delta to come back to life. Human society has no moral right to destroy a living system in order to satisfy its own reckless and selfish desires.

1

The Department of the Interior, Bureau of Reclamation, and the National Park Service all know very well the harm that has been done to the Colorado River in the Grand Canyon by Glen Canyon dam, and it is obvious to anyone who has followed this issue that the various attempts to mitigate this damage by manipulating the releases from Glen Canyon dam are nothing but band aids that ultimately are destined to fail. The only solution to this is to decommission Glen Canyon Dam.

2

Given the fact that the reservoir in Glen Canyon is ultimately destined to fill in completely with sediment, and that because of the many tributary canyons that are contributing sediment to it, along with the very difficult surrounding terrain, it will never be feasible to dredge this reservoir, it is long past time to face the fact that it is going to be a very temporary thing, and that there is nothing that can be done to save it. It is time to drain it, decommission the dam, and let the sediment flow on downstream, where it and a relatively free and unregulated river can restore the health of the Grand Canyon. And since the primary sediment input to the Mead reservoir is the Colorado River, and since it is more accessible, it could, indeed it MUST be dredged in order to maintain the

3

reservoir. If nothing is done to get the sediment out of the system, it is tantamount to conceding that southwestern civilization is doomed by the ultimate failure of its water supply. It is long past time for the Bureau of Reclamation to stop ignoring the cold hard reality of the sediment carried by the Colorado River and get on with doing something about it. Until something is done about it all the shortage planning and everything else that may be done is a complete waste of time.

Thank you for considering my comments.

A handwritten signature in cursive script, reading "William H. Wolverton".

William H. Wolverton  
Box 393  
Escalante, UT 84726

## Kucera, Cindy

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**From:** Dan Kozarsky [dkozarsky@earthlink.net]  
**Sent:** Tuesday, November 29, 2005 9:07 PM  
**To:** strategies@lc.usbr.gov; strategies@uc.usbr.gov  
**Subject:** Reoperation of Lake Powell and Lake Mead

Dear Bureau of Reclamation,

I am writing to urge you to study the feasibility and benefits of permanently ceasing operations at Lake Powell, and instead just using a single reservoir for Colorado River water storage.

Lake Powell has buried one of the nation's scenic treasures, Glen Canyon, which is certainly worthy of national park status were it not flooded. Lake Powell and Lake Mead lose enormous amounts of water to evaporation every year, as you know. Sediment is also a major and growing problem. There must be a more efficient and sensible means of water storage than the current system. Please study alternative solutions such as the use of vacant space in underground aquifers in lieu of long-term operations at Lake Powell.

Thank you for consideration of my comments.

Sincerely,  
Daniel Kozarsky  
366 Sierra Vista Ave., #12  
Mountain View, CA 94043

**Kucera, Cindy**

---

**From:** Richard Pott [richard\_pott@hotmail.com]  
**Sent:** Wednesday, November 30, 2005 11:15 AM  
**To:** strategies@lc.usbr.gov  
**Subject:** water

Why not save some water by replacing or reducing the current hydroelectric power generation with wind and solar power generators? The water users and the purchasers of the hydroelectric power should pay the cost of building the generators.

1

The Bureau of Reclamation sounds like it is on the right track with this suggestion.

Secondly let southern California get more of its water from northern California.

2

Richard Pott

4440 N Chieftain Street

Las Vegas, NV 89129

**Kucera, Cindy**

---

**From:** ivword/french [lyndafrench@citlink.net]  
**Sent:** Wednesday, November 30, 2005 9:34 AM  
**To:** strategies@lc.usbr.gov  
**Subject:** drought-induced allocation cuts

1. i think it's important to determine whether we want to water "people or produce."
2. i believe california receives an inordinate allocation and that it has been far too delinquent in developing sustainable systems - particularly desalination plants. | 1
3. i think arizona is complacent about the issue and relies far too heavily on the central arizona project canals to quench populations in phoenix and tucson which are expected to triple by 2030. | 2
4. i believe nevada is the only lower basin state which does not have its head in the sand. it must take a stand and lead the rest of the lower basin states to the rim of reality regarding colorado river water allocation.
5. i think that recycling water and recharging our reservoirs, basins and acquifers are esstantial areas of research. | 3

thank you for the oppportunity to input.

lynda french  
1435 franklin drive  
kingman, az 86401  
928.753.1435  
[lyndafrench@citlink.net](mailto:lyndafrench@citlink.net)

**Kucera, Cindy**

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**From:** Wegst, Walter [WegstWF@nv.doe.gov]  
**Sent:** Wednesday, November 30, 2005 8:57 AM  
**To:** strategies@lc.usbr.gov  
**Subject:** Colorado River Water

Dear Sirs:

I have two revolutionary ideas on how to save Colorado river water for the highest and best use.

Stop selling the water to farmers in the Imperial Valley of California at highly subsidized cheap prices. Charge the farmers the same price (or even 50%) that city residents must pay. This large increase in price will give the farmers an incentive to install efficient irrigation systems that use much less water while providing the same crop yield. At this time these farmers have no economic incentive to stop using overhead sprinkler irrigation, which wastes large amounts of water (as much as 50% of the water delivered).

1

An even more revolutionary idea is to stop the Federal subsidies paid to the cotton and sugar cane farmers. These farmers cannot compete in the international market without these subsidies and in fact cotton on the world market sells for ~35 cents per pound whereas it costs ~70 cents a pound to grow in the Imperial Valley.

2

However, I am realistic enough to know that neither of these solutions will be implemented because the few hundred farmers in the Imperial Valley have far more political power than the millions of people who live in San Diego and Las Vegas. This situation is an egregious example of blatant political discrimination.

Thank you for your attention to these comments.

Walter F. Wegst, PhD  
8390 Las Lunas Way  
Las Vegas, NV 89129  
kwwegst@aol.com (Home email)



**Kucera, Cindy**

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**From:** dr W [gerdeljesmar@yahoo.com]  
**Sent:** Wednesday, November 30, 2005 7:01 AM  
**To:** strategies@lc.usbr.gov  
**Subject:** Comments on potential drought-induced cuts to allocations of Colorado River water

RE: November 29, 2005 **Colorado River states bracing for cutbacks in water** By Launce Rake <[lrake@lasvegassun.com](mailto:lrake@lasvegassun.com)>

Las Vegas Sun

There's currently a landscape conversion program that allows a rebate for grass turf converted to desert landscaping. It does require 50% or more plant coverage to exist in the areas converted. Drastic times require drastic measures; perhaps the stipulation of 50% plant coverage be eliminated in order to further reduce water use wasted on landscaping.

1

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## Kucera, Cindy

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**From:** Gary Vesperman [garyvesperman@yahoo.com]  
**Sent:** Tuesday, November 29, 2005 8:50 PM  
**To:** strategies@lc.usbr.gov  
**Subject:** Comment on Colorado River cuts

Please include the following comment in the public record of comments concerning potential drought-induced cuts to allocations of Colorado River water:

First I reference the link to my compilation of "Advanced Technologies for Foreign Resort Project" which is in <http://www.icestuff.com/~energy21/advantech.htm>.

My compilation includes this energy source description:

"Environmental Heat Engine. Has some similarity to refrigerator or heat pump. Working fluid of ammonia or carbon dioxide is expanded by propane heater, cold fusion thermal reactor, or environmental heat to move pistons. Applications include vehicle engines, small-scale on-site electrical generators, and large-scale water lifters for dams and canals. (Could double electrical output of Hoover Dam.) This is a variation of Dennis Lee's low-temperature phase-change engine which the now deceased Las Vegas inventor Robert Stewart claimed is superior to Lee's engine."

Recently I came across a company which is preparing to commercially produce and sell an apparently successful new type of environmental heat engine. Their new engine employs a new proprietary working fluid and mechanical design improvements.

For mitigating drought effects, I suggest investigating large-scale water lifters for Colorado River dams based on environmental heat engines.

Gary Vesperman  
3133 La Mesa Drive  
Henderson, Nevada 89014-3649  
702-435-7947  
gvesperman@hotmail.com

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Yahoo! Mail - PC Magazine Editors' Choice 2005 <http://mail.yahoo.com>

## Kucera, Cindy

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**From:** LC strategies [strategies@lc.usbr.gov]  
**Sent:** Wednesday, December 07, 2005 1:41 PM  
**To:** Kucera, Cindy  
**Cc:** Jayne Kelleher  
**Subject:** Fwd: Glen Canyon

Hi Cindy,

This comment was late. Just add him to the mailing list, but not the comment database. His comment has been represented by others that did meet the deadline.

Nan Yoder  
Program Manager  
Boulder Canyon Operations Office

>>> Bernie Rupe <bernie912@comcast.net> 12/06/05 07:32PM >>>

Dear Mr. Johnson,

Please help return Glen Canyon by getting rid of the lake and dam. It is a treasure.

| 1

Bernie Rupe  
318 N. Elmwood Ln  
Palatine, IL 60067

**Kucera, Cindy**

---

**From:** Philsimtpr@aol.com  
**Sent:** Wednesday, December 28, 2005 12:39 PM  
**To:** strategies@lc.usbr.gov  
**Subject:** Decommission Glen Canyon Dam

We would have more water available if Glen Canyon Dam were decommissioned, and the water was stored behind Hoover Dam. Revision is necessary of the colorado River Compact.

1  
2  
3

Philip Simon

**From:** George Appleton [appletonlv@juno.com]  
**Sent:** Sunday, January 15, 2006 4:42 PM  
**To:** strategies@lc.usbr.gov  
**Cc:** lrake@lasvegassun.com  
**Subject:** Cuts in Colorado River water to Las Vegas  
I know I'm late with this but:

The problem with the Las Vegas Water *Authority* (knew we were in trouble when the Water District began using that name) is that they can't see, and won't do anything about, all the totally wasted (mostly by evaporation, especially in summer) water in the area they serve.

First of all, and perhaps worst of all, is that 300+ acre Lake In the Swamp in Henderson where the wash was dammed and the lake filled with (and kept filled with) our drinking water so that the developers could become instant multi-millionaires. In July and August, as nearly as I can tell from the District's own figures, that along will evaporate well over 3 million gallons of water a day. Perhaps more than 3.5 million.

Then there are all the other housing development lakes from the old Lakes at Las Vegas to the newer ones where people are whining because they bought lakeside property and find (Oh the Horror!) waterfowl using it, and pooping on their lawns. Pat Mulroy has said, several times, "We all live in a desert, you know." Except that some of "we" can go canoeing off our back yards. Yet I'll be fined if the Water Police catch me washing my vehicle.

Golf courses. More than 60 now, are there? I've seen a number of courses in the eastern part of this country where not one of them had a water hazard instead of sand traps, and certainly not lakes, waterfalls, and running streams.

Before any cuts are made to the average homeowner (our house was built in 1962; we bought it in 1967), it might be wise to turn off the faucets to all the artificial lakes in the Valley. Sure people will whine, as they are about planes from McCarran making right turns, or (in North Vegas) buying a new home across the street from a pig farm and then wanting it closed down.

But this is a large, growing (another source of water use that might well be considered), city where things change constantly. Golfers and certain homeowners have had their lakes and streams, but we're in a drought, and that ought to take precedence before any others to the rest of us. It would certainly mean less water taken from Lake Mead, and more returned to it.

George Appleton  
3400 Florrie Ave.  
Las Vegas NV 89121  
[appletonlv@juno.com](mailto:appletonlv@juno.com)

Dear Representative Kolbe,

The steadily dropping water levels at Lake Powell reservoir on the Colorado River have unveiled spectacular features not seen in decades. Emerging cultural, biological, and scenic resources found only in Glen Canyon are now threatened to be unnecessarily flooded this spring.

As it now stands, precious features such as Cathedral in the Desert, Register Rock, petroglyphs, and Fort Moqui will go right back under 25-50 feet of water during May and June -- only to be uncovered once again later this year.

This fluctuation of water levels is unnecessary and destructive to emerging cultural, historical, and scenic sites in Glen Canyon.

All 'surplus' waters of the Colorado River can easily be stored at Lake Mead and in available upper basin reservoirs instead of in Lake Powell . As water levels at Lake Powell drop, they should not be allowed to rise and further damage fragile emerging sacred sites and resources in Glen Canyon.

Please urge the Bureau of Reclamation to protect these priceless treasures by storing the 'surplus' runoff this spring somewhere else. Also, please contact Secretary Norton and communicate to her the importance of protecting emerging and priceless resources in Glen Canyon from unnecessary fluctuation of water levels. Please ask her to uphold the established legal protections for priceless sacred and historical sites and emerging endangered species habitat. Also, please ask her to ensure the National Park Service takes the necessary steps to protect the emerging resources from the impacts of visitors to Glen Canyon "unimpaired for future generations".

Powell called this area one of the most beautiful areas. Now we have the opportunity to see it again. If we turn it into a national park, then future generations will be able to hike it and enjoy it and we can all see the beauty that Powell did. And this will take some of the strain off the Grand Canyon. Also, if the lake continues to fall as expected, people will be able to take river trips through this area, again, relieving some of the demand on the Grand Canyon.

Thank you very much for your time and consideration.

Please protect Glen Canyon for future generations.  
Sincerely,

Thomas L. Abrams

12/06/2005

# **Appendix W**

## **Copies of Unique Comment Letters**

### **W.5 Local Agency Letters (L)**



## City of Phoenix

OFFICE OF THE CITY MANAGER

August 30, 2005

Mr. Robert W. Johnson  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region, Attention: BCOO-1000  
P.O. Box 61470  
Boulder City, NV 89006-1470

**Re Colorado River Reservoir Operations: Development of Management Strategies for Lake Powell and Lake Mead under Low Reservoir Conditions**

Dear Mr. Johnson,

The City of Phoenix (City) submits its response to the notice to solicit public comments on the development of management strategies for Lake Powell and Lake Mead, including Lower Basin shortage guidelines, under low reservoir conditions (70 Fed. Reg. 34794, dated June 15, 2005) (Notice). Colorado River water delivered to Phoenix through the Central Arizona Project (CAP) is a vital component of the City's water resources portfolio. Over 1.4 million people in the City rely on this resource to supply over 35% of the City's current total water demand. The City holds CAP subcontracts for Municipal, Industrial and non-Indian agricultural priority water and leases Indian priority water. Thus, the City has a unique perspective due to opportunities to manage Lake Powell and Lake Mead and also on Lower Basin shortage guidelines.

As you are well aware, the CAP has a junior priority under the Law of the River. Therefore, the State of Arizona, the CAP, and the City are the most vulnerable water users in the Lower Basin if shortages are declared by the Secretary of the Interior (Secretary). Because Arizona faces the greatest risks, the City urges the Bureau to give great weight to the comments provided by the State of Arizona, the CAP and its water users.

The City strongly supports the comments and balanced strategies enunciated by the State of Arizona, along with the six Basin states, in the August 25, 2005 letter to the Secretary submitted by the Governor's Representatives on Colorado River Operations. The City urges continued support from the Secretary and the Department of the Interior as the Basin states further analyze and address the issues raised in the letter as part of a comprehensive package for operating and managing the Colorado River.

Sincerely,

Thomas Buschatzke  
Water Advisor



**Kucera, Cindy**

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**From:** spollack [spollack@navajo.org]  
**Sent:** Wednesday, August 31, 2005 4:02 PM  
**To:** strategies@lc.usbr.gov  
**Cc:** smcelroy@greenelawyer.com  
**Subject:** 70 FR 34794  
**Attachments:** NN comments on 70 FR 34794.pdf

Attached are the comments of the Navajo Nation in response to 70 FR 34794 - Colorado River Reservoir Operations: Development of Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions. The original will be mailed tomorrow. A separate copy is also sent via fax.

Please do not hesitate to contact me if you have any questions concerning this matter.

Stanley Pollack

*This message may contain confidential information. If you are not the intended recipient, please delete the email and inform the sender immediately. Thank you.*

Stanley M. Pollack  
Navajo Nation Department of Justice  
P.O. Box 2010  
Window Rock, AZ 86515

928.871.6192 (P) / 928.871.6200 (F)

L.002

9/6/2005



# THE NAVAJO NATION

P.O. Box 9000 • WINDOW ROCK, ARIZONA 86515 • (928) 871-6000

JOE SHIRLEY, JR.  
PRESIDENT

FRANK J. DAYISH, JR.  
VICE PRESIDENT

August 31, 2005

VIA U.S. Mail & email

Robert W. Johnson, Regional Director  
Bureau of Reclamation  
Lower Colorado River Region  
Attention: BCOO-1000  
P.O. Box 61470  
Boulder City, NV 89006

Re: Comments on Development of Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions; 70 Federal Register 34794 (June 15, 2005)

Dear Mr. Johnson:

I am writing on behalf of the Navajo Nation regarding the Department of the Interior's ("Department") current effort to develop management strategies for Lake Powell and Lake Mead under low Reservoir conditions. In developing such strategies, the United States must account for the outstanding needs of the Navajo Nation for water from the Lower Basin and take all steps necessary to secure a firm and reliable supply of water from the Colorado River for the benefit of the Navajo Nation and its 60,000+ members who live on the Arizona portion of the Navajo Reservation in the Lower Basin. The federal government's failure to ensure a water supply to meet the present and future needs of the Navajo Nation not only jeopardizes the future of the Navajo Nation but also leaves all other water users on the Colorado River under a substantial cloud with regard to their ability to continue to use water which is currently allocated to them. The adverse effect of this uncertainty is greatly exacerbated in times of shortage – precisely the issue now before the Department.

Historically, the Secretary of the Interior ("Secretary") has failed to account for the water rights and needs of the Navajo Nation as she implemented her duties to manage the waters of the Lower Basin under the *Decree in Arizona v. California*, 376 U.S. 340, 353 (1964) and other authorities. Pursuant to the Boulder Canyon Project Act of 1928, 45 Stat. 1057 (codified as amended at 43 U.S.C. §§ 617-617u), the Secretary entered into a contract with Arizona in 1944 for delivery of 2.8 million acre-feet per year ("maf") of the water from the Colorado River. *Arizona v. California*, 373 U.S. 546, 562 (1963). As the Supreme Court has noted, the Secretary, while exercising physical control over the water

diverted from Lake Mead in satisfaction of Arizona's contractual rights, must also "charge [Arizona] for diversions from the mainstream between Lee Ferry and the damsite . . ." *Id.* at 591.

Although the Navajo Reservation borders the Colorado River below Lee Ferry and above Lake Mead, the Secretary has never sought to secure water from the Lower Basin of the Colorado River to maintain the Navajo Reservation as a permanent homeland for the members of the Navajo Nation. The Arizona Supreme Court recently explained that "[i]n its role as trustee of [Indian] lands, the government must act for the Indians' benefit." *In re the Gen. Adjudication of All Rights to Use Water in the Gila River System and Source*, 35 P.3d 68, 74 (Ariz. 2001) (citing *United States v. Mitchell*, 463 U.S. 206, 225-26 (1983)). The Arizona Court agreed "with the Supreme Court that the essential purpose of Indian reservations is to provide Native American people with a 'permanent home and abiding place,' . . . that is, a 'livable' environment." *Id.* (citing *Winters v. United States*, 207 U.S. 564, 565 (1908)); *Arizona v. California*, 373 U.S. at 599). There is no question but that the Navajo Reservation requires water from the Lower Basin above Lake Mead if the present and future needs of its members are to be met. Indeed, every recent study examining the needs of the Navajo Nation in the Lower Basin has concluded that water from the main stem is required to meet the long term needs of the members of the Navajo Nation. Accordingly, as she carries out her other duties on the Colorado River, the Secretary, as trustee for the Navajo Nation, must also take the necessary steps to protect such a water supply for the benefit of the Navajo Nation. See *Pyramid Lake Paiute Tribe v. Morton*, 354 F. Supp. 252, 256 (D.D.C.) ("The Secretary was obliged to formulate a closely developed regulation that would preserve water for the Tribe. He was further obliged to assert his statutory and contractual authority to the fullest extent possible to accomplish this result."), *supplemented on other grounds*, 360 F. Supp. 669 (D.D.C. 1973), *rev'd on other grounds*, 499 F.2d 1095 (D.C. Cir. 1974), *cert. denied*, 420 U.S. 962 (1975). In short, the Secretary's failure to set aside water to meet the needs of the Navajo Nation is detrimental to the interests of the Navajo Nation and severely undercuts the certainty of the water supplies available for use by other parties relying on the Colorado River to meet their communities' needs.

In stark contrast to the neglect of Navajo interests for which the Secretary has a trust responsibility, the Secretary and her predecessors have aggressively sought to implement their responsibilities to manage the waters of the Lower Basin below Lake Mead for the benefit of other water users. Among the actions taken by the Department is the promulgation of the Offstream Storage of Colorado River Water in Development and Release of Intentionally Created Unused Apportionment in the Lower Division States, 64 Fed. Reg. 58,986, 59,006 (Nov. 1, 1999) (codified as 43 C.F.R. pt. 414) ("Interstate Banking Regulations). Those regulations allow Southern Nevada Water Authority ("SNWA") and Metropolitan Water District of Southern California to obtain water in excess of their states' basic apportionments. Under the Interstate Banking Regulations, the Arizona Water Banking Authority will seek to store in central Arizona groundwater basins as much as 1.2 maf of water for SNWA's benefit. The stored water will be taken from

Lower Basin water supplies available to Nevada and Arizona. When SNWA ultimately needs the water, the Secretary will deliver Colorado River water to that entity and the Arizona Water Banking Authority will retrieve the water stored underground in Arizona for use by the Arizona entities who otherwise would have been entitled to use Colorado River water. *Id.* There is already more water in storage in Arizona for SNWA's benefit than the Navajo Nation is likely to require from the Colorado River.

The Secretary also has been actively involved in the allocation of Arizona's 2.8 mafy of Lower Basin water to Arizona entities. The Secretary, in collaboration with the State of Arizona and the Central Arizona Water Conservation District has committed all but approximately 13,000 acre-feet per year ("afy") of the approximately 1.3 mafy of water set aside for Arizona uses along the Colorado River. Included in that amount are various contracts and the present perfected rights held by Arizona water users. Admirably, the Secretary has fought to provide water from the Central Arizona Project for tribes in central Arizona with no claim to the waters of the Colorado River. Unfortunately, under the recent legislation settling the claims of the Gila River Indian Community, the water supply expressly set aside for the settlement of other tribal claims is minimal, given the outstanding claims within the State and the substantial needs of the Navajo Nation.

The Surplus Guidelines further reflect the Secretary's continuing efforts to implement her obligations under the 1964 Decree in *Arizona v. California* while neglecting her obligation to protect the interests of the Navajo Nation. The Surplus Guidelines establish rules for the determination of when surpluses may be available under the 1964 Decree and when to allocate those surpluses to California and Nevada. The Secretary negotiated the guidelines with the seven basin states. Significantly, the Secretary committed to use any surplus that would be allocated to Arizona under the 1964 Decree for the benefit of Nevada and California without regard to the outstanding needs of the Navajo Nation. Because the interests of the Navajo Nation were not adequately considered in the environmental compliance documents for that process, the Secretary's implementation of those guidelines is subject to judicial challenge in *Navajo Nation v. Norton*, No. CIV 03 0507 PCT PGR (D. Ariz. filed Mar. 14, 2003). Certainly, it is not adequate as trustee for the Navajo Nation for the Secretary to advise the Navajo Nation that its interests in the waters of the Colorado River will be adequately protected by the Decree in *Arizona v. California* when neither that decree or any other court order or executive document determines and protects the interests of the Navajo Nation.

To conclude, the Secretary must account for the needs of the Navajo Nation as she undertakes the difficult task of developing guidelines to deal with Lake Powell and Lake Mead in times of shortage. Absent forceful action by the Secretary to secure an adequate water supply for the Navajo Nation, the stated objective of providing certainty about the quantities of water available to other users cannot be achieved because those supplies will always be at risk from the outstanding and un-quantified Navajo claims. While it is not surprising that the Department is concerned over whether water supplies from the Colorado River can continue to fill the pipelines of heavily subsidized federal projects to

Robert W. Johnson, Regional Director, BOR  
Re: Development of Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions  
August 31, 2005  
Page 4

deliver water to cities far distant from the Colorado River such as Albuquerque and Phoenix, members of the Navajo Nation living within a stone's throw of the River continue to haul water to their homes to meet their most basic needs. In sum, the Department's long neglect of Navajo needs for water from the Colorado River is doubly defective since it is both grossly unfair to the Navajo Nation and cannot be reconciled with the Department's stated objective of providing certainty to its management of the Colorado River.

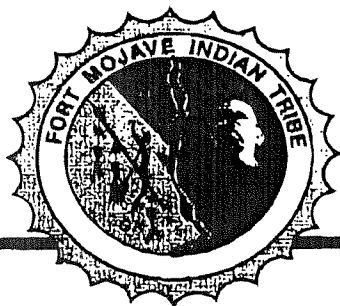
Sincerely,

THE NAVAJO NATION

s/signed on original  
Joe Shirley, Jr.  
President

cc: Michael A. Gheleta, USDOJ  
Vanessa Boyd Willard, USDOJ

L.002



# Fort Mojave Indian Tribe

NORA McDOWELL - Chairperson  
 SHAN LEWIS - Vice Chairman  
 DEBBIE JACKSON - Secretary  
 COLLEEN GARCLA - Member • BRUCE WILLIAMS - Member  
 MARTHA McCORI • Member • NICHOLE GARCIA - Member  
 500 Merriman Avenue • Needle, CA 92363  
 (760) 629-4591 • FAX (760) 629-5767

August 26, 2005

Robert Johnson, Regional Director  
 United States Bureau of Reclamation  
 Lower Colorado River Region  
 PO Box 61470  
 Boulder City, Nevada 89006-1470

Dear Mr Johnson:

The Fort Mojave Indian Tribe appreciates the opportunity to comment on the development of low reservoir management strategies for the Colorado River System and comments to the Bureau for undertaking this timely but controversial effort.

The Tribe is really not in the position of needing to be directly involved in the development of shortage criteria but we would like to make a few general comments.

The Colorado River has probably been over-allocated since the time of the Colorado River Compact and certainly since the Mexican Treaty added 1.5 million acre feet of non-existent water. We have been able to get by with this for all these years. But now, with consumption exceeding production by a million acre feet per year, the major reservoirs less than half full and considerable unused but senior entitlement still out there, it seems we have arrived at crunch time.

The Fort Mojave Indian Tribe's feeling toward the Colorado River is somewhat different than many other water users. We do rely entirely on the River for our water supply as do many others but the living river itself is equally important yet the Tribe would support shortage criteria when storage is 50% or less based on the actual annual yield of the River. A reduced river is not a good thing but it is better than having to live with a "run of the river" situation that would almost certainly occur without planned delivery reductions.

The Tribe's concern is not really water supply. Our rights are senior enough and will be defended vigorously enough to assure the water that we were allocated in the 1964 Arizona v. California Supreme Court Decree.

The concern is really the state of the River itself. We draw nearly all of our water supply from pumps on the bank of the flowing mainstem and our beaches and marinas are based on nine million acre feet per year flowing through the Reservation.

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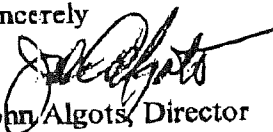
Robert Johnson 8/26/05

Page 2

We will adapt, but adapting takes time, planning and money. It also involves some modifications to the river channel. As we hope you would agree, the Fort Mojave Indian Tribe's diversions have been the least disruptive of all major users but it also leaves us the most vulnerable in the situation we now face. We also hope that the relatively minor modifications we now must make will be as welcomed by those agencies having jurisdiction over the water and bed of the Colorado River as have the dams and structures of others.

Again, we appreciate the opportunity to comment. We have long enjoyed an open dialog with the Bureau of Reclamation and look forward to continuing it.

Sincerely



John Algots, Director  
Department of Physical Resources

cc

Nora McDowell, Chairperson

**SPARKS, TEHAN & RYLEY, P. C.**

Attorneys  
7503 First Street  
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Joe P. Sparks  
John H. Ryley  
Robyn L. Interpreter  
Susan B. Montgomery

**FAXED**  
8/31/05  
JPR/HSP

August 31, 2005

*Via Facsimile (702) 293-8156 and  
U.S. Mail Certified - Return Receipt Requested  
7005 0390 0005 5431 5517*

Regional Director, Lower Colorado Region  
BUREAU OF RECLAMATION  
ATTN: BCOO-1000  
P.O. Box 61470  
Boulder City, Nevada 89006-1470

*Via Facsimile (801) 524-3858 and  
U.S. Mail Certified - Return Receipt Requested  
7005 0390 0005 5431 5524*

Regional Director, Upper Colorado Region  
BUREAU OF RECLAMATION  
ATTN: UC-402  
125 South State Street  
Salt Lake City, Utah 84318-1147

**Re: Comments on the Development of Management Strategies for Lake Powell and Lake Mead, Including Lower Basin Shortage Guidelines, Under Low Reservoir Conditions - TONTO APACHE TRIBE**

Dear Regional Directors:

This Firm serves as Legal Counsel to the Tonto Apache Tribe ("Tribe") and submits the following comments related to the development of management strategies for Lake Powell and Lake Mead, including Lower Basin shortage guidelines, under low reservoir conditions, on the Tribe's behalf, pursuant to 70 Fed. Reg. 114, 34794 (2005).

The Tonto Apache Tribe is located in eastern Arizona on the Tonto Apache Reservation ("Reservation") near Payson, Arizona. The Reservation is 85 acres and does not have an adequate water supply to serve the Reservation.

The Tribe has a Central Arizona Project Indian Water Delivery Contract Between the United States and the Tonto Apache Tribe dated December 11, 1980 ("CAP Contract"). See CAP Contract enclosed. This CAP Contract provides 125 acre-feet of CAP water to the Tribe.

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## SPARKS, TEHAN & RYLEY, P. C.

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August 31, 2005  
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River management strategies or decisions which would increase the frequency of shortages or the participation of others in the shortage pools, or reduce the long-term reliability of the Tribe's CAP water by declarations of a "shortage," must be avoided. 1

Section 3.21 of the Tribe's CAP Contract defines a "Time of Shortage" as "a calendar year for which the Secretary determines that a shortage exists pursuant to Section 301(b) of the Basin Project Act, such that there is not sufficient Project Water in that year to supply up to a limit of 309,828 acre feet of water for Indian uses, and up to a limit of 510,000 acre feet of water for non-Indian Municipal and Industrial uses." Under the Tribe's CAP Contract, deliveries of Project Water to the Tribe in Times of Shortage may be reduced or terminated in accordance with Section 4.9 of the Tribe's CAP Contract.

It is paramount that the Secretary of Interior ("Secretary") carefully consider and reject any proposed management strategies for Lake Powell and Lake Mead that would breach the Tribe's CAP Contract or breach the Secretary's trust responsibility to properly manage and protect the Tribe's CAP water. It is apparent that representatives from the Upper and Lower Basin States have been meeting regularly to propose management strategies to the Secretary. The Tribe is concerned that adoption of these proposed strategies will interfere with the delivery of CAP water to the Tribe and breach the Tribe's CAP Contract. For instance, if the Secretary adopted a management strategy where a shortage is artificially declared in order to benefit an arrangement by the States, such a strategy would interfere with the Tribe's reasonable contractual expectation for delivery of its CAP water under the CAP Contract. In fact, such an arrangement would also violate Section 301(b) of the Basin Project Act.

The Tribe has always understood the terms of the CAP Contract relating to shortage to mean that delivery of CAP water depends upon the physical situation of the Colorado River and not upon a scheme of management where some are benefitted while others are not. The Secretary owes the Tribe a trust duty to refrain from implementing management strategies which interfere with the Tribe's expectation of delivery of CAP water under its CAP Contract.

The Tribe also continues to be concerned with declarations of "surplus" conditions on the Colorado River by the Secretary to accommodate, *inter alia*, the "insatiable" thirst of Southern California and Las Vegas, Nevada. Withdrawals from the Colorado River to satisfy these entities, reduces the cumulative storage in the Colorado River reservoirs, thus making the long-term water supply for the Tribe less reliable.

The Tribe requests the Secretary to assign a representative or team of representatives to act as the United States' trustee for the Tribe and provide for direct participation by the Tribe in all future discussions of this matter. The Tribe also requests that the Secretary arrange to regularly consult with 2

**SPARKS, TEHAN & RYLEY, P. C.**

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August 31, 2005  
Page 3

the Tribe during the development of the proposed strategies so that the Secretary can avoid making a decision which would breach the Tribe's CAP Contract and/or her trust responsibility to the Tribe to manage and protect the Tribe's CAP water. 3

Please put this Firm on your mailing list for all future communications and documents related to this matter.

Yours Truly,

**SPARKS, TEHAN & RYLEY, P.C.**

  
Joe P. Sparks

Enclosure  
JPS/rli

cc: Ivan Smith, Chairman  
Kenny Davis, Vice-Chairman  
Council Members

L:\INDIAN\TONTON\CAP\tr to sec.wpd

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
OFFICE OF THE SECRETARY

CENTRAL ARIZONA PROJECT INDIAN WATER DELIVERY CONTRACT  
BETWEEN THE UNITED STATES AND THE TONTO APACHE TRIBE

1. PREAMBLE:

THIS CONTRACT, made this 11 day of DECEMBER 1980,

in pursuance generally of the Act of June 17, 1902, 32 Stat. 388, and acts amendatory thereof and supplementary thereto, the Boulder Canyon Project Act, 45 Stat. 1057, 43 USC s614 et seq (1928), the Colorado River Basin Project Act, 82 Stat. 885, 43 USC s1501 et seq. (1968), and the various authorities and responsibilities of the Secretary of the Interior (hereinafter "Secretary") in relation to Indians and Indian Tribes as contained in Title 25 USC and 43 USC s1457; and is between the United States of America (hereinafter "United States") and the Tonto Apache Tribe (hereinafter "Contractor") located on the Tonto Apache Reservation, Arizona.

WITNESSETH, THAT:

2. EXPLANATORY RECITALS:

WHEREAS, the Colorado River Basin Project Act provides, among other things, that the Secretary of the Interior shall construct, operate and maintain the Central Arizona Project for the purpose of furnishing irrigation water and municipal water supplies to the water-deficient areas of Arizona and Western New Mexico and for other purposes; and

WHEREAS, Contractor is in need of Central Arizona Project water to sustain its agricultural base and for other tribal homeland purposes; and

WHEREAS, upon completion of the Central Arizona Project, water will be available for delivery to Contractor for such purposes in accordance with the Secretarial notice of December 1, 1980, 45 FR 81265 ;

NOW, THEREFORE, in consideration of the mutual and dependent covenants herein contained, it is agreed as follows:

3. DEFINITIONS:

When used herein, unless otherwise distinctly expressed or manifestly incompatible with the intent hereof, the terms:

3.1 "Basin Project Act" shall mean the Colorado River Basin Project Act, 82 Stat. 885, dated September 30, 1968.

3.2 "Secretary" shall mean the Secretary of the Interior of the United States.

3.3 "Contracting Officer" shall mean the Secretary or his authorized designee acting in his behalf.

3.4 "Central Arizona Project" or "Project" shall mean the dams, reservoirs, aqueducts, canals, distribution and drainage works and appurtenant works authorized by Section 301(a) of the Basin Project Act and constructed by the United States pursuant to the provisions of said Act.

3.5 "Main System" shall mean those principle works of the Project listed as follows: Granite Reef Division, Orme Division (or suitable alternative), Salt-Gila Division, Tuscon Aqueduct (Colorado River Source), Buttes Dam and Navajo Project, together with all appurtenances thereto and all lands, interests in lands and rights-of-way for such works and appurtenances.

3.6 "OM&R" shall mean the care, operation, maintenance, and replacement of the Main System, or any part thereof.

3.7 "Operating Agency" shall mean the entity or entities authorized to assume OM&R responsibility of all or any part of the Main System and approved for that purpose by the Contracting Officer.

3.8 "Project Water" shall mean (a) Colorado River mainstream water, (b) all other water conserved and developed by Central Arizona Project dams and reservoirs and available for delivery by the United States, and (c) Return Flow captured by the Secretary for Project use.

3.9 "Notice of Availability of Project Water" shall mean the notice or notices which the Contracting Officer issues to Contractor to announce the availability of water for delivery to Contractor.

3.10 "Agricultural Water" or "Irrigation Water" shall mean Project Water used primarily in the commercial production of agricultural crops or livestock, including domestic use incidental thereto.

3.11 "Miscellaneous Water" shall mean water delivered from the Project for recreational and fish and wildlife purposes at other than Project facilities.

3.12 "Municipal and Industrial Water" hereinafter referred to as "M&I Water" shall mean water other than Agricultural Water or Miscellaneous Water delivered by means of the Main System.

3.13 "Return Flow" shall mean waste water, seepage, and ground water which originates or results from Agricultural Water, M&I Water, and Miscellaneous Water contracted for from the Central Arizona Project.

3.14 "Contractor's Reservation" shall mean the lands within the legal boundaries of Contractor's reservation(s).

3.15 "Distribution Works" shall mean those facilities constructed or financed by the United States for the primary purpose of distributing Project Water to the Delivery Point(s) within the Contractor's Reservation after said Project Water has been transported or delivered through the Main System.

3.16 "Water Right(s)" shall mean all those water rights which Contractor or the United States owns or holds for the benefit of the lands of the Contractor's Reservation(s) and the people thereon.

3.17 "Nonproject Water" shall mean water acquired by Contractor's other than from the Central Arizona Project.

3.18 "Year" shall mean the twelve month period between January 1 through the next succeeding December 31.

3.19 "Delivery Point(s)" is defined as the point(s) on Contractor's Reservation that are reasonably required, by agreement by the Contracting Officer and the Contractor, or selected by the Secretary to permit the Contractor to put the Project Water to its intended use.

3.20 "Substantial Completion" shall mean that degree of completion which, in the determination of the Contracting Officer, will enable the transportation of Project Water to Contractor's Delivery Points.

3.21 "Time of Shortage" shall mean a calendar year for which the Secretary determines that a shortage exists pursuant to section 301(b) of the Basin Project Act, such that there is not sufficient Project Water in that year to supply up to a limit of 309,828 acre feet of water for Indian uses, and up to a limit of 510,000 acre feet of water for non-Indian municipal and industrial uses.

3.22 "Exchange Water" shall mean water to be delivered to Contractor hereunder from a local source pursuant to an exchange as provided in section 304(d) of the Basin Project Act.

4. DELIVERY OF WATER:

4.1 Obligations of the United States. Subject to the terms, conditions, and provisions set forth in this contract during such periods as it operates and maintains the Project, the United States will deliver Project Water to the Contractor. The United States will use reasonable diligence to make available to the Contractor the quantities of water specified in the schedule submitted by Contractor and shall make deliveries of Project Water to Contractor to meet Contractor's water requirements within the constraints of and in accordance with Section 4.6. After transfer of OM&R to Operating Agency the United States will make deliveries of Project Water to the Operating Agency for subsequent delivery to Contractor as provided herein; the Secretary shall require a Subcontractor or other Indian Contractor to accept Project Water in exchange for or in replacement of existing supplies other than the mainstream of the Colorado River so that Contractor may receive the water to be delivered to it pursuant to this contract from a local source, all pursuant to Sec. 304(d) of the Basin Project Act (43 USCA 1524(d)).

4.2 Term of Contract. This Contract shall become effective upon its execution and shall remain in effect for a period of 50 years beginning with the year following Substantial Completion of the Project; Provided, that this Contract may be renewed upon written request by Contractor upon terms and conditions of renewal to be agreed upon not later than one year prior to the expiration of this Contract.

4.3 Conditions Relating to Delivery. Contractor hereby agrees that:

(a) The obligation of the United States to deliver water under this contract is subject to:

(1) The availability of such water for use in Arizona under the provisions of the Colorado River Compact, executed November 24, 1922; the Boulder Canyon Project Act, 45 Stat. 1057, dated December 21, 1928; the Colorado River Basin Project Act, dated September 30, 1968, 82 Stat. 885; the contract between the United States and the State of Arizona dated February 9, 1944; the Opinion of the Supreme Court of the United States in the case of Arizona v California et al., 373 U.S. 546, rendered June 3, 1963; and the March 9, 1964, Decree of that Court in said case, 376 U.S. 340, as now issued or hereafter modified.

(2) Executive A, Seventy-eighth Congress, Second Session, a treaty between the United States of America and the United Mexican States, signed at Washington, D.C., on February 3, 1944, relating to the utilization of the waters of the Colorado River and Tijuana River and of the Rio Grande from Fort Quitman, Texas, to the Gulf of Mexico, and Executive H, Seventy-eighth Congress, Second Session, a protocol signed at Washington, D.C., on November 13, 1944, supplementary to the Treaty, all hereinafter referred to as the Mexican Water Treaty.

(3) The express understanding and agreement by the Contractor that this contract is subject to the condition that Hoover Dam and Lake Mead shall be used: First, for river regulation, improvement of navigation, and flood control second, for irrigation and domestic uses and satisfaction of present perfected rights in pursuance of Article VIII of the Colorado River Compact approved by Section 13(a) of the Boulder Canyon Project Act; and third, for power; and furthermore, that this contract is made upon the express condition and with the express covenant that all rights hereunder shall be subject to and controlled by the Colorado River Compact and that the United States and the Contractor shall observe and be subject to and controlled by



said Colorado River Compact and Boulder Canyon Project Act in the construction management, and operation of Hoover Dam, Lake Mead, canals and other works and the storage, diversion, delivery, and use of water to be delivered to Contractor hereunder.

(4) The right of the United States temporarily to discontinue to reduce the amount of water to be delivered hereunder whenever such discontinuance or reduction is made necessary for purposes of investigations, inspections, replacements, maintenance, or repairs or any works whatsoever affecting, utilized for, in the opinion of the Secretary, necessary for delivery of water hereunder, its being understood that so far as feasible the United States will (1) do so during periods of low water demands and (2) give reasonable notice in advance of such temporary discontinuance or reduction.

(b) There be in effect measures, adequate in the judgment of the Secretary, to provide for the internally integrated management and control of surface and groundwaters within Contractor's Reservation to the end that groundwater withdrawals are managed on a responsible basis.

(c) The canals and Distribution Works through which Project Water is conveyed after its delivery to the Contractor shall be maintained with linings adequate in the Secretary's judgment to prevent excessive conveyance losses: Provided, the Contractor shall be relieved from this obligation if the United States does not make funds for this purpose available to Contractor following a timely request for such funds.

(d) The Contractor shall not pump nor permit others to pump groundwater from within the exterior boundaries of Contractor's Reservation for use outside said Reservation unless the Secretary and the Contractor agree, or shall have previously agreed, that a surplus of groundwater exists and drainage is required; Provided however, that where such pumping is presently permitted pursuant to contract, said pumping may continue throughout the life of said contract; Provided further, that such pumping may be permitted in other and additional cases subject to the approval of the Secretary.

(e) The Contractor shall not sell or permit the sale or other disposition of any Project Water for use outside the Contractor's Reservation except:

(1) The Contractor may exchange Project Water and may change times and places of delivery of Project Water, subject to the approval of the Secretary; and

(2) The Contractor may dispose of Project Water credited against finally determined Water Rights to the same extent that said Water Rights may then be subject to disposition by Contractor.

#### 4.4 Delivery of Project Water Prior to Completion of Project

Prior to completion of the Project works, water may be temporarily available for delivery to Contractor. When such water is available, the Contracting Officer will so notify Contractor and the water will be delivered on a "when available" basis at such terms as agreed upon between the Contractor and the Contracting Officer.

4.5 Delivery Entitlements and Obligations. The United States or the Operating Agency will not be required to deliver to the Contractor under this contract in excess of 128 acre-feet of Project Water yearly during the life of the Project.

4.6 Procedure for Ordering Water.

Following notice of Substantial Completion of the Project, Contracting Officer will issue a Notice of Availability of Project Water to Contractor. The Contractor will, in accordance with the procedures hereinafter set out, submit written schedules to the Contracting Officer showing the quantities of water requested for delivery. If the Notice of Availability of Project Water is given by Contractor prior to July 1 of any year, the first schedule for the balance of the current year shall be submitted to the Contracting Officer within 30 days. If said Notice is given after July 1 of any year, the first schedule shall cover the balance of the then current year and the next succeeding full year. Thereafter, the amounts, times, and rates of delivery of Project water to the Contractor during any year shall be in accordance with a water delivery schedule for that year, such schedule to be determined in the following manner:

(a) On or before October 1 of each year, the Contractor shall submit in writing to the Contracting Officer a water delivery schedule indicating the amounts of Project Water desired by the Contractor during each month of the following year along with a preliminary schedule of water desired for the succeeding two years.

(b) Upon receipt of a schedule the Contracting Officer shall review it and, after consultation with the Operating Agency and the Contractor, shall make only such modifications in it as are necessary to insure that the amounts, times, and rates of delivery to the Contractor will be consistent with the provisions of section 4.3(a). On or before December 1 of each year, the Contracting Officer shall determine and furnish to the Contractor the water delivery schedule for the next succeeding year which shall show the amounts of water to be delivered to the Contractor during each month of that year.

(c) A water delivery schedule may be amended by the Contracting Officer upon the Contractor's written request. Proposed amendments shall be submitted by the Contractor within a reasonable time before the desired change is to become effective, and shall be subject to review and modification by the Contracting Officer in like manner as the schedule itself.

4.7 Points of Delivery - Measurement and Responsibility for Distribution of Water.

(a) The Exchange Water to be furnished to the Contractor pursuant to this Contract will be delivered at the point(s) to be agreed upon in writing by the Contracting Officer and the Contractor, or in the event they are unable to agree, to be selected by the Secretary.

(b) All water delivered to the Contractor shall be measured with equipment furnished and installed by the United States and operated and maintained by the United States or the Operating Agency. Upon request of the Contractor, the accuracy of such measurements will be investigated by the Contracting Officer or the Operating Agency and Contractor, and any errors appearing therein adjusted.

(c) Neither the United States nor the Operating Agency shall be responsible for the control, carriage, handling, use, disposal, or distribution of water beyond the turnout point(s) from the Main System to the Distribution Works serving the Contractor, and the Contractor shall hold the United States and the Operating Agency harmless on account of damage or claim of damage of any nature whatsoever for which there is legal responsibility, including property damage, personal injury or death arising out of or connected with the Contractor's control, carriage, handling, used, disposal, or distribution of such water beyond said turnout point(s).

4.8 Water Acquired by Contractor Other than from the United States.

The provisions of the Contract shall not be applicable to or affect Non-project Water or water rights now owned or hereafter acquired by the Contractor.

4.9 Priority in Time of Shortages.

In Time of Shortage, deliveries of Project Water to miscellaneous and non-Indian agricultural uses will have been terminated; available Project Water shall be delivered to Indian contractors (including Contractor) and to non-Indian contractors for municipal and industrial uses according to the following formula:

$$IP = I / (I + MI) \text{ where:}$$

- IP is the Indian Share of Project Water;
- I is the Project Water used on Indian lands during the most recent calendar year which was not a Time of Shortage, up to a limit of 309,810 acre feet, less ten (10%) percent of the amount allocated to Indian Contractors for agricultural purposes;

provided that, for the purposes of this formula, such ten (10%) percent reduction shall not operate to reduce the amount of Project Water used for Indian agricultural purposes to less than ninety (90%) percent of the Indian agricultural allocation. (Included in I is any water delivered under a Substitute Water Contract; Provided that, where substitutions occur at a ratio greater than one-to-one, the ratio shall be considered as if it were one-to-one for the purposes of this section.)

MI is the aggregate Project Water used by Subcontractors for municipal and industrial purposes during the most recent calendar year which was not a Time of Shortage up to a limit of 510,000 acre feet. (Excluded from MI is Project Water obtained under a Substitute Water Contract.)

The non-Indian M&I water supply in Time of Shortage shall be the difference between Project Water and IP.

4.10 Secretarial Control of Return Flow. The Secretary reserves the right to capture all Return Flow flowing from the exterior boundaries of the Contractor's Reservation as a source of supply and for distribution to and use of the Central Arizona Project to the fullest extent practicable. Contractor may recapture and reuse or sell Return Flow ~~within~~ within the exterior boundaries of Contractor's reservation Provided however, that such Return Flow may not be sold for use outside the Contractor's Reservation unless the Secretary has given prior written approval.

4.11 Exchange Water. Where the Secretary determines that Contractor is physically able to receive Project water in exchange for or in replacement of existing supplies of water from surface sources other than the Colorado River to provide water supplies for water users unstream from

the confluence of the Salt and Verde Rivers and Buttes Dam site, if such dam is then existent, the Secretary may require and Contractor agrees to accept said Project water in exchange for or in replacement of said existing supplies pursuant to the provisions of Section 304(d) of the Basin Project Act.

5. OTHER WATER:

Nothing in this contract shall prevent Contractor from agreeing with a water user to receive water from an off-reservation source where the water user does not condition delivery upon substitution for Project Water.

6. Payment of Costs:

(a) Repayment of construction costs associated with Contractor's of Project Water shall be subject to the provisions of 43 U.S.C. 1542 and 25 U.S.C. 386a.

(b) The Secretary shall fix O&M charges payable by Contractor pursuant to 25 U.S.C. s385 and regulations promulgated pursuant thereto (25 C.F.R. Part 191). Project Water will not be delivered to Contractor unless the annual O&M assessment is paid in advance, except where such payment is deferred, adjusted, or cancelled pursuant to 25 CFR 191.17.

(c) In the event the Contractor fails or refuses to accept delivery at the Deliveries Point(s) of the quantities of water available for delivery to and required to be accepted by it pursuant to this Contract, or in the event the Contractor in any year fails to submit a schedule for delivery as provided in Section 4.6 hereof, said failure or refusal shall not relieve the Contractor of its obligation to make the payments required in this Section. Contractor agrees to make payment therefor in the same

manner as if said water had been delivered to an accepted by it in accordance with this Contract; Provided however, if Contractor fails or refuses to accept delivery of Project Water, Operating Agency is then able to sell that portion of Contractor's allotment of Project waters to another contractor that would not have otherwise received the additional increment of Project Water, then the Contractor's financial responsibility will be decreased by a like amount. The Secretary shall require Operating Agency to use due diligence to secure a reasonable price for said water. Provided further that Contractor shall be relieved from the obligation to pay for refusal to accept delivery if the United States does not make funds available to Contractor to construct Distribution Works and said Distribution Works are not in place to accept delivery.

(d) It is anticipated by both parties that a separate agreement will be entered into concerning the operation, maintenance, and replacement of the Distribution Works, the appointment of a Distribution Works Operating Agent and the setting and collection of appropriate charges for the care operation, maintenance and replacement of the Distribution Works.

7. DISTRIBUTION SYSTEM - ENVIRONMENTAL REVIEW: Notwithstanding any other provision of this contract, the United States will not deliver Project Water through Distribution Works to the Contractor's Reservation until additional environmental analyses as necessary, relating to the Distribution Works have been completed by the United States in accordance with the National Environmental Policy Act, and the design of Distribution Works suitable for delivery of Project Water to the Contractor pursuant to the terms of this contract is thereafter approved by the Secretary, it being the intent of the parties hereto that such approval is to be based on environmental considerations related only to the Distribution Works.



B. GENERAL PROVISIONS:

8.1 Water and Air Pollution Control. The Contractor, in carrying out this contract, shall comply with all applicable water and air pollution laws and regulations of the United States and shall obtain all required permits or licenses from the appropriate Federal authorities.

8.2 Quality of Water. The operation and maintenance of project facilities shall be performed in such manner as is practicable to maintain the quality of raw water made available through such facilities at the highest level reasonably attainable as determined by the Contracting Officer. The United States does not warrant the quality of water and is under no obligation to construct or furnish water treatment facilities to maintain or better the quality of water.

8.3 Rules, Regulations, and Determinations.

(a) The Contracting Officer shall have the right to make, after an opportunity has been offered to the Contractor for consultation, rules and regulations consistent with the provisions of this contract and the laws of the United States and to add to or to modify such rules and regulations as he may deem proper and necessary to carry out this contract, and to supply necessary details of its administration which are not covered by express provisions of this contract. The Contractor shall observe such rules and regulations..

(b) Where the terms of this contract provide for action to be based upon the opinion or determination of either party to this contract, whether or not stated to be conclusive, said terms shall not be construed as permitting such action to be predicated upon arbitrary, capricious, or

unreasonable opinions or determinations. In the event that the Contractor questions any factual determination made by the Contracting Officer, the findings as to the facts shall be made by the Secretary only after consultation with the Contractor.

**8.4 Books, Records, and Reports.** The Contractor shall establish and maintain accounts and other books and records pertaining to its financial transactions, land use and crop census, water supply, water use, changes of project works, and to other matters the Contracting Officer may reasonably require. Reports thereon shall be furnished to the Contracting Officer in such form and on such date or dates as he may require. Subject to applicable Federal laws and regulations, each party shall have the right during office hours to examine and make copies of each other's books and records relating to matters covered by this contract.

**8.5 Notices.** Any notice, demand, or request authorized or required by this contract shall be deemed to have been given, on behalf of the Contractor when mailed, postage prepaid, or delivered to the appropriate agent of the United States, or when mailed, postage prepaid, or delivered to the Tonto Apache Tribe, P.O. Box 1440, Payson, Arizona 85541. The designation of the addressee or the address may be changed by notice given in the same manner as provided in this article for other notices.

**8.6 Contingent on Appropriation or Allotment of Funds.** The expenditure or advance of any money or the performance of any work by the United States hereunder which may require appropriation of money by the Congress or the allotment of funds shall be contingent upon such appropriation or allotment being made. The failure of the Congress to appropriate funds or the absence of any allotment of funds shall not relieve the Contractor from any obligations under this Contract. No liability shall accrue to the United States in case such funds are not appropriated or allotted.

8.7 Assignment Limited--Successors and Assigns Obligated. The provisions of this contract shall apply to and bind the successors and assigns of the parties hereto but no assignment or transfer of this contract or any part or interest therein shall be valid until approved by the Contracting Officer.

8.8 Officials Not to Benefit.

(a) No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise herefrom. This restriction shall not be construed to extend to this contract if made with a corporation or company for its general benefit.

(b) No official of the Contractor shall receive any benefit that may arise by reason of this contract other than as a landowner within the project and in the same manner as other landowners within the project.

8.9 Equal Opportunity Clause. During the performance of this contract, the Contractor agrees as follows:

(a) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination;

rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Contracting Officer setting forth the provisions of this nondiscrimination clause.

(b) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(c) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or a understanding, a notice to be provided by the Agency Contracting Officer, advising the labor union or workers' representative of the Contractor's commitments under section 202 of Executive Order 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(d) The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(e) The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(f) In the event of the Contractor's noncompliance with the non-discrimination clauses of this contract or with any of such rules, regulations or orders, this contract may be canceled, terminated, suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246, of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(g) The Contractor will include the provisions of paragraphs (a) through (g) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor.

The Contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions including sanctions for noncompliance; Provided however, that in the event the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

8.10 Title VI, Civil Rights Act of 1964.

(a) The Contractor agrees that it will comply with Title VI of the Civil Rights Act of July 2, 1964 (78 Stat. 241), and all requirements imposed by or pursuant to the Department of the Interior Regulation (43 CFR 17) issued pursuant to that title, to the end that, in accordance with Title VI of that Act and the Regulations, no person in the United States shall, on the grounds of race, color, religion, or national origin be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity for which the Contractor receives financial assistance from the United States and hereby gives assurance that it will immediately take any measures to effectuate this agreement.

(b) If any real property or structure thereon is provided or improved with the aid of Federal financial assistance extended to the Contractor by the United States, this assurance obligates the Contractor, or in the case of any transfer of such property, any transferee for the period during which the real property or structure is used for a purpose involving the provision of similar services or benefits. If any personal property is so provided, this assurance obligates the Contractor for the period during which it retains ownership or possession of the property. In all other cases, this assurance obligates the Contractor for the period during which the federal financial assistance is extended to it by the United States.

(c) This assurance is given in consideration of and for the purpose of obtaining any and all federal grants, loans, contracts, property, discounts, or other Federal financial assistance extended after the date hereof to the Contractor by the United States, including installment payments after such date on account of arrangements for Federal financial assistance which were approved before such date. The Contractor recognizes and agrees that such federal financial assistance will be extended in reliance on the representations and agreements made in this assurance, and that the United States shall reserve the right to seek judicial enforcement of this assurance. This assurance is binding on the Contractor, its successors, transferees, and assignees.

9. CREDIT AGAINST WATER RIGHTS:

At such time as Contractor's Water Rights, are finally determined, the Project Water delivered to the Contractor under this contract will be credited against those Water Rights on such terms and conditions as may be agreed upon between the Secretary and Contractor at that time. Thereafter Contractor may use that Project Water for any and all uses consistent with such Water Rights or the uses described in this contract. Until such time as Contractor's Water Rights are finally determined the Project Water delivered to Contractor is supplemental water and is not credited against, or in any way related to, Contractor's Water Rights.

10. ALLOCATION NOT TO RELEASE RIGHTS

Neither the allocation of Project Water to the Contractor or otherwise, nor the execution of this contract shall constitute a taking, either directly or by implication of any water rights of the tribes, nor shall it be construed to alter or release the right of any person or entity, including the Contractor, to assert rights to water all without limitation as to whether the water is surface or groundwater, nor will it constitute the Department's opinion as to the legal rights of the tribe.

11. EXCEPTIONS TO APPLICATION OF CIVIL RIGHTS AND OTHER ACTS:

The provisions of Subarticles 7.1, 7.9, and 7.10 apply except where they conflict with Sections 701(b)(1) and 703(i) of Title VII of the Civil Rights Act of 1964, 73 Stat. 253-257, 42 U.S.C. s200e, which pertains to Indian Tribes and to preferential treatment given to Indians residing on or near a reservation or other applicable laws which exclude applicability to Indians or Indian reservations.

IN WITNESS WHEREOF, the parties hereto have executed this contract the day and year above written.

THE UNITED STATES OF AMERICA

BY

*David B. Beauf*  
Office of the Secretary

Tonto Apache Tribe

ATTEST:

BY

*Marta Campbell*  
Chairman

ATTEST:

BY

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SECRETARIAL ORDER NO.

Delegation of authority: Central Arizona Project

1. Purpose. The purpose of this Order is to delegate authority to execute water delivery contracts with the 12 Indian Tribes and Communities allocated Central Arizona Project water on December 1, 1980. (45 Fed. Reg. 81265, December 10, 1980)
2. Authority. 43 U.S.C. §§ 614 et seq. (1928); 43 U.S.C. §§ 1501 et seq. (1968); 43 U.S. § 1457; Title 25, U.S. Code; 5 U.S.C. § 301.
3. Delegation. There is hereby delegated to Daniel P. Beard, Deputy Assistant Secretary, Land and Water Resources, the authority to execute contracts with the 12 Indian Tribes and Communities named in 45 Fed. Reg. 81265, December 10, 1980, for delivery of the Central Arizona Project water allocated to them on December 1, 1980.
4. Effective date. This Order is effective immediately, to remain in effect until February 1, 1981, unless first rescinded or modified.

*Daniel P. Beard*  
Secretary of the Interior

12-11-80  
Date





## SPARKS, TEHAN & RYLEY, P. C.

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Settlement Agreement, dated March 30, 1999, as amended ("Settlement Agreement"). The Settlement Act and Settlement Agreement confirm certain water rights for the Tribe, including, *inter alia*, rights to 64,145 acre-feet of Central Arizona Project ("CAP") water. See Settlement Act at 106 Stat. 4740, 4742-4747 and Settlement Agreement at Sections 9-12.

The Tribe has a Central Arizona Project Indian Water Delivery Contract Between the United States and the San Carlos Apache Tribe dated December 11, 1980 ("CAP Contract"). See CAP Contract enclosed. This CAP Contract originally allocated 12,700 acre-feet of CAP water to the Tribe. The Tribe's CAP Contract was subsequently amended to include the additional 51,445 acre-feet of CAP water allocated to the Tribe under the Settlement Act. The Tribe agreed to settle a portion of its water rights claims in return for, *inter alia*, this additional allocation of CAP water. The allocation of CAP water to the Tribe pursuant to the Settlement Act and Settlement Agreement are trust assets of the Tribe which the Secretary of Interior has a specific trust responsibility to manage and protect. See 512 DM 2.2 (Dec. 1995). See also, Secretarial Order 3215, April 28, 2000.

River management strategies or decisions which would increase the frequency of shortages or the participation of others in the shortage pools, or reduce the long-term reliability of the Tribe's CAP water by declarations of a "shortage," must be avoided. 1

Section 3.21 of the Tribe's CAP Contract defines a "Time of Shortage" as "a calendar year for which the Secretary determines that a shortage exists pursuant to Section 301(b) of the Basin Project Act, such that there is not sufficient Project Water in that year to supply up to a limit of 309,828 acre feet of water for Indian uses, and up to a limit of 510,000 acre feet of water for non-Indian Municipal and Industrial uses." Under the Tribe's CAP Contract, deliveries of Project Water to the Tribe in Times of Shortage may be reduced or terminated in accordance with Section 4.9 of the Tribe's CAP Contract.

It is paramount that the Secretary of Interior ("Secretary") carefully consider and reject any proposed management strategies for Lake Powell and Lake Mead that would breach the Tribe's CAP Contract or breach the Secretary's trust responsibility to properly manage and protect the Tribe's CAP water. It is apparent that representatives from the Upper and Lower Basin States have been meeting regularly to propose management strategies to the Secretary. The Tribe is concerned that adoption of these proposed strategies will interfere with the delivery of CAP water to the Tribe and breach the Tribe's CAP Contract. For instance, if the Secretary adopted a management strategy where a shortage is artificially declared in order to benefit an arrangement by the States, such a strategy would interfere with the Tribe's reasonable contractual expectation for delivery of its CAP water under the CAP Contract. In fact, such an arrangement would also violate Section 301(b) of the Basin Project Act.

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The Tribe has always understood the terms of the CAP Contract relating to shortage to mean that delivery of CAP water depends upon the physical situation of the Colorado River and not upon a scheme of management where some are benefitted while others are not. The Secretary owes the Tribe a trust duty to refrain from implementing management strategies which interfere with the Tribe's expectation of delivery of CAP water under its CAP Contract.

The Tribe also continues to be concerned with declarations of "surplus" conditions on the Colorado River by the Secretary to accomodate, *inter alia*, the "insatiable" thirst of Southern California and Las Vegas, Nevada. Withdrawals from the Colorado River to satisfy these entities, reduces the cumulative storage in the Colorado River reservoirs, thus making the long-term water supply for the Tribe less reliable.

The Tribe requests the Secretary to assign a representative or team of representatives to act as the United States' trustee for the Tribe and provide for direct participation by the Tribe in all future discussions of this matter. The Tribe also requests that the Secretary arrange to regularly consult with the Tribe during the development of the proposed strategies so that the Secretary can avoid making a decision which would breach the Tribe's CAP Contract and/or her trust responsibility to the Tribe to manage and protect the Tribe's CAP water.

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Please put this Firm on your mailing list for all future communications and documents related to this matter.

Yours Truly,

**SPARKS, TEHAN & RYLEY, P.C.**



Joe P. Sparks

Enclosure  
JPS/rli

cc: Kathleen W. Kitcheyan, Chairwoman  
Robert Howard, Vice-Chairman  
Council Members

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
OFFICE OF THE SECRETARY

CENTRAL ARIZONA PROJECT INDIAN WATER DELIVERY CONTRACT  
BETWEEN THE UNITED STATES AND THE SAN CARLOS APACHE TRIBE

1. PREAMBLE:

THIS CONTRACT, made this 11 day of December 1980,

in pursuance generally of the Act of June 17, 1902, 32 Stat. 388, and acts amendatory thereof and supplementary thereto, the Boulder Canyon Project Act, 45 Stat. 1057, 43 USC s614 et seq (1928), the Colorado River Basin Project Act, 82 Stat. 885, 43 USC s1501 et seq. (1968), and the various authorities and responsibilities of the Secretary of the Interior (hereinafter "Secretary") in relation to Indians and Indian Tribes as contained in Title 25 USC and 43 USC s1457; and is between the United States of America (hereinafter "United States") and the San Carlos Apache Tribe (hereinafter "Contractor") located on the San Carlos Apache Reservation, Arizona.

WITNESSETH, THAT:

2. EXPLANATORY RECITALS:

WHEREAS, the Colorado River Basin Project Act provides, among other things, that the Secretary of the Interior shall construct, operate and maintain the Central Arizona Project for the purpose of furnishing irrigation water and municipal water supplies to the water-deficient areas of Arizona and Western New Mexico and for other purposes; and

WHEREAS, Contractor is in need of Central Arizona Project water to sustain its agricultural base and for other tribal homeland purposes; and

WHEREAS, upon completion of the Central Arizona Project, water will be available for delivery to Contractor for such purposes in accordance with the Secretarial notice of December 1, 1980, 45 FR 81265 ;

NOW, THEREFORE, in consideration of the mutual and dependent covenants herein contained, it is agreed as follows:

3. DEFINITIONS:

When used herein, unless otherwise distinctly expressed or manifestly incompatible with the intent hereof, the terms:

3.1 "Basin Project Act" shall mean the Colorado River Basin Project Act, 82 Stat. 885, dated September 30, 1968.

3.2 "Secretary" shall mean the Secretary of the Interior of the United States.

3.3 "Contracting Officer" shall mean the Secretary or his authorized designee acting in his behalf.

3.4 "Central Arizona Project" or "Project" shall mean the dams, reservoirs, aqueducts, canals, distribution and drainage works and appurtenant works authorized by Section 301(a) of the Basin Project Act and constructed by the United States pursuant to the provisions of said Act.

3.5 "Main System" shall mean those principle works of the Project listed as follows: Granite Reef Division, Orme Division (or suitable alternative), Salt-Gila Division, Tuscon Aqueduct (Colorado River Source), Buttes Dam and Navajo Project, together with all appurtenances thereto and all lands, interests in lands and rights-of-way for such works and appurtenances.

3.6 <sup>"CM&R"</sup> ~~"CM&R"~~ shall mean the care, operation, maintenance, and replacement of the Main System or any part thereof.

3.7 "Operating Agency" shall mean the entity or entities authorized to assume CM&R responsibility of all or any part of the Main System and approved for that purpose by the Contracting Officer.

3.8 "Project Water" shall mean (a) Colorado River mainstream water, (b) all other water conserved and developed by Central Arizona Project dams and reservoirs and available for delivery by the United States, and (c) Return Flow captured by the Secretary for Project use.

3.9 "Notice of Availability of Project Water" shall mean the notice or notices which the Contracting Officer issues to Contractor to announce the availability of water for delivery to Contractor.

3.10 "Agricultural Water" or "Irrigation Water" shall mean Project Water used primarily in the commercial production of agricultural crops or livestock, including domestic use incidental thereto.

3.11 "Miscellaneous Water" shall mean water delivered from the Project for recreational and fish and wildlife purposes at other than Project facilities.

3.12 "Municipal and Industrial Water" hereinafter referred to as "M&I Water" shall mean water other than Agricultural Water or Miscellaneous Water delivered by means of the Main System.

3.13 "Return Flow" shall mean waste water, seepage, and ground water which originates or results from Agricultural Water, M&I Water, and Miscellaneous Water contracted for from the Central Arizona Project.

3.14 "Contractor's Reservation" shall mean the lands within the legal boundaries of Contractor's reservation(s).



3.15 "Distribution Works" shall mean those facilities constructed or financed by the United States for the primary purpose of distributing Project Water to the Delivery Point(s) within the Contractor's Reservation after said Project Water has been transported or delivered through the Main System.

3.16 "Water Right(s)" shall mean all those water rights which Contractor or the United States owns or holds for the benefit of the lands of the Contractor's Reservation(s) and the people thereon.

3.17 "Nonproject Water" shall mean water acquired by Contractor's other than from the Central Arizona Project.

3.18 "Year" shall mean the twelve month period between January 1 through the next succeeding December 31.

3.19 "Delivery Point(s)" is defined as the point(s) on Contractor's Reservation that are reasonably required, by agreement by the Contracting Officer and the Contractor, or selected by the Secretary to permit the Contractor to put the Project Water to its intended us.

3.20 "Substantial Completion" shall mean that degree of completion which, in the determination of the Contracting Officer, will enable the transportation of Project Water to Contractor's Delivery Points.

3.21 "Time of Shortage" shall mean a calendar year for which the Secretary determines that a shortage exists pursuant to section 301(b) of the Basin Project Act, such that there is not sufficient Project Water in that year to supply up to a limit of 309,828 acre feet of water for Indian uses, and up to a limit of 510,000 acre feet of water for non-Indian Municipal and Industrial uses.

3.22 "Exchange Water" shall mean water to be delivered to Contractor hereunder from a local source pursuant to an exchange as provided in section 304(d) of the Basin Project Act.

4. DELIVERY OF WATER:

4.1 Obligations of the United States. Subject to the terms, conditions, and provisions set forth in this contract during such periods as it operates and maintains the Project, the United States will deliver Project Water to the Contractor. The United States will use reasonable diligence to make available to the Contractor the quantities of water specified in the schedule submitted by Contractor and shall make deliveries of Project Water to Contractor to meet Contractor's water requirements within the constraints of and in accordance with Section 4.6. After transfer of OM&R to Operating Agency the United States will make deliveries of Project Water to the Operating Agency for subsequent delivery to Contractor as provided herein; the Secretary shall require a Subcontractor or other Indian Contractor to accept Project Water in exchange for or in replacement of existing supplies other than the mainstream of the Colorado River so that Contractor may receive the water to be delivered to it pursuant to this contract from a local source, all pursuant to Sec. 304(d) of the Basin Project Act (43 USCA 1524(d)).

4.2 Term of Contract. This Contract shall become effective upon its execution and shall remain in effect for a period of 50 years beginning with the year following Substantial Completion of the Project; Provided, that this Contract may be renewed upon written request by Contractor upon terms and conditions of renewal to be agreed upon not later than one year prior to the expiration of this Contract.

4.3 Conditions Relating to Delivery. Contractor hereby agrees that:

(a) The obligation of the United States to deliver water under this contract is subject to:

(1) The availability of such water for use in Arizona under the provisions of the Colorado River Compact, executed November 24, 1922; the Boulder Canyon Project Act, 45 Stat. 1057, dated December 21, 1928; the Colorado River Basin Project Act, dated September 30, 1968, 82 Stat. 885; the contract between the United States and the State of Arizona dated February 9, 1944; the Opinion of the Supreme Court of the United States in the case of Arizona v California et al., 373 U.S. 546, rendered June 3, 1963; and the March 9, 1964, Decree of that Court in said case, 376 U.S. 340, as now issued or hereafter modified.

(2) Executive A, Seventy-eighth Congress, Second Session, a treaty between the United States of America and the United Mexican States, signed at Washington, D.C., on February 3, 1944, relating to the utilization of the waters of the Colorado River and Tijuana River and of the Rio Grande from Fort Quitman, Texas, to the Gulf of Mexico, and Executive H, Seventy-eighth Congress, Second Session, a protocol signed at Washington, D.C., on November 14, 1944, supplementary to the Treaty, all hereinafter referred to as the Mexican Water Treaty.

(3) The express understanding and agreement by the Contractor that this contract is subject to the condition that Hoover Dam and Lake Mead shall be used: first, for river regulation, improvement of navigation, and flood control second, for irrigation and domestic uses and satisfaction of present perfected rights in pursuance of Article VIII of the Colorado River Compact approved by Section 13(a) of the Boulder Canyon Project Act; and third, for power; and furthermore, that this contract is made upon the express condition and with the express covenant that all rights hereunder shall be

subject to and controlled by the Colorado River Compact and that the United States and the Contractor shall observe and be subject to and controlled by said Colorado River Compact and Boulder Canyon Project Act in the construction management, and operation of Hoover Dam, Lake Mead, canals and other works and the storage, diversion, delivery, and use of water to be delivered to Contractor hereunder.

(4) The right of the United States temporarily to discontinue to reduce the amount of water to be delivered hereunder whenever such discontinuance or reduction is made necessary for purposes of investigations, inspections, replacements, maintenance, or repairs or any works whatsoever affecting, utilized for, in the opinion of the Secretary, necessary for delivery of water hereunder, its being understood that so far as feasible the United States will (1) do so during periods of low water demands and (2) give reasonable notice in advance of such temporary discontinuance or reduction.

(b) There be in effect measures, adequate in the judgment of the Secretary, to provide for the internally integrated management and control of surface and groundwaters within Contractor's Reservation to the end that groundwater withdrawals are managed on a responsible basis.

(c) The canals and Distribution Works through which Project Water is conveyed after its delivery to the Contractor shall be maintained with linings adequate in the Secretary's judgment to prevent excessive conveyance losses: Provided, the Contractor shall be relieved from this obligation if the United States does not make funds for this purpose available to Contractor following a timely request for such funds.

(d) The Contractor shall not pump nor permit others to pump groundwater from within the exterior boundaries of Contractor's Reservation for use outside said Reservation unless the Secretary and the Contractor agree, or shall have previously agreed, that a surplus of groundwater exists and drainage is required; Provided however, that where such pumping is presently permitted pursuant to contract, said pumping may continue throughout the life of said contract; Provided further, that such pumping may be permitted in other and additional cases subject to the approval of the Secretary.

(e) The Contractor shall not sell or permit the sale or other disposition of any Project Water for use outside the Contractor's Reservation except:

(1) The Contractor may exchange Project Water and may change times and places of delivery of Project Water, subject to the approval of the Secretary; and

(2) The Contractor may dispose of Project Water credited against finally determined Water Rights to the same extent that said Water Rights may then be subject to disposition by Contractor.

4.4 Delivery of Project Water Prior to Completion of Project

Prior to completion of the Project works, water may be temporarily available for delivery to Contractor. When such water is available, the Contractor Officer will so notify Contractor and the water will be delivered on a "when available" basis at such terms as agreed upon between the Contractor and the Contracting Officer.

4.5 Delivery Entitlements and Obligations. The United States or the Operating Agency will not be required to deliver to the Contractor under this contract in excess of 10,700 acre-feet of Project Water yearly during the life of the Project.

4.6 Procedure for Ordering Water.

Following notice of Substantial Completion of the Project, Contracting Officer will issue a Notice of Availability of Project Water to Contractor. The Contractor will, in accordance with the procedures hereinafter set out, submit written schedules to the Contracting Officer showing the quantities of water requested for delivery. If the Notice of Availability of Project Water is given by Contractor prior to July 1 of any year, the first schedule for the balance of the current year shall be submitted to the Contracting Officer within 30 days. If said Notice is given after July 1 of any year, the first schedule shall cover the balance of the then current year and the next succeeding full year. Thereafter, the amounts, times, and rates of delivery of Project water to the Contractor during any year shall be in accordance with a water delivery schedule for that year, such schedule to be determined in the following manner:

(a) On or before October 1 of each year, the Contractor shall submit in writing to the Contracting Officer a water delivery schedule indicating the amounts of Project Water desired by the Contractor during each month of the following year along with a preliminary schedule of water desired for the succeeding two years.

(b) Upon receipt of a schedule the Contracting Officer shall review it and, after consultation with the Operating Agency and the Contractor, shall make only such modifications in it as are necessary to insure that the amounts, times, and rates of delivery to the Contractor will be consistent with the provisions of section 4.3(a). On or before December 1 of each year, the Contracting Officer shall determine and furnish to the Contractor the water delivery schedule for the next succeeding year which shall show the amounts of water to be delivered to the Contractor during each month of that year.

(c) A water delivery schedule may be amended by the Contracting Officer upon the Contractor's written request. Proposed amendments shall be submitted by the Contractor within a reasonable time before the desired change is to become effective, and shall be subject to review and modification by the Contracting Officer in like manner as the schedule itself.

4.7 Points of Delivery - Measurement and Responsibility for Distribution of Water.

(a) The Exchange Water to be furnished to the Contractor pursuant to this Contract will be delivered at the point(s) to be agreed upon in writing by the Contracting Officer and the Contractor, or in the event they are unable to agree, to be selected by the Secretary.

(b) All water delivered to the Contractor shall be measured with equipment furnished and installed by the United States and operated and maintained by the United States or the Operating Agency. Upon request of the Contractor, the accuracy of such measurements will be investigated by the Contracting Officer or the Operating Agency and Contractor, and any errors or omissions therein adjusted.

(c) Neither the United States nor the Operating Agency shall be responsible for the control, carriage, handling, use, disposal, or distribution of water beyond the turnout point(s) from the Main System to the Distribution Works serving the Contractor, and the Contractor shall hold the United States and the Operating Agency harmless on account of damage or claim of damage of any nature whatsoever for which there is legal responsibility, including property damage, personal injury or death arising out of or connected with the Contractor's control, carriage, handling, used, disposal, or distribution of such water beyond said turnout point(s).

#### 4.8 Water Acquired by Contractor Other than from the United States.

The provisions of the Contract shall not be applicable to or affect Non-project Water or water rights now owned or hereafter acquired by the Contractor.

#### 4.9 Priority in Time of Shortages.

In Time of Shortage, deliveries of Project Water to miscellaneous and non-Indian agricultural uses will have been terminated; available Project Water shall be delivered to Indian contractors (including Contractor) and to non-Indian contractors for municipal and industrial uses according to the following formula:

$$IP = I / (I + MI) \text{ where:}$$

- IP is the Indian Share of Project Water;
- I is the Project Water used on Indian lands during the most recent calendar year which was not a Time of Shortage, up to a limit of 309,810 acre feet, less ten (10%) percent of the amount allocated to Indian Contractors for agricultural purposes;



provided that, for the purposes of this formula, such ten (10) percent reduction shall not operate to reduce the amount of Project Water used for Indian agricultural purposes to less than ninety (90) percent of the Indian agricultural allocation. (Included in I is any water delivered under a Substitute Water Contract;

Provided that, where substitutions occur at a ratio greater than one-to-one, the ratio shall be considered as if it were one-to-one for the purposes of this section.)

-- MI is the aggregate Project Water used by Subcontractors for municipal and industrial purposes during the most recent calendar year which was not a Time of Shortage up to a Limit of 510,000 acre feet. (Excluded from MI is Project Water obtained under a Substitute Water Contract.)

The non-Indian M&I water supply in Time of Shortage shall be the difference between Project Water and IP.

4.10 Secretarial Control of Return Flow. The Secretary reserves the right to capture all Return Flow flowing from the exterior boundaries of the Contractor's Reservation as a source of supply and for distribution to and use of the Central Arizona Project to the fullest extent practicable. Contractor may recapture and reuse or sell Return Flow ~~within~~ within the exterior boundaries of Contractor's reservation Provided however, that such Return Flow may not be sold for use outside the Contractor's Reservation unless the Secretary has given prior written approval.

4.11 Exchange Water. Where the Secretary determines that Contractor is physically able to receive Project water in exchange for or in replacement of existing supplies of water from surface sources other than the Colorado River to provide water supplies for water users upstream from

the confluence of the Salt and Verde Rivers and Buller Dam site, if such dam is then existent, the Secretary may require and Contractor agrees to accept said Project water in exchange for or in replacement of said existing supplies pursuant to the provisions of Section 304(d) of the Basin Project Act.

5. OTHER WATER:

Nothing in this contract shall prevent Contractor from agreeing with a water user to receive water from an off-reservation source where the water user does not condition delivery upon substitution for Project Water.

6. Payment of Costs:

(a) Repayment of construction costs associated with Contractor's of Project Water shall be subject to the provisions of 43 U.S.C. 1542 and 25 U.S.C. 386a.

(b) The Secretary shall fix O&M charges payable by Contractor pursuant to 25 U.S.C. s385 and regulations promulgated pursuant thereto (25 C.F.R. Part 191). Project Water will not be delivered to Contractor unless the annual O&M assessment is paid in advance, except where such payment is deferred, adjusted, or cancelled pursuant to 25 CFR 191.17.

(c) In the event the Contractor fails or refuses to accept delivery at the Deliveries Point(s) of the quantities of water available for delivery to and required to be accepted by it pursuant to this Contract, or in the event the Contractor in any year fails to submit a schedule for delivery as provided in Section 4.6 hereof, said failure or refusal shall not relieve the Contractor of its obligation to make the payments required in this Section. Contractor agrees to make payment therefor in the same

manner as if said water had been delivered to an acceptor by it in accordance with this Contract; Provided however, if Contractor fails or refuses to accept delivery of Project Water, Operating Agency is then able to sell that portion of Contractor's allotment of Project waters to another contractor that would not have otherwise received the additional increment of Project Water, then the Contractor's financial responsibility will be decreased by a like amount. The Secretary shall require Operating Agency to use due diligence to secure a reasonable price for said water. Provided further that Contractor shall be relieved from the obligation to pay for refusal to accept delivery if the United States does not make funds available to Contractor to construct Distribution Works and said Distribution Works are not in place to accept delivery.

(d) It is anticipated by both parties that a separate agreement will be entered into concerning the operation, maintenance, and replacement of the Distribution Works, the appointment of a Distribution Works Operating Agent and the setting and collection of appropriate charges for the care, operation, maintenance and replacement of the Distribution Works.

7. DISTRIBUTION SYSTEM - ENVIRONMENTAL REVIEW: Notwithstanding any other provision of this contract, the United States will not deliver Project Water through Distribution Works to the Contractor's Reservation until additional environmental analyses as necessary, relating to the Distribution Works have been completed by the United States in accordance with the National Environmental Policy Act, and the design of Distribution Works suitable for delivery of Project Water to the Contractor pursuant to the terms of this contract is thereafter approved by the Secretary, it being the intent of the parties hereto that such approval is to be based on environmental considerations related only to the Distribution Works.

B. GENERAL PROVISIONS:

B.1 Water and Air Pollution Control. The Contractor, in carrying out this contract, shall comply with all applicable water and air pollution laws and regulations of the United States and shall obtain all required permits or licenses from the appropriate Federal authorities.

B.2 Quality of Water. The operation and maintenance of project facilities shall be performed in such manner as is practicable to maintain the quality of raw water made available through such facilities at the highest level reasonably attainable as determined by the Contracting Officer. The United States does not warrant the quality of water and is under no obligation to construct or furnish water treatment facilities to maintain or better the quality of water.

B.3 Rules, Regulations, and Determinations.

(a) The Contracting Officer shall have the right to make, after an opportunity has been offered to the Contractor for consultation, rules and regulations consistent with the provisions of this contract and the laws of the United States and to add to or to modify such rules and regulations as he may deem proper and necessary to carry out this contract, and to supply necessary details of its administration which are not covered by express provisions of this contract. The Contractor shall observe such rules and regulations.

(b) Where the terms of this contract provide for action to be based upon the opinion or determination of either party to this contract, whether or not stated to be conclusive, said terms shall not be construed as permitting such action to be predicated upon arbitrary, capricious, or

~~unreasonable~~ opinions or determinations. In the event that the Contractor questions any factual determination made by the Contracting Officer, the findings as to the facts shall be made by the Secretary only after consultation with the Contractor.

- 8.4 Books, Records, and Reports. The Contractor shall establish and maintain accounts and other books and records pertaining to its financial transactions, land use and crop census, water supply, water use, changes of project works, and to other matters the Contracting Officer may reasonably require. Reports thereon shall be furnished to the Contracting Officer in such form and on such date or dates as he may require. Subject to applicable Federal laws and regulations, each party shall have the right during office hours to examine and make copies of each other's books and records relating to matters covered by this contract.

8.5 Notices. Any notice, demand, or request authorized or required by this contract shall be deemed to have been given, on behalf of the Contractor when mailed, postage prepaid, or delivered to the appropriate agent of the United States, or when mailed, postage prepaid, or delivered to the [Tribe and address]. The designation of the addressee or the address may be changed by notice given in the same manner as provided in this article for other notices.

8.6 Contingent on Appropriation or Allotment of Funds. The expenditure or advance of any money or the performance of any work by the United States hereunder which may require appropriation of money by the Congress or the allotment of funds shall be contingent upon such appropriation or allotment being made. The failure of the Congress to appropriate

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funds or the absence of any allotment of funds shall not relieve the Contractor from any obligations under this Contract. No liability shall accrue to the United States in case such funds are not appropriated or allotted.

8.7 Assignment Limited--Successors and Assigns Obligated. The provisions of this contract shall apply to and bind the successors and assigns of the parties hereto but no assignment or transfer of this contract or any part or interest therein shall be valid until approved by the Contracting Officer.

8.8 Officials Not to Benefit.

(a) No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise herefrom. This restriction shall not be construed to extend to this contract if made with a corporate or company for its general benefit.

(b) No official of the Contractor shall receive any benefit that may arise by reason of this contract other than as a landowner within the project and in the same manner as other landowners within the project.

8.9 Equal Opportunity Clause. During the performance of this contract, the Contractor agrees as follows:

(a) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or ~~transfer~~; recruitment or recruitment advertising; layoff or termination;

rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Contracting Officer setting forth the provisions of this nondiscrimination clause.

(b) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(c) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or a understanding, a notice to be provided by the Agency Contracting Officer, advising the labor union or workers' representative of the Contractor's commitments under section 202 of Executive Order 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(d) The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(e) The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(f) In the event of the Contractor's noncompliance with the non-discrimination clauses of this contract or with any of such rules, regulations or orders, this contract may be canceled, terminated, suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246, of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(g) The Contractor will include the provisions of paragraphs (a) through (g) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor.

The Contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions including sanctions for noncompliance; Provided however, that in the event the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.



H.10 Title VI, Civil Rights Act of 1964.

(a) The Contractor agrees that it will comply with Title VI of the Civil Rights Act of July 2, 1964 (78 Stat. 241), and all requirements imposed by or pursuant to the Department of the Interior Regulation (43 CFR 17) issued pursuant to that title, to the end that, in accordance with Title VI of that Act and the Regulations, no person in the United States shall, on the grounds of race, color, religion, or national origin be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity for which the Contractor receives financial assistance from the United States and hereby gives assurance that it will immediately take any measures to effectuate this agreement.

(b) If any real property or structure thereon is provided or improved with the aid of Federal financial assistance extended to the Contractor by the United States, this assurance obligates the Contractor, or in the case of any transfer of such property, any transferee for the period during which the real property or structure is used for a purpose involving the provision of similar services or benefits. If any personal property is so provided, this assurance obligates the Contractor for the period during which it retains ownership or possession of the property. In all other cases, this assurance obligates the Contractor for the period during which the federal financial assistance is extended to it by the United States.

(c) This assurance is given in consideration of and for the purpose of obtaining any and all federal grants, loans, contracts, property, discounts, or other federal financial assistance extended after the date hereof to the Contractor by the United States, including installment payments after such date on account of arrangements for Federal financial assistance which were approved before such date. The Contractor recognizes and agrees that such federal financial assistance will be extended in reliance on the representations and agreements made in this assurance, and that the United States shall reserve the right to seek judicial enforcement of this assurance. This assurance is binding on the Contractor, its successors, transferees, and assignees.

9. CREDIT AGAINST WATER RIGHTS:

At such time as Contractor's Water Rights, are finally determined, the Project Water delivered to the Contractor under this contract will be credited against those Water Rights on such terms and conditions as may be agreed upon between the Secretary and Contractor at that time. Thereafter Contractor may use that Project Water for any and all uses consistent with such Water Rights or the uses described in this contract. Until such time as Contractor's Water Rights are finally determined the Project Water delivered to Contractor is supplemental water and is not credited against, or in any way related to, Contractor's Water Rights.

10. ALLOCATION NOT TO RELEASE RIGHTS

Neither the allocation of Project Water to the Contractor or otherwise, nor the execution of this contract shall constitute a taking, either directly or by implication of any water rights of the tribes, nor shall it be construed to alter or release the right of any person or entity, including the Contractor, to assert rights to water all without limitation as to whether the water is surface or groundwater, nor will it constitute the Department's opinion as to the legal rights of the tribes.

11. EXCEPTIONS TO APPLICATION OF CIVIL RIGHTS AND OTHER ACTS:

The provisions of Subarticles 7.1, 7.9, and 7.10 apply except where they conflict with Sections 701(b)(1) and 702(1) of Title VII of the Civil Rights Act of 1964, 73 Stat. 253-257, 42 U.S.C. 200e which pertains to Indian Tribes and to preferential treatment given to Indians residing on or near a reservation or other applicable laws which exclude applicability to Indians or Indian reservations.

IN WITNESS WHEREOF, the parties hereto have executed this contract the day and year above written.

THE UNITED STATES OF AMERICA

BY

*Samuel Beaulieu*  
Office of the Secretary

San Carlos Apache Tribe

ATTEST:

BY

*Ned Anderson*  
Tribal Chairman

ATTEST:

BY

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tract No. SANCARLOSAP121180A  
Amendment No. 1  
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UNITED STATES  
DEPARTMENT OF THE INTERIOR  
OFFICE OF THE SECRETARY

CENTRAL ARIZONA PROJECT  
INDIAN WATER DELIVERY CONTRACT  
BETWEEN THE UNITED STATES AND THE SAN CARLOS APACHE TRIBE

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Contract No. SANCARLOSAP121180A  
Amendment No. 1

Contract No. SANCARLOSAP121180A  
Amendment No. 1

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
OFFICE OF THE SECRETARY

CENTRAL ARIZONA PROJECT  
INDIAN WATER DELIVERY CONTRACT  
BETWEEN THE UNITED STATES AND THE SAN CARLOS APACHE TRIBE

1. PREAMBLE: THIS AMENDMENT NO. 1, hereinafter called "Amendment No. 1," made this 29<sup>th</sup> day of January 1999, in pursuance generally of the Act of June 17, 1902 (32 Stat. 388), and acts amendatory thereof and supplementary thereto; the Boulder Canyon Project Act (45 Stat. 1057) 43 USC § 614 et seq. (1928); the Ak-Chin Indian Community Water Rights Settlement Act, Public Law 98-530 dated October 19, 1984 (98 Stat. 2698); the Colorado River Basin Project Act (82 Stat. 885) 43 USC § 1501 et seq. (1968); the San Carlos Apache Tribe Water Rights Settlement Act of 1992, 106 Stat. 4740, as amended (the "Settlement Act"); and the various authorities and responsibilities of the Secretary of the Interior, hereinafter called "Secretary," in relation to Indians and Indian Tribes as contained in Title 25 USC and 43 USC; between the United States of America hereinafter called "United States," and the San Carlos Apache Tribe, hereinafter called "Tribe," located on the San Carlos Apache Reservation, Arizona, each individually sometimes hereinafter called "Party" and sometimes collectively called "Parties:"

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1 WITNESSETH. THAT

2 2. EXPLANATORY RECITALS:

3 2.1 WHEREAS, the Parties hereto desire to enter into this Amendment  
4 No. 1 for purposes of making certain water available to the Tribe as  
5 contemplated by the Settlement Act; and

6 2.2 WHEREAS, the Parties anticipate entering into additional  
7 amendments to this Contract to implement additional provisions of the San  
8 Carlos Apache Tribe Water Rights Settlement Act of 1992, as amended:

9 2.3 WHEREAS Section 3704(a) of the Settlement Act, 106 Stat. at 4742,  
10 provides, among other things, that the Secretary of the Interior shall  
11 reallocate, for the exclusive use of the Tribe, all of the water referred to  
12 in subsection (f)(2) of Section 2 of the Act of October 19, 1984 (98 Stat.  
13 2698) (hereinafter the "Ak-Chin Indian Water Settlement Act"), which is not  
14 required for delivery to the Ak-Chin Indian Reservation under the terms of the  
15 Ak-Chin Indian Water Settlement Act;

16 2.4. WHEREAS Section 3706(b)(1) of the Settlement Act, 106 Stat. 4645 -  
17 4746, requires, among other things, the Secretary of the Interior to amend the  
18 Tribal CAP Delivery Contract to include therein the obligation of the United  
19 States to deliver to the Tribe upon the same terms and conditions set forth in  
20 the Tribal CAP Delivery Contract water from sources described in Subsection  
21 (a) of Section 3704 of the 1992 Settlement Act;

22 2.5 WHEREAS the Secretary has independent statutory authority to  
23 allocate and to contract for the delivery of CAP water, pursuant *inter alia*,  
24 to those statutory authorities set forth in Paragraph above; see also, *Arizona*  
25 *v. California*, 373 U.S. 546 (1963); *Maricopa Stanfield Irrigation and Drainage*  
26 *District v. United States*, 158 F.3d 428 (1988);

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1 2.5. WHEREAS the United States and the Tribe have not agreed at this  
2 time on whether the authorities and obligations of the United States described  
3 in Paragraphs 2.3 or 2.4 above include an authority or an obligation for the  
4 United States to design or construct new facilities to deliver the CAP water  
5 described in Paragraph No. 2.3 above, or to provide funds to the Tribe to  
6 perform such design or construction.

7 NOW THEREFORE, in consideration of the mutual and dependent covenants  
8 herein, it is agreed by the Parties hereto as follows:

9 3. PURPOSE OF AMENDMENT NO. 1: This Amendment No. 1 modifies Contract  
10 No. SANCARLOSAPI21180A, "Central Arizona Project Indian Water Delivery  
11 Contract Between the United States and the San Carlos Apache Tribe," dated  
12 December 11, 1980, hereinafter called "Contract," to (1) include the  
13 obligation by the Secretary to deliver to the Tribe Project Water as follows:  
14 To deliver to the Tribe, for the exclusive use of the Tribe, all of the water  
15 referred to in subsection (f)(2) of Section 2 of the Ak-Chin Water Settlement  
16 Act which is not required for delivery to the Ak-Chin Indian Reservation under  
17 that Act; and (2) to enable the Tribe to lease water to which it is entitled  
18 pursuant to this Contract under terms and conditions set forth in subarticle  
19 4.3(e) herein.

20 4. AMENDMENT OF WATER DELIVERY CONTRACT:

21 4.1 Subarticle 3.23 is hereby added:  
22 3.23 "Excess Ak-Chin Water" shall mean Project Water  
23 allocated to the Community and determined to be  
24 available by the Secretary in excess of the quantity  
25 required for delivery to the Community, in  
26 satisfaction of the Secretary's water delivery

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obligations pursuant to the subsection 2(f) of Section 2 of the Ak-Chin Indian Community Water Rights Act of October 19, 1984 (the "Excess Ak-Chin Water").

4.2 Article 4.3(e) of the Contract is hereby deleted and the following substituted in lieu thereof:

4.3 Conditions Relating to Delivery.

(e) The Tribe shall not sell or permit the sale or other disposition of any Project Water for use outside the Tribe's Reservation except:

(1) Subject to the approval of the Contracting Officer, the Tribe is hereby authorized to enter into lease agreements or options to lease 14,000 acre feet of Project Water to which the Tribe is entitled pursuant to this Contract, as amended, for delivery to the Phelps Dodge Corporation in accordance with the Settlement Act, as amended; and

(2) The Tribe may exchange Project Water and may change times and places of delivery of Project Water, subject to the approval of the Secretary; and

(3) Excess Ak-Chin Water delivered pursuant to this Contract shall retain the priority such water held prior to execution of this Amendment No. 1.

(4) Section 2(c) of the Ak-Chin Indian Water Settlement Act, 98 Stat. at 2699, defines "time of shortage" of Colorado River water available to the Central Arizona Project. That definition is applicable to determining the "time of shortage" for the Excess Ak-Chin water available to the Tribe under this Amendment.



1                   4.4 Delivery Entitlement and Obligations

2 Article 4.5 of the Contract is hereby deleted and the following substituted  
3 in lieu thereof:

4           The United States or the Operating Agency will not be required to  
5           deliver to the Contractor under this contract in excess of 46,000 acre  
6           feet of Project Water yearly during the life of the Project. The  
7           quantity of water available for delivery to the Tribe is dependent upon  
8           the quantity of Excess Ak-Chin water available on a year-to-year basis.

9           5. CONTROLLING TERMS AND CONDITIONS:

10 Except as expressly modified herein, or as otherwise provided, the terms and  
11 provisions of Contract No. SANCARLOSAP121180A shall remain in full force and  
12 effect. In the event any of the terms and conditions of this Amendment No. 1  
13 and Contract No. SANCARLOSAP121180A conflict, this Amendment No. 1 shall  
14 control. There is no agreement between the United States and the Tribe as to  
15 whether the authorities and obligations of the United States include an  
16 authority or an obligation for the United States to design or construct new  
17 facilities to deliver the CAP water described in Paragraphs No. 2.3 and No.  
18 2.4 above, or to provide funds to the Tribe to perform such design or  
19 construction.

20           6. Status of the Amendment

21           This Contract, as amended by Amendment No. 1, shall remain in full force  
22 and effect whether or not the provisions of the San Carlos Apache Tribe Water  
23 Settlement Act of 1992, as amended, become enforceable. That portion of  
24 Section 3711(b) of the Settlement Act which renders ineffective certain  
25 contracts if the Settlement Act is not fully implemented shall not render  
26 invalid that part of this Amendment which grants the Tribe a right to the

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1 quantity of Excess Ak-Chin Water set forth in this Amendment.  
2 IN WITNESS WHEREOF, the Parties hereto have executed this Amendment  
3 No. 1 the day and year above written.  
4

5 THE UNITED STATES OF AMERICA

6 Legal Review and Approval:

7  
8 By: D. J. Dyl  
9 Field Solicitor  
Phoenix, Arizona

By: Robert W. Johnson  
Robert W. Johnson  
Regional Director  
Lower Colorado Region  
Bureau of Reclamation

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13 SAN CARLOS APACHE INDIAN TRIBE

14 ATTEST:

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16  
17 By: Sandra Roman  
18 Secretary

By: Ramon Stary  
Chairman

EXHIBIT 11.1

TRIBAL CAP CONTRACT AMENDMENT

Contract No. SANCARLOSAPI21180A  
Amendment No. 2

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UNITED STATES  
DEPARTMENT OF THE INTERIOR  
OFFICE OF THE SECRETARY

CENTRAL ARIZONA PROJECT  
INDIAN WATER DELIVERY CONTRACT  
BETWEEN THE UNITED STATES AND THE SAN CARLOS APACHE TRIBE

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Contract No. SANCARLOSAP121180A  
Amendment No. 2

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
OFFICE OF THE SECRETARY

CENTRAL ARIZONA PROJECT  
INDIAN WATER DELIVERY CONTRACT  
BETWEEN THE UNITED STATES AND THE SAN CARLOS APACHE TRIBE

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1. PREAMBLE: THIS AMENDMENT NO. 2, made this 29<sup>th</sup> day of  
April 1999, hereinafter called "Amendment No. 2," to  
Contract No. SANCARLOSAP121180A, as amended, (Tribal CAP Water Delivery Contract) or  
(Contract), in pursuance generally of the Act of June 17, 1902 (32 Stat. 388), and acts  
amendatory thereof and supplementary thereto; the Boulder Canyon Project Act dated  
December 21, 1928 (45 Stat. 1057) 43 USC § 614 et seq.; the Colorado River Basin Project Act  
dated September 30, 1968, as amended, (82 Stat. 885) 43 USC § 1501 et seq.; the San Carlos  
Apache Tribe Water Rights Settlement Act of 1992, as amended (San Carlos Settlement Act);  
and the various authorities and responsibilities of the Secretary of the Interior, hereinafter called  
"Secretary," in relation to Indians and Indian tribes as contained in Title 25 USC and 43 USC §  
1457; between the UNITED STATES OF AMERICA, hereinafter called "United States," and the  
SAN CARLOS APACHE TRIBE, hereinafter called "Tribe," located on the San Carlos Apache  
Reservation, Arizona, sometimes collectively called "Parties;"

WITNESSETH, THAT:

2. EXPLANATORY RECITALS:

2.1 WHEREAS, Amendment No. 1 to the Contract, executed on January 29, 1999,  
obligated the Secretary to make available to the Tribe all of the water referred to in subsection  
(f)(2) of Section 2 of the Ak-Chin Water Settlement Act which is not required for delivery to the  
Ak-Chin Indian Reservation under that Act, and authorized the Tribe to lease such water

1 pursuant to terms and conditions set forth in subsection 3711(d) of the San Carlos Settlement  
2 Act;

3 2.2 WHEREAS subsection 3704(c) of the San Carlos Settlement Act provides, among  
4 other things, that the Secretary shall reallocate, for the exclusive use of the Tribe, an annual  
5 entitlement to fourteen thousand six hundred sixty-five (14,665) acre-feet of M&I Water which  
6 the Secretary previously allocated to Phelps Dodge Corporation; and

7 2.3 WHEREAS subsection 3706(b)(1) of the San Carlos Settlement Act requires,  
8 among other things, the Secretary to amend the Tribal CAP Water Delivery Contract to include  
9 therein the obligation of the United States to deliver to the Tribe, upon the same terms and  
10 conditions set forth in the Tribal CAP Water Delivery Contract, water from the source described  
11 in subsection 3704(c) of the San Carlos Settlement Act; *Provided, however,* That pursuant to  
12 subsection 3706(b)(1) of the San Carlos Settlement Act, the cost to the United States to meet the  
13 Secretary's obligation to design and construct new facilities to deliver Water shall not exceed the  
14 cost of construction of the delivery and distribution system for twelve thousand seven hundred  
15 (12,700) acre-feet of CAP Water originally allocated to the Tribe;

16 NOW THEREFORE, in consideration of the mutual and dependent covenants herein, it is  
17 agreed by the Parties hereto as follows:

18 3. PURPOSE OF AMENDMENT NO. 2: This Amendment No. 2 modifies the Tribal CAP  
19 Water Delivery Contract to incorporate certain provisions required by the San Carlos Settlement  
20 Act.

21 4. AMENDMENT OF CONTRACT:

- 22 4.1 Amendment No. 1 to the Contract is hereby rescinded.  
23 4.2 Subarticles 3.23 through 3.25 are hereby added:  
24 3.23 "Excess Ak-Chin Water" shall mean Project Water  
25 allocated to the Ak-Chin Indian Community and determined to be  
26 available by the Secretary in excess of the quantity required for

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delivery to the Ak-Chin Indian Community, in satisfaction of the Secretary's water delivery obligations pursuant to paragraph (f), subsection 2, of Section 2 of the Ak-Chin Indian Community Water Rights Act of October 19, 1984 (98 Stat. 2698).

3.24 "Tribe," or "San Carlos Apache Tribe," shall mean a tribe of Apache Indians organized under section 16 of the Indian Reorganization Act of June 18, 1934 (48 Stat. 987; 25 U.S.C. 476), and duly recognized by the Secretary.

3.25 "CAP Water" as used in this Amendment No. 2 shall mean Project Water as defined in subarticle 3.8 of the Contract.

4.3 In each instance in which the term "Contractor" is used in the Contract, it is hereby replaced by the term "Tribe."

4.4 Subarticle 4.2 of the Contract is hereby deleted and the following substituted in lieu thereof:

4.2 Term of Contract: This Contract shall become effective upon its execution and shall remain in effect through December 31, 2100; *Provided*, That this Contract may be renewed upon written request by the Tribe upon terms and conditions of renewal to be agreed upon not later than one year prior to the expiration of this Contract.

4.5 Subarticle 4.3(e) of the Contract is hereby deleted and the following substituted in lieu thereof:

(e) The Tribe shall not sell or permit the sale or other disposition of any Project Water for use outside the Tribe's Reservation except:

(1) The Tribe is hereby authorized to enter into Project Water lease agreements or options to lease Project Water to which the Tribe is entitled under this Contract, as amended, within Maricopa, Gila, Graham, Greenlee, Pinal

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and Pima Counties, for terms not exceeding one hundred (100) years, and to renew such leases; *Provided*, That all conditions in subsection 3711(b)(1) of the San Carlos Settlement Act have been met; and

(2) The United States shall be a party to all lease agreements, amendments thereto, or options to lease Project Water entered into pursuant to this Contract; and

(3) The United States shall deliver the Tribe's Project Water to the Tribe's lessees as provided in the Project Water lease agreements; *Provided*, however, That the Secretary shall not be obligated to make such deliveries if, in the Secretary's judgment, delivery of water to the lessees or the schedule of deliveries to the lessees would limit deliveries of CAP Water under:

(a) existing CAP Water delivery contracts or subcontracts having terms of at least 50 years;

(b) future CAP Water delivery contracts or subcontracts, having terms of at least 50 years, for the 65,647 acre-feet of M&I Water which was not contracted for by the original allottees under the Secretarial water allocation decision published in the Federal Register on March 24, 1983; and

(c) existing contracts in which CAP Water is mandated to be delivered pursuant to statutory obligations; to a degree greater than would deliveries to the Tribe; *Provided*, That this subarticle shall not apply to leases which the Tribe may enter into with the Phelps Dodge Corporation, the City of Scottsdale, or the Town of Carefree; and

(4) The Tribe may exchange Project Water and may change times and places of delivery of Project Water, subject to the approval of the Secretary.

4.6 Subarticle 4.5 of the Contract is hereby deleted and the following is substituted in



1 lieu thereof:

2 4.5 Delivery Entitlements and Obligations.

3 (a) The United States or the Operating Agency shall deliver to the Tribe,  
4 annually, under this Contract, up to:

5 (1) 12,700 acre-feet of Project Water allocated to the Tribe in  
6 accordance with the Secretarial notice of December 1, 1980, 45 FR 81265;

7 (2) All of the Excess Ak-Chin Water, which is up to thirty-  
8 three thousand and three hundred (33,300) acre-feet in a normal year; and

9 (3) 14,665 acre-feet of M&I Water which the Secretary  
10 previously allocated to the Phelps Dodge Corporation in the Notice of Final Water  
11 Allocations to Indians and Non-Indian Water Users and Related Decisions, dated  
12 March 24, 1983 (48 F.R. 12446 et seq.)

13 (b) The water referred to in this subarticle shall retain the same priority  
14 as it had before it was allocated or reallocated to the Tribe under the San Carlos  
15 Settlement Act.

16 4.7 Subarticle 4.11 of the Contract, Exchange Water, is hereby amended by adding the  
17 following additional paragraph:

18 The Secretary shall, in consultation with the Tribe, enter into  
19 agreements necessary to permit the Tribe to exchange all or part of the water  
20 available to it under this Contract.

21 4.8 The existing text of subarticle 4.9 of the Contract, Priority in Time of Shortages, is  
22 hereby designated as subarticle 4.9 (a), and subarticles 4.9 (b) and 4.9 (c) are hereby added:

23 (b) Excess Ak-Chin Water delivered pursuant to this Contract shall  
24 retain the priority such water held prior to being reallocated under the San Carlos  
25 Settlement Act; and  
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(c) Section 2(c) of the Ak-Chin Act defines "time of shortage" of Colorado River water available to the Central Arizona Project. That definition is applicable to determining the "time of shortage" for the Excess Ak-Chin Water available to the Tribe under this Amendment No. 2.

PAYMENT OF COSTS:

5.1 Subarticle 6(a) of the Contract is hereby deleted and the following is substituted in lieu thereof:

(a) Except as provided in the San Carlos Settlement Act and this Contract, repayment of construction costs associated with the Tribe's Project Water shall be subject to the provisions of 43 U.S.C. 1542 and 25 U.S.C. 386a.

5.2 Article 6 of the Contract is hereby amended by adding subarticles 6(e), 6(f), and 6(g) after subarticle 6(d):

(e) Water service capital charges, municipal and industrial subcontract charges or any other charges or payments for CAP Water other than OM&R costs shall be nonreimbursable to the extent provided in the San Carlos Settlement Act.

(f) The United States shall not impose upon the Tribe the OM&R charges described and set forth in Article 6 of the Tribal CAP Water Delivery Contract or any other charge with respect to CAP Water delivered or required to be delivered to the lessee or lessees of the options to lease or leases herein authorized.

(g) The Tribe shall not be required to pay OM&R costs for CAP Water under this Contract for which the Tribe has no delivery system through which to deliver such water, or for which the Tribe has not placed a delivery order pursuant to subarticle 4.6

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of this Contract.

6. NEW FACILITIES: The Secretary shall design and construct new facilities to deliver the water that is subject to this Contract in accordance with the San Carlos Settlement Act.

7. CONTROLLING TERMS AND CONDITIONS:

7.1 Except as expressly provided in this Amendment No. 2, the terms and provisions of the Contract shall remain in full force and effect. In the event any of the terms and conditions of this Amendment No. 2 and the Contract conflict, this Amendment No. 2 shall control.

7.2 This Amendment No. 2 will become effective on the "Enforceability Date" set forth in paragraph 22.4.1 of the San Carlos Apache Tribe Water Rights Settlement Agreement.

IN WITNESS WHEREOF, the Parties hereto have executed this Amendment No. 2 the day and year above written.

LEGAL REVIEW & APPROVAL:

THE UNITED STATES OF AMERICA

By: David J. Hayes  
David J. Hayes  
Acting Deputy Secretary  
Department of the Interior

[Signature]  
Field Solicitor  
Phoenix, Arizona

SAN CARLOS APACHE INDIAN TRIBE

ATTEST:

By: [Signature]  
Chairman

By: Sandra Squibler  
Secretary

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Contract No. SANCARLOSAPI21180A  
Amendment No. 3

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
OFFICE OF THE SECRETARY

CENTRAL ARIZONA PROJECT  
INDIAN WATER DELIVERY CONTRACT  
BETWEEN THE UNITED STATES AND THE SAN CARLOS APACHE TRIBE

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Contract No. SANCARLOSAP121180A  
Amendment No. 3

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3 UNITED STATES  
4 DEPARTMENT OF THE INTERIOR  
5 OFFICE OF THE SECRETARY

6 CENTRAL ARIZONA PROJECT  
7 INDIAN WATER DELIVERY CONTRACT  
8 BETWEEN THE UNITED STATES AND THE SAN CARLOS APACHE TRIBE

9 1. PREAMBLE: THIS AMENDMENT NO. 3, made this \_\_\_\_ day of \_\_\_\_\_, 1999,  
10 hereinafter called "Amendment No. 3," to Contract No. SANCARLOSAP121180A, as amended,  
11 (Tribal CAP Water Delivery Contract) or (Contract), in pursuance generally of the Act of June 17,  
12 1902 (32 Stat. 388), and acts amendatory thereof and supplementary thereto; the Boulder Canyon  
13 Project Act dated December 21, 1928 (45 Stat. 1057) 43 U.S.C. § 614 et seq.; the Colorado River  
14 Basin Project Act dated September 30, 1968, as amended, (82 Stat. 885) 43 U.S.C. § 1501 et seq.;  
15 the San Carlos Apache Tribe Water Rights Settlement Act of 1992, as amended (San Carlos  
16 Settlement Act); and the various authorities and responsibilities of the Secretary of the Interior,  
17 hereinafter called "Secretary," in relation to Indians and Indian tribes as contained in Title 25 U.S.C.  
18 and 43 U.S.C. § 1457; between the UNITED STATES OF AMERICA, hereinafter called "United  
19 States," and the SAN CARLOS APACHE TRIBE, hereinafter called "Tribe," located on the San  
20 Carlos Apache Reservation, Arizona, both sometimes collectively called "Parties;"

21 WITNESSETH, THAT:

22 2. EXPLANATORY RECITALS:

23 2.1 WHEREAS, Amendment No. 1 to the Contract, executed on January 29, 1999,  
24 obligated the Secretary to make available to the Tribe all of the water referred to in subsection (f)(2)  
25 of Section 2 of the Ak-Chin Indian Community Water Rights Settlement Act of October 19, 1984,  
26 which is not required for delivery to the Ak-Chin Indian Reservation under that act, and authorized  
the Tribe to lease such water pursuant to terms and conditions set forth in subsection 3711(d) of the

1 San Carlos Settlement Act;

2 2.2 WHEREAS subsections 3704(a), (c) and (d) of the San Carlos Settlement Act  
3 provide, among other things, that the Secretary shall reallocate, for the exclusive use of the Tribe,  
4 all of the Excess Ak-Chin Water and annual entitlements to fourteen thousand six hundred sixty-five  
5 (14,665) acre-feet of M&I Water which the Secretary previously allocated to the Phelps Dodge  
6 Corporation, and to three thousand four hundred and eighty (3,480) acre-feet of M&I Water which  
7 the Secretary previously allocated to the city of Globe, Arizona, in the Notice of Final Water  
8 Allocations to Indian and Non-Indian Water Users and Related Decisions, dated March 24, 1983  
9 (48 FR 12466 et seq.);

10 2.3 WHEREAS subsection 3706(b)(1) of the San Carlos Settlement Act requires, among  
11 other things, the Secretary to amend the Tribal CAP Water Delivery Contract to include therein the  
12 obligation of the United States to deliver to the Tribe, upon the same terms and conditions set forth  
13 in the Tribal CAP Water Delivery Contract, water from the source described in subsections 3704 (a),  
14 (c) and (d) of the San Carlos Settlement Act; *Provided, however,* That pursuant to subsection  
15 3706(b)(1) of the San Carlos Settlement Act, the cost to the United States to meet the Secretary's  
16 obligation to design and construct new facilities to deliver water shall not exceed the cost of  
17 construction of the delivery and distribution system for twelve thousand seven hundred (12,700)  
18 acre-feet of CAP Water originally allocated to the Tribe;

19 2.4 WHEREAS, Amendment No. 2 was executed by the Parties on April 29, 1999, to  
20 provide for the obligation of the United States to deliver to the Tribe water from the source described  
21 in subsection 3704(c) of the San Carlos Settlement Act; and

22 2.5 WHEREAS, after execution of Amendment No. 2, the Parties determined that certain  
23 technical corrections and modifications were required in the Amendment, and that it was desirable  
24 to further amend the Tribal CAP Water Delivery Contract to provide for such corrections and  
25 modifications;

26 NOW THEREFORE, in consideration of the mutual and dependent covenants herein, it is

1 agreed by the Parties hereto as follows:

2 3. PURPOSE OF AMENDMENT NO. 3: This Amendment No. 3 modifies the Tribal CAP  
3 Water Delivery Contract to incorporate certain provisions required by the San Carlos Settlement Act  
4 and to make certain technical corrections and modifications to Amendment No. 2.

5 4. REALLOCATION OF CAP WATER: The following CAP water allocations are hereby  
6 reallocated to the Tribe:

7 (a) All of the water referred to in subsection (f)(2) of Section 2 of the Act of  
8 October 19, 1984 (98 Stat. 2698) which is not required for delivery to the Ak-Chin Indian  
9 Reservation under that Act (Ak-Chin Water) as provided in Section 3704(a) of the San Carlos  
10 Settlement Act;

11 (b) All of the water referred to in subsection 3704(c) of the San Carlos Settlement Act,  
12 which is 14,665 acre-feet of water per year from the Central Arizona Project having a CAP  
13 municipal and industrial priority, which the Secretary previously allocated to the Phelps Dodge  
14 Corporation in the Notice of Final Water Allocations to Indian and Non-Indian Users and Related  
15 Decisions, dated March 24, 1983 (48 FR 12466 et seq.); and

16 (c) Three thousand four hundred and eighty (3,480) acre-feet of water from the Central  
17 Arizona Project having a CAP M&I priority, which the Secretary previously allocated to the city of  
18 Globe, Arizona, in the Notice of Final Water Allocations to Indian and Non-Indian Water Users and  
19 Related Decisions, dated March 24, 1983 (48 FR 12466 et seq.).

20 5. AMENDMENT OF CONTRACT:

21 5.1 Amendments No. 1 and 2 to the Contract are hereby rescinded.

22 5.2 The following definitions are hereby added to the Contract as Subarticles 3.23  
23 and 3.24:

24 3.23 "Tribe," or "San Carlos Apache Tribe," shall mean a tribe of  
25 Apache Indians organized under section 16 of the Indian  
26 Reorganization Act of June 18, 1934 (48 Stat. 987; 25 U.S.C. 476),

1 and duly recognized by the Secretary.

2 3.24 "CAP Water" as used in this Amendment No. 3 shall mean

3 Project Water as defined in subarticle 3.8 of the Contract.

4 5.3 In each instance where the term "Contractor" is used in the Contract, it is hereby  
5 replaced by the term "Tribe."

6 5.4 Subarticle 4.2 of the Contract is hereby deleted and the following substituted in lieu  
7 thereof:

8 4.2 Term of Contract: This Contract shall become effective upon its  
9 execution and shall remain in effect through December 31, 2100; *Provided*, That this  
10 Contract may be renewed upon written request by the Tribe upon terms and  
11 conditions of renewal to be agreed upon not later than one year prior to the expiration  
12 of this Contract.

13 5.5 Subarticle 4.3(e) of the Contract is hereby deleted and the following substituted in  
14 lieu thereof:

15 (e) The Tribe shall not sell or permit the sale or other disposition of any  
16 Project Water for use outside the Tribe's Reservation except:

17 (1) The Tribe is hereby authorized to enter into Project Water lease  
18 agreements or options to lease Project Water to which the Tribe is entitled under this  
19 Contract, as amended, within Maricopa, Gila, Graham, Greenlee, Pinal, and Pima  
20 Counties, for terms not exceeding one hundred (100) years, and to renew such leases;  
21 *Provided*, That all conditions in subsection 3711(b)(1) of the San Carlos Settlement  
22 Act have been met;

23 (2) The United States shall be a party to all lease agreements,  
24 amendments thereto, or options to lease Project Water entered into pursuant to this  
25 Contract;

26 (3) The United States shall deliver the Tribe's Project Water to the



1 Tribe's lessees as provided in the Project Water lease agreements; *Provided,*  
2 *however,* That the Secretary shall not be obligated to make such deliveries if, in the  
3 Secretary's judgment, delivery of water to the lessees or the schedule of deliveries  
4 to the lessees would limit to a degree greater than would deliveries to the Tribe,  
5 deliveries of CAP Water under:

6 (a) existing CAP Water delivery contracts or subcontracts having terms  
7 of at least 50 years;

8 (b) future CAP Water delivery contracts or subcontracts, having terms of  
9 at least 50 years, for the 65,647 acre-feet of M&I Water which was not contracted for  
10 by the original allottees under the Secretarial water allocation decision published in  
11 the Federal Register on March 24, 1983; and

12 (c) existing contracts in which CAP Water is mandated to be delivered  
13 pursuant to statutory obligations.

14 (4) Except for leases which the Tribe may enter into with Scottsdale,  
15 Carefree, or the Phelps Dodge Corporation, the terms and conditions of Exhibit 11.3  
16 to the San Carlos Apache Tribe Water Rights Settlement Agreement shall be  
17 included in all water leases; and

18 (5) The Tribe may exchange Project Water and may change times and  
19 places of delivery of Project Water, subject to the approval of the Secretary.

20 5.6 Subarticle 4.5 of the Contract is hereby deleted and the following is substituted in lieu  
21 thereof:

22 4.5 Delivery Entitlements and Obligations. Subject to the provisions of  
23 this Contract, the United States or the Operating Agency shall deliver to the Tribe,  
24 annually, under this Contract, and the Tribe shall be entitled to the annual delivery  
25 of, the following quantities of Project Water:

26 (a) 12,700 acre-feet of Project Water allocated to the Tribe in accordance

1 with the Secretarial notice of December 1, 1980, 45 FR 81265;

2 (b) All of the water referred to in subsection (f)(2) of Section 2 of the Act  
3 of October 19, 1984 (98 Stat. 2698) which is not required for delivery to the Ak-Chin  
4 Indian Reservation under that Act;

5 (c) 14,665 acre-feet of M&I Water which the Secretary previously  
6 allocated to the Phelps Dodge Corporation in the Notice of Final Water Allocations  
7 to Indians and Non-Indian Water Users and Related Decisions, dated March 24, 1983  
8 (48 FR 12446 et seq.); and

9 (d) 3,480 acre-feet of M&I Water which the Secretary previously  
10 allocated to the city of Globe, Arizona in the Notice of Final Water Allocations to  
11 Indians and Non-Indian Water Users and Related Decisions, dated March 24, 1983  
12 (48 FR 12446 et seq.).

13 5.7 Subarticle 4.9 of the Contract, Priority in Time of Shortages, is hereby deleted and  
14 the following is substituted in lieu thereof:

15 4.9 Priority in Time of Shortage.

16 (a) The priority of the water referred to in subarticle 4.5(a) of this  
17 Contract shall be determined as follows. In Time of Shortage, deliveries of Project  
18 Water to miscellaneous and non-Indian agricultural uses will have been terminated;  
19 available Project Water shall be delivered to Indian contractors (including the Tribe)  
20 and to non-Indian contractors for municipal and industrial uses according to the  
21 following formula:

22  $IP = I / (I + MI)$  where:

- 23 - IP is the Indian Share of Project Water;
- 24 - I is the Project Water used on Indian lands during the most recent
- 25 calendar year which was not a Time of Shortage, up to a limit of
- 26 309,810 acre feet, less ten (10%) percent of the amount allocated to

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Indian Contractors for agricultural purposes; *Provided*, that for the purposes of this formula, such ten (10%) percent reduction shall not operate to reduce the amount of Project Water used for Indian agricultural purposes to less than ninety (90%) percent of the Indian agricultural allocation. (Included in I is any water delivered under a Substitute Water Contract; *Provided*, that where substitutions occur at a ratio greater than one-to-one, the ratio shall be considered as if it were one-to-one for the purposes of this section.)

MI is the aggregate Project Water used by Subcontractors for municipal and industrial purposes during the most recent calendar year which was not a Time of Shortage up to a limit of 510,000 acre feet. (Excluded from MI is Project Water obtained under a Substitute Water Contract.)

The non-Indian M&I water supply in Time of Shortage shall be the difference between Project Water and IP.

(b) For purposes of delivery in times of shortage, Ak-Chin Water delivered pursuant to this Contract shall retain the priority such water held prior to being reallocated to the Tribe. Section 2(c) of the Ak-Chin Indian Community Water Rights Settlement Act of October 19, 1984, defines "time of shortage" of Colorado River water available to the Central Arizona Project. That definition is applicable to determining the "Time of Shortage" for the Ak-Chin Water available to the Tribe under this Amendment No. 3.

(c) For purposes of delivery in times of shortage, the water referred to in subarticles 4.5(c) and (d) of this Contract shall retain the same priority as it had before it was reallocated to the Tribe.

5.8 Subarticle 4.11 of the Contract, Exchange Water, is hereby amended by adding the

1 following additional paragraph:

2 The Secretary shall, in consultation with the Tribe, enter into agreements necessary  
3 to permit the Tribe to exchange all or part of the water available to it under this  
4 Contract.

5 5.9 Subarticle 6(a) of the Contract is hereby deleted and the following is substituted in  
6 lieu thereof:

7 (a) Except as provided in the San Carlos Settlement Act and this  
8 Contract, repayment of construction costs associated with the Tribe's Project Water  
9 shall be subject to the provisions of 43 U.S.C. 1542 and 25 U.S.C. 386a.

10 5.10 Article 6 of the Contract is hereby amended by adding subarticles 6(e), 6(f), and 6(g)  
11 after subarticle 6(d):

12 (e) Water service capital charges, municipal and industrial subcontract  
13 charges, or any other charges or payments for CAP Water other than OM&R costs  
14 shall be non-reimbursable to the extent provided in the San Carlos Settlement Act.

15 (f) The United States shall not impose upon the Tribe the OM&R charges  
16 described and set forth in Article 6 of the Tribal CAP Water Delivery Contract or any  
17 other charge with respect to CAP Water delivered or required to be delivered to the  
18 lessee or lessees of the options to lease or leases herein authorized.

19 (g) The Tribe shall not be required to pay OM&R costs for CAP Water  
20 under this Contract for which the Tribe has no delivery system through which to  
21 deliver such water, or for which the Tribe has not placed a delivery order pursuant  
22 to subarticle 4.6 of the Contract.

23 6. NEW FACILITIES: The Secretary shall design and construct new facilities to deliver the  
24 water that is subject to this Contract in accordance with the San Carlos Settlement Act.

25 7. CONTROLLING TERMS AND CONDITIONS:

26 7.1 Except as expressly provided in this Amendment No. 3, the terms and provisions of

1 the Contract shall remain in full force and effect. In the event any of the terms and conditions of this  
2 Amendment No. 3 and the Contract conflict, this Amendment No. 3 shall control.

3 7.2 This Amendment No. 3 will become effective on the "Enforceability Date" set forth  
4 in paragraph 22.4.1 of the San Carlos Apache Tribe Water Rights Settlement Agreement.

5  
6 IN WITNESS WHEREOF, the Parties hereto have executed this Amendment No. 3 the day  
7 and year above written.

8 LEGAL REVIEW AND APPROVAL:

THE UNITED STATES OF AMERICA

9  
10  
11 By: [Signature]  
12 Field Solicitor

By: [Signature]  
Robert W. Johnson,  
Regional Director  
Lower Colorado Region  
Bureau of Reclamation

13  
14  
15 ATTEST:

SAN CARLOS APACHE INDIAN TRIBE

16  
17  
18 By: [Signature]  
19 Secretary

By: [Signature]  
Tribal Administrator

**SPARKS, TEHAN & RYLEY, P. C.**

Attorneys  
7503 First Street  
Scottsdale, Arizona 85251  
(480) 949-1339  
FAX (480) 949-7587

Joe P. Sparks  
John H. Ryley  
Robyn L. Interpreter  
Susan B. Montgomery

**FAXED**  
8/31/05  
4:32 PM

August 31, 2005

*Via Facsimile (702) 293-8156 and  
U.S. Mail Certified - Return Receipt Requested  
7005 0390 0005 5431 5531*

Regional Director, Lower Colorado Region  
BUREAU OF RECLAMATION  
ATTN: BCOO-1000  
P.O. Box 61470  
Boulder City, Nevada 89006-1470

*Via Facsimile (801) 524-3858 and  
U.S. Mail Certified - Return Receipt Requested  
7005 0390 0005 5431 5548*

Regional Director, Upper Colorado Region  
BUREAU OF RECLAMATION  
ATTN: UC-402  
125 South State Street  
Salt Lake City, Utah 84318-1147

**Re: Comments on the Development of Management Strategies for Lake Powell and Lake Mead, Including Lower Basin Shortage Guidelines, Under Low Reservoir Conditions - YAVAPAI-APACHE NATION.**

Dear Regional Directors:

This Firm serves as Special Legal Counsel to the Yavapai-Apache Nation ("Nation") and submits the following comments related to the development of management strategies for Lake Powell and Lake Mead, including Lower Basin shortage guidelines, under low reservoir conditions, on the Nation's behalf, pursuant to 70 Fed. Reg. 114, 34794 (2005).

The Yavapai-Apache Nation is located in central Arizona, near the communities of Camp Verde and Clarkdale. The Reservation is does not presently have an adequate water supply to serve the requirements of the Nation.

The Nation has a Central Arizona Project Indian Water Delivery Contract Between the United States and the Yavapai-Apache Nation dated December 11, 1980 ("CAP Contract"). See CAP Contract enclosed. This CAP Contract provides 1,200 acre-feet of CAP water to the Nation.

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Keyword		

## SPARKS, TEHAN & RYLEY, P. C.

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August 31, 2005

Page 2

River management strategies or decisions which would increase the frequency of shortages or the participation of others in the shortage pools, or reduce the long-term reliability of the Nation's CAP water by declarations of a "shortage," must be avoided. 1

Section 3.21 of the Nation's CAP Contract defines a "Time of Shortage" as "a calendar year for which the Secretary determines that a shortage exists pursuant to Section 301(b) of the Basin Project Act, such that there is not sufficient Project Water in that year to supply up to a limit of 309,828 acre feet of water for Indian uses, and up to a limit of 510,000 acre feet of water for non-Indian Municipal and Industrial uses." Under the Nation's CAP Contract, deliveries of Project Water to the Nation in Times of Shortage may be reduced or terminated in accordance with Section 4.9 of the Nation's CAP Contract.

It is paramount that the Secretary of Interior ("Secretary") carefully consider and reject any proposed management strategies for Lake Powell and Lake Mead that would breach the Nation's CAP Contract or breach the Secretary's trust responsibility to properly manage and protect the Nation's CAP water. It is apparent that representatives from the Upper and Lower Basin States have been meeting regularly to propose management strategies to the Secretary. The Nation is concerned that adoption of these proposed strategies will interfere with the delivery of CAP water to the Nation and breach the Nation's CAP Contract. For instance, if the Secretary adopted a management strategy where a shortage is artificially declared in order to benefit an arrangement by the States, such a strategy would interfere with the Nation's reasonable contractual expectation for delivery of its CAP water under the CAP Contract. In fact, such an arrangement would also violate Section 301(b) of the Basin Project Act.

The Nation has always understood the terms of the CAP Contract relating to shortage to mean that delivery of CAP water depends upon the physical situation of the Colorado River and not upon a scheme of management where some are benefitted while others are not. The Secretary owes the Nation a trust duty to refrain from implementing management strategies which interfere with the Nation's expectation of delivery of CAP water under its CAP Contract.

The Nation also continues to be concerned with declarations of "surplus" conditions on the Colorado River by the Secretary to accommodate, *inter alia*, the "insatiable" thirst of Southern California and Las Vegas, Nevada. Withdrawals from the Colorado River to satisfy these entities, reduces the cumulative storage in the Colorado River reservoirs, thus making the long-term water supply for the Nation less reliable.

The Nation requests the Secretary to assign a representative or team of representatives to act as the United States' trustee for the Nation and provide for direct participation by the Nation in all future discussions of this matter. . The Nation also requests that the Secretary arrange to regularly consult with the Nation during the development of the proposed strategies so that the Secretary can avoid making a 2 3

**SPARKS, TEHAN & RYLEY, P. C.**

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August 31, 2005

Page 3

decision which would breach the Nation's CAP Contract and/or her trust responsibility to the Nation to manage and protect the Nation's CAP water.

Please put this Firm on your mailing list for all future communications and documents related to this matter.

Yours Truly,

SPARKS, TEHAN & RYLEY, P.C.



Joe P. Sparks

Enclosure

JPS/rli

cc: Jamie Fullmer, Chairman  
Dennis Sine, Vice-Chairman  
Council Members

I:\INDIAN\YAVAPAI\CAP\lir to sec.wpd



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
OFFICE OF THE SECRETARY

CENTRAL ARIZONA PROJECT INDIAN WATER DELIVERY CONTRACT  
BETWEEN THE UNITED STATES AND THE YAVAPAI-APACHE INDIAN COMMUNITY  
(CAMP VERDE)

1. PREAMBLE:

THIS CONTRACT, made this 11 day of December 1980,  
in pursuance generally of the Act of June 17, 1902, 32 Stat. 388, and acts  
amendatory thereof and supplementary thereto, the Boulder Canyon Project  
Act, 45 Stat. 1057, 43 USC s614 et seq (1928), the Colorado River Basin  
Project Act, 82 Stat. 885, 43 USC s1501 et seq. (1968), and the various  
authorities and responsibilities of the Secretary of the Interior (hereinafter  
"Secretary") in relation to Indians and Indian Tribes as contained in Title 25  
USC and 43 USC s1457; and is between the United States of America (hereinafter  
"United States") and the Yavapai-Apache Indian Community (Camp Verde) (herein-  
after "Contractor") located on the Camp Verde Reservation, Arizona.

WITNESSETH, THAT:

2. EXPLANATORY RECITALS:

WHEREAS, the Colorado River Basin Project Act provides, among  
other things, that the Secretary shall construct, operate and maintain  
the Central Arizona Project for the purpose of furnishing irrigation  
water and municipal water supplies to the water-deficient areas of  
Arizona and Western New Mexico and for other purposes; and

WHEREAS, Contractor is in need of Central Arizona Project water to sustain its agricultural base and for other Tribal homeland purposes; and

WHEREAS, upon completion of the Central Arizona Project, water will be available for delivery to Contractor for such purposes in accordance with the Secretarial notice of December 1, 1980, 45 FR 81265 ;

NOW, THEREFORE, in consideration of the mutual and dependent covenants herein contained, it is agreed as follows:

3. DEFINITIONS:

When used herein, unless otherwise distinctly expressed or manifestly incompatible with the intent hereof, the terms:

3.1 "Basin Project Act" shall mean the Colorado River Basin Project Act, 82 Stat. 885, dated September 30, 1968.

3.2 "Secretary" shall mean the Secretary of the Interior of the United States.

3.3 "Contracting Officer" shall mean the Secretary or his authorized designee acting in his behalf.

3.4 "Central Arizona Project" or "Project" shall mean the dams, reservoirs, aqueducts, canals, distribution and drainage works and appurtenant works authorized by Section 301(a) of the Basin Project Act and constructed by the United States pursuant to the provisions of said Act.

3.5 "Main System" shall mean those principle works of the Project listed as follows: Granite Reef Division, Orme Division (or suitable alternative), Salt-Gila Division, Tucson Aqueduct (Colorado River Source), Buttes Dam and Navajo Project, together with all appurtenances thereto and all lands, interests in lands and rights-of-way for such works and appurtenances.

3.6 "OM&R" shall mean the care, operation, maintenance, and replacement of the Main System, or any part thereof.

3.7 "Operating Agency" shall mean the entity or entities authorized to assume OM&R responsibility of all or any part of the Main System and approved for that purpose by the Contracting Officer.

3.8 "Project Water" shall mean (a) Colorado River mainstem water, (b) all other water conserved and developed by Central Arizona Project dams and reservoirs and available for delivery by the United States, and (c) Return Flow captured by the Secretary for Project use.

3.9 "Notice of Availability of Project Water" shall mean the notice or notices which the Contracting Officer issues to Contractor to announce the availability of water for delivery to Contractor.

3.10 "Agricultural Water" or "Irrigation Water" shall mean Project Water used primarily in the commercial production of agricultural crops or livestock, including domestic use incidental thereto.

3.11 "Miscellaneous Water" shall mean water delivered from the Project for recreational and fish and wildlife purposes at other than Project facilities.

3.12 "Municipal and Industrial Water" hereinafter referred to as "M&I Water" shall mean water other than Agricultural Water or Miscellaneous Water delivered by means of the Main System.

3.13 "Return Flow" shall mean waste water, seepage, and ground water which originates or results from Agricultural Water, M&I Water, and Miscellaneous Water contracted for from the Central Arizona Project.

3.14 "Contractor's Reservation" shall mean the lands within the legal boundaries of Contractor's reservation(s).

3.15 "Distribution Works" shall mean those facilities constructed or financed by the United States for the primary purpose of distributing Project Water to the Delivery Point(s) within the Contractor's Reservation after said Project Water has been transported or delivered through the Main System.

3.16 "Water Right(s)" shall mean all those water rights which Contractor or the United States owns or holds for the benefit of the lands of the Contractor's Reservation(s) and the people thereon.

3.17 "Nonproject Water" shall mean water acquired by Contractor's other than from the Central Arizona Project.

3.18 "Year" shall mean the twelve month period between January 1 through the next succeeding December 31.

3.19 "Delivery Point(s)" is defined as the point(s) on Contractor's Reservation that are reasonably required, by agreement by the Contracting Officer and the Contractor, or selected by the Secretary to permit the Contractor to put the Project Water to its intended use.

3.20 "Substantial Completion" shall mean that degree of completion which, in the determination of the Contracting Officer, will enable the transportation of Project Water to Contractor's Delivery Points.

3.21 "Time of Shortage" shall mean a calendar year for which the Secretary determines that a shortage exists pursuant to section 301(b) of the Basin Project Act, such that there is not sufficient Project Water in that year to supply up to a limit of 309,828 acre feet of water for Indian uses, and up to a limit of 510,000 acre feet of water for non-Indian Municipal and Industrial uses.

3.22 "Exchange Water" shall mean water to be delivered to Contractor hereunder from a local source pursuant to an exchange as provided in section 304(d) of the Basin Project Act.

## 4. DELIVERY OF WATER:

4.1 Obligations of the United States. Subject to the terms, conditions, and provisions set forth in this contract during such periods as it operates and maintains the Project, the United States will deliver Project Water to the Contractor. The United States will use reasonable diligence to make available to the Contractor the quantities of water specified in the schedule submitted by Contractor and shall make deliveries of Project Water to Contractor to meet Contractor's water requirements within the constraints of and in accordance with Section 4.6. After transfer of OMR to Operating Agency the United States will make deliveries of Project Water to the Operating Agency for subsequent delivery to Contractor as provided herein. The Secretary shall require a Subcontractor or other Indian Contractor to accept Project Water in exchange for or in replacement of existing supplies other than the mainstream of the Colorado River so that Contractor may receive the water to be delivered to it pursuant to this contract from a local source, all pursuant to Sec. 304(d) of the Basin Project Act (43 USCA 1524(d)).

4.2 Term of Contract. This Contract shall become effective upon its execution and shall remain in effect for a period of 50 years beginning with the year following Substantial Completion of the Project; Provided, that this Contract may be renewed upon written request by Contractor upon terms and conditions of renewal to be agreed upon not later than one year prior to the expiration of this Contract.

4.3 Conditions Relating to Delivery. Contractor hereby agrees that:

(a) The obligation of the United States to deliver water under this contract is subject to:

(1) The availability of such water for use in Arizona under the provisions of the Colorado River Compact, executed November 24, 1922; the Boulder Canyon Project Act, 45 Stat. 1057, dated December 21, 1928; the Colorado River Basin Project Act, dated September 30, 1968, 82 Stat. 885; the contract between the United States and the State of Arizona dated February 9, 1944; the Opinion of the Supreme Court of the United States in the case of Arizona v California et al., 373 U.S. 546, rendered June 3, 1963; and the March 9, 1964, Decree of that Court in said case, 376 U.S. 340, as now issued or hereafter modified.

(2) Executive A, Seventy-eighth Congress, Second Session, a treaty between the United States of America and the United Mexican States, signed at Washington, D.C., on February 3, 1944, relating to the utilization of the waters of the Colorado River and Tijuana River and of the Rio Grande from Fort Quitman, Texas, to the Gulf of Mexico, and Executive H, Seventy-eighth Congress, Second Session, a protocol signed at Washington, D.C., on November 14, 1944, supplementary to the Treaty, all hereinafter referred to as the Mexican Water Treaty.

(3) The express understanding and agreement by the Contractor that this contract is subject to the condition that Hoover Dam and Lake Mead shall be used: First, for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic uses and satisfaction of present perfected rights in pursuance of Article VIII of the Colorado River Compact approved by Section 13(a) of the Boulder Canyon Project Act; and third, for power; and furthermore, that this contract is made upon the express condition and with the express covenant that all rights hereunder shall be subject to and controlled by the Colorado River Compact and that the United States and the Contractor shall observe and be subject to and controlled by

said Colorado River Compact and Boulder Canyon Project Act in the construction management, and operation of Hoover Dam, Lake Mead, canals and other works and the storage, diversion, delivery, and use of water to be delivered to Contractor hereunder.

(4) The right of the United States temporarily to discontinue to reduce the amount of water to be delivered hereunder whenever such discontinuance or reduction is made necessary for purposes of investigations, inspections, replacements, maintenance, or repairs or any works whatsoever affecting, utilized or, in the opinion of the Secretary, necessary for delivery of water hereunder, its being understood that so far as feasible the United States will (1) do so during periods of low water demands and (2) give reasonable notice in advance of such temporary discontinuance or reduction.

(b) There be in effect measures, adequate in the judgment of the Secretary, to provide for the internally integrated management and control of surface and groundwaters within Contractor's Reservation to the end that groundwater withdrawals are managed on a responsible basis.

(c) The canals and Distribution Works through which Project Water is conveyed after its delivery to the Contractor shall be maintained with linings adequate in the Secretary's judgment to prevent excessive conveyance losses: Provided, the Contractor shall be relieved from this obligation if the United States does not make funds for this purpose available to Contractor following a timely request for such funds.

(d) The Contractor shall not pump nor permit others to pump groundwater from within the exterior boundaries of Contractor's Reservation for use outside said Reservation unless the Secretary and the Contractor agree, or shall have previously agreed, that a surplus of groundwater exists and drainage is required; Provided however, that where such pumping is presently permitted pursuant to contract, said pumping may continue throughout the life of said contract; Provided further, that such pumping may be permitted in other and additional cases subject to the approval of the Secretary.

(e) The Contractor shall not sell or permit the sale or other disposition of any Project Water for use outside the Contractor's Reservation except:

(1) The Contractor may exchange Project Water and may change times and places of delivery of Project Water, subject to the approval of the Secretary; and

(2) The Contractor may dispose of Project Water credited against finally determined Water Rights to the same extent that said Water Rights may then be subject to disposition by Contractor.

4.4 Delivery of Project Water Prior to Completion of Project

Prior to completion of the Project works, water may be temporarily available for delivery to Contractor. When such water is available, the Contracting Officer will so notify Contractor and the water will be delivered on a "when available" basis at such terms as agreed upon between the Contractor and the Contracting Officer.



4.5 Delivery Entitlements and Obligations. The United States or the Operating Agency will not be required to deliver to the Contractor under this contract in excess of 1200 acre-feet of Project Water yearly during the life of the Project.

4.6 Procedure for Ordering Water. Following notice of Substantial Completion of the Project, Contracting Officer will issue a Notice of Availability of Project Water to Contractor. The Contractor will, in accordance with the procedures hereinafter set out, submit written schedules to the Contracting Officer showing the quantities of water requested for delivery. If the Notice of Availability of Project Water is given by Contractor prior to July 1 of any year, the first schedule for the balance of the current year shall be submitted to the Contracting Officer within 30 days. If said Notice is given after July 1 of any year, the first schedule shall cover the balance of the then current year and the next succeeding full year. Thereafter, the amounts, times, and rates of delivery of Project water to the Contractor during any year shall be in accordance with a water delivery schedule for that year, such schedule to be determined in the following manner:

(a) On or before October 1 of each year, the Contractor shall submit in writing to the Contracting Officer a water delivery schedule indicating the amounts of Project Water desired by the Contractor during each month of the following year along with a preliminary schedule of water desired for the succeeding two years.

(b) Upon receipt of a schedule the Contracting Officer shall review it and, after consultation with the Operating Agency and the Contractor, shall make only such modifications in it as are necessary to insure that the amounts, times, and rates of delivery to the Contractor will be consistent with the provisions of section 4.3(a). On or before December 1 of each year, the Contracting Officer shall determine and furnish to the Contractor the water delivery schedule for the next succeeding year which shall show the amounts of water to be delivered to the Contractor during each month of that year.

(c) A water delivery schedule may be amended by the Contracting Officer upon the Contractor's written request. Proposed amendments shall be submitted by the Contractor within a reasonable time before the desired change is to become effective, and shall be subject to review and modification by the Contracting Officer in like manner as the schedule itself.

4.7 Points of Delivery - Measurement and Responsibility for Distribution of Water.

(a) The Exchange Water to be furnished to the Contractor pursuant to this contract will be delivered at the point(s) to be agreed upon in writing by the Contracting Officer and the Contractor, or in the event they are unable to agree, to be selected by the Secretary.

(b) All water delivered to the Contractor shall be measured with equipment furnished and installed by the United States and operated and maintained by the United States or the Operating Agency. Upon request of the Contractor, the accuracy of such measurements will be investigated by the Contracting Officer or the Operating Agency and Contractor, and any errors appearing therein adjusted.

(c) Neither the United States nor the Operating Agency shall be responsible for the control, carriage, handling, use, disposal, or distribution of water beyond the turnout point(s) from the Main System to the Distribution Works serving the Contractor, and the Contractor shall hold the United States and the Operating Agency harmless on account of damage or claim of damage of any nature whatsoever for which there is legal responsibility, including property damage, personal injury or death arising out of or connected with the Contractor's control, carriage, handling, used, disposal, or distribution of such water beyond said turnout point(s).

4.8 Water Acquired by Contractor Other than from the United States.

The provisions of this Contract shall not be applicable to or affect Non-project Water or water rights now owned or hereafter acquired by the Contractor.

4.9 Priority in Time of Shortages. In Time of Shortage, deliveries

of Project Water to miscellaneous and non-Indian agricultural uses will have been terminated; available Project Water shall be delivered to Indian contractors (including Contractor) and to non-Indian contractors for municipal and industrial uses according to the following schedule:

$IP = I(I + MI)$  where:

- IP is the Indian Share of Project Water;
- I is the Project Water used on Indian lands during the most recent calendar year which was not a Time of Shortage, up to a limit of 309,810 acre feet, less ten percent (10%) of the amount allocated to Indian contractors for agricultural purposes; Provided that, for the purposes of this formula, such ten percent (10%) reduction shall not operate to reduce the amount of Project Water used for Indian agricultural purposes to less than ninety percent (90%) of the Indian agricultural allocation. (Included in I is any water delivered under a Substitute Water Contract; Provided that, where substitutions occur at a ratio greater than one-to-one, the ratio shall be considered as if it were one-to-one for the purposes of this section.)
- MI is the aggregate Project Water used by Subcontractors for municipal and industrial purposes during the most recent calendar year which was not a Time of Shortage up to a limit of 510,000 acre feet. (Excluded from MI is Project Water obtained under a Substitute Water Contract.)

The non-Indian M&I water supply in Time of Shortage shall be the difference between Project Water and IP.

4.10 Secretarial Control of Return Flow.

The Secretary reserves the right to capture all Return Flow flowing from the exterior boundaries of the Contractor's Reservation as a source of supply and for distribution to and use of the Central Arizona Project to the fullest extent practicable. Contractor may recapture and reuse or sell Return Flow ~~within~~ within the exterior boundaries of Contractor's reservation; Provided however, that such Return Flow may not be sold for use outside the Contractor's Reservation unless the Secretary has given prior written approval.

4.11 Exchange Water. Where the Secretary determines that Contractor is able to receive Project water in exchange for or in replacement of existing supplies of water from surface sources other than the Colorado River to provide water supplies for water users upstream from the confluence of the Salt and Verde Rivers and Buttes Dam site, if such dam is then existent, the Secretary may require and Contractor agrees to accept said Project water in exchange for or in replacement of said existing supplies pursuant to the provisions of Section 304(d) of the Basin Project Act.

5. OTHER WATER:

Nothing in this contract shall prevent Contractor from agreeing with a water user to receive water from an off-reservation source where the water user does not condition delivery upon substitution for Project Water.

**Kucera, Cindy**

---

**From:** Bob Lynch [rslynch@rslynchaty.com]  
**Sent:** Wednesday, August 31, 2005 1:54 PM  
**To:** strategies@lc.usbr.gov; strategies@uc.usbr.gov  
**Cc:** Wade Noble; Bill Woehlecke; Charles W. Slocum; David Plumb; Dennis Delaney; DeWayne Justice; Don Pope; Elizabeth (Beth) Story; Frank McRae; Gary Ijams; Grant Ward; Jackie Meck; James "Bud" Rhodes; James D. Downing; Jay I. Moyes; Jeff Woner; Jim Sweeney; Jim Trangsrud; Ken Saline; Larry Dozier; Larry Huff; Leonard Gold; Mark Mitchell; N.W. "Bill" Plummer; Patrick Ledger; Paul R. Orme; R. Gale Pearce; Rex Green; Richard O. "Rock" Cramer; Ron McEachern; Sheryl Sweeney; Stanley H. Ashby; Terry Hinton; Thomas S. Martin; 'Pedro Serrano'  
**Subject:** Colorado River Reservoir Operations: Development of Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions, 70 Fed.Reg. 34794, et seq. (June 15, 2005)  
**Attachments:** ShortCrit083105.doc

Please see attached.

Robert S. Lynch, Esq.  
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L.008

9/6/2005

# IRRIGATION & ELECTRICAL DISTRICTS ASSOCIATION OF ARIZONA

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E-MAILED ONLY

August 31, 2005

Mr. Robert W. Johnson  
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Lower Colorado River Region  
U.S. Bureau of Reclamation  
P.O. Box 61470  
Boulder City, Nevada 89006-1470  
Attn: BCOO1000 E-mail: [strategies@lc.usbr.gov](mailto:strategies@lc.usbr.gov)

Mr. Rick L. Gold  
Regional Director  
Upper Colorado River Region  
U.S. Bureau of Reclamation  
125 South State Street, Room 6107  
Salt Lake City, Utah 84138-1102  
Attn: UC-402 E-mail: [strategies@uc.usbr.gov](mailto:strategies@uc.usbr.gov)

Re: Colorado River Reservoir Operations: Development of Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions, 70 Fed.Reg. 34794, et seq. (June 15, 2005)

Gentlemen:

The Irrigation & Electrical Districts' Association of Arizona (IEDA) is pleased to have the opportunity to comment on the proposal published in the Federal Register on June 15, 2005, which has been the subject of several meetings since then.

As you know, IEDA members buy power from the Colorado River Storage Project, the Boulder Canyon Project and the Parker-Davis Project. Thus, the development of criteria for shortage conditions on the Colorado River directly impacts the ability of these projects to produce the power contracted for and impacts our members who receive that power.

First, we wish to compliment the Bureau of Reclamation for its studied approach to this difficult subject. This exercise has called into question the current operating parameters for the dams and other facilities within the Colorado River Basin under your care. There has been much

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Mr. Rick L. Gold  
August 31, 2005  
Page 2

discussion, including a good deal of posturing, about the current Law of the River, whether aspects of it should change and who should suffer the consequences of those changes. Drought has a way of doing that to people.

Water law only means something when there isn't enough water. Otherwise, people generally ignore it like they do many traffic laws. The water buffalos essentially act as the "cops" of the system, knowing that enforcement of the laws will need to happen at some time in the future and no one will be happy. Unfortunately, when the cops start fighting with each other, the situation becomes even more difficult.

The seven Basin States have written to the Secretary of the Interior in a letter dated August 25, 2005 and, apparently, announced a shaky ceasefire. The eight water entities that signed the letter outlined an ambitious and difficult task for themselves. With these developments in mind, let us attempt to comment on the four subjects on which you solicited comment in your Federal Register notice: content, format, mechanisms and analysis.

CONTENT

It would seem that the water agencies collectively have agreed that, at this stage, only interim shortage criteria should be developed for the Lower Basin. We support this cautious approach because there are so many moving parts to this task that there really can be no way to assess the full consequences of the plan that is proposed in advance. This interim approach would also serve the development of possible strategies for changes in the relative operational relationships of Lake Mead and Lake Powell. What that exactly means we have no idea but, here again, the cautious approach calls for interim measures, not attempts at permanent solutions.

1

FORMAT

We believe that something similar to the interim surplus guidelines process should be all the formality that this effort should undertake. We are encouraged that the Basin States are talking about leaving the Long-Range Operating Criteria and the rest of the Law of the River alone for now and seeking practical solutions to problems.

2

MECHANISMS

We are not exactly sure what you mean about asking whether the results should be implemented through the Annual Operating Plan or not. If interim shortage guidelines are adopted, they will be factored into Secretarial decisions on the Annual Operating Plan. We frankly don't see how they could not be under the appropriate hydrologic circumstances. We do not believe that reopening the Long-Range Operating Criteria, any more than opening Pandora's Box, would be a good idea. The Secretary and the Basin States have already worked together to make one interim adjustment to the Long-Range Operating Criteria for use during the operational phase of the Interim Surplus Guidelines. That is the appropriate template.

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Mr. Rick L. Gold  
August 31, 2005  
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## ANALYSIS

This is where things get complicated. Obviously, we are concerned about potential impacts to power generation at all three federal projects because changes in water releases change power generation schedules and quantities. Since power generally provides the cash register for getting most of the other things done on the River, this set of impacts will be an important part of your analysis. 4

Additionally, alteration of the parameters for water releases from Glen Canyon Dam will not only impact power generation at the dam, it will impact the way scientific studies are done under the Adaptive Management Program related to environmental impact analysis of Glen Canyon Dam power operations. Water operations changes may also impact the new Multi-Species Conservation Plan in the Lower Colorado River Basin and, if Congress continues it, the Upper Colorado River Recovery Implementation Program as well. 5

Analysis of operations and studies at Flaming Gorge and on the Gunnison River will also have to be included. Potential impacts of the water litigation on the Gunnison River will have to be evaluated. The potential impacts of the new suit filed opposing the lining of the All American Canal will also need to be evaluated. 6  
7

In short, this is a very complicated river with a very complicated legal scheme.

We want to especially note that the August 25<sup>th</sup> letter emphasized complementary programs aimed at enhancing the water supply of the Colorado River. The letter singled out tamarisk eradication, Lower Colorado River facilities additions and improvements, cloud seeding and desalinization. We would urge Reclamation to include these subjects in its analysis as well and to support these complementary programs in its planning and budget requests. 8

Finally, we agree with Reclamation's observation in the Federal Register notice that it should proceed on the assumption that an environmental impact statement in advance of the Secretarial decision will be necessary. Given the massiveness of the task outlined in the August 25<sup>th</sup> letter, it is hard to imagine a result that would not be a major federal action. However, it is at least possible that the ultimate strategy decided upon could have very little in the way of impacts resulting from discretionary actions of the Secretary. Under that circumstance, lesser action under the National Environmental Policy Act may be feasible. But it is always easier to cut back than it is to ramp up so we think that ramping up under NEPA and other requirements is the safest course of action at this point. 9

We are not sure that too many people understand the enormity of this undertaking. Clearly, for Arizona, the shortage criteria alone present us with a serious economic as well as political challenge. For our part, we look forward to working with you in assessing what the impacts on power generation will be from the decision the Secretary will ultimately make. L.008

Mr. Robert W. Johnson  
Mr. Rick L. Gold  
August 31, 2005  
Page 4

Thank you for the opportunity to comment on this extraordinarily important undertaking.

Sincerely,

*/s/ Robert S. Lynch*

Robert S. Lynch  
Counsel and Assistant  
Secretary/Treasurer

RSL:psr  
cc: IEDA Members

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August 3, 2005

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Via U.S. First Class Mail

Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
Attention: BCOO-1000  
PO Box 61470  
Boulder City, Nevada 89006-1470

Re: Colorado River Reservoir Operations: Comments of Quechan Indian Tribe on  
Proposed Development of Management Strategies for Lake Powell and Lake  
Mead Under Low Reservoir Conditions

Dear Regional Director:

On behalf of the Quechan Indian Tribe, we submit the following comments on the proposed Development of Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions, as found in 70 Fed. Reg. 34794. The Bureau of Reclamation has not actually developed new regulations or shortage guidelines, but is simply proposing the development of such regulations in the near future. Therefore, these comments are general in nature, designed to remind the Bureau of the Quechan Tribe's senior, federally perfected rights in Colorado River water and the Bureau's trust obligation to protect and promote the Tribe's interests in any new regulations or guidelines that are developed. The comments also suggest that the Bureau should develop strategies to reduce the occurrence of shortages, in addition to addressing shortages once they occur.

**A. Quechan Water Rights**

The Quechan Tribe is located on the Fort Yuma Indian Reservation in Southwestern Arizona and Southern California, near Yuma, Arizona. The Tribe possesses presently perfected federal reserved water rights from the main stem of the Colorado River pursuant to the 1964 United States Supreme Court decree in *Arizona v. California I*, 376 U.S. 344 (1964). In that decree, the Supreme Court confirmed that the Quechan Tribe had Winters doctrine reserved water rights associated with the Fort Yuma Reservation. The decree determined that the Tribe is entitled to water to irrigate 7,743 acres, with an annual diversion of Colorado River water of 51,616 acre-feet. The priority date for this water is January 9, 1884.

On July 19, 1989, the 1964 decree was reopened to determine water rights associated with the disputed boundaries of the Fort Yuma Indian Reservation. In early 2005, the Quechan Tribe and the United States entered into separate settlement agreements with the State of California and State of Arizona regarding water rights to these disputed lands. Pursuant to the settlements, the Quechan Tribe is entitled to divert an additional 26,350 acre-feet of water from the main stem of the Colorado River. Special Master Frank J. McGarr approved the final settlement documents and has submitted them to the United States Supreme Court for review. With no objections from any of the parties anticipated, the Quechan Tribe expects the Court to enter the proposed supplemental decree this coming Fall.

In sum, once the Supreme Court enters the proposed supplemental decree, the Quechan Tribe will have perfected federal reserved water rights for 77,966 acre-feet of water, all with a priority date of January 9, 1884.

**B. Considerations For Developing A Shortage Strategy.**

**1. Preventing Shortage – Marketing of Senior Tribal Water Rights.**

In developing “shortage guidelines,” the Bureau should consider proactive steps to prevent shortages from occurring. One way to minimize shortage situations is to encourage and facilitate transfers of available surplus water from Tribes, who hold senior water rights, to the more junior water users with increasing demand, such as the urban metropolitan areas of Arizona and California. Indian reserved water rights are transferable property rights that can be directly leased and marketed to other users, either intrastate or interstate. To date, the Department of the Interior has failed to adequately promote and facilitate interstate marketing of tribal water to junior users. For example, the Department had an opportunity to promote interstate marketing of tribal water rights in its 1999 water banking regulations (64 Fed. Reg. 58,986), but those regulations ultimately failed to authorize tribal banking, inter-tribal transfers, or off-reservation transfers. The new shortage guidelines should proactively encourage and take steps to facilitate both intra and interstate transfers of tribal water rights to other water users. This would not only relieve some pressure on the needs of junior municipal users, but would also assist the Tribes derive full benefit from their federally protected senior water rights.

For example, in a shortage situation, with no available “surplus” water, California is limited to a maximum of 4.4 million acre-feet under the Boulder Canyon Project Act and related agreements. In order to comply with its 4.4 maf limitation, holders of junior water rights in California, such as municipal users in Southern California, need to either develop new water resources or purchase or lease senior rights from agricultural or tribal interests. Some of this pressure can be relieved through the marketing of tribal water. In the process of considering how to manage and prevent shortages on the Colorado River, the Bureau should seriously evaluate the benefits that flow to all interested parties if Tribal interests are encouraged, or provided with incentives, to market their senior water rights to junior municipal users.

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## 2. Defining "Surplus"

In developing "shortage" guidelines, the Department should also revisit how it determines "normal" or "surplus" conditions on the Colorado. The analysis of whether "normal" or "surplus" conditions exist is the key to many water rights activities on the Colorado, including revision of the annual operating plan, revision of the 4.4 Plan, etc. The determination of "surplus" and "normal" conditions is also directly related to the proposed shortage guidelines. For example, if the trigger for declaring a surplus is set too low, then surpluses may be determined in years when in fact no such surplus occurs. The erroneous surplus determination would then lead to an actual shortage of available water in subsequent years. Alternatively, setting the surplus "trigger" too high can lead to flood, storage or run-off of water which could have been put to beneficial use and for wildlife enhancement purposes. The Department should ensure that existing storage levels in the Colorado River system are sufficient to satisfy the legal entitlements of the Lower Basin users and, if not, should prohibit "surplus" determinations until the storage levels return to an adequate level. Because the "definition" of surplus can have a substantial effect on whether a "shortage" occurs in the future, the "trigger" for declaring a "surplus" should be fully analyzed when developing new shortage guidelines.

3

## 3. Delivery Restrictions

The focus in a shortage management strategy should be on proactively preventing shortages to occur. If, however, the new guidelines are not successful in preventing a "shortage," the Department would presumably restrict or limit water deliveries in times of shortage. Alternatively, if a shortage is anticipated, the Department may propose guidelines to limit deliveries prospectively in order to avoid the anticipated future shortage. Any proposals to limit future water deliveries must be evaluated in light of the existing priority system on the Colorado River. In accordance with the general law of prior appropriation, and the Law of the Colorado River, delivery or diversion restrictions, if any are adopted, must be imposed in reverse order of priority and with due consideration to the tribal holders of senior, federal reserved water rights. Senior water rights holders such as the Quechan Tribe may not be subject to delivery restrictions of any kind.

4

## 4. Environmental Analysis

The Tribe agrees that the development of shortage management strategies is an action that significantly affects the quality of the human environment and that requires a full Environmental Impact Statement pursuant to NEPA, 42 U.S.C. § 102. Development of the proposed operating strategies will require full consideration of various alternatives and will benefit from the input of all interested agencies, Tribes, states, and water users. While there is an immediate need to address shortage conditions on the Colorado, the Department should be deliberate in process and ensure that the adopted strategies will both minimize likelihood of shortages in the future and also effectively address shortages when they do occur. Again, the emphasis should be on developing strategies to prevent shortages, through water marketing, water banking, and conservation measures, and by preventing premature "surplus" declarations.

5

**5. Additional Commenting Opportunities**

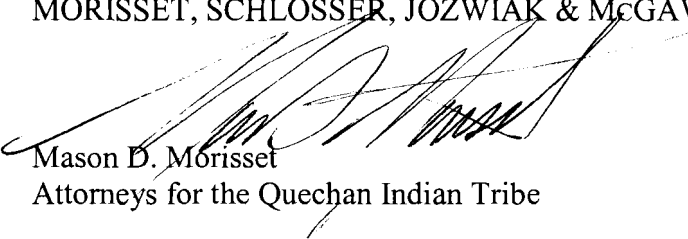
Given the vague nature of the Department's proposal at this point, the comments of the Quechan Tribe are necessarily general. However, given the Quechan Tribe's significant interest in the Colorado River, the Tribe will be an active participant in the development of the proposed guidelines. Therefore, the Quechan Tribe requests to be listed as a party of interest in these proceedings and notified of any additional opportunities to comment once more specific guidelines or strategies are proposed.

5

Thank you for this opportunity to comment.

Sincerely yours,

MORISSET, SCHLOSSER, JOZWIAK & MCGAW



Mason D. Morisset  
Attorneys for the Quechan Indian Tribe

cc: President Mike Jackson, Sr. (via facsimile)

**Kucera, Cindy**

---

**From:** Schiaffo, Catherine [cschiaffo@allenmatkins.com]  
**Sent:** Wednesday, November 30, 2005 3:58 PM  
**To:** strategies@lc.usbr.gov  
**Subject:** FW: Transmittal from Imperial Irrigation District\*  
**Attachments:** IID Letter.pdf

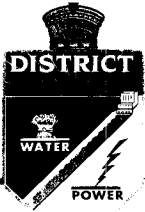
-----Original Message-----

**From:** Schiaffo, Catherine  
**Sent:** Wednesday, November 30, 2005 1:33 PM  
**To:** Johnson, Robert W.  
**Cc:** Hosken, Charles; Grubaugh, Elston; Carter, John P. Esq.; Swan, William H. Esq.; Zimmerman, Gerald R.; King, Michael L.  
**Subject:** Transmittal from Imperial Irrigation District\*

<<IID Letter.pdf>>

Original will follow via overnight delivery.

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# IMPERIAL IRRIGATION DISTRICT

OPERATING HEADQUARTERS • P. O. BOX 937 • IMPERIAL, CALIFORNIA 92251

November 30, 2005

Robert Johnson  
Regional Director  
Lower Colorado River Region  
Attn: BCOO-1000  
PO Box 61470  
Boulder City, Nevada 89006-1470

Dear Mr. Johnson:

I am writing on behalf of the Imperial Irrigation District (IID) in regard to the NEPA scoping process for proposed interim shortage guidelines and strategies for the coordinated operation of Lake Mead and Lake Powell. IID supports, and incorporates herein by reference, the scoping comments submitted by the California Colorado River Board. However, in addition IID is submitting comments specifically addressed to the “Conservation Before Shortage” paper submitted to the Secretary of the Interior (Secretary) by a group of organizations on July 18, 2005. IID believes that the Conservation Before Shortage document contains numerous errors and misstatements and also represents a proposal that is unworkable and unnecessary. Our comments on the Conservation Before Shortage cover letter and briefing document are set forth below.

1. The document entitled “Conservation Before Shortage” clearly contemplates the inclusion of this type of program as a *component* of the interim shortage guidelines currently under consideration within the Department of the Interior through this NEPA process. Since IID asserts that this kind of program should not be included in the interim shortage guidelines, this is an appropriate matter to be addressed during the scoping phase of the NEPA process.

2. IID does not see the logic in this proposal when viewed in the context of the post-1968 water entitlements that are subject to early reductions in the event of declared shortages. As you are aware, the 1968 Colorado River Basin Project Act, 43 USC 1501 et. seq., provided for the subordination of Central Arizona Project (CAP) water uses to California’s 4.4 maf apportionment in times of shortage. Administratively the Secretary has managed the post-1968 entitlements as a group and has provided in water delivery contracts that post-1968 water entitlements in Arizona and Nevada will be the first water uses subject to reduction in times of declared shortage because of the post-1968 status of such rights. In Arizona a rather large volume of water has been allocated to non-Indian agricultural uses within the CAP, and the CAP structural documents provide that in times of shortage the CAP non-Indian agricultural rights will be the first to be reduced.

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Similarly, there are other post-1968 agricultural rights along the river in Arizona that would also be subject to reduction in the case of a declared shortage.

Because the CAP has been in the implementation and construction phase for many years, CAP water users, other post-1968 entitlement holders, and the State of Arizona water managers are all well informed about the consequences of a declared shortage in relation to the likely cut back of post-1968 agricultural and other uses in Arizona. In light of this background, IID does not understand the wisdom of establishing a program, paid for in part by the very users who are supposed to benefit from the value of senior vested rights, that would pay farmers not to farm productive farmland so that junior CAP farmers can continue farming. While we appreciate that the reductions in CAP water uses would be uncompensated, that is in fact how water rights priority systems work in the West. In addition, CAP water users and Arizona water managers have put in place programs, like the Arizona Water Banking Authority, that are specifically designed to address the impact of this type of loss of water supply in times of declared shortages.

Accordingly, it makes no sense to develop a complex and expensive land fallowing program managed by Reclamation simply to avoid what has been contemplated within the context of the post-1968 entitlements for many years. Entities that hold CAP agricultural priority water entitlements within Arizona, whether non-Indian or Indian, have a clear expectation of having those rights reduced first in the situation of a declared shortage. There is no sound reason to create an expensive and complex Reclamation-managed program that would insulate that category of CAP water users from their junior-priority positions within the lower division states' water rights arrangement.

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To the extent it is argued that this kind of program is needed in the case of a more severe drought where cutbacks in the post-1968 priority group of rights reach into *urban* water entitlements, IID suggests that there is ample flexibility within Arizona to arrange for the temporary use of senior agricultural rights (for example in the Yuma area) in such circumstances, without having to develop a complex and expensive Reclamation-managed program that is designed to be financially supported by taxes on water and power users in the lower basin. IID recognizes the value of short-term intra-state water transfers in such situations, but there is no justification for setting up a complex and expensive Reclamation-managed program as has been suggested here.

3. On page 1 the cover letter suggests that this large land fallowing program should be paid for by "surcharges" applied to "water users and consumers of power generated at Hoover Dam." IID will strongly resist the imposition of water and power surcharges to fund a Reclamation-managed program that is designed to avoid the operation of the water rights priority arrangement that has been in place within the lower division states for decades. IID assumes that its resistance against this suggestion will be supported by virtually all water and power users within the lower division states. There is simply no merit to the notion that senior right holders and power consumers should be taxed so as to avoid long-anticipated shortage-induced cut backs on junior water right holders. It is also a reality that under current circumstances there is clearly insufficient

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*federal* funding for 50% of the program cost. Furthermore, Reclamation does not have the current statutory authority to impose such surcharges on water and power users, and so this proposal would obviously require federal legislation.

4. On page 1 the cover letter suggests that this “conservation before shortage” program would enhance power production at Hoover Dam. Again, IID questions the logic behind this conclusion. If, for example, a cut back of 400,000 af were needed to carry out a shortage declaration, what is the difference in power production at Lake Mead if the water reduction comes from farmers in California and Mexico as opposed to farmers within the post-1968 water pool in Arizona? Under either scenario Lake Mead would be enhanced by the retention of the 400,000 af. To the extent it is argued that there is a temporal advantage by arranging for the voluntary reduction in use *in advance* of the declared shortage, IID asserts that any marginal benefit in this direction is greatly outweighed by the disadvantages of the program, especially the cost of the program and the proposed funding mechanism. In light of the realistic costs of this proposed program (discussed below), it would make no sense for power users to pay for expensive land following simply to maintain this marginal potential advantage to power production at Hoover Dam.

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5. On page 1 the cover letter suggests that one of the benefits of this approach would be to “eliminate the need for costly new water projects.” It is not clear to IID what “costly new water projects” the program proponents have in mind. Without such detail this kind of justification point has no merit. Nevertheless, it should be recognized that this is in reality the way the water rights priority systems work in the West. Junior right holders, recognizing the potential risk of cut backs in times of shortage, often wisely invest in water savings, infrastructure, or other programs that will serve to mitigate the impact of future shortages. IID suggests that Reclamation should *encourage* such investments as opposed to discouraging such investments.

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6. On page 1 the cover letter also suggests that this program would reduce overall water consumption in dry years, thus “decreasing the risk of shortages that could disproportionately impact environmental uses in the future.” This part of the cover letter also states that fish, wildlife, and natural areas are “last in line” for water in the lower basin. IID suggests that these statements are unsupported by the facts and are misrepresentations of the water rights structure in the lower basin. First, there are several large fish and wildlife refuges along the lower river corridor and the water entitlements for those refuges are far from being “last in line.” In reality those refuges have rather senior water entitlements that are ahead of many other water uses – such as the entire block of post-1968 rights. Similarly, water rights leased or purchased for purposes of the recently-approved Multi-Species Conservation Program (MSCP) are also very likely to be senior in nature. Finally, it is critical to understand that the vast majority of the water in the lower basin travels to the bottom of the system, and this condition will be the same even in times of declared shortages (because of the senior rights in that region). So it is simply *inaccurate* to suggest that the water needs of fish, wildlife and natural areas are “last in line” or at significant risk in relation to anticipated shortage declarations. Second, the proponents of this program have made no showing to support the claim that

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decreasing the risk of shortages will somehow have a *positive impact* on fish, wildlife or natural areas. Statements of this nature are simply not supported by the current water rights structure and river operations reality within the lower division states.

7. In the body of the proposal document, at page 2, it is suggested that it is “desirable to avoid shortages in the Lower Basin above 500,000 acre-feet whenever possible.” The sole rationale for this statement seems to be that going beyond 500,000 af exceeds the capacity of the Arizona Water Bank to make up for such impacts. However, this narrow view of the water rights priority arrangement within the region of the lower division states ignores the history of the water-use development of the region, the legal history of the Central Arizona Project and the establishment of other post-1968 rights within Arizona and Nevada, and the need to for each lower division state to look first to its intra-state resources to mitigate the impacts of shortages prior to looking to the resources of the other lower division states. IID appreciates that shortage cut backs greater than 500,000 af may exceed the capacity of the Arizona Water Bank and may also extend cut backs into uses by Arizona urban and Indian communities. But this surface recognition ignores the *kinds of uses* being made by those CAP users. For example, some senior CAP Indian water uses may be for *agricultural* purposes. If that were the case, why should farmers in California or Mexico be paid to stop farming simply to allow farmers on CAP-serviced Indian lands to continue farming? Another example is that much of the current CAP M&I water pool might be used for underground recharge. In other words, the suggested 500,000 af limitation is simplistic and without sound factual foundation. Furthermore, as noted above, if a severe drought is likely to cause cut backs within the post-1968 pool of urban water users, water managers within Arizona will have sufficient time within which to arrange temporary fallowing arrangements with senior agricultural users *within Arizona*, thus avoiding the need for this complex and expensive Reclamation-managed program.

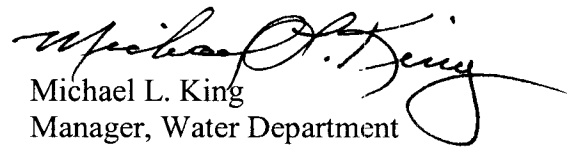
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8. At several places in the body of the proposal (pages 2, 5, and 11) it is suggested that “a large volume of water in the lower basin could be obtained for \$20 – 100 per acre foot.” It is also suggested that Reclamation should establish a “drought economic adjustment fund” so as to mitigate the impacts of such large-scale fallowing on local communities. IID believes that the cost projections contained in the Conservation Before Shortages proposal are *seriously flawed*. This conclusion is supported by the attached analysis of economist Rodney T. Smith, who was retained by IID to analyze the economic projections in the proposal. Importantly, IID believes that the Conservation Before Shortages proposal reflects a current broader misunderstanding as to the long-term costs and economic impacts of land fallowing. Like many others, the proponents of this proposal have not used comparable transactions and have misunderstood the difficulty, complexity, and expense of obtaining conserved water through the fallowing of productive farmland. The reality is that obtaining water through fallowing, in steps of 200,000, 400,000, and 600,000 acre feet, would result in an exceedingly expensive and unworkable program, and this conclusion is supported by Dr. Smith’s analysis.

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Summary – The Conservation Before Shortages proposal is almost totally lacking in merit and is based on numerous misrepresentations and misunderstandings regarding current river operations and the water rights priority system within the lower division states. Importantly, it will be difficult enough to develop a package of interim shortage guidelines and reservoir operations that are workable for Reclamation and the basin states, and so it is simply unrealistic to suggest that a complex and expensive Reclamation-managed program like this should be added as a component to the interim shortage guidelines. Finally, the cost and complexity of this proposed program has been greatly understated, Reclamation is not likely to be able to obtain 50% of the program cost through federal appropriations, and the suggestion that water and power users should pay 50% of the program cost will be strenuously resisted. As a result, consideration of this proposal as a component of the interim shortage guidelines should be rejected at the scoping phase of the NEPA process.

Sincerely,

  
Michael L. King  
Manager, Water Department

cc: General Manager  
Assistant General Manager  
John Carter  
William H. Swan  
Jerry Zimmerman, CRB

# Stratecon Inc.

November 28, 2005

## Comments on “Conservation Before Shortage”

By

Rodney T. Smith  
*Senior Vice President*

In a letter dated July 18, 2005 to Secretary of the Interior Gale A. Norton, a consortium of interest groups proposed a program called “Conservation Before Shortage” as a means to address the management of prospective shortages on the Colorado River.<sup>1</sup> Under the consortium’s proposal, the Bureau of Reclamation would engage in large-scale land fallowing programs where the amount of water acquired would depend on elevation triggers at Lake Mead. The conserved water acquired through such transactions would then be used to increase storage at Lake Mead in order to reduce the future risk of shortage declarations on the Colorado River.

### Summary of Proposal

The scale of proposed fallowing would depend on the 24-month forecast of the elevation of Lake Mead on January 1 as follows:<sup>2</sup>

- Elevation At or Above 1100 feet: no acquisitions;
- Elevation Above 1075 feet but below 1100 feet: 200,000 acre feet (“AF”) per year of water conserved by land fallowing (“Tier 1”)
- Elevation Above 1050 but below 1075 feet: 400,000 AF per year of water conserved by land fallowing (“Tier 2”);
- Elevation Below 1050 feet: 600,000 AF per year of water conserved by land fallowing (“Tier 3”).

The proposal expresses a preference for voluntary programs and anticipates that the fallowed water can be acquired at a cost of \$20/AF to \$100/ AF.<sup>3</sup> It also recommends that

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<sup>1</sup> The groups included Defenders of Wildlife, National Wildlife Federation, Sierra Club, Environmental Defense, Pacific Institute, and Sonoran Institute

<sup>2</sup> See Conservation Before Shortage, pp 3-4.

<sup>3</sup> *Ibid*, p. 5, 11-12.

the federal government mitigate the third-party impacts of following through a drought economic adjustment fund that would provide economic grants to affected communities.<sup>4</sup>

The consortium provides useful information regarding the anticipated impact of its proposal if it were implemented successfully. Concerning its potential benefits, the consortium estimates that without the “Conservation Before Shortage” proposal, the probability of a shortage in the Lower Basin becomes material starting in the year 2015 (about 15%) and increases steadily thereafter until the probability about stabilizes between 25% and 30% by the early 2020s.<sup>5</sup> With implementation of the “Conservation Before Shortage” proposal, the probability of a shortage in the Lower Basin still becomes material in the year 2015, but at a substantially smaller level (less than 10% through the forecast period ending in the year 2026).<sup>6</sup>

Concerning the scale of acquisitions under its proposal, the consortium provides figures graphing the time profile of the probabilities of the elevation of Lake Mead being within the proposal’s triggers for following with the Conservation Before Shortage policy in place (see Attachment 1 for compilation).<sup>7</sup> Following is not anticipated to occur before the year 2008, when there is about a 30% probability that Lake Mead elevations would trigger the Tier 1 following of 200,000 AF per year. In the year 2009, the probability of Tier 1 following increases to about 45% and the probability of Tier 2 following equals about 5%, suggesting that in 2009 there is about an even money chance of either Tier 1 or Tier 2 following. Thereafter, the probability of following fluctuates near 50% through the year 2015 then starts a steady decline towards 40% by the year 2026.

The mix of the magnitude of following will change over time. In the early years, following is most likely to be at 200,000 AF per year. From the years 2011 through 2014, the most likely scale of following is 400,000 AF per year. Thereafter, the most likely scale of following is 600,000 AF per year. The transitioning from the following volume most likely at 200,000 AF per year to 600,000 AF per year means that the expected amount of following under the Conservation Before Shortage proposal will build up to about 200,000 AF per year by the year 2015 and fluctuate around that level through the year 2023 when the expected volume of following will decline towards 180,000 AF per year by the year 2026 (see Attachment 2).<sup>8</sup>

### **Comments on the Economics of the Conservation Before Shortage Proposal**

The consortium either neglects or misstates key economic considerations about their proposal: (i) the purpose of acquisitions, (ii) the likely economic terms for land following agreements, and (iii) the scope and means for addressing the socioeconomic impacts of land following. Unless these considerations are taken into account (especially the second and the third ones), proponents of the Conservation Before Shortage Proposal will generate unrealistic expectations about implementation that may set up circumstances for failed federal policy in the Lower Colorado River Basin.

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<sup>4</sup> *Ibid.*, p. 12.

<sup>5</sup> *Ibid.*, Figure 5 at p. 10.

<sup>6</sup> *Ibid.*

<sup>7</sup> *Ibid.*, Figures 6–8 at pp. 10-11. Attachment 1 based on reading of numbers off the figures.

<sup>8</sup> Expected Following calculated with the probabilities of Tier 1, Tier 2, and Tier 3 following given in Attachment 1, where the amounts of following under the tiers are, respectively, 200,000 AF per year, 400,000 AF per year, and 600,000 AF per year.

*Purpose of Acquisition.* The consortium proposes that the Bureau acquire water conserved by land fallowing to increase storage at Lake Mead in order to reduce the likelihood of future shortages. As the volume of water in storage falls, of course, it does make sense to consider means to increase storage in order to avoid future shortages.

The consortium's proposal to use land fallowing to increase water storage for future uses does not make economic sense. If land fallowing can indeed be turned on and turned off annually, then why not use land fallowing to meet water demands when needed? If land fallowing is done to conserve water years before the water is needed, then a portion of the water conserved by land fallowing is lost to evaporation. For example, if the incremental evaporative loss of stored water were 5%, then land fallowing would need to conserve 1.11 AF, 1.17 AF, or 1.23 AF respectively to meet a future need of 1 AF two, three, or four years in the future. Moreover, acquiring water before it is needed also incurs the financing cost of incurring expenditures on fallowing transactions before the water is needed. From an economic perspective, conserving water before shortage rather than conserving water when it is needed is economically wasteful.

*Likely Economic Terms.* The consortium predicts that the Bureau can acquire water at a cost of \$20/AF to \$100/AF when needed. To support this claim, the consortium references undocumented claims concerning the profit per AF of water use in the Colorado River basin,<sup>9</sup> as well as the recent experience where IID has acquired water in 2004 at less than \$60/AF.<sup>10</sup> The claim that this information provides any meaningful information about the likely economic terms under which water could be acquired under the proposed program is misplaced.

The best data concerning the likely economic terms comes from comparable market transactions, not hypothetical calculations. From this perspective, the most relevant information involves what information exists regarding comparable transactions and what do the terms of the comparable transactions say about the terms of acquisitions under the proposed program.

As discussed above, the proposed fallowing program involves a long-term program of land fallowing, not a single year. In effect, the program would need to acquire water on a regular although not steady basis (see Attachment 1). The most comparable transaction in the Lower Colorado River basin, therefore, is the 35-year fallowing agreement between the Palo Verde Irrigation District and the Metropolitan Water District of Southern California. Under that program, Metropolitan paid an up front payment of \$3,170/acre and will make an annual payment of \$602/acre (inflation adjusted) when acreage is fallowed.<sup>11</sup> At a yield of 4.2 AF/acre,<sup>12</sup> the upfront payment equals about \$755/AF and the annual payment equals \$143/AF (inflation adjusted). If the Bureau can enter into long term fallowing contracts on the same terms as Metropolitan, then the Conservation Before Shortage program would entail up front payments of \$453 million.<sup>13</sup> When the option to acquire fallowed water is exercised, then annual payments

<sup>9</sup> *Ibid*, pp. 11-12.

<sup>10</sup> *Ibid*, p. 11.

<sup>11</sup> Palo Verde Fact Sheet, Metropolitan Water District of Southern California (available on MWD website).

<sup>12</sup> Maximum amount of farmland fallowed is 26,500 acres yielding 111,000 AF. *Ibid*.

<sup>13</sup> \$453 million = \$755/AF • 600,000 AF



would equal \$28.6 million (inflation adjusted) for 200,000 AF, \$57.2 million (inflation adjusted) for 400,000 AF, and \$85.8 million (inflation adjusted) for 600,000 AF.<sup>14</sup>

For two reasons, the likely acquisition costs will be higher than estimated. First, Metropolitan has other financial obligations under its agreement with Palo Verde not considered in the above estimate. Second, the proposed fallowing program for the Bureau contemplates acquisition of almost six times the maximum amount of water acquired annually by Metropolitan. With the large-scale expansion of acquisition activity contemplated by the proposed program, acquisition costs are likely to prove higher than faced by the smaller-scaled Metropolitan program.

Ignoring the most relevant comparable transaction, the consortium references the financial terms paid by the Imperial Irrigation District for fallowed water in 2004. These transactions were expressly one-time annual fallowing, NOT a long-term commitment granting an option to turn fallowing on or off. As such, the IID transaction is not a comparable. Moreover, IID's experience with its fallowing program shows the difficulty in relying upon annual fallowing arrangements for long-term commitments. First, in organizing its 2005-2006 fallowing program, IID has found that potential participants who volunteered but not selected for its 2004-2005 program have rejected participation in the 2005-2006 program even though they had first priority for participation. Financial terms that looked attractive in 2004 were no longer acceptable given the recent recovery in crop prices. Second, and in anticipation of such developments, IID had acquired 42,000 acres of farmland from the US Filter Corporation in 2004 to help manage its long term fallowing obligations. Long term fallowing cannot be underwritten by sole reliance on year-to-year contracting.

*Socioeconomic Impact of Land Fallowing.* The consortium's proposal does recognize the need to address the socioeconomic impact of land fallowing. Based on the experience of IID's first two land fallowing programs, the magnitude of socioeconomic impacts will grow with the scale of land fallowing. For the smaller 13 Month Emergency Fallowing Program, the socioeconomic impacts of IID's land fallowing were \$46/AF. For the larger 2004-2005 Fallowing Program, the socioeconomic impacts of land fallowing were \$97/AF.<sup>15</sup> The socioeconomic impacts for a Bureau fallowing program, of course, will depend on the type of crops fallowed and location. Even if the socioeconomic impacts for a Bureau program were on the low end of the experience in IID, the annual socioeconomic impacts that must be addressed would equal \$10 million (inflation adjusted) for 200,000 AF, \$20 million (inflation adjusted) for 400,000 AF, and \$30 million (inflation adjusted) for 600,000 AF.

While the socioeconomic impacts to be addressed would be significant, the funding requirements for mitigation would be greater. Funding requirements will be greater than the estimated impacts to the extent that mitigation programs generate taxable benefits for recipients and that the mitigation programs (like most government programs) need more than one dollar to generate one dollar of benefit.<sup>16</sup>

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<sup>14</sup> Annual cost equals \$143/AF multiplied by amount of acquired water.

<sup>15</sup> See: *The Socioeconomic Impacts of Land Fallowing by the Imperial Irrigation District in 2003 and 2004*, Imperial Irrigation District, December 2005.

<sup>16</sup> *Ibid.*, pp. 20-21.

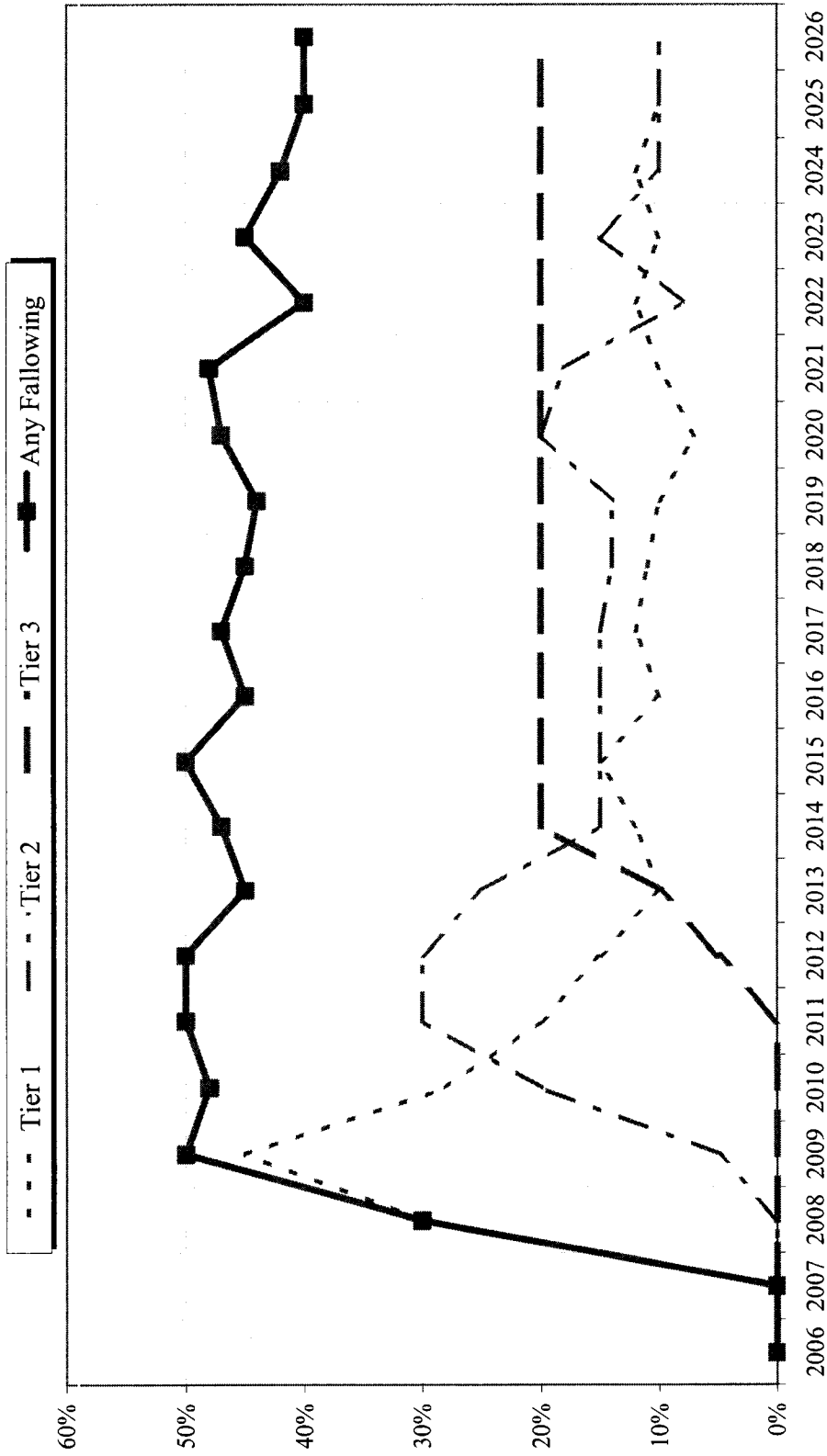


## **Conclusion**

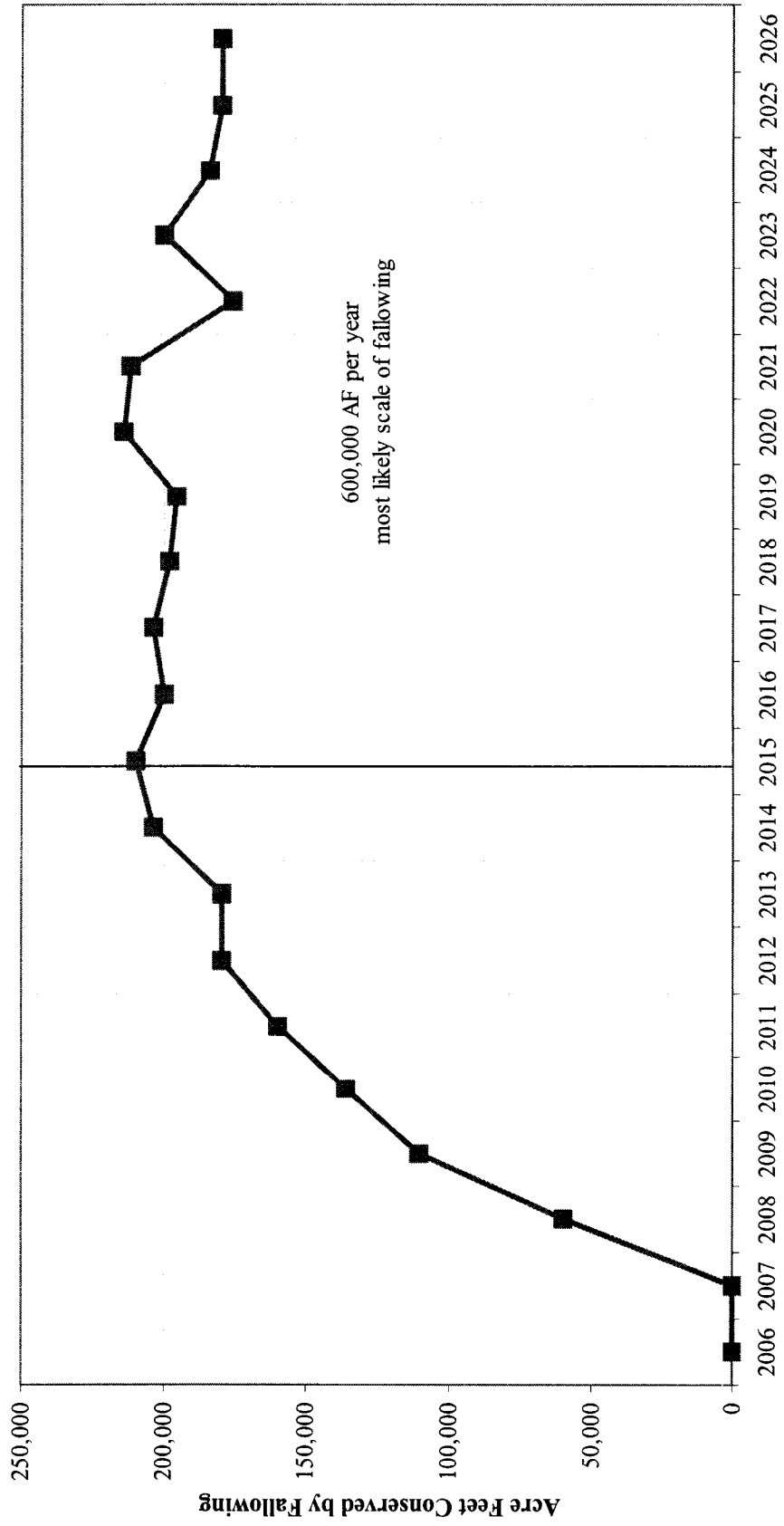
The consortium proposal does not provide a framework for reasonable management of shortages. If the tool proposed by the consortium (long-term reliance on year-to-year fallowing) is viable, then it makes more economic sense to use the tool to meet water demands as they occur when elevations at Lake Mead cannot support the declaration of a normal or surplus year. This alternative approach avoids the cost of making acquisitions prematurely as well as avoids acquiring water that evaporates before it is needed.

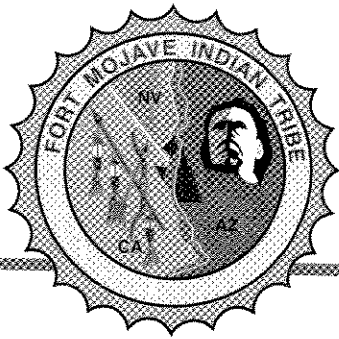
The consortium proposal lacks economic reality as well as economic wisdom. The consortium seriously understates its costs by focusing on hypothetical data or non-comparable transactions for estimating the likely costs of fallowing contracts. If the Bureau wants to initiate a long-term program of intermittent land fallowing, then the comparable transaction is the Palo Verde-Metropolitan program. Even in the unlikely circumstance where the Bureau can acquire 600,000 AF of contractual commitments at the same terms as Metropolitan's smaller program, this would require an up front payment commitment of \$453 million and annual payments ranging from \$28.6 million (inflation adjusted) to \$85.8 million (inflation adjusted) when options to fallow land are exercised. In addition, addressing the socioeconomic impacts of land fallowing will generate a further significant financial obligation for the Bureau of Reclamation. In the end, the economic and financial costs of the proposed "Conservation Before Shortage" program will prove significantly higher than estimated by its advocates.

**Attachment 1  
Probability of Falling under Conservation Before Shortage Proposal**



**Attachment 2  
Expected Fallowing under Conservation Before Shortage Proposal**





# Fort Mojave Indian Tribe

NORA McDOWELL - Chairperson  
SHAN LEWIS - Vice Chairman  
DEBBIE JACKSON - Secretary  
COLLEEN GARCIA - Member • BRUCE WILLIAMS - Member  
MARTHA McCORD • Member • NICHOLE GARCIA - Member  
500 Merriman Avenue • Needle, CA 92363  
(760) 629-4591 • FAX (760) 629-5767

November 29, 2005

Robert Johnson, Regional Director  
US Bureau of Reclamation  
Lower Colorado River Region  
PO Box 61470  
Boulder City, Nevada 89006-1470

NOV 30 2005  
12/5/05 [Signature] BCCO-1000  
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Dear Mr Johnson:

The Fort Mojave Indian Tribe supports the Bureau of Reclamation in it's effort to develop guidelines for the management of shortage conditions on the Colorado River. We attended the scoping meeting in Henderson on November 8<sup>th</sup> held as a part of the National Environmental Policy Act process. The Tribe previously provided written comments after the introductory meeting in July but these related more to the health of the living river than the mechanics of shortage determinations. Now we respectfully submit the following comments for consideration as solicited in the Environmental Impact Statement Scoping Meeting.

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In regard to reservoir operations, the Bureau of Reclamation has historically made unused entitlements of Indian tribes and others available to less senior users. We understand that the Bureau's position is that such a re-allocation is within the Secretary's discretion, but we question it's value as public policy especially during shortage conditions. This extra water is relied on, in too many cases, to foment permanent, urban development whereas the right to that water actually belongs to an ambitious and rapidly developing Indian tribe. What happens when the lawful owner makes the call for water and the water is already being used for people's homes and cannot be replaced?

The Fort Mojave Indian Tribe feels a more prudent option for it's unused entitlement would be to store it in a top water bank. This would, in some cases, reduce the total amount of water available to the most junior users but it would be a reliably fixed amount that should be more useful for planning purposes. Storage would improve reservoir conditions in shortage and would provide an available pool of water to help mitigate system shortages.

In regard to river operations with less than 7.5 million acre feet available for the Lower Basin. This situation seems inevitable and, perhaps, close at hand. Information handed out at the Henderson Scoping Meeting indicates that, under present demand, Lake Mead will decline at an average rate of 1.3 maf annually. We assume that the developed shortage criteria will involve protection levels in Lake Mead and Lake Powell and a reduction of delivery as these levels are approached.

The Fort Mojave Indian Tribe feels that, when shortage conditions exist and reduced deliveries are necessary, these reductions should be made based on the actual hydrologic conditions in the system. Each state should bear the same percentage reduction and water within a state apportioned according to established priorities after the Secretary satisfies “ present perfected rights in the order of their priority with out regard to state lines.” Arizona v California , 1964 Decree at para II (B) (3). This creates a situation in which long time users are not shorted but junior users are. In most cases the long time users with senior water rights are agricultural irrigators with little or no capacity to absorb increased costs and the junior users are urban water districts to whom the raw cost of water is almost irrelevant. Conditions such as these are best addressed by the market. The Fort Mojave Indian Tribe suggests that all restrictions to a free, spot, intra-state market be removed in shortage conditions including transactions by Indian tribes using forbearance agreements.

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The Fort Mojave Indian Tribe appreciates the efforts by the Bureau of Reclamation and we look forward to working with you through this long and difficult process.

Sincerely



John Algots, Director  
Department of Physical Resources



## City of Phoenix

November 30, 2005

Mr. Robert W. Johnson  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region, Attention: BCOO-1000  
P.O. Box 61470  
Boulder City, NV 89006-1470

Re: Notice of intent to prepare an environmental impact statement (EIS) and notice to solicit comments and hold public scoping meetings on the development of Lower Basin shortage guidelines and coordinated management strategies for the Operation of Lake Powell and Lake Mead under low reservoir conditions.

Dear Mr. Johnson,

The City of Phoenix ("City") submits its response to the notice to scope an EIS and solicit public comments on the development of management strategies for Lake Powell and Lake Mead including Lower Basin shortage guidelines under low reservoir conditions (70 Fed. Reg. 57322, dated September 30, 2005) ("Notice"). Colorado River water delivered to Phoenix through the Central Arizona Project ("CAP") is a vital component of the City's water resources portfolio. Over 1.4 million people in the City rely on this resource to supply over 35% of the City's current total water demand. The City holds CAP subcontracts for Municipal and Industrial Priority water, non-Indian agricultural priority water and leases Indian priority water. Thus, the City has a unique perspective upon the opportunities to manage Lake Powell and Lake Mead and on Lower Basin shortage guidelines.

As you are well aware the CAP has a junior priority under the Law of the River. Therefore, the State of Arizona, the CAP, and the City, are the most vulnerable water users in the Lower Basin if shortages are declared by the Secretary of the Interior ("Secretary"). Because Arizona faces the greatest risks, the City urges the Bureau to give great weight to the comments provided by the City, the State of Arizona, the CAP and Arizona water users. Arizona stakeholders, in concert with the Arizona Department of Water Resources, have crafted a set of shortage criteria that consider impacts on various beneficiaries of the Colorado River. Those criteria are presented in detail below.

The City requests that the scope of the EIS be broad enough to encompass alternatives that are consistent with the following:

1. The Secretary should not adopt operational schemes that increase the risk of shortage in the Lower Basin that are not consistent with the Law of the River.

2. Water supply has a higher priority than hydrogeneration and the determination of equalization under Section 602 (a) of the Colorado River Basin Project Act of 1968 should adhere to that principle. Water users in Phoenix should not be subject to shortages for the benefit of hydropower production. The EIS must analyze potential impacts on CAP water users in Arizona if the reservoirs are operated to elevate power production to an equal or greater priority as consumptive water use. 2
3. The scope of the EIS should include an analysis of the Bureau's current and planned equalization triggers that include Upper Basin depletion schedules, any temporary limitations on storage levels or elevations, the calculation of active storage in the Upper Basin, and any inherent limitations in the Bureau's current computer model used to simulate reservoir operations. 3
4. Shortage criteria should be implemented for an interim period. An appropriate time frame is 2016, since, for example, the Interim Surplus Guidelines expire at that time. 4
5. Mexico and Nevada should share in shortages to the Lower Basin. 5
6. The City agrees with the Arizona Department of Water Resources recommendation that the EIS should analyze Lower Basin shortages that are implemented in the following manner:
  - a. For Lake Mead elevations between 1075 ft. and 1050 ft. the shortage reduction should be 400,000 AF.
  - b. For Lake Mead elevations between 1050 ft. and 1025 ft. the shortage reduction should be 500,000 AF.
  - c. For Lake Mead elevations beginning at 1025 ft., and below, the shortage reduction should be 600,000 AF. 6
  - d. Flexibility should be built into implementation of these criteria so that consultation with the State of Arizona can take place so that reductions beyond 600,000 AF will be done in the least damaging way and when improving hydrologic conditions may warrant a lesser reduction than is indicated by a trigger elevation. 7

The City appreciates the ability to provide comments and will continue to work with the Bureau as final shortage criteria and reservoir management schemes are adopted by the Secretary.

Sincerely,

Thomas Buschatzke  
Water Advisor



• "Most Liable City" U.S. Conference of Mayors •

30 November 2005

Via Facsimile (702) 293-8156  
Copy to Follow via US Mail

Robert Johnson, Regional Director  
US Bureau of Reclamation  
Lower Colorado Region (Attn: BCOO-1000)  
PO Box 61470  
Boulder City, NV 89006-1470

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Dear Mr. Johnson:

The City of Scottsdale ("Scottsdale") hereby submits its response to the September 30, 2005 Federal Register notice (70 FR 57322) soliciting public comment regarding development of management strategies for Lake Powell and Lake Mead under low reservoir conditions, including development of lower basin shortage guidelines.

More than 200,000 people rely on the City of Scottsdale to provide safe, reliable drinking water supplies. Central Arizona Project ("CAP") water is a vital component of the city's water supply portfolio. Nearly two-thirds (66%) of Scottsdale's water supply needs are currently met with this resource. Scottsdale has subcontracts for Municipal and Industrial priority water, non-Indian agricultural water, and excess CAP water. We also lease water from three Native American communities, and are participants in the Gila River Indian Community Water Rights Settlement Agreement, which will provide an additional leased supply.

Given that under the Law of the River, the CAP is the junior diverter in the lower basin, the management strategies being developed by the Bureau are of critical interest and importance to the City of Scottsdale. Because Arizona faces the greatest risk of shortage of all of the lower basin states, Scottsdale urges the Bureau to give special consideration to the comments provided by Scottsdale, the State of Arizona, the CAP, and other Arizona water users.

Scottsdale understands that others, including the Arizona Municipal Water Users' Association, and the City of Phoenix, will be providing comments on this issue. Scottsdale supports the general concepts contained in those letters, and would like to reiterate the following points:

- Operation of Lakes Powell and Mead must be consistent with the Law of the River, and must consider that operation of the system for the generation of hydroelectric



power is subordinate to operation for water supply purposes. Water users should not be subject to increased shortages for the benefit of hydroelectricity production.

- We understand that the Bureau of Reclamation has been consulting with the seven basin states regarding conjunctive management of Lakes Powell and Mead. If conjunctive management of Lakes Powell and Mead is the implemented strategy, then the time frame for this management strategy may need to be extended beyond 2016, with the opportunity for review and revision preceding the expiration date. 2
- Through a public process established by the Arizona Department of Water Resources (DWR), the affected Colorado River water users in Arizona have tentatively decided on the following lower basin shortage volumes that should be evaluated by the Bureau. Shortages to the lower basin water users should be based on water level elevations at Lake Mead as follows: 3
  - 400,000 af shortage at or below 1075 ft at Lake Mead
  - 500,000 af shortage at or below 1050 ft at Lake Mead
  - 600,000 af shortage below 1025 ft at Lake Mead
- The final shortage guidelines must be flexible enough so that, after consultation with the affected Arizona water users and DWR, any necessary reductions beyond 600,000 af are accomplished in the least damaging way. The guidelines also must consider that improved hydrologic conditions may warrant a lesser shortage volume than indicated by the Lake Mead water level elevation 4
- The DWR process also considered the management of shortages within Arizona among the Priority 4 water users located along the Colorado River mainstem and the CAP. Scottsdale believes that the Secretary must apportion shortages among Priority 4 water users in a manner consistent with the Law of the River and their contracts. The Bureau's environmental impact statement should identify the impact on diversions by each Priority 4 water user under varying shortage conditions. 5
- The affected Arizona water users and DWR should be allowed to determine how to most efficiently manage shortages within Arizona. 6
- Shortage guidelines and/or management strategies must assume the Yuma Desalting Plant will be operated at full capacity when considering impacts on lower basin water users. If shortage guidelines and/or management strategies assume the Yuma Desalting Plant will not be operated at full capacity, impacts to lower basin water users must be evaluated. 7
- Mexico and Nevada should share in any lower basin shortage. 8
- Mexico and Nevada should share in any lower basin shortage. 9

Scottsdale appreciates the opportunity to comment on this critical issue and looks forward to continuing to work with the State of Arizona and the Bureau in the future with the intention of reaching a satisfactory conclusion for all affected parties.

Sincerely,



David M. Mansfield, General Manager  
Water Resources Department  
City of Scottsdale

Cc: Herb Guenther, Director, Arizona Department of Water Resources



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November 29, 2005

(Via Fax 702.293.8156)

Robert Johnson, Regional Director  
 US Bureau of Reclamation  
 Lower Colorado Region (Attn: BCOO-1000)  
 PO Box 61470  
 Boulder City, NV 89006-1470

RE: Notice of Intent (70 FR57322) to prepare an EIS and solicit comments on the development of Lower Basin shortage guidelines

Dear Mr. Johnson,

The Town of Gilbert submits its response to the notice to scope an EIS and solicit for public comments on the development of management strategies for Lakes Powell and Mead, and Lower Basin shortage guidelines under low reservoir conditions.

The Colorado River water delivered through the CAP is a major component of Gilbert's water supply portfolio, equating to 42% of our renewable supplies. Gilbert holds CAP subcontracts for municipal and industrial priority and non-Indian agricultural priority water, and leases Indian priority water. Because the CAP is the Junior right holder under the Law of the River, Gilbert requests the Bureau heed the comments of the Arizona water users with regards to the development of conjunctive management of the reservoirs, and the development of shortage sharing criteria that best minimizes the impacts to Arizona water users.

The Arizona water users through a statewide stakeholders process in conjunction with the Arizona Department of Water Resources, have developed a set of shortage criteria and anticipate that the scope of the EIS be written broad enough to incorporate the following criteria:

1. Operation for the generation of hydroelectricity is subordinate to operation for water supply purposes as established by the Law of the River, 1
2. Shortage criteria should be implemented for an interim period, ie; 2016, which corresponds to the expiration of the Interim Surplus Guidelines, 2

3. Mexico and Nevada should share in Lower Basin shortages,

3

4. Shortage guidelines and/or management strategies must assume the Yuma Desalting Plant (YDP) will be operated when considering impacts on Arizona water users, and if shortage guidelines and/or management strategies assume the Yuma Desalting Plant will not be operated, impacts to Arizona water users must be evaluated.

4

Gilbert also recommends that the EIS analyze shortages to the Lower Basin users based upon the Arizona Department of Water Resources shortage criteria recommendations:

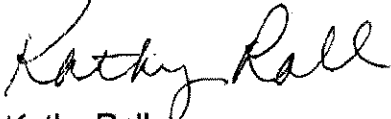
- A. 400,000 af shortage at or below 1,075 water elevation at Lake Mead
- B. 500,000 af shortage at or below 1,050 water elevation at Lake Mead
- C. 600,000 af shortage at or below 1,025 water elevation at Lake Mead
- D. Any reductions beyond 600,000 af must be accomplished through consultation with the affected Arizona water users and the ADWR, in order to minimize the impacts to the Arizona water users

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The Town of Gilbert as a municipality of the Greater Phoenix area, appreciates the opportunity to comment on this important issue and will continue to work with the Bureau in the development of shortage criteria and reservoir management scenarios that best meets the needs of all parties.

Sincerely,

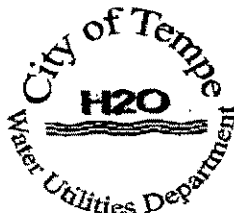


Kathy Rall,  
Water Resources Manager

- c: George Pettit, Town Manager
- Lonnie Frost, Public Works Director



# City of Tempe Water Utilities Department



255 East Marigold Lane  
Tempe, Arizona 85281

## FAX cover sheet

Date: November 30, 2005 Pages to follow: 2

To: Mr. Robert Johnson  
Regional Director  
U.S. Bureau of Reclamation  
Lower Colorado Region

Fax No. (702) 293-8156

From: Eric Kamienski  
Water Resources Administrator  
Tempe Water Utilities Department

Re: City of Tempe comments for EIS scoping on "Development of Lower Basin shortage guidelines and coordinated management strategies for Lake Powell and Lake Mead under low reservoir conditions."

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City of Tempe - Water Utilities Department, FAX (480) 350-8336  
If you do not receive all pages in this transmission please call (480) 350-2608

City of Tempe  
255 E. Marigold Lane  
Tempe, AZ 85281



**Water Utilities Department**

November 30, 2005

*Via Fax (702) 293-8156 and Regular Mail*

Mr. Robert Johnson  
Regional Director  
US Bureau of Reclamation  
Lower Colorado Region (Attention: BCOO-1000)  
PO Box 61470  
Boulder City, NV 89006-1470

**Re: Colorado River Reservoir Operations - Development of Lower Basin  
Shortage Guidelines and Coordinated Management Strategies for  
Lake Powell and Lake Mead Under Low Reservoir Conditions**

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Dear Mr. Johnson,

The City of Tempe provides these comments in response to the September 30, 2005, Federal Register notice of intent to prepare an environmental impact statement (EIS) and solicit comments on development of Lower Basin shortage guidelines and coordinated management strategies for Lake Powell and Lake Mead under low reservoir conditions (70 FR 57322).

The City of Tempe provides water service to a population of over 171,000 people in our water service area, in addition to a large concentration of industries, businesses, and educational institutions in the heart of the greater Phoenix metropolitan area. Colorado River water delivered to Tempe via the Central Arizona Project (CAP) is a significant component of Tempe's water resources portfolio. Tempe holds CAP contracts for Municipal & Industrial (M & I) priority water, and lesser amounts of Indian lease water and non-Indian agricultural priority water. Some portions of the Tempe water service area lack rights to use Salt River Project water supplies, such as the adjacent Town of Guadalupe, to which Tempe has provided water service for over 30 years. Colorado River water delivered by the CAP is the single most important water supply to meet the needs of these areas, and Colorado River reservoir operations are fundamental to the CAP supply.

The CAP has a junior priority under the Law of the River. All CAP water users have a significant interest in the management strategies being developed by the U.S. Bureau of Reclamation. The Arizona Department of Water Resources, the CAP, and Colorado River water stakeholders in Arizona have worked together on development of shortage criteria

for total Lower Basin shortages that manage and minimize the impacts to water users from shortage declarations by the Secretary of the Interior. (See Item VI below).

The City of Tempe provides the following comments on the scope of this EIS:

- I. Operation of Lake Powell and Lake Mead must be consistent with the Law of the River. 1
- II. Operation of the system for water supply purposes has a higher priority than operation of the system for hydropower generation purposes. 2
- III. Shortage criteria should be implemented for an interim period, with a public process for review and/or revision to the criteria prior to the expiration date. An interim period through 2016 has been suggested, as the Interim Surplus Guidclines also expire that year. 3
- IV. Mexico and Nevada should share in shortages to the Lower Basin. 4
- V. Shortage guidelines or management strategies should evaluate the impact to Arizona water users with the Yuma Desalting Plant (YDP) fully operational, and compare impacts to Arizona water users without the YDP in operation. 5
- VI. The City of Tempe agrees with the Arizona Department of Water Resources recommendation (developed through the stakeholder process) that the EIS should analyze implementation of Lower Basin shortages as follows: 6
  - For Lake Mead elevation between 1075 ft. and 1050 ft., a shortage reduction of 400,000 acre-feet.
  - For Lake Mead elevation between 1050 ft. and 1025 ft., a shortage reduction of 500,000 acre-feet.
  - For Lake Mead elevation beginning at 1025 ft. and below, a shortage reduction of 600,000 acre-feet.

Thank you for the opportunity to comment on this important Colorado River reservoir management process. We look forward to working with the Bureau of Reclamation, the State of Arizona, the CAP, and other water users as this process moves forward.

Sincerely,

*Eric S. Kamienski*

Eric Kamienski  
Water Resources Administrator  
Tempe Water Utilities Department

cc: Herb Guenther, Director, Arizona Department of Water Resources





**Chandler · Arizona**  
*Where Values Make The Difference*

November 30, 2005

Robert Johnson, Regional Director  
US Bureau of Reclamation  
Lower Colorado Region (Attn: BCOO-1000)  
PO Box 61470  
Boulder City, NV 89006-1470

RE: Response to September 30, 2005 Federal Register Notice (70 FR 57322)

Dear Mr. Johnson:

In response to the Bureau of Reclamation's request for public comment on the scoping of the Environmental Impact Statement (EIS) for development of Lower Basin shortage guidelines and coordinated management strategies for the operation of Lake Powell and Lake Mead, Chandler submits the following information and comments. Chandler currently delivers water to over 200,000 residents and this number will increase to over 290,000. The Colorado River supplies a large portion of water needed to meet the demand of our residents. The City holds Central Arizona Project (CAP) sub-contracts for Municipal and Industrial Priority water, non-Indian agricultural priority water, and leases Indian priority water. CAP is the junior diverter in the lower basin. Management strategies and shortage guidelines developed through this process will impact Chandler's future water supply. I appreciate the opportunity to comment on the proposed development of these strategies.

Central Arizona Project water users will experience the greatest impact in the Lower Basin if the Secretary of the Interior declares a shortage. Therefore, it is imperative that the Bureau pays special attention to the comments from Chandler, the State of Arizona, the CAP, and Arizona water users. Chandler requests that the final management strategy and shortage guidelines under low reservoir conditions are consistent with the following:

- 1. Lake Powell and Lake Mead operations are consistent with the Law of the River. 1
- 2. Lakes Powell and Mead are operated for water supply purposes. Generation of hydroelectricity is subordinate to operation for water supply. Water users should not be subject to increased shortages for the benefit of hydroelectricity production. 2
- 3. The minimum objective release from Lake Powell to the lower basin must be at least 8.23 maf/yr. Lower basin shortage guidelines should expire no later than 2016, with the opportunity for review and revision preceding the expiration date. 3

*Mailing Address*  
Mail Stop 404  
PO Box 4008  
Chandler, Arizona 85244-4008

**Municipal Utilities Department**  
**Environmental Resources/Water Conservation**  
Telephone (480) 782-3580  
Fax (480) 782-3805  
www.chandleraz.gov

*Location*  
975 East Armstrong Way  
Chandler, Arizona 85249  
**L-2006**

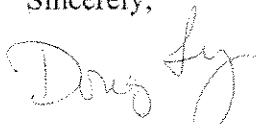


Robert Johnson  
November 30, 2005  
Page 2

- 4. Mexico will share in shortages to the Lower Basin. 5
- 5. Any management strategy or shortage guidelines must consider operation of the Yuma Desalting Plant. If shortage guidelines and management strategies assume the Yuma Desalting Plant will not be operated, impacts to Arizona water users must be evaluated. 6
- 6. Through a public process established by the Arizona Department of Water Resources (ADWR), the affected Colorado River water users in Arizona have tentatively decided on lower basin shortage volumes. Chandler agrees with ADWR's recommendation that the EIS should analyze Lower Basin shortages that are implemented as follows: 7
  - 400,000 af shortage at or below 1075 ft at Lake Mead.
  - 500,000 af shortage at or below 1050 ft at Lake Mead.
  - 600,000 af shortage below 1025 ft at Lake Mead.
- The final shortage guidelines must be flexible so that, after consultation with the affected Arizona water users and ADWR, any reductions beyond 600,000 af are accomplished in the least damaging way. 8
- 7. Within the context of existing contracts, affected Arizona water users and ADWR will determine how to most efficiently manage shortages within Arizona. 9
- 8. The Secretary of the Interior should implement the final management strategy through a record of decision after completion of the EIS by the Bureau. 10

I appreciate the opportunity to comment on behalf of the City of Chandler. I will continue to participate in this critical issue to ensure shortage criteria and reservoir management schemes are implemented to meet the intent of the Law of the River.

Sincerely,



Doug Toy P.E.  
Water Resource Engineer

xc: Herb Guenther, Director, Arizona Department of Water Resources  
Karen Barfoot P.E., Assistant Municipal Utilities Director, City of Chandler

**Kucera, Cindy**

---

**From:** Bob Lynch [rslynch@rslynchaty.com]  
**Sent:** Wednesday, November 30, 2005 1:52 PM  
**To:** strategies@lc.usbr.gov; strategies@uc.usbr.gov  
**Subject:** Scoping of an Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA) in developing possible Lower Basin Shortage Guidelines and possible Coordinated Management Strategies for Lake Powell and Lake Mead  
**Attachments:** ShortCrit113005.doc

Please see attached.

Robert S. Lynch, Esq.  
Robert S. Lynch & Associates  
340 E. Palm Lane, Suite 140  
Phoenix, Arizona 85004-4603  
Phone: 602-254-5908  
Fax: 602-257-9542  
E-mail: rslynch@rslynchaty.com

L-2007

12/6/2005

# IRRIGATION & ELECTRICAL DISTRICTS ASSOCIATION OF ARIZONA

W.A. DUNN  
CHAIRMAN OF THE BOARD

R. GALE PEARCE  
PRESIDENT

R.D. JUSTICE  
VICE-PRESIDENT

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(602) 254-5908  
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E-mail: [rslynch@rslynchaty.com](mailto:rslynch@rslynchaty.com)

CHARLES W. SLOCUM  
SECRETARY-TREASURER  
  
ROBERT S. LYNCH  
ASSISTANT SECRETARY-TREASURER

E-MAILED AND MAILED

November 30, 2005

Mr. Robert W. Johnson  
Regional Director  
Lower Colorado River Region  
U.S. Bureau of Reclamation  
Attn: BCOO-1000  
P.O. Box 61470  
Boulder City, Nevada 89006-1470  
E-mail: [strategies@lc.usbr.gov](mailto:strategies@lc.usbr.gov)

Mr. Rick L. Gold  
Regional Director  
Upper Colorado River Region  
U.S. Bureau of Reclamation  
Attn: UC-402  
125 South State Street, Room 6107  
Salt Lake City, Utah 84318-1147  
E-mail: [strategies@uc.usbr.gov](mailto:strategies@uc.usbr.gov)

Re: Scoping of an Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA) in developing possible Lower Basin Shortage Guidelines and possible Coordinated Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions, 70 Fed.Reg. 57322-3 (September 30, 2005)

Gentlemen:

The Irrigation & Electrical Districts' Association of Arizona (IEDA) is submitting these comments supplementary to the comments previously submitted by letter of August 31, 2005 on this subject and the oral remarks that I made the evening of November 3, 2005 at your public meeting at the Arizona Department of Water Resources in Phoenix. Please consider those comments incorporated by reference in the following comments as to the scope of alternatives that need to be addressed in the upcoming EIS. The purpose of our comments is to discuss our views about the range of alternatives that need to be incorporated into the EIS analysis. As you know, NEPA requires that the EIS discuss all reasonable alternatives and analyze their environmental impacts in order to have a proper advisory document to place before the decision-maker, here the Secretary of the Interior.

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L-2007

First, the Federal Register notice begins with the assumption that an EIS is required for this exercise and we heartily agree. Over 20 million people rely on the Lower Colorado River for a water supply and the hydropower generated at Hoover and Glen Canyon Dams is an essential element of the power supply of the Southwest and the Colorado River Basin. Balancing water and electric needs against environmental requirements in this context is clearly a major federal action significantly affecting the quality of the human environment.

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Second, we will not comment on the desirability of any of these alternatives or what a preferred alternative, if any, should contain in the way of elements. Rather, we wish to focus on the task of articulating “all” reasonable alternatives in order to create an adequate EIS.

On this second point, we wish to express our concern that the document must address all the alternatives that have been suggested and elements of alternatives that have been suggested in order to pass muster under NEPA. Some of those elements will be elements we do not support. For instance, Peter Culp of the Sonoran Institute mentioned in his remarks on November 3 that the Secretary should be crafting long-term criteria. It is our understanding that the Basin States do not support that approach but rather support establishing interim shortage criteria. We have already agreed in writing with that position. Nevertheless, NEPA obliges you to either include that element in an alternative for environmental analysis or to explain why such an element will not be included in any of the alternatives analyzed in detail. Likewise, Mr. Culp’s suggestion of market-based strategies is not one we can support. Here again, it either must be included in one or more alternatives for detailed analysis or the reason for not doing so must be laid out. We believe that there are too many moving parts to Lower Colorado River operations right now, including those that affect Mexico, in order to establish any long-term shortage criteria that could possibly make any sense. Moreover, given the number of decisions that we all face on the Lower Colorado River in the future, there is no way that any such criteria could go very long without major overall. Likewise, market-based management of the Lower Colorado River would require significant change to the Law of the River, change that would be opposed in many quarters and is not likely to be successful. Observations such as ours may be worth considering in deciding whether these elements should be given detailed environmental analysis. Our message simply is that they cannot be ignored.

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Likewise, there has been significant discussion over whether the minimum release criterion of the Long-Range Operating Criteria (8.23 maf) should be lowered permanently or temporarily or ignored permanently or temporarily. While we do not at all favor opening the Pandora’s box that is the Long-Range Operating Criteria, this issue also must be evaluated.

6

Other matters that have been suggested already by various comments and are likely to be included in further comments include altering 602(a) storage parameters, alternative outcomes that can result from negotiations with Mexico over shortage sharing, alternative outcomes for the future of the Yuma Desalting Plant and proposed Lower Basin offstream storage, possible augmentation of Colorado River water supplies pursuant to the 1968 Act, shortage frequency

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management, and the possible role of the Secretary in resolving issues related to shortage sharing among Priority 4 water users. 12

Another array of alternatives very important to our members is the question of whether a minimum power pool will be protected in these shortage criteria, either for Lake Powell or Lake Mead. We have reviewed Herb Guenther's letter to you of November 28, 2005 forwarding the comments of the Arizona Department of Water Resources. We support those comments. Whether we support them or not, they articulate elements that must be considered in one or more reasonable alternatives in the EIS. We believe that Director Guenther's comments fall short under NEPA in one very significant respect, however.

The Arizona Power Authority has already commented on the need for protecting minimum power pool at Lake Mead or analyzing the impacts of not doing so and what that means for the Power Authority and its customers as well as the other Hoover power customers. We have joined in that comment. For that reason, we believe that you must do studies for your alternatives analysis that protect minimum power pool at Lake Mead in combination with protecting it at Lake Powell, studies that do not protect minimum power pool at either, and studies that protect minimum power pool at Lake Mead but not at Lake Powell. It is our understanding that current studies protect minimum power pool at Lake Powell but not at Lake Mead, so that fourth combination has already been studied. Without such analyses, we believe the ultimate product, the EIS, will be subject to challenge. 13

Along the way, you will need to fact the legal issues that arise from the supposition that minimum power pool elevations at either lake will be unprotected, both as to the existing statutory mandates of the acts that govern their operation and the contracts that exist for the delivery of resources from those Reclamation facilities. In studying the minimum release criterion in the Long Range Operating Criteria, you may also have to face the knotty legal issue about just exactly what those criteria are. Since they have existed, relatively untouched, for 35 years, the fluidity of their status (no pun intended) may not be the same as if they had been announced by the Secretary last year. 14

Finally, your baseline, i.e., your no action alternative, must articulate current conditions and the current status quo vis-à-vis dam operations at Glen Canyon and Hoover Dams as well as operational constraints at both facilities that are currently being employed. The no action alternative must also be premised on the current Law of the River. To the extent that the Secretary believes she has authority to declare shortages without shortage criteria, that needs to be included. To the extent that the Secretary believes that she has the legal right currently to ignore or fail to implement an element of the current Long Range Operating Criteria, that also needs to be included as part of the baseline and no action alternative. Additionally, there are other matters that will be happening within the area covered by the shortage criteria that are not within the four corners of that criteria as contemplated. These include the development of the Multi-Species Conservation Plan and its impacts, the ongoing litigation over water supply in the Gunnison River, and other matters that are ongoing within the area of study but not part of this 15 16 17

Mr. Robert W. Johnson  
Mr. Rick L. Gold  
November 30, 2005  
Page 4

administrative exercise.

This is no simple task and not one that would evoke envy in most quarters. We wish to continue to participate with you in this process and to be of whatever assistance we can in seeing to it that the EIS that is produced is “adequate” under NEPA, regardless of whether the ultimate decision brings peace in our times.

Sincerely,

*/s/ Robert S. Lynch*

Robert S. Lynch  
Counsel and Assistant  
Secretary/Treasurer

RSL:psr  
cc: IEDA Members



**CREDA**  
**Colorado River Energy Distributors Association**

**ARIZONA**  
Arizona Municipal Power Users Association

Arizona Power Authority

Arizona Power Pooling Association

Irrigation and Electrical Districts Association

Navajo Tribal Utility Authority  
(also New Mexico, Utah)

Salt River Project

**COLORADO**  
Colorado Springs Utilities

Intermountain Rural Electric Association

Platte River Power Authority

Tri-State Generation & Transmission Association, Inc.  
(also Nebraska, Wyoming, New Mexico)

Yampa Valley Electric Association, Inc.

**NEVADA**  
Colorado River Commission of Nevada

Silver State Power Association

**NEW MEXICO**  
Farmington Electric Utility System

Los Alamos County

City of Truth or Consequences

**UTAH**  
City of Provo

City of St. George

Strawberry Electric Service District

Utah Associated Municipal Power Systems

Utah Municipal Power Agency

**WYOMING**  
Wyoming Municipal Power Agency

**Leslie James**  
Executive Director  
CREDA  
4625 S. Wendler Drive, Suite 111  
Tempe, Arizona 85282

Phone: 602-748-1344  
Fax: 602-748-1345  
Cellular: 602-469-4046  
Email: [creda@qwest.net](mailto:creda@qwest.net)  
Website: [www.creda.org](http://www.creda.org)

November 30, 2005

Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
Attn: BCOO1000 email: [strategies@lc.usbr.gov](mailto:strategies@lc.usbr.gov)

Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
Attn: UC-402 email: [strategies@uc.usbr.gov](mailto:strategies@uc.usbr.gov)

RE: Colorado River Reservoir Operations: Development of Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions – Notice of Intent to prepare an environmental impact statement (EIS) and notice to solicit comments and hold public scoping meetings...(70 FRN No. 189 at 57322, September 30, 2005)

Gentlemen:

Following are comments of the Colorado River Energy Distributors Association (CREDA) in response to the above referenced Notice.

CREDA submitted written comments, including a detailed description of CREDA membership and interest in this process on August 29, 2005. CREDA representatives also provided verbal comments at Reclamation's public comment forums held on November 1, 2, 3 and 8, 2005. At those forums, Reclamation indicated it is not necessary to reiterate such verbal comments in written format. Accordingly, CREDA will not reiterate our previous written comments or our verbal comments herein, but would request that those comments and recommendations be included in the record and be given consideration in the current process.

Thank you for your consideration. We are available at any time to discuss these issues with you.

Sincerely,

*/s/ Leslie James*

Leslie James  
Executive Director

Cc: CREDA Board  
John Keys, USBR  
Rick Gold, USBR  
Mike Hacskeylo, WAPA

November 30, 2005

Mr. Robert W. Johnson  
Regional Director, LC-1000  
Lower Colorado Region  
Bureau of Reclamation  
Department of the Interior  
P.O. Box 61470  
Boulder City, NV 89006-1470

Reference: Interior's Low Reservoir Management Strategies - Colorado River

Dear Mr. Johnson:

The Arizona Power Authority (Authority) submits the following comments in response to the Secretary of the Interior's direction to the Bureau of Reclamation (Reclamation) found at 70 Fed. Reg 57322; Reclamation's **Notice to Solicit Comments on Colorado River Operations: Development of Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead under Low Reservoir Conditions**,

The Authority is a body corporate and politic of the State of Arizona authorized under Arizona Revised Statutes for the express purpose of, among others, receiving and administering hydroelectric power produced from the main stem of the Colorado River.

In developing both the draft Environmental Impact Study(ies) (EIS) and alternatives to be analyzed therein, the public power users in Arizona that receive hydropower generation from Hoover Dam via water from Lake Mead encourage Reclamation and the Secretary to note the following: The 1928 Boulder Canyon Project Act and the 1984 Hoover Power Plant Act, as amended or supplemented, and the electric service contracts thereto. For example, the Authority has entered into two pertinent contracts. The first contract, between the Authority and Reclamation (Contract No. 7-07-30-P1019 dated January 27, 1987) provided for the Authority to contribute \$57,178,466 in "up-front" funding for the rewinding and uprating of the generating units at Hoover Dam. The second, entered into by the Authority with the Department of Energy, Western Area Power Administration (Western) and Reclamation (Contract No. DE-MS65-



86WP39574, dated January 1, 1987), provides for the purchase of hydroelectric power from the Boulder Canyon Project's Hoover Dam for the period 1987 to 2017. For Reclamation to join Western in signing an electric service contract was an exceptional event that occurred only as part of an arrangement in which the Hoover Schedule B contractors provided "up-front" funding for the rewinding and uprating of the Hoover generating units. Reclamation was, therefore, willing to provide its contractual commitment that the power would be generated in accordance with the capacity and energy entitlements contracted for by the Hoover power contractors with the limited exceptions set forth in section 5.1.1.1 and 5.1.1.2 of the contract. These provisions state:

"Subject to the statutory requirement that Hoover Dam and Lake Mead shall be used: first, for river regulation, improvement of navigation and flood control; second, for irrigation and domestic uses and satisfaction of present perfected rights mentioned in section 6 of the Boulder Canyon Project Act; and third, for power, Reclamation shall release water, make available generating capacity, and generate energy, in such quantities, and at such times, as are necessary for the delivery of the capacity and energy to which Contractors are entitled.

Reclamation reserves the right to reschedule, temporarily discontinue, reduce, or increase the delivery of water for the generation of electrical energy at any time for the purpose of maintenance, repairs, or replacements, and for investigations and inspections necessary thereto, or to allow for changing reservoir and river conditions, or for changes in kilowatthours generation per acre-foot, . . . ."

Water users of Lake Mead provide less than 1% of the Boulder Canyon Projects' funding leaving the remaining 99 percent of the Project's financial security upon the fifteen power users. In the case of Arizona, that applies to one power customer, in Nevada it applies to two power customers. It seems logical that Reclamation and the Secretary should seriously consider the concerns and possible financial inequities to the power community in the modeling criteria and process such that the elevation of Lake Mead is maintained at or above the minimum power pool elevation.

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Even though water for consumptive uses may have a higher priority than water utilized for power generation, it is essential that the EIS recognize and protect power production, not only to insure the availability of low-cost hydropower in the Upper and Lower Basins, but to provide the revenue necessary to maintain the water conveyance features of the Projects while protecting the power features that provide the economic security and financial integrity of the Projects.

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Reduction in the amount of water stored in Lake Mead in turn reduces the head available for power production thereby reducing the amount of the power produced for the Hoover power contractors. Changes in the time of water releases can also have a negative impact on the value of the power produced. In either case, the value of the bargain for the Hoover power contractors is reduced. The Hoover power contractors recognized the variability of river hydrology when they contracted with Western and Reclamation. They recognized river flows may vary and

accept the risk of unpredictable river flows. **However, they did not accept the risk that a federal agency might reduce the benefit of their bargain by changes which the federal government chose to make in the operation of the river.** That was the assurance that Reclamation committed to in section 5.1.1 of each contractor's Electric Service Contract.

The Authority supports Reclamation's use of an open rule-making process in order to (a) assure that the potential benefits of improved river operations can be explored and (b) an optimum operating strategy can be implemented. In order to assure that any modification of the operating strategy does not deprive the Hoover power contractors of the benefit of the bargain that they, Western and Reclamation mutually committed to in 1987, the Authority requests that Reclamation adopt the following practices in developing management strategies for low reservoir conditions at Lake Powell and Lake Mead, and for shortage criteria for the Lower Colorado River Basin.

- For each operating strategy proposal, Reclamation should run sensitivity studies to determine the impact on Hoover power production. The results of those sensitivity studies should be made available to the Hoover power contractors with an explanation of any reduction in the amount of power that will be generated and any change in the timing of generation. 3
  
- Reclamation should propose methods to minimize and fully mitigate any adverse impacts on the amount and value of the power that the Hoover power contractors will receive. 4
  
- Reclamation should discuss the package of proposed changes and proposed mitigation with the Hoover power contractors prior to their adoption. 5

In evaluating the environmental impacts of any modification of river operations, the National Environmental Policy Act requires that the economic impacts of reducing power production or adversely impacting the value of the power generated by altering its timing be analyzed and considered. We, therefore, request that the process include such an analysis and consideration of the effect of any proposed change in river operation on the power generation at Hoover Dam.

The Authority appreciates this opportunity to offer its comments on this important process.

Respectfully submitted,

*/s/ Joseph W. Mulholland*

Joseph W. Mulholland  
Executive Director



November 30, 2005

CITY OF  
TUCSON

TUCSON WATER  
DEPARTMENT

Robert Johnson, Regional Director  
US Bureau of Reclamation  
Lower Colorado Region (Attn: BCOO-1000)  
PO Box 61470  
Boulder City, NV 89006-1470

Dear Mr. Johnson:

The City of Tucson Water Department (Tucson Water) submits the following comments in response to the September 30, 2005 notice in the Federal Register (70 FR 57322) soliciting public comment on developing management strategies for Lake Powell and Lake Mead under low reservoir conditions, including lower basin shortage guidelines.

Tucson Water holds the largest Central Arizona Project (CAP) municipal and industrial subcontract in the state. This subcontract provides the only significant renewable water supply currently available to meet the needs of the nearly 680,000 people residing within the Tucson Water service area, both inside and outside the City of Tucson. Therefore, the management strategies being developed by the Bureau of Reclamation are of critical importance to the current and future economy of the entire Tucson metropolitan area.

Tucson Water is aware that the State of Arizona and others representing Arizona's municipal water providers also are providing comments on this matter. We fully concur with and support the comments submitted by the Arizona Department of Water Resources and the Arizona Municipal Water Users Association and, by reference, reiterate those parties' comments on behalf of this department.

We appreciate the opportunity to provide comment on this critical issue. Tucson Water will continue to work with the State of Arizona and the Bureau of Reclamation as we collectively pursue a management strategy that benefits both the Upper Division States and the Lower Division States within the Colorado River Basin.

Sincerely,

*Marie S. Pearthree, Deputy Director*

*for* David V. Modeer, Director  
Tucson Water

Cc: Herb Guenther, Director, Arizona Department of Water Resources  
Steven L. Olson, Executive Director, AMWUA





# arizona municipal water users association

4041 north central avenue • suite 900 • phoenix, arizona 85012 • phone (602) 248-8482 • fax (602) 248-8423

November 30, 2005

Mr. Robert Johnson  
Regional Director  
U.S. Bureau of Reclamation  
Lower Colorado Region (Attn: BCOO-1000)  
P.O. Box 61470  
Boulder City, Nevada 89006-1470

Dear Mr. Johnson:

In response to the September 30, 2005 notice in the Federal Register (70 FR 57322), the Arizona Municipal Water Users Association (AMWUA) presents these comments regarding management strategies for Lake Powell and Lake Mead under low reservoir conditions, including lower basin shortage guidelines. The municipal water systems owned and operated by the AMWUA member cities of Chandler, Glendale, Goodyear, Peoria, Phoenix, Mesa, Scottsdale, Tempe and the Town of Gilbert taken together are responsible for providing for the water needs of over 3 million people, 60 percent of the population of the State of Arizona, and the vibrant economy supporting this population. Each AMWUA member holds an M&I subcontract for Central Arizona Project (CAP) water, a vital component of its renewable supplies. Given that under the Law of the River, the CAP is the junior diverter in the lower basin, the management strategies being developed by the Bureau are of critical interest and importance to AMWUA. In fact, equity demands that the Bureau take special note of the desires of the CAP water users with respect to this issue.

Regardless of the nature of the final management strategy, it must comply with the "Law of the River" extant. Within this context, the following concepts must be addressed:

1. Operation of Lakes Powell and Mead must be consistent with the Law of the River, including the fact that operation for the generation of hydroelectricity is subordinate to operation for water supply purposes. Water users should not be subject to increased shortages for the benefit of hydroelectricity production. 1 2
2. The minimum objective release from Lake Powell to the lower basin must be at least 8.23 maf/yr. Lower basin shortage guidelines should expire no later than 2016, with the opportunity for review and revision preceding the expiration date. 3 4
3. It is AMWUA's understanding that the Bureau has been consulting with the seven basin states regarding conjunctive management of Lakes Powell and Mead. Any change in

upper basin deliveries must be consistent with the upper basin's delivery obligations to the lower basin and the upper basin's share of the Mexican obligation. If conjunctive management of Lakes Powell and Mead is the implemented strategy, then the time frame for this management strategy may need to be extended beyond 2016, with the opportunity for review and revision preceding the expiration date.

4. Through a public process established by the Arizona Department of Water Resources (DWR), the affected Colorado River water users in Arizona have tentatively decided on the following lower basin shortage volumes which should be evaluated by the Bureau. Shortages to the lower basin water users should be based on water level elevations at Lake Mead as follows:

400,000 af shortage at or below 1075 ft at Lake Mead  
500,000 af shortage at or below 1050 ft at Lake Mead  
600,000 af shortage below 1025 ft at Lake Mead

The final shortage guidelines must be flexible enough so that, after consultation by the Secretary of the Interior (Secretary) with the affected Arizona water users and DWR, any necessary reductions beyond 600,000 af are accomplished in the least damaging way. The guidelines also have to take into account that improved hydrologic conditions may warrant a lesser shortage volume than indicated by the Lake Mead water level elevation.

The DWR process also considered the management of shortages within Arizona among the Priority 4 water users located along the Colorado River mainstem and the CAP. AMWUA believes that the Secretary must apportion shortages among Priority 4 water users in a manner consistent with the Law of the River and their contracts. The Bureau's environmental impact statement should identify the impact on diversions by each Priority 4 water user under varying shortage conditions.

5. The affected Arizona water users and DWR will determine how to most efficiently manage shortages within Arizona.
6. The Bureau's evaluation of the management strategies and shortage guidelines must include consideration of operation of the Yuma Desalting Plant (YDP) as compared to the present situation where the YDP is not operating. The Secretary should not implement a management strategy that does not include operation of the YDP if the strategy will increase the probability of lower basin shortages with respect to severity, magnitude, duration, or frequency of occurrence.
7. Mexico and Nevada should share in any lower basin shortage.
8. Finally, the Secretary should implement the final management strategy through a record of decision after completion of the environmental impact statement by the Bureau.

We appreciate the opportunity to comment on this critical issue and look forward to continuing to work with the State of Arizona and the Bureau of Reclamation in the future with the intention of reaching a satisfactory conclusion for all affected parties.

Sincerely,

A handwritten signature in black ink that reads "Steven L. Olson". The signature is written in a cursive style with a large, prominent "S" and "O".

Steven L. Olson  
Executive Director

c: Herbert R. Guenther, Director, Arizona Department of Water Resources

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November 30, 2005

Robert Johnson, Regional Director  
US Bureau of Reclamation  
Lower Colorado Region (Attn: BCOO-1000)  
PO Box 61470  
Boulder City, NV 89006-1470

Dear Mr. Johnson,

In response to the September 30, 2005 notice in the Federal Register (70 **FR** 57322), the City of Mesa, Arizona (“Mesa”), submits these comments regarding management strategies for Lake Powell and Lake Mead under low reservoir conditions, including Lower Basin shortage guidelines.

Mesa, the third-largest city in Arizona, holds subcontracts for 36,388 acre-feet of municipal and industrial priority Central Arizona Project (CAP) water and for a percentage of the available supply of non-Indian agricultural priority CAP water, historically equal to at least 10,000 acre-feet per year. In addition Mesa has interest in Indian priority CAP water through both leases and exchanges that total nearly 25,000 acre-feet. CAP water supplies make up nearly 45% of the water provided to Mesa customers. Because the CAP is the junior diverter in the lower basin, the management strategies being developed by the Bureau are of critical interest and importance to our citizens. Mesa asks the Bureau to give particular weight to its comments as CAP water users potentially bear the greatest burdens of shortage on the Colorado River.

To that end, please note that Mesa and other Arizona water users have developed a set of concepts that we believe must be addressed in the final management strategy. We ask that the scope of the EIS be sufficiently broad to include the following concepts:

1. Operation of Lakes Powell and Mead must be consistent with the Law of the River, including and in particular the legal requirement that operation for the generation of hydropower is subordinate to operation for water supply purposes. Water users should

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not be subject to an increase in the frequency or duration of shortages for the benefit of hydropower production.

2. The minimum objective release from Lake Powell to the Lower Basin must be at least 8.23 maf/yr. Lower Basin shortage guidelines should expire no later than 2016, with an opportunity for review and revision preceding the expiration date.

3. Any change in Upper Basin deliveries arising out of consultation with the seven basin states regarding conjunctive management of Lakes Powell and Mead must be consistent with the Upper Basin's delivery obligations to the Lower Basin and the Upper Basin's share of the Mexican obligation. If conjunctive management of Lakes Powell and Mead is the implemented strategy, then the time frame for this management strategy may need to be extended beyond 2016, with the opportunity for review and revision preceding the expiration date.

Through a public process established by the Arizona Department of Water Resources the affected Colorado River water users in Arizona have tentatively agreed that the Bureau should evaluate the following Lower Basin shortage volumes. Shortages to the Lower Basin water users in Arizona should be based on water level elevations at Lake Mead as follows:

- 400,000 af shortage at or below 1075 ft at Lake Mead
- 500,000 af shortage at or below 1050 ft at Lake Mead
- 600,000 af shortage below 1025 ft at Lake Mead

The final shortage guidelines must be flexible enough so that, after consultation by the Secretary of the Interior (Secretary) with the affected Arizona water users, any necessary reductions beyond 600,000 acre-feet are accomplished in the least damaging way. The guidelines also should contemplate that improved hydrologic conditions may warrant a lesser shortage volume than indicated by the Lake Mead water level elevation.

4. The management of shortages within Arizona between those Priority 4 water users located along the Colorado River mainstem and those dependent on the CAP was also considered through the Arizona water users' stakeholder process. Mesa believes that the Secretary must apportion shortages among Priority 4 water users in a manner consistent with the language of the Priority 4 contracts and the Law of the River.

5. The affected Arizona water users will determine how to most efficiently manage shortages within Arizona.



6. Operation of the Yuma Desalting Plant must be considered in such a manner as to not increase Lower Basin shortages either with respect to severity, magnitude, duration or frequency of occurrence. 9
7. Mexico and Nevada should share in any Lower Basin shortage. 10
8. Finally, the Secretary should implement the final management strategy through a record of decision after completion of the environmental impact statement by the Bureau. 11

Thank you for the opportunity to comment on this critical issue. Mesa looks forward to working with the State of Arizona and the Bureau as the process for determination of shortage criteria and reservoir management schemes continues.

Sincerely,

Kathryn Sorensen  
Water Resources Coordinator

Cc: Herb Guenther, Director, Arizona Department of Water Resources

16 MR. BOYCE: My name is Harvey Boyce, B-O-Y-C-E.  
17 I'm here representing the Arizona Power Authority, and we'd  
18 like to offer the following into the record:

19 Public power users in Arizona that receive  
20 hydropower generation from the Hoover Dam via water  
21 deliveries from Lake Mead encourage the federal officials  
22 involved in this process to consider the language found in  
23 the 1928 Boulder Canyon Project Act and the 1984 Hoover  
24 Power Plant Act and those Power contracts written thereto.  
25 We find that reclamation is required acting for the  
1 Secretary of the Interior to generate and deliver hydropower  
2 to the customers of Hoover, also referred to as the Hoover  
3 Allottees, which there are 15 in number. Further the 1928  
4 Act directs the Secretary of the Interior to provide for  
5 hydrogeneration to make the Boulder Canyon Project  
6 financially secure. We note that water users of Lake Mead  
7 provide less than 1 percent of the Project's funding.  
8 Consequently the power users, those 15 customers, bear the  
9 bulk of the responsibility to ensure that the financial and  
10 integrity of the Boulder Canyon Project remains sound.

11 Therefore, the concerns of the power community  
12 within Arizona must be made a part of the modeling criteria  
13 and the process such that the elevation of Lake Mead is  
14 maintained at or above the minimum power pool elevation.

15 Furthermore the Arizona Power Authority requests  
16 that the Hoover power users be included throughout this  
17 process. Thank you.

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**Diane**

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**From:** "pgriffin" <pgriffin@griffinreporters.com>  
**To:** "Diane Donoho" <ddonoho1@cox.net>  
**Sent:** Friday, November 04, 2005 4:20 PM  
**Subject:** FW: Statement to be made at meeting tonight.

FOR YOU!

Mary Ann

Griffin & Associates  
602.264.2230  
pgriffin@griffinreporters.com  
FAX: 602.264.2245  
888.529.9990

-----Original Message-----

**From:** Harvey W. Boyce [mailto:harvey@powerauthority.org]  
**Sent:** Friday, November 04, 2005 3:46 PM  
**To:** Pam Griffin  
**Subject:** FW: Statement to be made at meeting tonight.

Attention: Diane Donoho

**Statement of Harvey W. Boyce made at Bureau of Reclamation's public meeting, Evening of Thursday, 11/4/05.**

**[Harvey W. Boyce]** Diane, I deviated from this slightly but, this will give you a comparative document. This can be entered into the record as a seperate document just as though I delivered it to you last night. Thank you.

The public power users in Arizona that receive hydropower generation from Hoover Dam via water from Lake Mead encourage the federal officials involved in this public process to give consideration to the 1928 Boulder Canyon Project Act and the 1984 Hoover Power Plant Act and the Power contracts thereto which require Reclamation to generate and deliver hydro power to the allottees. Further, the 1928 Act directs the Secretary of the Interior to provide hydro generation to make the BCP financially secure. Water users of Lake Mead provide less than 1% of the Projects' funding. Therefore, the power users bear the bulk of responsibility to ensure the financial integrity of the BCP.

Therefore, the concerns of the power community must be made a part of the modeling criteria and process such that the elevation of Lake Mead is maintained at or above the minimum power pool elevation. Furthermore, the Arizona Power Authority requests that the Hoover power users be included in this process.

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*Thank you for this opportunity to provide these remarks.*

16 MR. LYNCH: I'm Bob Lynch. I am an attorney here  
17 in Phoenix and here on behalf of the Irrigation and  
18 Electrical District Association of Arizona. Our members and  
19 associate members buy most of the power sold in Arizona from  
20 the Colorado River Storage Project and most of the power  
21 sold through the Arizona Power Authority from Hoover as well  
22 as a good slug of the power from the Parker Davis project.  
23 So we are very much concerned about the impacts on power  
24 generation from shortage criteria that will be developed or  
25 might be developed by the Secretary through this process.

1 The problem is that short criteria, at least in  
2 my view, are just a way of coming up with a mathematical  
3 model for cutting off Central Arizona Project's water and  
4 for complicating our ability to have the necessary water to  
5 generate power on the river. Neither of these are  
6 particularly nice outcomes and is probably a good reason why  
7 since 1928 shortage criteria have not been developed on the  
8 Colorado river for the Lower Basin states.

9 I'm concerned about your scoping process  
10 initially. If I understand the current status of affairs  
11 correctly, there are serious questions about modeling that  
12 have not been resolved related to the past practice of  
13 stopping analysis of minimum power fuel at Lake Powell but  
14 not at Lake Mead. I know that the Arizona Department of  
15 Water Resources has sent some letters requesting some  
16 alternative models be run. I don't know what the answer to  
17 that is or whether the Reclamation is going to do that.

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18 There have also been discussions about not following the  
19 minimum release criterion on long range operative criteria,  
20 8.23 million-acre feet. There's been some talk about the  
21 fact that the Secretary of the Interior has the authority to  
22 in an appropriate circumstance ignore that criterion and  
23 lower that minimum release annually on a given year without  
24 any further criteria. I haven't seen anything in the  
25 Department of the Interior that would provide any kind of  
1 legal justification for that.

2 But the bottom line is that the assumptions are  
3 being discussed if not assaulted in this process at this  
4 time. Yet Mr. Culp's proposal, your slides all appear to  
5 operate on the basis that the law of river long-range  
6 operating criteria in the status quo in terms of past  
7 practice are not going to change. If that's true, fine.  
8 But if you scope this EIS on the basis that that is the  
9 case, if it turns out not to be, then you've got to go back  
10 to Square 1 underneath it and start it over again because  
11 the assumptions everyone is relying on to identify the  
12 alternatives and to comment on them and to work with them  
13 and analyze them will be wrong.

14 So your first task in my view is getting it  
15 settled among the seven basin states, you know, with or  
16 without shotguns, as to whether or not this set of  
17 assumptions is going to continue to hold true for the  
18 process. If it is, fine. If it isn't, well, we'll deal  
19 with that probably in court. But that's the, you know, the  
20 800-pound gorilla in this process right now. And with a  
21 60-day scoping period, you sort of come to the end the

22 public process the end of this month, and I don't think all  
23 of these issues will be put to bed by then. I could be  
24 wrong, but the way things are going, I don't think so.

25           So we're all in a quandary or at least maybe I'm  
1 the only one in a quandary over how to suggest to you  
2 various alternatives that need to be assessed and identified  
3 in order to have an adequate document as a draft  
4 environmental impact statement to present to the public. I  
5 know, for instance, that, if you assume that there be will  
6 be conditions covered by this criteria that cause either of  
7 these reservoirs to drop below the minimum power pool,  
8 you've got a very serious economic analysis associated with  
9 those events in addition to the environmental and other  
10 consequences of not having that water supply.

11           Those impacts include the cost to the purchasing  
12 entities for alternative water supplies, the cost to the  
13 programs authorized by Congress, the difficulties in dealing  
14 with legal issues that have already been mentioned tonight  
15 about the obligations of the Secretary to deliver this  
16 resource and generate it. Both reservoirs are covered by  
17 funds within the United States Treasury. They're different  
18 kind of funds, but basically they're used to pay the bills.  
19 And Power pays essentially all the bills for both the  
20 Boulder Canyon Project and Colorado River storage Project as  
21 well as a good slug of the bills for the Parker Davis  
22 Project.

23           There are some very serious socioeconomic  
24 consequences associated with this and related economic

25 damage in communities, especially rural communities and  
1 agricultural communities, in all three states that will have  
2 to be assessed. So deciding whether you're going to protect  
3 minimum power pool at Glen Canyon or Hoover or neither is a  
4 major cut and a major analysis that you're going to have to  
5 go through in deciding how to fashion alternatives to  
6 display in the draft environmental impact statement. And  
7 you're going to have to gather some information. One of the  
8 unfortunate things that has crept into the Council on  
9 Environmental Regulations is the requirement to go get  
10 information if you haven't got it. In a day of adaptive  
11 management, I don't think that makes any sense, but it's  
12 there. And I doubt seriously that the agency's got its arms  
13 around these potential economic or socioeconomic  
14 consequences at this point.

15           There are other factors that appear not to be  
16 within what you are currently contemplating. For instance,  
17 shortages absorbed by Mexico under the 1944 treaty are not  
18 in these slides. Now, I know that's governed by a treaty  
19 and that makes things a little more complicated, and  
20 shortages and surpluses mean different things in different  
21 documents. But I don't see how you contemplate analyzing  
22 what might happen to the Lower Basin states without  
23 including an analysis of what might happen with regard to  
24 the treaty in Mexico. Whether you get the Mexican  
25 government to cooperate in that event is not relevant to  
1 having to analyze what the impacts would be if they did or  
2 didn't cooperate. And those factors will have to be  
3 included in your development of alternatives.

4                   The future is related to water supply storage  
5   availability of water in Lake Mead, the other strategies  
6   that are being worked on in the Lower Basin, alternative  
7   storage in the area of the All-American Canal. It's a whole  
8   panoply of things that will potentially affect our ability  
9   to conserve water in the Lower Basin will need to be  
10 included.

11                   I think also you're going to have to take a hard  
12 look at the statutory requirement to augment water supplies  
13 that's contained in the 1968 account and is, of course, an  
14 unfulfilled promise to the basin as a whole and the lower  
15 basin especially. That is not an idle promise. It was a  
16 major reason why Arizona ultimately supported the Act with  
17 the Central Arizona Project being the stepchild of the  
18 river. And augmentation has been an activity that  
19 reclamation has been involved in on an experimental basis  
20 before, and it needs to be factored into the analysis as  
21 part of one or more alternatives that would come into play.  
22 I won't ask the agency to support that concept. I'm just  
23 trying to tell you you have to analyze it whether you want  
24 to support it or not.

25                   That's probably enough for you to chew on for  
1 this evening. I will be submitting written comments by the  
2 November 30 deadline, and thank you for the opportunity.



4 MS. JAMES: My name is Leslie James. I'm  
5 executive director of the Colorado River Energy Distributors  
6 Association or CREDA. I won't reiterate several of the  
7 comments that were made by Mr. Boyce and Mr. Lynch, but I  
8 did want to provide a few supplemental remarks.

9 CREDA is a nonprofit organization that represents  
10 the majority of the power customers of the Colorado River  
11 Storage Project of which we all know that Glen Canyon is the  
12 largest feature of the project. CREDA members in six states  
13 serve over four million consumers and all are nonprofit  
14 entities.

15 The 1956 Colorado River Storage Act, Section 7,  
16 requires that hydroelectric power plants be operated so as  
17 to produce the greatest practical amount of power and  
18 energy. Section 5 of that Act also established the basin  
19 fund, and both Harvey and Bob talked about how the power  
20 function or the authorized power purpose is the paying  
21 partner of these projects. In the CRSP power revenues fund  
22 about 95 percent of the irrigation investment in the project  
23 along with all the power investment, operation maintenance,  
24 replacements, as well as funding the adaptive management  
25 program down here at Glen Canyon Dam, a portion of the Upper  
1 Basin Recovery Implementation Program, a portion of the  
2 Solidity Control Program. And all of this funding comes  
3 from the basin fund.

4 As both Bob and Harvey mentioned, the Hoover  
5 funding and CRSP funding are different in some respects but

6 are the same in other respects. The basin fund's sole  
7 source of money are power revenues. The drought has been  
8 quite unkind to basin fund. The utility customers who  
9 purchase power from western area power administration from  
10 the Colorado River Storage Project have seen quite serious  
11 impacts. In fact since about 1999 the Colorado River  
12 Storage Project rate has increased 44 percent, and yet  
13 deliveries, power deliveries have been reduced by  
14 22 percent.

15 Now, those numbers don't even taken into  
16 consideration the individual utility impact that they have  
17 had to make to supplement the amount of deliveries that  
18 could not be made because of CRSP resources reduction.  
19 Based on some preliminary analysis, in the event power  
20 generation ceased at Glen Canyon Dam even for a few months  
21 each year from 2007 to 2009, the CRSP rate would have to  
22 increase 99.8 percent.

23 The initial notice back in the summer indicated  
24 that it's the Department's intent that the development of  
25 management strategies would provide more predictability to  
1 water users throughout the basin. It is our view that,  
2 based on power being an authorized purpose of this project  
3 as well as the financial considerations, that the impacts  
4 on -- the economic impacts on power generation need to be  
5 treated equally, if not more so, in all of this analysis.

6 We'd like to thank Arizona Department of Water  
7 Resources. We were able to make a presentation at one of  
8 the early meetings to talk about these impacts from the CRSP  
9 power customers' standpoint and thank the Bureau for the

10 opportunity to make comments. And we'll submit written  
11 comments by the deadline. Thank you.

1 HENDERSON, NEVADA, TUESDAY, NOVEMBER 8, 2005

16 MR. CAAN: I've got a comment, if I may, and I  
17 think everyone will hear me without the microphone.

18 My name is George Caan. I'm the  
19 Executive Director of the Colorado River Commission.  
20 I'll give you a card.

21 First, I want to thank the Bureau of  
22 Reclamation for having put on these meetings and  
23 getting the public's input into this plan. Today I'm  
24 speaking not as the director of the Colorado River  
25 Commission, but instead as a board member of the  
1 Colorado River Energy Distributors Association, known  
2 as CREDA. CREDA is a nonprofit organization composed  
3 of power customers who take power from the upper  
4 basin projects, known as the CRSP.

5 My purpose today is to offer to the  
6 bureau a suggestion to insure that the bureau work  
7 closely with western to analyze impact to the basin  
8 fund for whatever shortage criteria that comes out,  
9 and let me be specific. The revenues from the Upper  
10 Colorado River projects paid by power customers go  
11 into a basin fund and then those revenues and funds  
12 are used to pay for the operation, maintenance,  
13 repair and upkeep of those projects. In addition to  
14 that, over \$20 million is used from that fund to pay  
15 for environmental programs that are not power  
16 related, directly power related.

17 The shortage criteria and the drought

18 could or will have an impact on the power production  
19 of those facilities. Therefore, the revenues  
20 produced by those facilities will be reduced. We  
21 aren't suggesting what to do with respect to that  
22 reduction, all we're saying is that we would like the  
23 bureau to work very closely with western to assess  
24 the impact on that fund from the shortage criteria,  
25 and then to look at strategies that might be put in  
1 place in appropriations or others to pay for some of  
2 the non-power related costs and help support the  
3 funding of the operation and the maintenance of those  
4 facilities. Thank you.

## P R O C E E D I N G S

The following public comments were made:

DAVID MAZOUR: My name is David Mazour, M-a-z-o-u-r. I work for Tri-State Generation and Transmission Association. Tri-State is a power supplier -- a consumer-owned power supplier that provides electricity to 44 rural distribution systems in four states. The end user of those 44 systems owns them, and those 44 systems own us. So we're truly consumer-owned. Tri-State is a member of CREDA, Colorado River Energy Distributors Association, and CREDA represents the power customers from the Colorado River storage project, and I'm appearing here today on behalf of CREDA.

CREDA will be -- an executive director will be testifying or making comments tomorrow at your forum in Phoenix, but I was requested to just make a few very, very brief comments, and the comment I'd like to make -- well, actually, two points. First of all, CREDA is involved in a number of Colorado River processes. One is the stakeholders' process in developing the annual operating plan. CREDA is involved in the adaptive

L-2018

1 management program for the Grand Canyon below Lake  
2 Powell, and CREDA is also a representative and an  
3 active participant in the recovery program in the  
4 upper Colorado River. So the power customers are  
5 involved in several forums.

6 Power impacts are an issue that we feel  
7 should be considered as these shortage criteria are  
8 being developed, and this request is -- and as I  
9 say, Leslie James will be commenting more  
10 thoroughly tomorrow -- but I just wanted to make a  
11 point that as these shortage criteria are being  
12 developed, the power impacts really need to be  
13 evaluated because the revenues from the sale of  
14 power are used to operate and maintain the  
15 reservoir as well as about \$20 million a year from  
16 power revenues that are used for nonoperational  
17 programs, for environmental programs. They fund  
18 the salinity control program. They fund parts of  
19 the adaptive management program. And they also are  
20 a key funder in the upper Colorado River recovery  
21 program for the endangered fish. And so, again,  
22 that's the brief comment I'd like to make, and  
23 we'll have further details and more information  
24 tomorrow.

25 Thank you very much.

L-2018

# **Appendix W**

## **Copies of Unique Comment Letters**

### **W.6 State Agency Comment Letters (S)**



Statement

**Governor's Representatives on Colorado River Operations  
States of Arizona, California, Colorado Nevada, New Mexico, Utah and Wyoming  
Department of the Interior Public Meetings  
Las Vegas – July 26, 2005  
Salt Lake City – July 28, 2005**

The Basin States support the process initiated by the Secretary of the Interior to develop shortage guidelines for the release of water from Lake Mead. These guidelines should be coordinated with anticipated releases from Lake Powell during low reservoir conditions.

1

The economies of all seven Basin States depend on the effective management of the Colorado River System reservoirs. The primary objective in the development of such strategies must be the conservation of water supply consistent with the purposes for which Lakes Mead and Powell were authorized by the Congress.

2

The Basin States are committed to work cooperatively together with the Department of the Interior in the development of these strategies. We have agreed that shortage guidelines should be designed to delay the onset and minimize the extent and duration of shortages in the Lower Basin. Also, we have agreed that management strategies should maximize the protection afforded to the Upper Basin by Lake Powell against possible calls upon the Upper Basin to curtail uses. Finally, the shortage guidelines should be premised upon proportionate sharing of shortages by Mexico pursuant to the Mexican Treaty.

3

4

5

We look forward to continuing to work with the Department in this process.

Herb Guenther  
Director  
Arizona Department of Water Resources

Gerald R. Zimmerman  
Executive Director  
Colorado River Board of California

Scott Balcomb  
Governor's Representative  
Colorado

Patricia Mulroy  
General Manager  
Southern Nevada Water Authority

Richard Bunker  
Chairman  
Colorado River Commission of Nevada

John D'Antonio  
Governor's Representative  
State of New Mexico

Patrick Tyrrell  
State Engineer  
State of Wyoming

D. Larry Anderson  
Director  
Utah Division of Water Resources

Mr. Robert W. Johnson  
Regional Director, LC-1000  
Lower Colorado Region  
Bureau of Reclamation  
Department of the Interior  
P.O. Box 61470  
Boulder City, NV 89006-1470

Reference: Interior's Low Reservoir Management Strategies - Colorado River

Dear Mr. Johnson:

The Arizona Power Authority (Authority) is a body corporate and politic of the State of Arizona authorized under Arizona Revised Statutes in 1944 for the express purpose of, among others, receiving and administering hydroelectric power produced from the main stem of the Colorado River contiguous with the State of Arizona's boundaries. It is within this context that the Authority offers the following comments on the Secretary of the Interior's request for the Bureau of Reclamation (Reclamation) to develop a management strategy for Lake Powell and Lake Mead, including Lower Basin shortage guidelines, under low reservoir conditions. The Authority appreciates this opportunity to provide comments on this extremely critical subject.

The Authority has entered into a package of two important contracts with Reclamation which require attention when considering changes in the storage and release patterns on the Colorado River. The first contract, between the Authority and Reclamation (Contract No. 7-07-30-P1019 dated January 27, 1987) provided for the Authority to contribute \$57,178,466 in "up-front" funding for the rewinding and uprating of the generating units at Hoover Dam. The second, entered into by the authority with the Department of Energy, Western Area Power Administration (Western) and Reclamation (Contract No. DE-MS65-86WP39574, dated January 1, 1987), provides for the purchase of hydroelectric power from the Boulder Canyon Project's Hoover Dam for the period 1987 to 2017. For Reclamation to join Western in signing an electric service contract was an exceptional event that occurred only as part of an arrangement in which the Hoover

Schedule B contractors were providing “up-front” funding for the rewinding and uprating of the Hoover generating units. Reclamation was therefore willing to provide its contractual commitment that the power would be generated in accordance with the capacity and energy entitlements contracted for by the Hoover power contractors with the limited exceptions set forth in section 5.1.1.1 and 5.1.1.2 of the contract which states:

“Subject to the statutory requirement that Hoover Dam and Lake Mead shall be used: first, for river regulation, improvement of navigation and flood control; second, for irrigation and domestic uses and satisfaction of present perfected rights mentioned in section 6 of the Boulder Canyon Project Act; and third, for power, Reclamation shall release water, make available generating capacity, and generate energy, in such quantities, and at such times, as are necessary for the delivery of the capacity and energy to which Contractors are entitled. Reclamation reserves the right to reschedule, temporarily discontinue, reduce, or increase the delivery of water for the generation of electrical energy at any time for the purpose of maintenance, repairs, or replacements, and for investigations and inspections necessary thereto, or to allow for changing reservoir and river conditions, or for changes in kilowatthours generation per acre-foot, . . . .”

Any reduction in the amount of water stored in Lake Mead reduces the head available for power production and therefore reduces the amount of the power produced for the Hoover power contractors. Changes in the time of releases can have a negative impact on the value of the power produced. In either case the value of the bargain for the Hoover power contractors is reduced. The Hoover power contractors recognized the variability of river hydrology when they contracted with Western and Reclamation. They accepted the risk of unpredictable river flows. They did not accept the risk that a federal agency might reduce the benefit of their bargain by changes which the federal government chose to make in the operation of the river. That was the assurance that Reclamation committed to in section 5.1.1 of each contractor’s Electric Service Contract.

The Authority supports Reclamation’s undertaking the kind of review that it has proposed in order to assure that the potential benefits of improved river operations can be explored and an optimum operating strategy can be implemented. In order to assure that any modification of the operating strategy does not deprive the Hoover power contractors of the benefit of the bargain that they, Western and Reclamation mutually committed to in 1987, the Authority requests that Reclamation adopt the following practices in developing management strategies for low reservoir conditions at Lake Powell and Lake Mead, and for shortage criteria for the lower Colorado River basin.

- ! For each operating strategy proposal, Reclamation should run sensitivity studies to determine the impact on Hoover power production. The results of those sensitivity studies should be made available to the Hoover power contractors with an explanation

of any reduction in the amount of power that will be generated and any change in the timing of generation.

! Reclamation should propose methods to minimize and fully mitigate any adverse impacts on the amount and value of the power that the Hoover power contractors will receive. | 2

! Reclamation should discuss the package of proposed changes and proposed mitigation with the Hoover power contractors prior to their adoption. | 3

The Authority supports the use of an open rule-making process with the understanding that the product will be incorporated into the Criteria for Coordinated Long-Range Operation of Colorado River Reservoirs and the Annual Operating Plans as appropriate. | 4

One again, the Authority appreciates this opportunity to comment on the process to be used in this important undertaking.

Respectfully submitted,

*/s/ Joseph W. Mulholland*

Joseph W. Mulholland  
Executive Director

AUG-31-2005 17:56

AZ GAME AND FISH DEPT

6027893928 P. 02/05



THE STATE OF ARIZONA  
**GAME AND FISH DEPARTMENT**

2221 WEST GREENWAY ROAD, PHOENIX, AZ 85023-4399  
 (602) 942-3000 • AZGFD.GOV

GOVERNOR  
 JANET NAPOLITANO  
 COMMISSIONERS  
 CHAIRMAN, W. HAYS GILSTRAP, PHOENIX  
 JOE MELTON, YUMA  
 MICHAEL M. GOLIGHTLY, FLAGSTAFF  
 WILLIAM H. MCLEAN, GOLD CANYON  
 BOB HERNBRODE, TUCSON  
 DIRECTOR  
 DUANE L. SHROUFE  
 DEPUTY DIRECTOR  
 STEVE K. FERRELL



August 31, 2005

Mr. Robert W. Johnson  
 Regional Director, Lower Colorado Region  
 U.S. Bureau of Reclamation  
 Attention: BCOO-1000  
 P.O. Box 61470  
 Boulder City, NV 89006-1470

Re: Colorado River Reservoir Operations: Development of Management Strategies for  
 Lake Powell and Lake Mead Under Low Reservoir Conditions

Dear Mr. Johnson:

The Arizona Game and Fish Department (Department), by and through the Arizona Game and Fish Commission, manages the state's wildlife resources on behalf of the citizens of the State of Arizona. Additionally, the Department has responsibility for managing and providing opportunities for the enjoyment of those resources through boating, hunting, fishing and off-highway vehicle recreation programs. With consideration to the Department's management responsibilities, we respectfully offer comments for consideration in the development of management strategies for lakes Powell, and Mead and the lower Colorado River under low reservoir conditions.

First, we commend the Bureau of Reclamation (Bureau) for taking on this substantial endeavor. Through wise use and conservation of the water resources of the seven Colorado Basin states and by working cooperatively with all of the Bureau's partners along the river, together, we can secure our future and continue to provide the unique wildlife resources and recreational opportunities that the Colorado River has to offer. Our comments relate to the development of shortage criteria, and fall into two general categories: 1) issues the Department recommends be considered for analysis under the National Environmental Policy Act (NEPA) (& the Endangered Species Act for the preferred alternative), and 2) issues related to coordination under the Fish and Wildlife Coordination Act as Arizona negotiates water shortages with other basin states.

- 1) Issues that the Department would recommend be considered under various operational alternatives, should these alternatives be reviewed under NEPA include:
  - Effects of mainstem reservoir operations on sportfishing (timing and rates of drawdowns may have substantial negative effects to sportfish reproduction and

1

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Mr. Robert W. Johnson

August 31, 2005

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recruitment) and access for recreational boaters and anglers (lack of suitable access points) are considerable concerns. Similar access issues and effects to sportfish reproduction may extend to downstream reservoirs (Mohave and Havasu) if those reservoirs are held or operated at a lower elevation.

2

• Recreational sportfishing provides significant economic benefit to the local communities. Lakes Mead and Powell provide for 362,838 angler days. The Colorado River below Glen Canyon Dam (Lees Ferry) and Hoover Dam (Willow Beach) provide an additional 45,215 angler days. Combined, this recreational activity yields a total economic benefit (direct and indirect) of approximately \$84 million. This is substantial, especially to the economy of Page, Arizona.

• Operation of the reservoirs may negatively affect stream flows in the riverine sections below each dam by altering tailwater fisheries and their suitability for maintaining viable fish populations through adverse changes to water quality (primarily changes in dissolved oxygen and temperature). We would recommend that the Bureau consider effects of decreased instream flows on fish and wildlife resources.

3

• The potential exists for indirect impacts to the continued operation of Willow Beach National Fish Hatchery as a production facility for rainbow trout and continued production of the endangered razorback sucker, should Lake Mead releases not meet minimum water quality standards for those purposes.

4

• Declining water levels both in reservoirs and along the river as a result of changed operational strategies may negatively affect riparian vegetation through decreased persistence of established riparian vegetation along the banks. As you know, these riparian areas support many species of wildlife, including threatened and endangered species. Decreased river flows may also have an impact on currently established backwaters and off-channel marshes that provide habitat for fish and wildlife resources as well as many recreational opportunities for our citizens. Effects to these habitats by operation of the river may include, but not limited too; water quantity available to maintain them; water quality including dissolved oxygen, concentration of pollutants, increased salinity or radical temperature fluctuations; loss of connectedness between the main-river and off-channel habitats. Some of these effects may prove to be beneficial to some species and provide wildlife managers added opportunities for management actions along the river.

5

• We would also recommend that the Bureau consider, where appropriate, effects of river operations that may occur outside of the Colorado River.

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Mr. Robert W. Johnson

August 31, 2005

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Colorado River operations will likely necessitate adjustments be made on other water supply operations in central Arizona such as Alamo Dam, Lake Pleasant and the Salt River reservoirs impoundments (Roosevelt, Apache, Canyon, Saguaro, Horseshoe and Bartlett). The Department would also like effects to our Mittry Lake Wildlife Area by changed river operations considered in any analysis conducted. Changes in river operations will affect Federal refuges along the river and a full impact to fish and wildlife resources and recreation should be considered.

7

- The Department is a party to the Lower Colorado River Multi-Species Conservation Plan (MSCP). During development of the HCP and Section 10 permit, water shortages were considered and analyzed, but only up to a shortage of 1.5 may (million acre-feet per year). Any shortage beyond that would not be covered under the MSCP and may thus result in a need for further consultation with the U.S. Fish and Wildlife Service. If a shortage results in the loss of water available to establish or maintain mitigation properties and habitats established under the MSCP, it may result in take of threatened or endangered species or habitats not covered by the HCP and Section 10 permit. Due to the long-term nature of the MSCP, opportunities may exist to mitigate for short-term reductions in river flow by increasing and improving MSCP mitigation habitats in years when a surplus of water on the river is declared. We expect that the Bureau will fully analyze development of shortage criteria relative to the MSCP language, authorities, and assurances provided therein.

8

9

- Opportunities may arise during operation of the river under shortage criteria that allow for improved fish and wildlife management. These may be in the form of the ability to more easily construct and maintain various habitat features along the river, provide for treatment of invasive plants, renovation of isolated waters to remove non-native fish, expose suitable soils for establishment and development of additional cottonwood/willow riparian areas, allow for installation of fish habitat improvement structures in reservoirs, and provide for growth of vegetation in exposed lake bottoms to improve fish habitat. Lower water levels in the reservoirs and in the river may provide an opportunity/need to address where additional recreational facilities such as boat ramps, docks, fishing piers and marinas may be warranted.

10

- 2) The second general issue is related to ongoing negotiation between the lower basin states on shortage sharing. Should Congressional action be pursued to establish shortage sharing criteria, our Department will work with the other states to develop a report to congress under the Fish and Wildlife Coordination Act to provide them with information on impacts in the lower basin.

11

Mr. Robert W. Johnson  
August 31, 2005  
4

We appreciate the opportunity to provide input on the development of management strategies for Lake Powell and Lake Mead under low reservoir conditions. We look forward to working with you closely as this process moves forward. Please contact Bob Broscheid, Habitat Branch Chief, at 602-789-3605 if you have any questions regarding this letter.

Sincerely,



Bruce D. Taubert, Assistant Director  
Wildlife Management Division

BDT:dw

CC: Jim deVos, Chief, Research Branch  
Bill Persons, Research Branch  
Eric Gardner, Chief, Nongame Branch  
Larry Riley, Chief, Fisheries Branch  
Rick Miller, Habitat Program Manager, Region II  
Kevin Morgan, Habitat Program Manager Region III  
Russ Engel, Habitat Program Manager, Region IV

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08/30/2005 15:24 FAX 505 827 0180

INTERSTATE STREAM COMM.  
STATE ENGINEER

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001

08/29/05 MON 14:08 FAX 505 827 3808

**The States of Arizona, California, Colorado, Nevada,  
New Mexico, Utah and Wyoming  
Governor's Representatives on Colorado River Operations**

August 25, 2005

Honorable Gale A. Norton, Secretary  
Department of the Interior  
1849 C. Street, NW  
Washington, D.C. 20240

Re: Development of Management Strategies to Address Operations of Lake  
Powell and Lake Mead under Low Reservoir Conditions

Dear Secretary Norton:

This letter responds to your May 2, 2005, letter to the Governors of the Seven Colorado River Basin States (basin states) in which you announced your intent to undertake a process to develop Lower Basin shortage guidelines and to explore management options for the operation of Lakes Powell and Mead. The Bureau of Reclamation published a notice on June 19, 2005, in the Federal Register announcing its intent to solicit comments and hold public meetings on the development of management strategies for Lakes Powell and Mead, including Lower Basin shortage guidelines, under low reservoir conditions.

For more than a year, the basin states Governors' representatives, the Bureau of Reclamation, and others have engaged in discussions on a variety of potential management options to address the system-wide drought in the Colorado River Basin. Recently, the basin states agreed that management strategies should be designed to delay the onset and minimize the extent and duration of shortages in the Lower Basin. The states agreed that management strategies should maximize the protection afforded to the Upper Basin by Lake Powell against possible calls upon the Upper Basin to curtail uses. The states agreed that shortage guidelines should be premised upon proportionate sharing of shortages by Mexico pursuant to the Mexican Treaty.

1  
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The basin states are in the process of developing and evaluating alternatives for coordinated reservoir management and Lower Basin shortage strategies to address the above objectives. In addition, the basin states are exploring a larger, more comprehensive management arrangement. This arrangement would avoid political and legal confrontation over the meaning of fundamental aspects of the Law of the River; supplement the supply of Colorado River water; develop acceptable interim shortage guidelines for the Lower Basin; and realize a common goal to implement management strategies that might allow more efficient, flexible, responsive and reliable operation of the system reservoirs for the benefit of the states of both the Upper and Lower Basin. The states regard such an arrangement as important to the continued development and use of the Colorado River resource in both the Upper and Lower Basins. The Secretary

08/30/2005 15:25 FAX 505 827 6188

INTERSTATE STREAM COMM.

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08/29/05 MON 14:09 FAX 505 827 3806

STATE ENGINEER

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The Honorable Gale A. Norton  
 August 25, 2005  
 Page 2 of 5

should recognize that the coordinated management and shortage strategy outlined in this letter is recommended only on the condition that the other aspects of that more comprehensive management arrangement can be finally agreed upon and implemented by the states and the Secretary.

The states propose that any reservoir operational strategy developed by the Secretary be explicitly limited to an interim period. The interim operations should be tied to the implementation of additional measures that will accomplish the dual objectives of supplementing the supply of the Colorado River, and operating the existing infrastructure in the system more efficiently. The elements set forth in this letter are interrelated, and represent an integrated strategy for managing the Colorado River into the future. Therefore, all of the elements of this strategy will need to be implemented. In addition, practical resolution of differences among the basin states regarding mainstream and tributary development will be required. The states' strategy consists of three elements. 4

#### **Coordinated Reservoir Management and Lower Basin Shortage Strategies**

The states are discussing ways to utilize the water surface elevations or volumetric contents of both Lake Mead and Lake Powell to determine the beginning and end of a Lower Basin shortage condition. The strategy could incorporate various water management components including: tiered releases from Glen Canyon Dam; content balancing; alternative release schedules; continued operations under Section 602(a); other equalization strategies; and storage (banking) of water in Lake Mead. All of these operational components are currently being studied under the assumption that the Lower Basin shortage strategy would be two-tiered, the first tier protecting a Lake Mead water surface elevation of 1,050 feet, and the second tier assuring maintenance of a Lake Mead water surface elevation of 1,000 feet. 5

There may be additional reservoir water surface elevations identified to help achieve the management objectives prior to the actual declaration of a shortage. The quantities of reductions in demand are still being analyzed. After consultation with water users and completion of the analyses, the basin states will recommend conditions under which the Secretary may declare that insufficient water will be available for release from Lake Mead to satisfy 7.5 maf of consumptive use from the mainstream in the Lower Basin, and a delivery of 1.5 maf to Mexico. The basin states will also recommend reductions in deliveries that can be reasonably managed by the states and water users during the interim period. A plan to manage the shortage condition and to allocate reductions among water users within the Lower Basin will be developed and recommended to the Secretary. Acceptance of the recommendations is an essential condition for the success of an integrated strategy for the operation of the Colorado River.

The coordinated operational policies and procedures for the storage of water in and release of water from Lakes Mead and Powell may apply during a defined interim period consistent with the Interim Surplus Guidelines (until 2016, or as the ISG might be modified and extended), or for so long thereafter as may be necessary to achieve selected target elevations in Lakes Powell and Mead. Power and recreational impacts of such operations will be coordinated, but water supply operations will remain the first priority of coordinated operations.

08/30/2005 15:25 FAX 505 827 6186

INTERSTATE STREAM COMM.  
STATE ENGINEER

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08/29/05 MON 14:09 FAX 505 827 3808

The Honorable Gale A. Norton  
August 25, 2005  
Page 3 of 5

Shortages to Mexico under the 1944 Treaty would be shared proportionately with those incurred by the Lower Basin states, as shortages may be imposed under the shortage guidelines. The states anticipate that shortages to both Mexico and the Lower Basin will be reduced proportionately with the implementation of the coordinated operation strategy.

Because such coordinated operations may alter the volume of water delivered from Lake Powell from that under existing operations during times of low reservoir conditions, the states are evaluating the effects that coordinated reservoir management may have on the recently adopted Interim Surplus Guidelines, as well as considering whether to agree that during the interim period they will not raise issues of the meaning, interpretation or enforcement of the Colorado River Compact, the 1968 Colorado River Basin Project Act, or other aspects of the Law of the River concerning any obligation of the Upper Basin to meet any requirement at Lee Ferry. The states are considering whether agreement not to raise Law of the River issues will continue to the end of the interim period, or longer.

**System Efficiency and Management**

The basin states will work with the Department of the Interior to analyze and implement a program of tamarisk eradication throughout the basin. The states believe such a program may yield multiple benefits to the environment and water supply of the basin.

The basin states will work with the Department of the Interior to develop a prioritized list of specific measures that will result in the more efficient management of the River in the Lower Basin. Initial priorities for implementation will include development of All-American Canal Drop 2 storage, evacuating accumulated sediments behind Laguna Dam, development of Wellton-Mohawk regulatory storage, and full utilization of Senator Wash Reservoir. Additionally, the states are discussing measures to better coordinate daily system operations and water orders of contractors in the Lower Basin to prevent the loss of water. It will be necessary for the Department to take all necessary actions to account for and replace water that has been released to Mexico through the bypass drain since 2004, and continue to implement measures that minimize the over-deliveries of water to Mexico. It will also be necessary for the Department to aggressively pursue elimination of unauthorized uses of Colorado River water in the Lower Basin.

**Augmentation of Supply**

The basin states will work with the Department of the Interior to implement a precipitation management (cloud seeding) program in the basin (both Upper and Lower). Any additional water generated to the Colorado River system will be considered system water. No entity or state will have any claim to any additional supply developed by precipitation management.

The basin states will work with the Department of the Interior to analyze the technological feasibility of desalination, and issues such as siting, environmental impacts and the potential to exchange desalinated water into the Colorado River system.

08/30/2005 15:26 FAX 505 827 6188  
00/09/05 MON 14:10 FAX 505 827 3808

INTERSTATE STREAM COMM.  
STATE ENGINEER

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The Honorable Gale A. Norton  
August 25, 2005  
Page 4 of 5

The states are discussing programs under which states may provide, and get the benefit of, individual supply augmentation including desalination; ground water developed and conveyed to add to the Colorado River system; tributary water that has been consumptively used for irrigation that is retired to permit its flow into the Colorado River; temporary consumptive use of additional water from Lake Mead; and wastewater that is generated by the direct use of any water and that is permitted to flow into the Colorado River. The basin states will work with the Secretary to explore additional methods of augmentation. It will be necessary for the Secretary to develop and implement regulations to allow the use of mainstream Colorado River water by forbearance, replacement or exchange. 11

The basin states representatives recommend that the Secretary adopt interim guidelines, concurred to by the states, for the implementation of the Long Range Operating Criteria (LROC) under low reservoir conditions in Lakes Mead and Powell, together with interim shortage guidelines in the Lower Basin. If at the end of the interim period changes to the LROC are warranted, then the Secretary may consider such changes. 12

Finally, the basin states recognize that the concepts discussed in this letter raise potentially significant legal and political issues. The basin states look forward to working with you and the Department in analyzing and addressing these issues.

[Signatures on Following Page]

08/30/2005 15:27 FAX 505 827 8188  
08/29/05 MON 14:10 FAX 505 827 3606

INTERSTATE STREAM COMM.  
STATE ENGINEER

006

005

The Honorable Gale A. Norton  
August 25, 2005  
Page 5 of 5

Sincerely,



Herb Guenther  
Director  
Arizona Department of Water Resources



Gerald R. Zimmerman  
Executive Director  
Colorado River Board of California



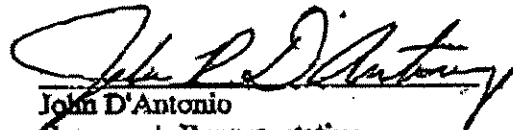
Scott Balcomb  
Governor's Representative  
Colorado



Patricia Mulroy  
General Manager  
Southern Nevada Water Authority



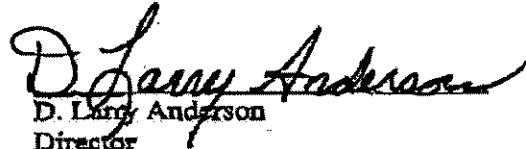
Richard Bunker  
Chairman  
Colorado River Commission of Nevada



John D'Antonio  
Governor's Representative  
State of New Mexico



Patrick Tyrrall  
State Engineer  
State of Wyoming



D. Larry Anderson  
Director  
Utah Division of Water Resources

S-2001 AZ Dept of Water Resources.txt  
From: Nan Yoder [nyoder@lc.usbr.gov]  
Sent: Tuesday, November 29, 2005 1:28 PM  
To: LC strategies  
Subject: Re: Arizona's 602(a) scoping letter

>>> "Herb Guenther" <hrguenther@azwater.gov> 11/28/05 3:48 PM >>>  
November 28, 2005

Good Afternoon Mr. Johnson,  
The attached letter was faxed and will be in today's mail as well.  
Arizona Department of Water Resources moved this past weekend. Our  
new address is:  
3550 North Central Avenue  
Phoenix, AZ 85012-2105  
Our Main Switchboard is (602) 771-8500  
Director Guenther's direct line is (602) 771-8426 and his fax  
number will be (602) 771-8681 (line should be operational by the  
end of the day November 29th).  
Our e-mail addresses remain the same.



ARIZONA DEPARTMENT OF WATER RESOURCES

3550 North Central Avenue, Phoenix, Arizona 85012-2105

Telephone (602) 771-8426



November 28, 2005

JANET NAPOLITANO  
Governor

HERBERT R. GUENTHER  
Director

[Via Facsimile (702) 293-8156  
and Regular Mail]

Mr. Robert W. Johnson  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
1000, P.O. Box 61470  
Boulder City, Nevada 89006-1470

**Re: *Arizona's Comments Concerning Scope of Colorado River Reservoir Operations: Development of Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions***

Dear Mr. Johnson:

The Arizona Department of Water Resources (Department) submits the following comments regarding the scope of the environmental impact statement (EIS) for the proposed *Colorado River Reservoir Operations: Development of Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions* (70 Fed. Reg. 189 (September 30, 2005)) (hereinafter Shortage Guidelines). The Department requests that the Bureau of Reclamation draft the scope of the Shortage Guidelines broadly enough to incorporate an alternative that includes all of the following actions:

1. The EIS evaluation for the Shortage Guidelines should include a complete review of Section 602(a) of the Colorado River Basin Project Act of 1968 (Project Act) and the 602(a) storage algorithm (algorithm) used to determine releases from Lake Powell. The present method for calculating 602(a) storage requirements results in the overstatement of the amount of storage in the Upper Basin reservoirs that is intended to protect against curtailment in the Upper Division States. Currently, 5.179 million acre-feet (maf) are added to the 602(a) storage requirement for power protection. That, in turn, arbitrarily reduces the probability of equalization and increases the likelihood of shortages to Arizona.

The Department requests that the alternative remove power protection from the algorithm. At a minimum, any alternative provided for in the EIS should recognize that water supply for consumptive uses has a higher priority than water supply for power.

2. The Department requests that the alternative use actual Upper Basin depletions and projected new depletions that are verifiable to calculate the 602(a) storage requirement on an annual basis. The projected Upper Basin depletion schedules currently used in the algorithm are significantly overstated. This overstatement results in an increase in 602(a) storage of approximately 3.8 maf in 2006 and 2007, which increases the probability of shortages to Arizona. The Department recommends that Reclamation utilize the Upper Basin depletion projections contained in the Draft Interim Surplus Guidelines Environmental Impact Statement as they track far more closely with actual Upper Basin depletions than do the current Upper Basin depletion schedules used in the algorithm. 5
  
3. The Department requests that the alternative eliminate the 14.85 million acre-feet (maf) storage requirement set forth in the Interim 602(a) Storage Guideline for Management of Colorado River (Interim 602(a) Storage Guideline). The guideline artificially limits equalization releases and will have the same detrimental effect on the State of Arizona as the current algorithm. The amount of 14.85 maf is far in excess of the amount needed to fulfill the requirements of 602(a) of the Project Act. 6

The Department also notes that the Secretary does not appear to be considering the available storage in all of the reservoirs authorized by the Colorado River Storage Project Act, 43 U.S.C. § 620 *et seq.* in determining whether forecasted active storage in the Upper Basin is greater than the Section 602(a) storage requirement under subarticle II(3) of the Coordinated Long-Range Operation of Colorado River System Reservoirs. If this is the case, the Department requests that the Secretary adjust the Colorado River System Simulation Model to properly calculate active storage in the Upper Basin. 7

Finally, the Department requests that any alternative incorporate Arizona's recommendation for total Lower Basin shortages, which includes Mexico. Arizona's recommended shortages range in volume from 400,000 acre-feet (af) to 600,000 af and would be implemented as follows: 8

- a. For Mead elevations between 1075 ft. and 1050 ft., the shortage reduction should be 400,000 af. 9
- b. For Mead elevations between 1050 ft. and 1025 ft., the shortage reduction should be 500,000 af.
- c. For Mead elevations beginning at elevation 1025 ft. and below, the shortage reduction should be 600,000 af.

Hydrologic conditions that could necessitate reductions in excess of 600,000 af must trigger a Secretarial consultation process to determine how to implement additional reductions in the least damaging and most equitable manner possible. Further, if hydrologic conditions indicate that Powell elevations are rising and may reach equalization elevations in the coming year, the Secretary may have the discretion, after consultation with Arizona, to forego a shortage declaration even if a Lake Mead trigger elevation has been reached. 10  
11



The Seven Colorado River Basin States continue to collaborate on the development of conjunctive operation of Lakes Powell and Mead to minimize shortages to the Lower Division States and avoid curtailment on the Upper Division States. Arizona is committed to finding a solution that benefits both basins. It is crucial, however, that the EIS be scoped broadly enough to include an alternative that incorporates the above adjustments to 602(a) storage and that all alternatives include Arizona's recommendation regarding shortages as outlined above. Please contact me if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "Herbert R. Guenther".

Herbert R. Guenther

HRG:ckl

November 30, 2005

Mr. Robert Johnson [rjohnson@lc.usbr.gov](mailto:rjohnson@lc.usbr.gov)  
 Mr. Rick Gold [rgold@uc.usbr.gov](mailto:rgold@uc.usbr.gov)

The states of Utah, Colorado, New Mexico and Wyoming have received a copy of the Arizona Department of Water Resources (ADWR) letter to you dated November 28, 2005. The letter suggests several comments concerning the scope of the environmental impact statement (EIS) for the proposed *Colorado River Reservoir Operations: Development of Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions* (70 Fed. Reg. 189 (September 30, 2005)) (hereinafter Shortage Guidelines).

We think it important that you understand our thoughts and position on ADWR's suggestions. By letter dated August 25, 2005, all seven basin states outlined our plan "to collaborate on the development of conjunctive operations of Lakes Powell and Mead to minimize shortages to the Lower Basin states and avoid curtailment of Upper Basin states."

We view the ADWR suggestions to be entirely inconsistent with the actions and commitments described in the August 25 letter. In that letter, all seven states envisioned a process by which agreements could be reached concerning river operations to achieve defined and agreed-upon goals. The ADWR correspondence appears to us to retreat from both that process and those goals despite its intent to "continue to collaborate" whatever that means. Should the Bureau of Reclamation wish to include a "full range" of alternatives, we in the Upper Division have some very specific alternatives that should be given consideration. If necessary, we expect the Bureau to consult with the Basin States in the development of such alternatives. They also, however, might be viewed as a retreat from our commitment of August 25.

Utah, Colorado, Wyoming, and New Mexico are committed to pursue the process and goals described in our August 25, 2005 letter. We trust that your scoping process will facilitate, not undermine those efforts.

Very truly yours,

Scott Balcomb  
 Governor's Representative, Colorado

Patrick Tyrrell  
 State Engineer, Wyoming

D. Larry Anderson  
 Director, Utah Div. Water Resources

John D'Antonio  
 Governor's Representative, New Mexico

cc: Lower Basin State Representatives

S-2003

STATE OF CALIFORNIA - THE RESOURCES AGENCY

ARNOLD SCHWARZENEGGER, Governor

COLORADO RIVER BOARD OF CALIFORNIA

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November 30, 2005

Mr. Robert W. Johnson  
Regional Director  
U.S. Bureau of Reclamation  
Lower Colorado River Region  
Attn: BCOO-1000  
PO Box 61470  
Boulder City, Nevada 89006-1470

**RE: NEPA scoping for interim shortage guidelines and coordinated operation of Lakes Mead and Powell**

Dear Mr. Johnson:

The purpose of this letter is to provide the U.S. Bureau of Reclamation (Reclamation) with comments from the Colorado River Board of California (Board) regarding Reclamation's NEPA process for the development of lower basin interim shortage guidelines and coordinated management strategies for the operation of Lake Powell and Lake Mead. The Board appreciates this opportunity to provide comments on matters of such significance concerning Colorado River operations.

Although the Board's interests in this NEPA process are very broad in scope, it is our understanding that the current process of public meetings and accepting written comments is focused largely on the scoping phase of the NEPA process. Accordingly, the following comments will be confined to scoping issues with the understanding that the Board and the public generally will have additional opportunities to address other aspects of these important operational considerations. With that focus in mind the Board offers the following scoping comments:

A. Interim shortage guidelines:

1. Full Range of Reservoir Operations -- The Board believes that as guidelines are developed for the operation of Lake Mead, such guidelines must be for the full range of expected operations. As such, the guidelines that are being developed to describe Lake Mead's operations under low runoff and low reservoir conditions must run concurrent with the guidelines for operation of the reservoirs for high runoff and high reservoir conditions. Thus, the shortage guidelines for the Lower Basin should be through 2016, unless through this process, the existing Interim Surplus Guidelines are extended or modified to run concurrent with the term of the interim shortage guidelines.

2. Guidelines as Opposed to Regulations -- As suggested above, the shortage rules that are being contemplated by the Secretary should be in the form of guidelines as opposed to formal federal regulations. This approach would parallel the process that was undertaken for the recently-issued Interim Surplus Guidelines, would allow for modification at the end of the interim period, and would

Mr. Robert W. Johnson  
November 30, 2005  
Page 2

avoid the complexity and bureaucratic process of issuing formal federal regulations. While the Board appreciates that eventually formal long-term shortage rules may be embodied in regulations, at this stage informal guidelines are appropriate.

3. Interim Period -- The Board believes that any lower basin shortage guidelines issued by the Secretary should be effective for an interim period only (through 2016 unless the Interim Surplus Guidelines are extended or modified as described in 1. above). There are several very important reasons for this approach. First, it is appropriate for interim shortage guidelines to be structured in a temporal manner similar to the recently-issued Interim Surplus Guidelines. This will allow the states and other interested parties to deal with these two related operational structures in a similar manner and on a similar timeline. Second, Reclamation, the Basin states, and other interested parties need an opportunity to test shortage guidelines before long-term regulations are implemented on a more permanent basis. And third, since the interim shortage guidelines are linked to the possible issuance of new reservoir operation strategies, it is appropriate to explore the consequences of such operational modifications before more permanent shortage guidelines are adopted.

4. Apply to Post-1968 Entitlements -- There are groups of water entitlements within the Lower Basin's water rights structure and those groups are a function of factors such as priority dates, the structure of the 1964 Supreme Court decree, and the influence of statutes such as the 1929 Boulder Canyon Project Act and the 1968 Colorado River Basin Project Act. As a result, there are groups of entitlements: the pre-June 25, 1929 group, the June 25, 1929 to September 30, 1968 group, and the post-September 30, 1968 group. With regard to declaring shortages in the Lower Basin, the Law of the River provides different guidance in relation to these different groups of entitlements. Accordingly, since these guidelines should be in force for an interim period only, the interim shortage guidelines should cover only that group of entitlements that are post-September 30, 1968 in priority. This block of water is large enough to deal with likely shortage events during the interim period. Furthermore, extending the guidelines into the next group of entitlements, from 1929 to 1968, will raise numerous difficult issues concerning interpretation of the terms of the 1964 Supreme Court decree, the meaning of provisions in various water delivery contracts, and other complex issues that would only serve to greatly delay this NEPA process.

Also, during the process of development of the interim shortage guidelines, there must be clarification for the public of the post-1968 non-Central Arizona Project rights in Arizona and the post-1968 rights in Nevada in order to determine how the shortages will be distributed among the post-1968 entitlements. This clarification should, first, be conducted in consultation with Arizona and Nevada. When clarified, the NEPA documents should address the manner in which the water demands within the states affected by a shortage declaration will be managed. This approach would be comparable to the one used to develop Exhibit B contained in the 2003 Colorado River Water

Mr. Robert W. Johnson  
November 30, 2005  
Page 3

Delivery Agreement executed by the Department of the Interior pursuant to the Interim Surplus Guidelines.

Since a hydrologic sequence of events worse than a repeat of the historic hydrologic conditions could occur during the interim period, a shortage of a larger magnitude could result. In such a situation, the Secretary may have to address the cut-back of rights in the 1929 to 1968 pool of entitlements. Thus, the interim guidelines should at least speak to that unlikely event. The Board suggests that the following reference would address this unlikely event: "Although these guidelines address only the management of shortages in the pool of entitlements that are post-September 30, 1968 in priority, if hydrologic conditions worse than historically experienced occur, the Secretary may have to address the imposition of shortages on the pool of entitlements dating from 1929 to 1968. In such a situation, the Secretary shall follow the guidelines set forth in the 1964 Supreme Court Decree in Arizona v. California and also exercise such discretion as is provided in federal law, including the decree."

5. Protection of Senior Rights -- The Board believes that the interim shortage guidelines should be structured in a manner so as to give protection to senior entitlements as established in the 1968 Colorado River Basin Project Act and the 1964 Supreme Court decree. Accordingly, it is appropriate for the interim shortage guidelines to: 1) impose cut backs of water use by junior users based upon predetermined reservoir elevations so as to appropriately initiate the process of reducing junior uses in the face of what could be a long-term drought; 2) provide for additional staged reductions in the use of water by junior uses as the reservoir elevation drops; and 3) provide for the protection of storage in Lake Mead at appropriate elevations agreed to by the Lower Division states.

6. Appropriate Regard for the Intakes of the SNWA -- Although not a strict water right priority matter, the Board believes that the interim shortage guidelines should reflect the *practical reality* of the elevations of the intakes for the Southern Nevada Water Authority (SNWA). Because a significant urban population is largely dependent on the water supply made feasible by the SNWA intakes, development of the interim shortage guidelines should consider protection for elevations that will allow SNWA's intakes to function.

7. Address Shortages to Mexico -- An area of the law that has remained unclear is how a declared shortage will be applied to the Republic of Mexico. The Board feels strongly that the United States government must robustly protect the rights of users in the United States in accordance with the terms of the 1944 Mexican Water Treaty. The 1944 Mexican Water Treaty provides that in times of extraordinary drought Mexico will participate in cut backs that are in proportion to reductions in consumptive use imposed within the United States. Accordingly, the interim shortage guidelines should spell out for the public how this formula will be applied, how reductions in deliveries will take place, and the role of the IBWC and the State Department.



Mr. Robert W. Johnson

November 30, 2005

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8. Voluntary Forbearance Programs – As a result of the initiation of this process, several organizations have advanced the idea that the Secretary should embrace a program to pay for the voluntary fallowing of farmland so as to push off involuntary reductions in water usage in times of declared shortages. The Board believes that the interim shortage guidelines should *not* include or formally endorse programs that place involuntary taxes or user fees on water and power users. The Board will strongly resist any attempt to tax water and power users within the Lower Division states to fund such programs. Furthermore, the Board does not see any meaningful environmental benefits resulting from such a program given that interim guideline shortage cutbacks will occur at or above Lake Havasu and a significantly large volume of water will continue to flow to Imperial Dam. Furthermore, it would be inappropriate to add this kind of program, with its complexity and lack of wide support, to the foundational structure of the interim shortage guidelines.

Although, the Board objects to the inclusion of a Secretarial-sponsored voluntary forbearance program in the interim shortage guidelines that is based on taxing water and power users. The Board does recognize the value in allowing voluntary intra-state fallowing or other arrangements deemed necessary to mitigate impacts resulting from declared shortages or to be employed in advance of anticipated shortages.

B. Coordinated Management Strategies for the Operation of Lake Mead and Lake Powell:

1. Need for Modified Reservoir Operating Guidelines – In its initiation of this NEPA process, Reclamation has provided a *linkage* between the development of interim shortage guidelines and the development of coordinated reservoir operating guidelines. Although there may be other reasons to support such a linkage, the Board believes that one fundamental reason is that it will be functionally difficult to develop meaningful interim shortage guidelines unless the Secretary and the Basin states understand: 1) the volume of water that will be released from Lake Powell under various operating conditions, 2) the volume of 602(a) storage as determined pursuant to the 1968 Colorado River Basin Project Act, and how that volume, and the storage volume determined pursuant to the Interim 602(a) Storage Guideline, will be applied, 3) the magnitude of the anticipated depletions within the Basin during the term of the proposed interim coordinated management guidelines, and 4) lake levels in both Lake Powell and Lake Mead that need special consideration. Accordingly, if the Basin states and the Secretary are to be successful in developing much-needed interim shortage guidelines, the Board believes that it is essential for the Basin states and the Secretary to likewise succeed in developing modified reservoir operating guidelines that provide benefits to both the Upper and Lower Basins.

2. Avoid calls on the Upper Basin and Avoid Shortages in the Lower Basin – As indicated in past correspondence to the Secretary, the Basin states have articulated two overriding sideboard

Mr. Robert W. Johnson  
November 30, 2005  
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factors in the development of new reservoir operating guidelines. First, any modification should help delay, in time, the likelihood of a Compact call on the Upper Division states. The Board recognizes the importance of this matter to the Upper Division states; and accordingly, the Board will work with the Basin states' representatives to find reservoir operating solutions that will postpone the likelihood of a Compact call. Second, the Board also appreciates the significant economic and other impacts from water use reductions resulting from declared shortages in the Lower Basin. Accordingly, the Board will also work with the Basin states' representatives to find solutions, in the form of modified reservoir operations that will delay the likelihood of, and reduce the magnitude of, declared shortages during the interim period. These two goals should be given emphasis by the Secretary in crafting modified reservoir operating guidelines.

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C. Operational Flexibility:

1. Recognition of Programs Providing Operational Flexibility -- In the discussions of development of interim shortage guidelines and coordinated management of Lakes Powell and Mead, the Basin states are considering programs and strategies to obtain additional operational flexibility and to reduce the likelihood and impacts of low runoff and reservoir conditions. These strategies include augmentation of the water supply of the Colorado River through various means, storing conserved water in Lake Mead, salvaging water currently lost to the System, and implementation of programs that will initially provide benefits to specific beneficiaries, but in the long-term provide benefits to the System. As appropriate, the NEPA process for development of interim shortage guidelines and coordinated management of Lakes Powell and Mead should recognize these operational programs that can benefit the system and reduce the impacts of low runoff and low reservoir conditions.

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Thank you for taking into consideration the comments of the Board with regard to this important process.

Sincerely,



Gerald R. Zimmerman  
Executive Director

Southern Nevada Water Authority

December 9, 2005

Mr. Robert Johnson, Regional Director  
U. S. Bureau of Reclamation  
Lower Colorado Region  
P.O. Box 61470  
Boulder City, NV 89006-1470

ATTN:BCOO-1000

Re: Request for Comments on Development of Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions

Dear Mr. Johnson:

The State of Nevada and the Southern Nevada Water Authority (Authority) are writing in direct response to the Bureau of Reclamation's September 30, 2005 Federal Register notice of its intent to prepare an Environmental Impact Statement for the Development of Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions. The September 30th notice, Secretary Norton's May 2, 2005 letter to the Governors of the seven Colorado River Basin States, and the August 25, 2005 letter to the Secretary from the Governor's representatives of the Basin States all underscore the urgent need for a comprehensive Colorado River management strategy that accommodates the immediate and long-term requirements of all the interests that are dependent on the Colorado River.

Timely resolution of Colorado River management issues is critical for Nevada. The Authority serves exclusively one of the most rapidly growing urban populations in the United States, but Nevada has the smallest state allocation of Colorado River water. We are also, unlike other Basin States, without in-state agriculture whose irrigation supplies can buffer shortages when they occur. While Nevada is aggressively developing additional in-state, non-Colorado River permanent supplies, these are long-term undertakings that involve significant environmental challenges and intersect difficult legal/policy/political issues.



Nevada would like to reiterate four points as part of the record for the September 30th request for comments. First, conjunctive management of Lakes Powell and Mead is imperative; it can benefit both basins and can forestall, or minimize, the effects of drought and shortages in the basin. Second, shortage criteria should recognize the effects that shortages could have for urban areas. Third, operating measures should consider the full range of reservoir operations, not just low reservoir conditions. Fourth, these operating measures must be adopted in a timely manner that would allow Nevada to benefit from augmentation of the Colorado River to bridge to the day Nevada will have developed additional permanent supplies. These operating measures should have no negative effect on any Colorado River interest and, more important, can benefit not just Nevada but also the entire Colorado River system.

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We look forward to working with Reclamation and the other Basin States to these ends, and are committed to pursuing the process and goals described in our August 25, 2005 letter.

Sincerely,  
Patricia Mulroy  
General Manager  
Southern Nevada Water Authority

Richard Bunker  
Chairman  
Colorado River Commission of Nevada

c: Larry Anderson, Utah  
Scott Balcomb, Colorado  
John D'Antonio, New Mexico  
Herb Guenther, Arizona  
Pat Tyrreil, Wyoming  
Jerry Zimmerman, California

**The States of Arizona, California, Colorado, Nevada,  
New Mexico, Utah and Wyoming  
Governor's Representatives on Colorado River Operations**

February 3, 2006

Honorable Gale A. Norton, Secretary  
Department of the Interior  
1849 C. Street, NW  
Washington, D.C. 20240

Re: Development of Lower Basin Shortage Guidelines and Coordinated Management Strategies for the Operation of Lake Mead and Lake Powell Under Low Reservoir Conditions

Dear Secretary Norton:

The materials attached to this letter contain descriptions of the programs that the seven Colorado River Basin States suggest be included within the scope of the environmental impact statement (EIS) for the proposed *Colorado River Reservoir Operations: Development of Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions* (70 Fed. Reg. 57322) (Sept. 30, 2005).

The Basin States, Bureau of Reclamation and others have consulted regularly since our previous correspondence on August 25, 2005 to further discuss and refine recommended management strategies for the Colorado River system. Subsequently, individual entities within the seven Basin States submitted oral and written comments to the Bureau of Reclamation on the above-referenced EIS process. Attachment A, "Seven Basin States' Preliminary Proposal Regarding Colorado River Interim Operations," is submitted as a consensus document on behalf of the seven Basin States. Please recognize that the States are still actively working on the matters addressed in this submission and anticipate further refinement.

Our recommendation is designed to provide input for the Department's consideration as it develops additional operational and water accounting procedures to: 1) delay the onset and minimize the extent and duration of shortages in the Lower Division States; 2) maximize the protection afforded the Upper Division States by storage in Lake Powell against possible curtailment of Upper Basin uses; 3) provide for more efficient, flexible, responsive and reliable operation of the system reservoirs for the benefit of both the Upper and Lower Basins by developing additional system water supplies through extraordinary conservation, system efficiency and augmentation projects; 4) allow the continued development and use of the Colorado River resource in both the Upper and Lower Basins; and 5) allow for development of dedicated water supplies through participation in improvements to system efficiency and clarification of how to proceed with development of non-system water reaching the Lower Basin

The Honorable Gale A. Norton

February 3, 2006

Page 2 of 3

mainstream. It is our position that implementation of these operational and accounting procedures can be accomplished without modification of the Long Range Operating Criteria or other elements of the law of the river. 2

The States' attached proposal incorporates an approach to shortage management. Additionally, the proposal includes modification and extension of the Department's Interim Surplus Guidelines to incorporate operations for all reservoir conditions.

The attached proposal also addresses the States' recommended approach to implementation of shortages pursuant to the U.S.-Mexico Treaty of 1944. We request that the Department of the Interior initiate, at the earliest appropriate time, consultation with the U.S. Section of the International Boundary and Water Commission and the U.S. Department of State on implementation of Treaty shortages. We further request the opportunity to consult with Interior and State Department officials on this issue as the federal government formulates its approach to any bi-national consultation with Mexico. 3

An agreement between Basin State water managers and users will be necessary to put in place additional terms upon which they have reached common understanding. We intend that this agreement be finalized while Reclamation is preparing the draft EIS, and be executed as soon as practicable. We are including with this letter a draft version of the agreement (Attachment B), to memorialize our current understandings and to provide you the benefits of our thoughts at this time. As with Attachment A, please recognize that the parties are still actively working on the matters addressed in Attachment B, and contemplate additional development and refinement of the agreement. We recognize that timely execution of our agreement is necessary in order to allow funding of certain efficiency projects to go forward.


During the time Reclamation is preparing the draft EIS, the States will move forward with a package of other actions that include implementation of a demonstration program for extraordinary conservation in 2006, system efficiency projects, preparation of an action plan for system augmentation through weather modification, execution of a memorandum of understanding for preparing a Lower Division States interstate drought management plan, development of forbearance agreements among the Lower Division States and the initiation of a study for long-term augmentation of Colorado River system water supplies. The States have already begun the consultant procurement process to support the long-term augmentation study, and intend to complete a weather modification action plan and a memorandum of understanding for interstate drought planning as soon as practicable. The Basin States recognize that Reclamation is undertaking NEPA compliance separately to determine whether to construct a regulating reservoir near Drop 2 of the All-American Canal and urge swift completion of that process. 4

We appreciate the opportunity you have provided for the Colorado River Basin States to recommend to you a program of reservoir management that considers all their respective concerns and interests. The Basin States look forward to working with you and Reclamation in analyzing and addressing these matters.

Sincerely,



Herb Guenther  
Director  
Arizona Department of Water Resources



Gerald R. Zimmerman  
Executive Director  
Colorado River Board of California



Scott Balcomb  
Governor's Representative  
State of Colorado



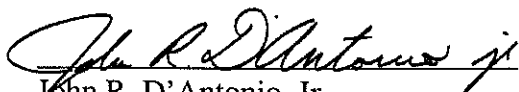
Rod Kuharich  
Director  
Colorado Water Conservation Board



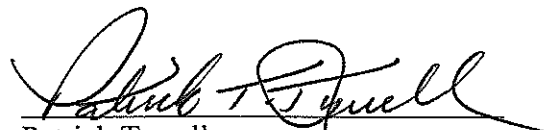
Richard Bunker  
Chairman  
Colorado River Commission of Nevada



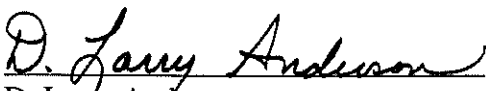
Patricia Mulroy  
General Manager  
Southern Nevada Water Authority



John R. D'Antonio, Jr.  
Governor's Representative  
State of New Mexico



Patrick Tyrrell  
State Engineer  
State of Wyoming



D. Larry Anderson  
Director  
Utah Division of Water Resources

List of Attachments:

Attachment A: Seven Basin States' Preliminary Proposal Regarding Colorado River Interim Operations

Attachment B: Draft Agreement

**ATTACHMENT A**  
**Seven Basin States' Preliminary Proposa Regarding Colorado River Interim Operations**

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The Seven Basin States (States) have worked together to recommend interim operations to the Secretary that should minimize shortages in the Lower Basin and avoid the risk of curtailment in the Upper Basin through conservation, more efficient reservoir operations, and long-term alternatives to bring additional water into the Colorado River community.

The States' recommendation has three key elements. First, the States propose to manage the reservoirs to minimize shortages and avoid curtailments. Second, the States have identified actions in the Lower Basin to conserve water. Third, the States recommend a specific proposal for implementing shortages in the Lower Basin. Finally, the States recognize the need for additional water supplies to meet the current and future needs in the Basin.

**Section 1. Allocation of Unused Basic Apportionment Water under Article II(B)(6)**

A. Introduction

Article II(B)(6) of the 1964 Decree in *Arizona v. California* (Decree) allows the Secretary to allocate water that is apportioned to one Lower Division State, but is for any reason unused in that State, to another Lower Division State. This determination is made for one year only and no rights to recurrent use of the water accrue to the State that receives the allocated water.

B. Application of Unused Basic Apportionment

Before making a determination of a surplus condition under this proposal, the Secretary will determine the quantity of apportioned but unused water under Article II (B)(6), and will allocate such water in the following order of priority.

1. Meet the direct delivery domestic use requirements of the Metropolitan Water District of Southern California, (MWD) and the Southern Nevada Water Authority (SNWA), as allocated between them by agreement.
2. Meet the needs of off stream banking activities by MWD in California and SNWA in Nevada, as allocated between them by agreement.
3. Meet the other needs for water in California in accordance with the California Seven-Party Agreement as supplemented by the Quantification Settlement Agreement.

**Section 2. Coordinated Operation of Lakes Powell and Mead**

Figure 1 describes the operating strategy that has been agreed to by the Colorado River Basin States.

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**ATTACHMENT A**  
**Seven Basin States' Preliminary Proposa Regarding Colorado River Interim Operations**

<b>Powell Elevation (feet)</b>	<b>Powell Operation</b>	<b>Powell Live Storage (maf)</b>
<b>3700</b>	Equalize or 8.23 maf	<b>24.32</b>
<b>3636 - 3664</b> (see table below)	8.23 maf; if Mead < 1075 feet, balance contents with a min/max release of 7.0 and 9.0 maf	<b>15.54- 19.02</b> (2008 - 2025)
<b>3575</b>	7.48 maf	<b>9.52</b>
<b>3525</b>	8.23 maf if Mead < 1025 f	<b>5.93</b>
<b>3370</b>	Balance contents with a min/max release of 7.0 and 9.5 maf	<b>0</b>

6

Lake Powell Equalization Elevation Table

In each of the following years, the Lake Powell Equalization Elevation will be as follows:

Year	Elevation (feet)
2008	3636
2009	3639
2010	3642
2011	3643
2012	3645
2013	3646
2014	3648
2015	3649
2016	3651
2017	3652
2018	3654
2019	3655
2020	3657
2021	3659
2022	3660
2023	3662
2024	3663
2025	3664

**ATTACHMENT A**  
**Seven Basin States' Preliminary Proposa Regarding Colorado River Interim Operations**

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1. Equalization: In years when Lake Powell content is projected on January 1 to be at or above the elevation stated in the Lake Powell Equalization Elevation Table, an amount of water will be released from Lake Powell to Lake Mead at a rate greater than 8,230,000 acre-feet per year to the extent necessary to equalize storage in the two reservoirs, or otherwise to release 8,230,000 acre-feet from Lake Powell.
2. Upper Elevation Balancing: In years when Lake Powell content is projected on January 1 to be below the elevation stated in the Lake Powell Equalization Elevation Table and at or above 3575 ft., the Secretary shall release 8,230,000 acre-feet from Lake Powell if the projected elevation of Lake Mead is at or above 1075 ft. If the projected elevation of Lake Mead is below 1075 ft., the Secretary shall balance the contents of Lake Mead and Lake Powell, but shall release no more than 9,000,000 acre-feet and no less than 7,000,000 acre-feet from Lake Powell.
3. Mid-Elevation Releases: In years when Lake Powell content is projected on January 1 to be below 3575 ft. and at or above 3525 ft., the Secretary shall release 7,480,000 acre-feet from Lake Powell if the projected elevation of Lake Mead is at or above 1025 ft. If the projected elevation of Lake Mead is below 1025 ft., the Secretary shall release 8,230,000 acre-feet from Lake Powell.
4. Lower Elevation Balancing: In years when Lake Powell content is projected on January 1 to be below 3525 ft., the Secretary shall balance the contents of Lake Mead and Lake Powell, but shall release no more than 9,500,000 acre-feet and no less than 7,000,000 acre-feet from Lake Powell.

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Coordinated Operation of Lakes Powell and Mead as described herein will be presumed to be consistent with the Section 602(a) storage requirement contained in the Colorado River Basin Project Act.

The objective of the operation of Lakes Powell and Mead as described herein is to avoid curtailment of uses in the Upper Basin, minimize shortages in the Lower Basin and not adversely affect the yield for development available in the Upper Basin.

The August 24-month study projections for the January 1 system storage and reservoir water surface elevations, for the following year, would be used to determine the applicability of the coordinated operation of Lakes Powell and Mead.

**Section 3. Determination of Lake Mead Operation during the Interim Period**

- A. Interim Surplus Guidelines

7

**ATTACHMENT A**  
**Seven Basin States' Preliminary Proposa Regarding Colorado River Interim Operations**

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1. The Basin States recommend that the Secretary continue to implement the Interim Surplus Guidelines (ISG) except as modified by this proposal, including the following:
  - a. Partial Domestic Surplus would be discontinued upon issuance of the Record Of Decision (“ROD”); and
  - b. The ISG effective period would be extended through December 31, 2025.
  
2. During the years 2017 through 2025 the Secretary shall distribute Domestic Surplus water:
  - a. For use by MWD, 250,000 acre-feet per year in addition to the amount of California’s basic apportionment available to MWD.
  - b. For use by SNWA, 100,000 acre-feet per year in addition to the amount of Nevada’s basic apportionment available to SNWA.
  - c. For use in Arizona, 100,000 acre-feet per year in addition to the amount of Arizona’s basic apportionment available to Arizona contractors.

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**B. Flood Control Surplus**

In years in which the Secretary makes space building or flood control releases pursuant to the Field Working Agreement, the Secretary shall determine a Flood Control Surplus for the remainder of that year or the subsequent year as specified in Section 7 of the ISG. In such years, releases will be made to satisfy all beneficial uses within the United States, including unlimited off-stream banking. Intentionally Created Surplus credits, as defined herein, would be reduced by the amount of any flood control release, if necessary until no credits are remaining. Under current practice, surplus declarations under the Treaty for Mexico are declared when flood control releases are made. Operation under a Flood Control Surplus does not establish any determination relating to implementation of the Treaty, including any potential changes in approach relating to surplus declarations under the Treaty. Such determinations must be addressed in a bilateral fashion with the Republic of Mexico.

**C. Quantified Surplus  
(70R Strategy)**

In years when the Secretary determines that water should be released for beneficial consumptive use to reduce the risk of potential reservoir spills based on the 70R Strategy, the Secretary shall determine and allocate Quantified Surplus sequentially as follows:

1. Establish the volume of the Quantified Surplus. For the purpose of determining the existence, and establishing the volume, of Quantified



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Surplus, the Secretary would not consider the volume of Intentionally Created Surplus credits, as defined herein.

2. Allocate and distribute the Quantified Surplus 50% to California, 46% to Arizona and 4% to Nevada, subject to 3. through 5. that follow.
3. Distribute California's share first to meet basic apportionment demands and MWD's demands. Then distribute to California Priorities 6 and 7 and other surplus contracts. Distribute Nevada's share first to meet basic apportionment demands and SNWA's demands. Distribute Arizona's share to surplus demands in Arizona including off stream banking and interstate banking demands. Arizona, California and Nevada agree that Nevada would get first priority for interstate banking in Arizona.
4. Distribute any unused share of the Quantified Surplus in accordance with Section 1, Allocation of Unused Basic Apportionment Water Under Article II (B)(6).
5. Determine whether MWD, SNWA and Arizona have received the amount of water they would have received under Section 3 D of this proposal, Domestic Surplus, if a Quantified Surplus had not been declared. If they have not, then determine and meet all demands provided for in Section 3 D, Domestic Surplus.

**D. Domestic Surplus**

In years when Lake Mead elevation is projected on January 1 to be above 1145 ft and below 70R Strategy elevation determination, the Secretary would determine a Domestic Surplus in accordance with Section 2(B)(2) of the ISG between the effective date of the ROD and December 31, 2016 and in accordance with Section 3(A) (2) of this proposal between January 1, 2017 and December 31, 2025.

**E. Normal Conditions**

In years when Lake Mead elevation is projected on January 1 to be above elevation 1075 ft. and below 1145 ft., the Secretary would determine a normal operating condition. In any year when Lake Mead elevations are in this range, the Secretary may determine that Intentionally Created Surplus ("ICS") as described in Section 4 of this proposal is available. ICS credits may then be delivered pursuant to the provisions of Section 4.

**F. Shortage Conditions**

Shortages would be implemented in the Lower Division States and Mexico under the following conditions and in the following manner:

1. 400,000 acre foot shortage: In years when Lake Mead content is projected on January 1 to be at or below elevation 1075 ft. and at or above 1050 ft.,

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a quantity of 400,000 acre-feet shall not be released or delivered in the Lower Division States and Mexico.

2. 500,000 acre foot shortage: In years when Lake Mead content is projected on January 1 to be below elevation 1050 ft. and at or above 1025 ft. a quantity of 500,000 acre-feet shall not be released or delivered in the Lower Division States and Mexico.
3. 600,000 acre foot shortage: In years when Lake Mead content is projected on January 1 to be below 1025 ft., a quantity of 600,000 acre-feet shall not be released or delivered in the Lower Division States and Mexico.
4. The three conditions described above are illustrated in Figure 2.

Figure 2

Lake Mead Step Shortage		
Mead Elevation (ft)	Stepped Shortage	Mead Live Storage
1075 to 1050	400 kaf	9.37 to 7.47 maf
<1050 to 1025	500 kaf	7.47 to 5.80 maf
<1025 to 1000	600 kaf	5.80 to 4.33 maf
<1000	Increased reductions to be consistent with consultation(s)	<4.33 maf

5. The United States, through the appropriate mechanisms, should implement a shortage pursuant to Article 10 of the 1944 Treaty in any year in which the Secretary has declared that a shortage condition exists pursuant to Art. II(B)(3) of the Decree. The total quantity of water that will not be released or delivered to Mexico shall be based on Lower Basin water deliveries during normal water supply conditions. The proportion of the shortage that shall be borne by Mexico will be 17% ( $1.5 \text{ maf} / 9 \text{ maf} \times 100\% = 17\%$ ).
6. Arizona and Nevada will share shortages based on a shortage sharing agreement. In the event that no agreement has been reached, Arizona and Nevada will share shortages in accordance with the 1968 Colorado River Basin Project Act, the Decree, other existing law as applicable, and the Interstate Banking Agreement between Arizona and Nevada parties.
7. Whenever Lake Mead reaches elevation 1025 ft., the Secretary will consult with the States to determine whether Colorado River hydrologic conditions, together with the delivery of 8.4 million acre-feet of Colorado River water to Lower Basin users and Mexico, will cause the elevation of Lake Mead to fall below 1000 ft. Upon such a determination, the

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Secretary shall consult with the states to discuss further measures that may be undertaken to avoid or reduce further increases in shortage determinations. If increased reductions are required, the Secretary shall implement the reductions consistent with the law of the river.

8. The States will evaluate factors at critical elevations that may avoid shortage determinations as reservoir elevations approach critical thresholds. The States may provide operational recommendations surrounding the critical elevations at some later date.

**Section 4. System Efficiency, Extraordinary Conservation and Augmentation Projects**

The States propose that the Secretary develop a policy and accounting procedure concerning augmentation, extraordinary conservation, and system efficiency projects, including specific extraordinary conservation projects, tributary conservation projects, introduction of non-Colorado River System water, system efficiency improvements and exchange of non-Colorado River System water. The accounting and recovery process would be referred to as “Intentionally Created Surplus” consistent with the concept that the States will take actions to augment storage of water in the Lower Colorado River Basin. The water would be distributed pursuant to Section II(B)(2) of the Decree and forbearance agreements between the States. The ICS credits may not be created or released without such forbearance agreements.

- A. The purposes of the Lake Mead Intentionally Created Surplus (“ICS”) program are to:
  1. Help avoid shortages to the Lower Basin. For the purposes of determining calendar year declarations of Domestic Surplus, Normal and Shortage conditions, any ICS credits would be considered system water;
  2. Benefit both Lake Mead and Lake Powell; and
  3. Increase the surface elevations of both Lakes Powell and Mead to higher levels than would have otherwise occurred.
- B. Extraordinary Conservation Storage Credits
  1. Users of Colorado River water may create ICS credits through extraordinary conservation under the following conditions:
    - a. A Boulder Canyon Project Act Section 5 Contractor (“Contractor”) shall repay all outstanding system payback obligations before it can create ICS credits.
    - b. ICS credits can only be created if such water could have otherwise been beneficially used.

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- c. A Contractor notifies Reclamation by September 15 of the amount of ICS credits it wishes to create for the subsequent year.
2. ICS credits may be created only through extraordinary conservation activities. These activities include:
  - a. Fallowing of land that currently is, historically was, and otherwise would have been in the next year, irrigated.
  - b. Canal lining programs
  - c. Desalination programs
  - d. Extraordinary conservation programs existing as of January 1, 2006
  - e. Other extraordinary conservation measures as agreed upon by the States
3. If conditions during the year change due to weather or other unforeseen circumstances, a Contractor may request a mid-year modification of its water order to reduce the amount of ICS credits created during that year. A Contractor cannot increase the amount of ICS credits it had previously scheduled to create during the year.
4. Any ICS credits would be used first to offset any overrun for that year or future year(s).
5. The maximum amount of ICS credits that can be created during any year through extraordinary conservation is limited to each state as listed below.
  - a. California: 400,000 acre-feet per year
  - b. Nevada: 125,000 acre-feet per year
  - c. Arizona: 100,000 acre-feet per year
6. The maximum cumulative amount of ICS credits created through extraordinary conservation that would be available at any one time is:
  - a. 1,500,000 acre-feet for California;
  - b. 300,000 acre-feet for Nevada; and
  - c. 300,000 acre-feet for Arizona.
7. No category of surplus water can be used to create ICS credits.

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8. At the time the ICS credits are created by extraordinary conservation, the Contractor will dedicate 5% of the ICS credits to the system on a one-time basis to provide a water supply benefit to the system. Additionally, ICS credits will be subject to annual evaporation loss (estimated to be no more than 3% annually) during each year in which no shortage has been declared. The Secretary will not assess any other charge for creating ICS credits.
9. Contractors that have created ICS credits may recover them under the following conditions:
  - a. A Contractor may request delivery of ICS credits it has created at the time it submits its annual water order for the following year. The ICS credits would be added to the Contractor's approved water order for that year upon approval by Reclamation.
  - b. The amount of ICS credits that may be recovered by California in any one year is limited to 400,000 acre-feet, by Nevada 300,000 acre-feet and Arizona 300,000 acre-feet; provided that the May 1, 24-month study for that year does not indicate that a shortage condition would be declared in the current or succeeding year.
  - c. If extraordinary weather conditions or water emergencies occur, a Contractor may request that Reclamation increase its use of ICS credits for that year.
  - d. A Contractor may request to reduce its use of ICS credits during the year for any reason, including reduction in water demands.
  - e. If Reclamation releases water for flood control purposes, ICS credits shall be reduced on a pro-rata basis among all holders of ICS credits-- if necessary until no credits remain. In determining the amount of Quantified Surplus, Reclamation shall not consider the volume of ICS credits that will be available.
10. Contractors may begin to create ICS through extraordinary conservation 1) beginning in 2006 as a pilot program (which may be lost if the Secretary does not adopt an extraordinary conservation program as part of the Coordinated Operation of Lakes Powell and Mead) or 2) after adoption of the Coordinated Operation for Lakes Powell and Mead until 2025. Any ICS credits under this program remaining at the end of the program would remain available for recovery for up to 10 years following termination of the Program.

**C. Tributary Conservation**

The Secretary should develop procedures in consultation with the States that would permit Contractors to purchase and fallow annual or permanent water rights on tributaries

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within the Lower Division States that have been used for a significant period of years and were created prior to Congress' adoption of the Boulder Canyon Project Act that, when retired, and verified by the Secretary, contribute water to the Colorado River mainstream for diversion by the Contractor. The water recovered by the Contractor may be used for municipal and industrial purposes only. This water would be in addition to the State's basic apportionment and would be available during declared shortages.

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It is intended that the water would be taken on a real-time basis and that not more than 95% of such water will be recovered; however, if storage were required, such stored water would be subject to all provisions applicable to ICS credits created through extraordinary conservation.

**D. System Efficiency Projects**

A Contractor may make contributions of capital to the Secretary for use in Secretarial projects designed to realize efficiencies that save water that would otherwise be lost from the Colorado River System in the United States. The Secretary in consultation with the States will identify system efficiency projects, terms for capital participation in such projects, and types and amounts of benefits the Secretary would provide in consideration of non-federal capital contributions to system efficiency projects, including a portion of the water saved by the project. Water made available to Contractors by the Secretary would be considered Intentionally Created Surplus. System efficiency projects are only intended to provide temporary water supplies and would not be available for permanent use.

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Benefits to the total water available within the Colorado River System in the United States should be substantial, taking into account any benefit provided to any non-federal capital contributor. In those cases in which benefits are provided to a non-federal capital contributor in the form of a portion of the water saved by the system efficiency project, the water provided to the capital contributor should be characterized as Colorado River surplus water intentionally created by the system efficiency project. The ICS credits should be provided to the capital contributor pursuant to its BCPA § 5 surplus contract. The Secretary should first obtain the waiver or forbearance of any other BCPA § 5 surplus contractor(s) that may possess any right to the delivery of the same water, so that the Secretary may deliver it to the capital contributor pursuant to Article II (B)(6) of the Decree. The ICS credits should be provided to the capital contributor on a predetermined schedule of annual deliveries for a period of years as agreed by the Secretary and Contractor. The ICS credits would not be stored, and therefore would not spill from system reservoirs. Delivery of ICS credits during shortage conditions will be determined on a project-by-project basis.

**E. Introduction and Recovery of Non-Colorado River System Water**

The Secretary should develop procedures, in consultation with the States, that would prospectively allow non-Colorado River System water in a Lower Division State to be introduced into, conveyed through, and diverted from system reservoirs, or otherwise through the Colorado River System. The non-Colorado River System water may be

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introduced either (1) directly from the non-Colorado River System source, or (2) as effluent resulting from use of the non-Colorado River System water in the introducing entity's service area, assuming water quality concerns are adequately addressed by the Contractor introducing the water. This water is in addition to a state's basic apportionment and may be used during declared shortages.

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Contractors proposing to introduce, convey and recover such non-Colorado River System water should make sufficient arrangements, contractual or otherwise, with the Secretary so as to guarantee that any such action causes no harm to the Secretary's management of the Colorado River System. Such arrangements would provide that the introduction, conveyance and recovery of such water be done pursuant to appropriate permits or other authorizations as required by state law, that the actual amount of water introduced, conveyed and recovered would be reported to the Secretary on an annual basis, and that no more than 95% of such water introduced will be recovered. The non-Colorado River System water would be intended to be taken on a real-time basis, and hence would not spill from system reservoirs. However, if storage were required such stored water would be subject to all provisions applicable to ICS created through extraordinary conservation. Any agreements made with the Secretary to introduce and recover this water will survive the termination of the Coordinated Operations of Lakes Powell and Mead.

Weather modification projects should be pursued as a means of augmenting Colorado River System water supplies. However, increases in water supply that result from weather modification projects are not included within the projects defined in this Section and would not create any additional supply for a Contractor or State that engages in a weather modification project.

**Section 5. Non-Colorado River System Water Exchanges**

Contractors in Arizona, California, or Nevada may secure an additional water supply by funding the development of a non-Colorado River System water supply in one Lower Division State for use in another State by exchange. The new water supply developed would be consumptively used in the State in which it was developed by a Contractor and that Contractor would intentionally reduce its consumptive use of Colorado River water. This would allow the Contractor(s) in the other Lower Division State(s) that provided the funding to consumptively use the Colorado River water that was intentionally unused through an agreement with the Secretary of the Interior. Through the cooperation of the International Boundary and Water Commission, United States and Mexico, similar agreements could be established by which non-Colorado River System water supplies in Mexico could be developed for use in the United States by exchange.

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It could be necessary for a State or other lower priority Contractors in the State in which consumptive use was intentionally reduced to agree to forebear their use of such water depending on the then-existing priority system to use of Colorado River water, to avoid a claim against the water being delivered to the Contractor that funded the new water supply. As an alternative to forbearance, an offer by the Contractor developing the non-Colorado River System water to allow the lower priority Contractor to pay the cost of developing a portion or all of the non-

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Colorado River System water supplies to be developed, would be utilized to protect such a lower priority Contractor's position in the then-existing priority system. A refusal of an offer to pay the cost of developing a portion or all of the non-Colorado River System water supplies to be developed would constitute the lower-priority Contractor's waiver of a right to challenge the exchange.

**Section 6. Accounting Mechanisms**

The operating alternatives discussed in Sections 4 and 5 will require new or modified Colorado River accounting mechanisms. No specific accounting mechanism to allow these types of operations is proposed for evaluation in Reclamation's current NEPA process. However, the description and evaluation of such accounting mechanisms would provide Contractors with the assurance that if such accounting mechanism were adopted in the Record of Decision, funds spent to propose such an arrangement in the future would not be spent in vain.

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**Section 7. Effective Period**

The proposed interim operations will be in effect 30 days from the publication of the Secretary's Record of Decision in the Federal Register. The proposed interim operations will, unless subsequently modified, remain in effect through December 31, 2025 (through preparation of the 2026 AOP), subject to a formal review of their effectiveness beginning no later than 2020.

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**AGREEMENT**

The [name parties] hereby enter into this Agreement effective as of \_\_\_\_\_.

**RECITALS**A. Parties.

## 1. Arizona

- a. The Arizona Department of Water Resources, through its Director, is the successor to the signatory agency of the State for the 1922 Colorado River Compact, and the 1944 Contract for Delivery of Water with the United States, both authorized and ratified by the Arizona Legislature, A.R.S. §§ 45-1301 and 1311. Pursuant to A.R.S. §§ 45-107, the Director is authorized and directed, subject to the limitations in A.R.S. §§ 45-106, for and on behalf of the State of Arizona, to consult, advise and cooperate with the Secretary of the Interior of the United States with respect to the exercise by the Secretary of Congressionally authorized authority relative to the waters of the Colorado River (including but not limited to the Boulder Canyon Project Act, 43 U.S.C. § 617, and the 1968 Colorado River Basin Project Act, 43 U.S.C. § 1501) and with respect to the development, negotiation and execution of interstate agreements. Additionally, under A.R.S. § 45-105(A)(9), the Director is authorized to "prosecute and defend all rights, claims and privileges of this state respecting interstate streams."
- b. Under A.R.S. § 11-951 *et. seq.*, the Director is authorized to enter into Intergovernmental Agreements with other public agencies, which includes another state; departments, agencies, boards and commissions of another state; and political subdivisions of another state.

2. California. The chairman of the Colorado River Board of California, acting as the Colorado River Commissioner pursuant to California Water Code section 12525, has the authority to exercise on behalf of California every right and power granted to California by the Boulder Canyon Project Act, and to do and perform all other things necessary or expedient to carry out the purposes of the Colorado River Board.

## 3. Colorado

- a. Section 24-1-109, Colorado Revised Statutes (2005) provides that "Interstate compacts authorized by law shall be administered under the direction of the office of the governor." This includes the Colorado River Compact and the Upper Colorado River Basin Compact. Section 37-60-109 provides that "the governor from time to time, with approval of the

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board, shall appoint a commissioner, who shall represent the state of Colorado upon joint commissions to be composed of commissioners representing the state of Colorado and another state or other states for the purpose of negotiating and entering into compacts or agreements between said states..." By Executive Order \_\_\_\_\_, issued \_\_\_\_\_, 2006, attached hereto as Exhibit \_\_\_\_\_ and incorporated herein by reference, the Governor appointed Upper Colorado River Commissioner Scott Balcomb to represent the State of Colorado.

- b. Section 37-60-106, subsections (e) and (i), C.R.S. (2005), authorize the Colorado Water Conservation Board to "cooperate with the United States and the agencies thereof, and with other states for the purpose of bringing about the greater utilization of the water of the state of Colorado and the prevention of flood damages," and "to confer with and appear before the officers, representatives, boards, bureaus, committees, commissions, or other agencies of other states, or of the federal government, for the purpose of protecting and asserting the authority, interests, and rights of the state of Colorado and its citizens with respect to the waters of the interstate streams in this state." By resolution dated \_\_\_\_\_, attached hereto as Exhibit \_\_\_, and incorporated herein by reference, the Colorado Water Conservation Board authorized and directed its Director to negotiate with and enter into agreements with other state entities within the Colorado River Basin.

#### 4. Nevada

- a. The Colorado River Commission of the State of Nevada (CRCN) is an agency of the State of Nevada, authorized generally by N.R.S. §§ 538.041 and 538.251. CRCN is authorized by N.R.S. § 538.161 (6), (7) to enter into this Agreement. The CRCN, in furtherance of the State of Nevada's responsibility to promote the health and welfare of its people in Colorado River matters, makes this Agreement to supplement the supply of water in the Colorado River which is available for use in Nevada, augment the waters of the Colorado River, and facilitate the more flexible operation of dams and facilities by the Secretary of the Interior of the United States. The Chairman of the Commission, signatory hereto, serves as one of the Governor's representatives as contemplated by Section 602(b) of the 1968 Colorado River Basin Project Act, 43 U.S.C. § 1552(b) and the Criteria for Coordinated Long-Range Operation of Colorado River Reservoirs Pursuant to the Colorado River Basin Project Act.
- b. The Southern Nevada Water Authority (SNWA) is a Nevada joint powers agency and political subdivision of the State of Nevada, created by agreement dated July 25, 1991, as amended November 17, 1994 and January 1, 1996, pursuant to N.R.S. §§ 277.074 and 277.120. SNWA is authorized by N.R.S. § 538.186 to enter into this Agreement and, pursuant

to its contract issued under section 5 of the Boulder Canyon Project Act of 1928, SNWA has the right to divert “supplemental water” as defined by NRS § 538.041 (6). The General Manager of the SNWA, signatory hereto, serves as one of the Governor’s Representatives as contemplated by Section 602(b) of the 1968 Colorado River Basin Project Act, 43 U.S.C. § 1552(b) and the Criteria for Coordinated Long-Range Operation of Colorado River Reservoirs Pursuant to the Colorado River Basin Project Act.

5. New Mexico. Pursuant to NMSA 1978, 72-14-3, the New Mexico Interstate Stream Commission is authorized to investigate water supply, to develop, to conserve, to protect and to do any and all other things necessary to protect, conserve and develop the waters and stream systems of the State of New Mexico, interstate or otherwise. The Interstate Stream Commission also is authorized to institute or cause to be instituted in the name of the state of New Mexico any and all negotiations and/or legal proceedings as in its judgment are necessary. By Resolution dated \_\_\_\_\_, the Interstate Stream Commission authorizes the execution of this Agreement.
6. Utah. The Division of Water Resources (DWR) is the water resource authority for the State of Utah. Utah Code Ann. § 73-10-18. The Utah Department of Natural Resources Executive Director (Department), with the concurrence of the Utah Board of Water Resources (Board), appoints the DWR Director (Director). § 63-34-6(1). The Board makes DWR policy. § 73-10-1.5. The Board develops, conserves, protects, and controls Utah waters, § 73-10-4(4),(5), and, in cooperation with the Department and Governor, supervises administration of interstate compacts, § 73-10-4, such as the Colorado River Compact, §§ 73-12a-1 through 3, and the Upper Colorado River Basin Compact, § 73-13-10. The Board, with Department and Gubernatorial approval, appoints a Utah Interstate Stream Commissioner, § 73-10-3, currently the DWR Director, to represent Utah in interstate conferences to administer interstate compacts. §§ 73-10-3 and 73-10-4. These delegations of authority authorize the Utah Interstate Stream Commissioner/DWR Director to sign this document. He acts pursuant to a Board resolution, acknowledged by the Department, dated \_\_\_\_\_, attached hereto as Exhibit \_\_, and incorporated herein by reference.
7. Wyoming. Water in Wyoming belongs to the state. WYO. CONST. Art. 8 ' 1. The Wyoming State Engineer is a constitutionally created office and is Wyoming’s chief water official with general supervisory authority over the waters of the state. WYO. CONST. Art. 8 ' 5. The Wyoming legislature conferred upon Wyoming officers the authority to cooperate with and assist like authorities and entities of other states in the performance of any lawful power, duty, or authority. WYO. STAT. ANN. ' 16-1-101 (LEXISNEXIS 2005). Wyoming and its State Engineer represent the rights and interests of all Wyoming appropriators with respect to other states. *Wyoming v. Colorado*,

286 U.S. 494 (1922). See *Hinderlider v. La Plata River & Cherry Creek Ditch Co.*, 304 U.S. 92 (1938). In signing this Agreement, the State Engineer intends that this Agreement be mutually and equally binding between the Parties.

## B. Background

1. Federal law and practice (including Section 602(b) of the 1968 Colorado River Basin Project Act, 43 U.S.C. § 1552(b), and the Criteria for Coordinated Long-Range Operation of Colorado River Reservoirs Pursuant to the Colorado River Basin Project Act), contemplate that in the operation of Lakes Powell and Mead, the Secretary of the Interior consults with the States through Governors' Representatives, who represent the Governors and their respective States. Through this law and practice, the Governors' Representatives have in the past reached agreements among themselves and with the Secretary on various aspects of Colorado River reservoir operation. This Agreement is entered into in furtherance of this law and practice.

2. On January 16, 2001, the Secretary adopted Colorado River Interim Surplus Guidelines (ISG) based on an alternative prepared by the Colorado River Basin States, for the purposes of determining annually the conditions under which the Secretary would declare the availability of surplus water for use within the states of Arizona, California and Nevada in accordance with and under the authority of the Boulder Canyon Project Act of 1928 (45 Stat. 1057) and the Decree of the United States Supreme Court in *Arizona v. California*, 376 U.S. 340 (1964). The ISG are effective through calendar year 2015 (through preparation of the 2016 Annual Operating Plan).

3. In the years following the adoption of the ISG, drought conditions in the Colorado River Basin caused a significant reduction in storage levels in Lakes Powell and Mead, and precipitated discussions by and among the Parties, and between the Parties and the United States through the Department of the Interior and the Bureau of Reclamation. The Parties recognize that the Upper Division States have not yet developed their full apportionment under the Colorado River Compact. Although the Secretary has not imposed any shortage in the Lower Basin, the Parties also recognize that with additional Upper Basin development and in drought conditions, the Lower Division States may be required to suffer shortages in deliveries of water from Lake Mead. Therefore, these discussions focused on ways to improve the management of water in Lakes Powell and Mead so as to enhance the protection afforded to the Upper Basin by Lake Powell, and to delay the onset and minimize the extent and duration of shortages in the Lower Basin.

4. Shortages in the Lower Basin will also trigger shortages in the delivery of water to Mexico pursuant to the Mexican Water Treaty of 1944, February 3, 1944, U.S.-Mex., 59 Stat. 1219, T.S. 994, 3 U.N.T.S. 313.

5. On May 2, 2005, the Secretary announced her intent to undertake a process to develop Lower Basin shortage guidelines and explore management options for the coordinated operation of Lakes Powell and Mead. On June 15, 2005, the Bureau of Reclamation published a notice in the *Federal Register*, announcing its intent to implement the Secretary's direction. The Bureau of Reclamation has proceeded to undertake scoping and develop alternatives pursuant to the National Environmental Policy Act (the NEPA Process), which the Parties anticipate will form the basis for a ROD to be issued by the Secretary by December 2007.

6. On August 25, 2005, the Governors' Representatives for the seven Colorado River Basin States wrote a letter to the Secretary expressing conceptual agreement in the development and implementation of three broad strategies for improved management and operation of the Colorado River: Coordinated Reservoir Management and Lower Basin Shortage Guidelines; System Efficiency and Management; and Augmentation of Supply.

7. On February 3, 2006, the Governors' Representatives transmitted to the Secretary their recommendation for the scope of the NEPA Process, which refined many of the elements outlined in the August 25, 2005 letter.

8. At the request of the Secretary, the Parties have continued their discussions relative to the areas of agreement outlined in the letters of August 25, 2005 and February 3, 2006.

9. In furtherance of the letters of August 25, 2005 and February 3, 2006, the Parties have reached agreement to take additional actions for their mutual benefit, which are designed to augment the supply of water available for use in the Colorado River System and improve the management of water in the Colorado River.

C. Purpose. The Parties intend that the actions by them contemplated in this Agreement will: improve cooperation and communication among them; provide additional security and certainty in the water supply of the Colorado River System for the benefit of the people served by water from the Colorado River System; and avoid circumstances which could otherwise form the basis for claims or controversies over interpretation or implementation of the Colorado River Compact and other applicable provisions of the law of the river.

## AGREEMENT

In consideration of the above recitals and the mutual covenants contained herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties agree as follows:

1. Recitals. The Recitals set forth above are material facts that are relevant to and form the basis for the agreements set forth herein.

2. Definitions. As used in this Agreement, the following terms have the following meanings:

- A. Colorado River System. This term shall have the meaning as defined in the Colorado River Compact.
- B. ISG. The Colorado River Interim Surplus Guidelines adopted by the Secretary on January 16, 2001.
- C. NEPA Process. The decision-making process pursuant to the National Environmental Policy Act, 42 U.S.C. §§ 4321 through 47, beginning with the Bureau of Reclamation's Notice to Solicit Comments and Hold Public Meetings, 70 Fed. Reg. 34794 (June 15, 2005) and culminating in a Record of Decision.
- D. Party or Parties. Any party or parties to this Agreement.
- E. Parties' Recommendation. The Seven Basin States' Preliminary Proposal Regarding Colorado River Interim Operations, a copy of which is attached hereto and incorporated herein by this reference, presented by the Parties to the Secretary in furtherance of the States' letters of August 25, 2005 and February 3, 2006, and any modification of the Parties' Recommendation adopted by the Parties pursuant to this Agreement.
- F. ROD. The Record of Decision anticipated to be issued by the Secretary after completion of NEPA Process, pursuant to her letter of May 2, 2005, and the Notice published in the Federal Register on September 30, 2005, 70 Fed. Reg. 57322.
- G. Secretary. The Secretary of the Interior or the Bureau of Reclamation, as applicable.
- H. State or States. Any of the states of Arizona, California, Colorado, Nevada, New Mexico, Utah or Wyoming, as context requires.

3. Support for Parties' Recommendation. After considering a number of alternatives, each Party has determined that the Parties' Recommendation is in the best interests of that Party, and promotes the health and welfare of that Party and of the Colorado River Basin States. In the NEPA Process, the Parties shall support the Secretary's adoption of the Parties' Recommendation in a ROD. If during the course of the NEPA Process any new information becomes available which causes any Party, in its sole and absolute discretion, to reassess any provision of the Parties' Recommendation, that Party shall immediately notify all other Parties in writing. The Parties shall jointly confer and, if they agree to any modification of the Parties' Recommendation, shall consult with the Secretary to advise her of such modification and request the adoption thereof in the ROD. If after such conference and consultation it is apparent there is an

irreconcilable conflict between the Parties as to such modification, then any Party may upon written notice to the other Parties withdraw from this Agreement, and in such event this Agreement shall no longer be effective or binding upon such withdrawing Party. All withdrawing Parties hereby reserve all rights upon withdrawal from this Agreement to take such actions, including support of or challenges to the ROD, as they in their sole and absolute discretion deem necessary or appropriate. In the event of the withdrawal of any one or more Parties from this Agreement, this Agreement shall continue in full force and effect as to the remaining Parties. The remaining Parties may confer to determine whether to continue this Agreement in effect, to amend this Agreement, or to terminate this Agreement. In the event of termination, all Parties shall be relieved from the terms hereof, and this Agreement shall be of no further force or effect.

4. ROD Consistent with the Parties' Recommendation. In the event the Secretary adopts a ROD in substantial conformance with the Parties' Recommendation, the Parties shall take all necessary actions to implement the terms of the ROD, including the approval and execution of agreements necessary for such implementation.

5. ROD Inconsistent with the Parties' Recommendation. In the event the Secretary adopts a ROD that any Party, in its sole and absolute discretion, determines is not in substantial conformance with the Parties' Recommendation, such Party shall immediately notify all other Parties of such determination in writing. The Parties shall jointly confer, and consult with the Secretary as necessary, in order to determine whether the ROD is in substantial conformance with this Agreement, or whether any action, including the amendment of this Agreement, may resolve such concern. If after such conference and consultation it is apparent there is an irreconcilable conflict between the ROD and the concerns of such Party, then such Party may upon written notice to the other Parties withdraw from this Agreement, and in such event this Agreement shall no longer be effective or binding upon such withdrawing Party. All withdrawing Parties hereby reserve all rights upon withdrawal from this Agreement to take such actions, including support of or challenges to the ROD, as they in their sole and absolute discretion deem necessary or appropriate. In the event of the withdrawal of any one or more Parties from this Agreement, this Agreement shall continue in full force and effect as to the remaining Parties. The remaining Parties may confer to determine whether to continue this Agreement in effect, to amend this Agreement, or to terminate this Agreement. In the event of termination, all Parties shall be relieved from the terms hereof, and this Agreement shall be of no further force or effect.

6. Additions to the ROD. The Parties hereby request that the Secretary recognize the specific provisions of this Agreement as part of the NEPA Process and, if appropriate, include in the ROD specific provisions that reference this Agreement as a basis for the ROD. The Parties also hereby request that the Secretary include in the ROD specific provision that the Secretary will first consult with all the States, through their designated Governor's Representatives, before making any substantive modification to the ROD. Finally, the Parties hereby request that the Secretary include in the ROD specific provision that upon a request by any State for modification of the ROD, or upon any request by any State to resolve any claim or controversy arising under this Agreement or

under the operations of Lakes Powell and Mead pursuant to the ROD, the ISG, or any other applicable provision of federal law, regulation, criteria, policy, rule or guideline, the Secretary shall invite all of the Governors, or their designated representatives, to consult with the Secretary in an attempt to resolve such claim or controversy by mutual agreement.

7. Consultation on Operations. After the Secretary commences operating Lakes Powell and Mead pursuant to the ROD, the Parties shall confer among themselves as necessary, but at least annually, to assess such operations. Any Party may request consultation with the other Parties on a proposed adjustment or modification of such operations, based on changed circumstances, unanticipated conditions, or other factors. Upon such request, the Parties shall in good faith confer to resolve any such issues, and based thereon may request consultation by the States with the Secretary on adjustments to or modifications of operations under the ROD. In any event, the Parties shall confer before December 31, 2020, to determine whether to extend this Agreement and recommend that the Secretary continue operations under the ROD for an additional period, or modify this Agreement and recommend that the Secretary modify operations under the ROD, or terminate this Agreement and recommend that the Secretary not continue operations under the ROD after the expiration thereof.

8. Development of System Augmentation. The Parties agree to diligently pursue system augmentation within the Colorado River System including but not limited to the determination of the feasibility of projects to increase precipitation in the basin or to augment available supplies through desalination. Additionally, the Parties agree to cooperatively pursue an interim water supply of at least a cumulative amount of 280,000 acre-feet for use in Nevada while long-term augmentation projects are being pursued. It is anticipated that this interim water supply will be made available in return for Nevada's funding of the Drop 2 Reservoir currently proposed for construction by the Bureau of Reclamation. Annual recovery of this interim water supply by Nevada will not exceed 40,000 acre-feet. All water available to Nevada in consideration for funding the Drop 2 Reservoir would remain available during all shortage conditions declared by the Secretary.

In consideration of the Parties' diligent pursuit of long-term augmentation and the availability of the interim water supply, the Southern Nevada Water Authority (SNWA) agrees that it will withdraw right-of-way Application No. N-79203 filed with the Bureau of Land Management on October 1, 2004 for the purpose of developing Permit No. 58591 issued by the Nevada State Engineer in Ruling No. 4151.

The SNWA will not re-file such right-of-way application or otherwise seek to divert the water rights available under Permit No. 58591 from the Virgin River prior to 2014 so long as Nevada is allowed to utilize its pre-Boulder Canyon Project Act Virgin and Muddy River rights in accordance with section 4(C) of the Parties' Recommendation in the form forwarded to the Secretary on February 3, 2006, and the interim water supply made available to Nevada is reasonably certain to remain available. The SNWA will not re-file such right-of-way application or otherwise seek to divert the water rights available



under Permit No. 58591 from the Virgin River after 2014 so long as diligent pursuit of system augmentation is proceeding to provide Nevada an annual supply of 75,000 acre-feet by the year 2020. Prior to re-filing any applications with the Bureau of Land Management, SNWA and Nevada will consult with the other Basin States.

This agreement is without prejudice to any Party's claims, rights or interests in the Virgin or Muddy River systems.

9. Consistency with Existing Law. The Parties' Recommendation is consistent with existing law. The Parties expressly agree that the storage of water in and release of water from Lakes Powell and Mead pursuant to a ROD issued by the Secretary in substantial conformance with the Parties' Recommendation and this Agreement, and any agreements, rules and regulations adopted by the Secretary or the parties to implement such ROD, shall not constitute a violation of Article III(a)-(e) inclusive of the Colorado River Compact, or Sections 601 and 602(a) of the Colorado River Basin Project Act of 1968 (43 U.S.C. §§ 1551 and 1552(a)), and all applicable rules and regulations promulgated thereunder.

10. Resolution of Claims or Controversies. The Parties recognize that litigation is not the preferred alternative to the resolution of claims or controversies concerning the law of the river. In furtherance of this Agreement, the Parties desire to avoid litigation, and agree to pursue a consultative approach to the resolution of any claim or controversy. In the event that any Party becomes concerned that there may be a claim or controversy under this Agreement, the ROD, Article III(a)-(e) inclusive of the Colorado River Compact, or Sections 601 and 602(a) of the Colorado River Basin Project Act of 1968 (43 U.S.C. §§ 1551 and 1552(a)), and all applicable rules and regulations promulgated thereunder, such Party shall notify all other Parties in writing, and the Parties shall in good faith meet in order to resolve such claim or controversy by mutual agreement prior to any litigation. No Party shall initiate any judicial or administrative proceeding against any other Party or against the Secretary under Article III(a)-(e) inclusive of the Colorado River Compact, or Sections 601 and 602(a) of the Colorado River Basin Project Act of 1968 (43 U.S.C. §§ 1551 and 1552(a)), or any other applicable provision of federal law, regulation, criteria, policy, rule or guideline, and no claim thereunder shall be ripe, until such conference has been completed. In addition, all States shall comply with any request by the Secretary for consultation in order to resolve any claim or controversy. In addition, any State may invoke the provisions of Article VI of the Colorado River Compact. Notwithstanding anything in this Agreement to the contrary, the terms of this Paragraph 10 shall survive for a period of five years following the termination or expiration of this Agreement, and shall apply to any withdrawing Party after withdrawal for such period.

11. Reservation of Rights. Notwithstanding the terms of this Agreement and the Parties' Recommendation, in the event that for any reason this Agreement is terminated, or that the term of this Agreement is not extended, or upon the withdrawal of any Party from this Agreement, the Parties reserve, and shall not be deemed to have waived, any and all rights, including any claims or defenses, they may have as of the date hereof or as

may accrue during the term hereof, under any existing federal or state law or administrative rule, regulation or guideline, including without limitation the Colorado River Compact, the Upper Colorado River Basin Compact, the Decree in *Arizona v. California*, the Colorado River Basin Project Act of 1968, and any other applicable provision of federal law, rule, regulation, or guideline.

12. No Third-Party Beneficiaries. This Agreement is made for the benefit of the Parties. No Party to this Agreement intends for this Agreement to confer any benefit upon any person or entity not a signatory upon a theory of third-party beneficiary or otherwise.

13. Joint Defense Against Third Party Claims. In the event the Secretary adopts a ROD in substantial conformance with the Parties' Recommendation as set forth herein, they will have certain common, closely parallel, or identical interests in supporting, preserving and defending the ROD and this Agreement. The nature of this interest and the relationship among the Parties present common legal and factual issues and a mutuality of interests. Because of these common interests, the Parties will mutually benefit from an exchange of information relating to the support, preservation and defense of the ROD and this Agreement, as well as from a coordinated investigation and preparation for discussion of such interests. In furtherance thereof, in the event of any challenge by a third party as to the ROD or this Agreement (including claims by any withdrawing Party), the Parties will cooperate to proceed with reasonable diligence and to use reasonable best efforts in the support, preservation and defense thereof, including any lawsuit or administrative proceeding challenging the legality, validity or enforceability of any term of the ROD or this Agreement, and will to the extent appropriate enter into such agreements, including joint defense or common interest agreements, as are necessary therefor. Each Party shall bear its own costs of participation and representation in any such defense.

14. Reaffirmation of Existing Law. Nothing in this Agreement or the Parties' Recommendation is intended to, nor shall this Agreement be construed so as to, diminish or modify the right of any Party under existing law, including without limitation the Colorado River Compact, the Upper Colorado River Basin Compact, or the Decree in *Arizona v. California*. The Parties hereby affirm the entitlement and right of each State under such existing law to use and develop the water of the Colorado River System.

15. Term. This Agreement shall be effective as of the date of the first two signatories hereto, and shall be effective as to any additional Party as of the date of execution by such Party. Unless earlier terminated, this Agreement shall be effective for so long as the ROD and the ISG are in effect, and shall terminate upon the termination of the ROD and the ISG.

16. Authority. The persons and entities executing this Agreement on behalf of the Parties are recognized by the Parties as representing the respective States in matters concerning the operation of Lakes Powell and Mead, and as those persons and entities authorized to bind the respective Parties to the terms hereof. Each person executing this

Agreement has the full power and authority to bind the respective Party to the terms of this Agreement. No Party shall challenge the authority of any person or Party to execute this Agreement and bind such Party to the terms hereof, and the Parties waive the right to challenge such authority.

# **Appendix X**

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- Y.5 January 30, 2006, Arizona Republic, River Drought Plan in Peril – Ariz., Calif. At Odds Over Allotment of Colo. Supply, by Shaun McKinnon**
- Y.6 December 28, 2005, Salt Lake Tribune, Colorado River Users Anticipate Compromise; January Meeting: Will the Upper and Lower Basins Agree?, by Joe Baird**
- Y.7 September 30, 2005, Casa Grande Valley Newspapers, States Facing Complexity of Demands on Colorado River Water Usage; Like Dat Ol’ Man River, Talks on the Future of the Colorado River and Who Gets How Much Water Keep on Rollin’ Along, by Harold Kitching**
- Y.8 September 20, 2005, Las Vegas Sun, States Meet Over Colorado River, by Launce Rake**
- Y.9 August 25, 2005, Arizona Republic, Arizona Braces for Water War: \$1.5 Million Sought to Fight Colorado River Lawsuits, by Shaun McKinnon**
- Y.10 June 9, 2005, The Vail Trail, A Colorado River Tug-of-War; Norton Ruled in Favor of Lower Basin States, but More Problems are Sure to Come, by Matt Jenkins**
- Y.11 April 28, 2005, Salt Lake Tribune, Norton Holds Tap on Lake Powell; States Still at Odds: Interior Secretary to Decide Flow of Colorado River, by Joe Baird**
- Y.12 December 31, 2004, Denver Post, Right Move on West’s Water**
- Y.13 December 11, 2004, Rocky Mountain News, State Preparing for Water Battle, by Jerd Smith**
- Y.14 October 8, 2004, Reuters, Drought in the West Might Get Worse, by Maggie Fox**
- Y.15 August 16, 2004, San Diego Union-Tribune, Drought’s Grip Has the West by Throat, by Michael Gardner**

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## **News Articles**

- Y.1 February 7, 2006, Arizona Republic, Colorado River States Add Historic Chapter in Water Use**



**News Clip:**

Call it the most significant Colorado River agreement since the 1922 compact that set specific water allocations for Arizona and six other western states.

Pressured by a six-year-long drought and Interior Secretary Gale Norton, the seven states crafted a thoughtful and reasonable plan last week on how the river should be managed in times of drought.

This was no easy task.

Western water wars are legendary, and the fact that Arizona, California and Nevada in the Lower Basin and Colorado, New Mexico, Utah and Wyoming in the Upper Basin could avoid protracted and costly litigation is a testament to their desire to work through differences.

"It truly merits the term historic to get all seven states on the same page endorsing concepts to deal with some really tough issues," said George Renner, a member of the board that oversees the Central Arizona Project.

From Arizona's standpoint, the toughest challenge in achieving an agreement has been its junior status.

Junior status was the price Arizona paid in 1968 for congressional approval of the CAP: in times of shortage, the CAP's annual supply of 1.5 million acre-feet of Colorado River water would take the first hit.

The pact doesn't change that. But it does try to ensure that any shortage declaration will have, in Renner's term, a "soft landing" and Arizona will have sufficient advance warning.

This measure of protection is achieved by establishing guidelines pegged to water elevation levels at Lake Mead, which stand at 1,140 feet above sea level. If the lake dips to 1,075 feet, water deliveries would drop by 400,000 acre-feet.

If the levels were to fall to 1,025 feet, the hit would be 600,000 acre-feet, the amount that about 1.5 million people use in a year. Any drop below that floor would trigger discussions with the secretary of the Interior to find more common ground.

Arizona would bear the brunt of the shortage, about 70 percent, with Nevada and Mexico shouldering the rest. It's important to keep in mind that drought modeling puts the probability of any shortage over the next 20 years at only 5 percent.

It's also important to understand that were a shortage declared, the likelihood of cutbacks of CAP deliveries to cities is remote.

Delivery reductions to agriculture, which could compensate by pumping groundwater, and halting the state's groundwater recharge program would come first; not municipal customers.

The plan also modifies the way reservoirs Lake Mead and Lake Powell are managed. This flexibility gives a measure of protection to the Upper Basin states, which in dry years may not have to release to the Lower Basin states the required 8.23 million acre-feet out of Lake Powell.

Also suggested are conservation plans and water augmentation programs, such as lining canals, cloud seeding and desalinization, in an effort to increase supplies and, importantly, further delay the day that shortages on the river are declared.

The states have done their part, and they have done it well. But this is just the first step.

Explosive growth in the West and persistent drought conditions are creating new demands on the Colorado River.

The 1922 compact divvied up an annual flow of 15 million acre-feet, and a subsequent treaty with Mexico sent 1.5 million acre-feet south of the border. Experts now don't believe there are sufficient flows to meet those obligations.

In short, the Colorado River likely is overallocated.

It was essential that the states sharing the Colorado River work out their differences through give-and-take and leave parochialism at the door. This they have done, and we applaud them.

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# **Appendix Y**

## **News Articles**

- Y.2 February 2, 2006, Las Vegas Sun, Hope Arises for Future Proposal May End Years of Conflicts Among States Sharing the Colorado River**

**News Clip:**

After four years of extreme drought in Nevada and throughout the West, the Interior Department in 2003 introduced a program called "Water 2025." The department, under Secretary Gale Norton, feared the long-term consequences of a double calamity: prolonged lack of precipitation and prolonged population growth. Both are continuing today, particularly in Nevada and the six other states that share water from the Colorado River.

By injecting funds and federal water experts into the West's growing problem, the Interior Department hoped that regional crises and conflicts among the states could be avoided. A major strategy under the program was to assure the states that the federal government would listen to any proposals they brought to the table. Another strategy was to encourage -- and if that didn't work, pressure -- the states to begin collaborating with each other to produce the proposals. This strategy appears to have been successful for Nevada and the other Colorado River states. They were warned by the Interior Department that a plan to manage the drought would be in place by the end of 2007 -- with or without their input. As meetings began among the states' water managers, they were all wary of each other and divisions arose. But not wanting a federal plan imposed upon them, they continued with regular meetings. On Tuesday the officials emerged from a meeting in Las Vegas with the news that all seven states had agreed to a proposal. This means the Interior Department, which has the final say on drought management, will be able to start with a document that reflects local concerns.

For Nevada, the proposal means an investment of about \$80 million toward infrastructure improvements that will lead to more water in the Colorado

River system, and more water for state residents and businesses. Altogether, the agreements under the proposal add up to a lot more water for Nevada, nearly double its current allotment from the river.

All of the states' water officials and the Interior Department deserve credit for improving the water outlook. But the whole agreement depends upon a healthy Colorado River. If the proposal is accepted, those who will ultimately deserve the most credit will be those who continue to conserve.

# **Appendix Y**

## **News Articles**

- Y.3 February 2, 2006, Rocky Mountain News, 'Peace for 25 Years' Tentative Agreement Reached on Drought Plan for Colorado River, by Jerd Smith**

**News Clip:**

Colorado and six other Western states have reached a tentative agreement on a drought plan for the Colorado River, breaking a 10-month deadlock that threatened to erupt in an epic water war.

"We've bought ourselves a measure of peace for the next 25 years," said Jim Lochhead, a water attorney who helped negotiate the agreement and who represents some of Colorado's largest water utilities.

"There will certainly be public debate about this proposal," Lochhead said, but he called it a "historic milestone" comparable to the original 1922 Colorado River Compact and the agreements that led to the construction of Lake Powell and Lake Mead.

The tentative deal provides more protection for Colorado's share of the river and for Lake Powell during dry years, Lochhead said, and gives all the states more flexibility in managing their own supplies.

"No one is in a position to declare victory," Lochhead said. "But it is a victory for everyone, because we continued to work, as opposed to engaging in parochial infighting and litigation. We were very close to potential litigation."

The river, which starts high in Rocky Mountain National Park, provides more than half the water used on Colorado's Front Range and supplies about 25 million people throughout the West.

The new proposal includes commitments to reduce water use in dry years, to manage Lake Powell and Lake Mead jointly, to rebuild delivery systems below Lake Mead to minimize water lost to evaporation, and for the states to



consult with one another before filing lawsuits.

Last April, the states missed a deadline set by U.S. Secretary of Interior Gale Norton to craft a water-sharing plan for the river.

Norton then launched her own effort to develop a federal plan, something that's never been done before.

Experts said the seven-state agreement reached late Tuesday will likely serve as an important template for the federal process.

"I am pleased that the basin states have a preliminary recommendation that they can provide us," Norton said in a written statement.

"I appreciate their dedication to working on a long-term solution, and recognize that it took much time and effort."

Under the 1922 compact, 15 million acre-feet of the river's yearly runoff is divided among the Upper Basin states of Colorado, Wyoming, Utah and New Mexico and the Lower Basin states, Nevada, Arizona and California.

A subsequent treaty provides 1.5 million acre-feet of water to Mexico.

Other agreements bring the total to more than 17 million acre-feet of water that should legally come out of the river most years.

But experts now believe it doesn't have that much to give.

Modern stream flow records indicate the river is generating less water than the compact envisioned, perhaps just 14 million to 15 million acre-feet.

In the five years since the recent drought began, populations have continued to soar, and it's become clear that the river can't sustain the relentless demands on its system without new drought guidelines.

Under the terms of the tentative agreement:

- Nevada, Arizona and California have agreed to reduce water use in dry years when Lake Powell and Lake Mead drop to dangerous lows.
- Colorado, Utah, Wyoming and New Mexico have agreed to cope with slightly lower levels in Lake Powell in normal years in exchange for being able to keep more water in Powell during droughts, a move that protects Colorado and its neighbors from demands for more water from such cities as Las Vegas and Phoenix.

- New operating rules will protect water levels needed to generate power and to protect recreational facilities at Lake Powell and Lake Mead.

- Nevada, Arizona and California - already forecasting shortages - have agreed to look for ways to boost the river's water supplies, including building desalination plants on the Mexican border, building better delivery systems below Lake Mead to reduce water waste, and financing more cloud seeding programs to boost mountain snowpacks.

- And all seven states have agreed to pause to consult with one another before initiating lawsuits. Negotiators warn that much work remains to be done in coming weeks to make sure the states' proposal is finalized and that critical technical issues are resolved. Federal water officials hope to have a draft environmental impact statement ready for public review this fall. Norton wants the final drought plan ready by the end of 2007.

Highlights of proposal:

- Colorado, Utah, Wyoming and New Mexico agree to slightly lower levels in Lake Powell in normal runoff years in exchange for being able to keep more water in Powell during droughts. This protects the states against demands for more water from downstream cities such as Phoenix and Las Vegas.
- Joint operating rules will protect water levels needed to generate power and to protect recreational facilities at Lake Powell and Lake Mead.
- Nevada, Arizona and California agree to look for ways to boost the river's water supplies, including building desalination plants on the Mexican border, building better delivery systems below Lake Mead, and financing more cloud seeding programs to boost mountain snowpacks.
- Nevada, Arizona and California agree to reduce water use in dry years.

By Jerd Smith

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# Appendix Y

## News Articles

- Y.4 February 1, 2006, Salt Lake Tribune, Utah, 6 Other States OK Drought Plan for Colorado River; Water Sharing: Among Other Things, the Deal Dictates the Water Level of Lake Powell and Lake Mead During Shortages, by Joe Baird**

2006 | 02 | Utah, 6 other states OK drought plan for Colorado River; Water  
01 sharing: Among other things, the deal dictates the water level of  
Lake Powell and Lake Mead during shortages  
Salt Lake Tribune

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**News Clip:**

The seven Colorado River Basin states Tuesday apparently overcame a final intramural feud and will send a letter to Interior Secretary Gale Norton this week indicating that they have reached a basic agreement on how the river will be managed under drought conditions.

Some details remain to be worked out. But Upper Basin states Utah, Wyoming, Colorado and New Mexico, and California, Arizona and Nevada in the Lower Basin agreed to forward a document to Norton that will allow the Bureau of Reclamation to proceed with an ongoing environmental study of how future water shortages on the river will be dealt with. Norton had given the states a Feb. 1 deadline to have their proposal included in the study.

The seven states have been meeting regularly since December 2004 to try to reach an agreement. The absence of a deal, all sides agree, probably would lead to expensive and prolonged litigation that could endanger future water projects, such as Utah's proposed Lake Powell pipeline.

Larry Anderson, director of the Utah Division of Water Resources, said he and other water officials representing the basin states believed they had a tentative agreement earlier this month after two days of meetings in Las Vegas. But it took another round of meetings in Vegas on Monday and Tuesday to resolve a battle pitting Arizona against fellow Lower Basin states Nevada and California. The three states met for several hours Monday, and by Tuesday had apparently resolved enough issues to sign on to the letter and document sent to Norton.

"I don't think they've resolved everything to everybody's satisfaction," said Anderson. "But they have resolved a lot of it. Otherwise we wouldn't have come this far."

Arizona has sought changes to the 40-year-old river management agreement that has left it as the junior partner in the Lower Basin, putting it first in line to absorb water shortages in future droughts.

"Arizona cannot accept a seven-states alternative that has within it any harm to us, that would increase the chances for a shortage," Herb Guenther, director of the Arizona Department of Water Resources, told the Arizona Republic prior to this week's meetings.

Under the proposed agreement going to Norton, water delivery to the Lower Basin from Lake Powell will be reduced by 400,000 acre-feet annually when the water elevation at Lake Mead drops to 1,075 feet. That shortage will increase by another 100,000 acre-feet at 1,050 and 1,025 feet, respectively. And the Interior secretary will be called in for what Anderson calls "reconsultation" if Mead's elevation falls below 1,000 feet.

The agreement also will modify and coordinate the operation of Powell and Mead, the basin's two largest reservoirs, to ensure that neither suffers at the expense of the other.

What's next The Department of Interior will go ahead with an environmental study that will include the plan to allocate Colorado River Basin water in times of drought. Utah plans to pursue a pipeline to carry Lake Powell water to the St. George area.

By Joe Baird, staff writer

# **Appendix Y**

## **News Articles**

- Y.5 January 30, 2006, Arizona Republic, River Drought Plan in Peril – Ariz., Calif. At Odds Over Allotment of Colo. Supply, by Shaun McKinnon**

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**News Clip:**

Seven states share the Colorado River, but a final agreement about how to manage the waterway in times of drought may turn on a truce between just two of them: Arizona and California.

A rift between the neighboring states, which have battled over the Colorado since before Arizona joined the union, nearly derailed work on a drought plan agreeable to all seven states. Representatives from the states continue meeting today in Las Vegas to take one last shot at producing such a plan.

If they fail, the Interior Department will move ahead and impose its own water-use guidelines on the states by the end of 2007. That's a best-case situation. The worst case is the one the states fear most, a courtroom standoff that could drag on for years, putting water supplies at risk if drought returns. The original Arizona vs. California case, which began in 1931 and set the river allocations for Arizona, California and Nevada, still reverberates in water discussions.

"If we don't have a plan to address shortages and we get to shortages, then we have chaos," said Jeffrey Kightlinger, general counsel for the Metropolitan Water District of Southern California. "That's not good for any state. I don't think there's an immediate risk . . . but shame on us if we can't get a plan together when there's no crisis."

Arizona and California settled several key issues late last week about how the river's major reservoirs will be operated but were forced to abandon talks on other points, said Herb Guenther, director of the Arizona Department of Water Resources. That means the final plan will cover less ground than the states hoped.

The crux of the disputes, the one between Arizona and California and the ones that reach across the river basin, is who should suffer most if drought leaves the Colorado unable to supply full allotments. The law offers only one concrete answer: Arizona, which agreed nearly 40 years ago to give up senior status to more than half its share in exchange for the Central Arizona Project canal.

California has resisted Arizona's attempts to change that law, arguing that a deal is a deal. Other states have been willing to talk about ways to postpone declaring a shortage as long as possible, thus protecting Arizona, but only until low water levels put them at risk.

The states on the upper river - Colorado, Utah, Wyoming and New Mexico - also want to begin using more of their allotments to help handle growing demands. They want assurances that their supplies will be protected from the three lower-river states: Arizona, California and Nevada.

But before the full-river issues can be addressed, the lower-basin states must reach an accord. Their issues differ widely.

#### Arizona

With the risk of losing billions of gallons of water from the CAP canal, which supplies Phoenix, Tucson and Pinal County, Arizona is focused squarely on avoiding any official shortage declaration. Shortages would be triggered by specific water levels in Lake Mead, which means the key to Arizona's plans is keeping water in Mead.

"Arizona cannot join a seven-states alternative that has within it any harm to us, that would increase the chances of a shortage," Guenther said. "We haven't asked for anything new in all this, but we don't want to be diminished."

Attempts to rewrite the law have failed in the face of hard-line opposition by California. In the event of a water shortage, California does not want to give up any of its water until Arizona first meets its legal obligations to give up all of its CAP water. California's proposal to store unused water in Lake Mead from one year to the next has further rankled Arizona.

"They wanted to keep water in Lake Mead with their name on it and then take it out when they don't have enough from their in-state water project," said Sid Wilson, Central Arizona Project general manager. "That's not consistent with the rules, and it works to Arizona's disadvantage. It gives California a super-priority for the water. The reservoir is brought down based on their



call."

If California is able to draw water in a dry year and, in effect, use more than its allocation that year, it could trigger a shortage, Wilson said. Under the law, if water isn't used in a given year, it belongs to the entire system, he said, a law California took advantage of when Arizona wasn't using its entire allocation.

"Our position is, there is no way, no way, that Arizona is going to be subject to greater risk just to assure California that they will never take a cut or that they get an advantage for storing water in the system that they could have taken," Wilson said.

Arizona officials have also lobbied hard for an array of schemes to augment the river's flow or cut losses due to waste. The ideas proposed range from cloud-seeding in the high Rocky Mountains to adding reservoirs at the end of the river, capturing water lost to inefficient management.

#### California

From the other side of the river, California officials view their proposals as more than reasonable. California worked hard for years to develop an in-state plan that limits its use of the Colorado River to its legal allocation of 4.4 million acre-feet. The state not only met that goal early, but it has also passed up opportunities to take extra water in recent years.

"We just made one tremendous hurdle," said Kightlinger of the Metropolitan Water District. "We're not saying 'no shortage,' but we do expect the other lower-basin states to show the ability to work within the 1968 law and work within the shortage guidelines."

The 1968 law assigned the lowest priority for water to the CAP Canal and any other user who received an allotment after 1968. Kightlinger said asking Arizona to comply with the law is no different than when "the other six states were beating up on us" over California's excessive water use.

California water agencies spent a lot of time and money developing the in-state plan, and they want to protect it, he said. The other states should see value in that plan because if it collapses within California, the effects could ripple all the way up the river, creating new conflicts.

Storing unused water in Lake Mead, California officials argue, is nothing more than good water management.

"We would like to see a little more flexibility in the system," Kightlinger said. "If you get X amount in one year and can't use it, you just end up moving it from one storage reservoir to another. Maybe it makes sense to store some in the system."

## Nevada

Nevada holds the wild card. Metropolitan Las Vegas relies on the Colorado River for about 90 percent of its water supply and has nearly exhausted its small share of the river. Southern Nevada officials have agreed to share shortages with Arizona, but they also have offered to pay for a new storage reservoir that could help California.

One of the state's newest plans could find some support across the basin. Southern Nevada plans to import groundwater from rural areas to the north to supplement its Colorado River supply.

Because almost all the wastewater and runoff from the Las Vegas area drains into Lake Mead through a single wash, that groundwater will wind up in the lake.

Nevada wants to be able to take the water back out of the reservoir, using a system of return-flow credits that allow the state to reuse treated river water.

"It's something the original drafters of the compact and the later decrees never envisioned," said Patricia Mulroy, general manager of the Southern Nevada Water Authority. "But the system benefits."

In exchange for the groundwater-return plan, Nevada would agree to postpone plans to take water from the Virgin River, a tributary of the Colorado. Upper-river states objected to that plan and threatened to take the issue to court, a dispute that could also cost Arizona the water it takes from Colorado tributaries.

## Avoiding a war

Mulroy believes the states should consider any plan that would avoid a court battle.

"For any one of the states to go to the Supreme Court is a declaration of war," she said. "Once you do that, it shuts down the talks and the resulting damage takes decades to overcome. We're still not over Arizona vs. California. All the creative solutions won't get any kind of airing if the

lawyers are at each other's throats in a court."

A seven-state proposal is due to the Interior Department this week. The Bureau of Reclamation plans to begin developing a range of alternatives for a shortage-sharing plan almost immediately, with a goal of releasing a first draft by March.

"Those alternatives have to be very specific," said Bob Johnson, director of the bureau's Lower Colorado division. "We're going to listen to what the basin states tell us and formulate the alternatives. If they haven't given us enough detail, we'll put the detail in ourselves. We have to move on."

There's no guarantee the bureau will accept the seven-states' plan verbatim even if it arrives on time, Johnson said, though the agency would prefer a proposal with ample detail and strong, unanimous support.

Arizona's Guenther believes a full-basin plan can be finished this week if the critical lower-basin issues are resolved. But he said it's also possible that more than one proposal could be forwarded.

"If we don't get agreement from the states, you might see an upper-basin plan and maybe one from the lower basin or from all the states down here," Guenther said.

"If that happens, I know you'll have an Arizona alternative. Arizona must not be harmed in any way."

Shaun McKinnon

# **Appendix Y**

## **News Articles**

- Y.6 December 28, 2005, Salt Lake Tribune, Colorado River Users Anticipate Compromise; January Meeting: Will the Upper and Lower Basins Agree?, by Joe Baird**

2005 | 12 | 28 | COLORADO RIVER SUPPLY: Colorado River users anticipate compromise; January meeting: Will the upper and lower basins agree?  
Salt Lake Tribune

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**News Clip:**

A small group of water officials from seven Western states will gather in a meeting room at a Las Vegas hotel next month to thrash out the details of what could be a precedent-setting agreement determining how Colorado River water will be shared during times of drought.

Whether they will actually pull it off, though, remains to be seen.

Water officials from the seven Colorado River Basin states - Wyoming, Utah, Colorado and New Mexico in the upper basin; Nevada, Arizona and California in the lower - were publicly hopeful, even optimistic that they would strike a deal following the recent Colorado River Water Users conference, also held in Las Vegas.

"I'll be surprised if we don't reach an agreement," says Larry Anderson, director of the Utah Division of Water Resources. "I don't know that we'll have a formal deal, but we should be close enough that we can go back to our states and present it for approval.

"There are many reasons for both the upper basin and lower basin states to support this and get it done."

If an accord is reached, it will be forwarded to the Interior Department as part of a federal environmental impact study that will determine future shortage criteria for the river. It is widely assumed that the Interior will take the states' agreement and use it as a template for the EIS, which is scheduled to be finished by the end of 2007.

Failure to forge an agreement, however, would almost certainly result in litigation. Interior officials have vowed to implement new shortage criteria by 2007 regardless of whether the states are on board. Water officials believe such an outcome would spawn upper versus lower basin lawsuits, costing millions of dollars and stalling ongoing and future water projects indefinitely.

Such a bleak scenario is not without an upside.

"The threat of litigation in and of itself is driving a lot of the solutions," says Assistant Interior Secretary Mark Limbaugh.

Yet, there still are some significant hurdles to be cleared before a state-brokered settlement can be placed in the hands of Limbaugh's boss, Interior Secretary Gale Norton, by the February deadline. Left to be resolved:

- How to make any new agreement reasonably binding, short of amending the 1922 Colorado Compact or creating new federal legislation, alternatives the states would rather not pursue.
- How large a water reduction Arizona will accept under shortage conditions as the junior partner in the lower basin. Computer models of low-reservoir conditions run by the Bureau of Reclamation have narrowed the options and Arizona has presented a proposal. But as of the conference meeting in Vegas, it still had not been accepted.
- How to jointly manage and balance water storage in the Colorado River's two largest reservoirs - Lake Powell in the upper basin and Lake Mead in the lower basin. Powell drains more quickly during a drought, but also rises faster when snowpack is plentiful. Mead tends to drain and replenish more slowly. The basin states are closing in on a formula, but still need to finalize it.
- Sorting out how southern Nevada, which has just about tapped out its Colorado River allotment, will tide itself over during the next six or seven years while projects to tap groundwater resources elsewhere in the state are being developed.

That's not all.

Upper basin officials want assurances from the lower basin counterparts that they won't demand a full allocation - 8.23 million acre-feet - that would result in a reduction of their own water supply. The upper basin is also seeking lower basin support for their future water development projects, such as Utah's planned Lake Powell pipeline, which must snake through Arizona between the reservoir and its St. George destination. The lower

basin is already considered to be fully developed.

The basin states are also wrestling with the thorny issue of tributary use. Nevada, for instance, wants to take water from the Virgin River to supplement its Colorado River allocation, but has run into opposition from upper basin states. Utah has been an exception here, because of its own use of that tributary.

And all of the basin states are trying to coordinate strategy for augmenting Colorado River water through additional storage capacity and techniques such as cloud seeding, desalinization and the lining of canals to minimize seepage. Battling water-sucking invasive plant species, such as tamarisk and Russian olive, is also part of that agenda.

Finally, California would like a little flexibility in drawing down its annual allotment of 4.4 million acre-feet from Lake Mead. Jeff Kightlinger, general counsel for the Metropolitan Water District of Southern California, says the state, under the current agreement, must lap up its entire allotment by the end of the year, whether it's all needed or not.

"We're pumping until midnight on Dec. 31. It doesn't make any sense," Kightlinger said. "It draws down Mead and it stresses the system. It's a use-it-or-lose-it approach. Why not leave it in there until the following summer? But right now, the rules don't allow for that."

Limbaugh, the assistant Interior secretary, says the basin states have some things going for them.

First, he noted, both Powell and Mead were essentially full when the five-year drought arrived in 1999. Second, the seven states were able to rely on newly adopted interim guidelines to determine how much surplus water use would be reduced in the lower basin during bountiful water years - a formula that provided a model for the current negotiations.

But federal officials also believe it is crucial for the states to agree on shortage conditions now.

Even though the 2005 water year provided above-average precipitation - way above average in the lower basin - Limbaugh notes that "we don't know if we're at the end of a five-year drought or in the middle of a 15-year drought."

Like other water officials, Limbaugh says he is optimistic the states will forge an agreement, based upon what he witnessed during upper and lower

basin meetings during the Colorado River Water Users conference.

But he also says the Interior is prepared to move on even if there is no agreement.

"In order to stay on schedule with [the environmental study], we need to see all the plans in February," he said. "If it's not there, we'll be disappointed, and the alternatives will be analyzed. But that remains to be seen. I'm very encouraged the states will be able to submit a plan at the proper time."

By Joe Baird, staff writer



# Appendix Y

## News Articles

- Y.7** September 30, 2005, Casa Grande Valley Newspapers, States Facing Complexity of Demands on Colorado River Water Usage; Like Dat Ol' Man River, Talks on the Future of the Colorado River and Who Gets How Much Water Keep on Rollin' Along, by Harold Kitching

2005 | 09 COLORADO RIVER SUPPLY: States facing complexity of demands  
| 30 on Colorado River water usage; Like Dat Ol' Man River, talks on  
the future of the Colorado River and who gets how much water  
keep on rollin' along  
Casa Grande Valley Newspapers (Arizona)

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**News Clip:**

"This is very, very intense for the department right now," Karen Smith, deputy director of the Arizona Department of Water Resources, told this month's meeting of the area Groundwater Users Advisory Council. "Our director, Herb Guenther, is very engaged in our efforts to protect Arizona's allocation of the Colorado River.

"You can't pick up the newspaper, I think perhaps once every other week there's a story on the Colorado River and the tensions among the seven basin states. That has not abated.

"Week to week," Smith continued, "it seems to me that our director and our staff working on this are in telephone conversations with Nevada, with California, with the Upper Basin states, and so I would just simply share with you we are working very hard. I'm confident that at the end of the day we'll prevail and that we will have some kind of a working agreement among the seven Basin states, but we are preparing for any eventuality."

The Colorado River Basin was divided into the Upper Basin - Colorado, New Mexico, Utah and Wyoming - and Lower Basin - Arizona, Nevada and California.

The talks and negotiations among the states are especially important to the Casa Grande Valley because of the 7.5 million acre-feet of water available to the Lower Basin, the Central Arizona Project has the most junior priority. If water supplies are below normal, Arizona must curtail use of its 1.5 million

acre-foot CAP entitlement first.

The seven Basin states are meeting every other month, Smith said.

"There is a proposal that the secretary of Interior needs to receive about how the states are going to share the shortages on the Colorado River," she continued. "So that is the immediate issue before the seven Basin states that's really driving all these conversations about the law of the river.

"Hopefully, the seven Basin states will come to some agreement on how that shortage will be shared, as well as who owns the delivery to Mexico."

The Basin states last month sent a joint letter to Gale A. Norton, the Interior secretary, outlining some of the strategies being developed for operating Lake Powell and Lake Mead under low reservoir conditions.

The states said the letter was in response to Norton's letter in early May saying that Interior would develop Lower Basin shortage guidelines (expected sometime next year) and discuss management options for lakes Powell and Mead.

For more than a year, the letter to Norton said, the Basin states, the Bureau of Reclamation and others have discussed a variety of possible options to combat the drought throughout the Basin while minimizing the extent and duration of shortages in the Lower Basin and maximizing the protection that Lake Powell gives to the Upper Basin.

Along with that would be guidelines for proportionate sharing of shortages by Mexico, covered by the Mexican Treaty of 1945.

"In addition," the letter to Norton said, "the Basin states are exploring a larger, more comprehensive management arrangement. This arrangement would avoid political and legal confrontation over the meaning of fundamental aspects of the Law of the River; supplement the supply of Colorado River water; develop acceptable interim shortage guidelines for the Lower Basin; and realize a common goal to implement management strategies that might allow more efficient, flexible, responsive and reliable operation of the system reservoirs for the benefit of the states of both the Upper and Lower Basin.

"The states regard such an arrangement as important to the continued development and use of the Colorado River resource in both the Upper and Lower Basins. The secretary (Norton) should recognize that the coordinated management and shortage strategy outlined in this letter is recommended only on the condition that the other aspects of that more comprehensive

management arrangement can be finally agreed upon and implemented by the states and the secretary."

The states proposed that any reservoir strategy developed by Norton be on an interim basis only.

"The interim operations should be tied to the implementation of additional measures that will accomplish the dual objectives of supplementing the supply of the Colorado River, and operating the existing infrastructure in the system more efficiently," the letter said.

"The elements set forth in this letter are interrelated and represent an integrated strategy for managing the Colorado River into the future. Therefore, all of the elements of this strategy will need to be implemented. In addition, practical resolution of differences among the Basin states regarding mainstream and tributary development will be required."

That strategy proposed by the states is three- part:

-- The first is coordinated reservoir management and Lower Basin shortages.

"After consultation with water users and completion of the analyses," the letter said, "the Basin states will recommend conditions under which (Norton) may declare that insufficient water will be available for release from Lake Mead to satisfy 7.5 million acre-feet of use from the main stream in the Lower Basin, and a delivery of 1.5 million acre-feet to Mexico.

"The Basin states will also recommend reductions in deliveries that can be reasonably managed by the states and water users during the interim period. A plan to manage the shortage condition and to allocate reductions among water users within the Lower Basin will be developed and recommended to the secretary.

"Acceptance of the recommendations is an essential condition for the success of an integrated strategy for the operation of the Colorado River."

-- The second part is system efficiency and management.

That would include beginning a program to eradicate high-water-use tamarisk trees throughout the basin, developing storage in All- American Canal Drop 2, dredging sediment from behind Laguna Dam, developing storage at Wellton-Mohawk and having full utilization of Senator Wash Reservoir.

"Additionally," the letter said, "the states are discussing measures to better

coordinate daily system operations and water orders of contractors in the Lower Basin to prevent the loss of water. It will be necessary for the Interior Department to take all necessary actions to account for and replace water that has been released to Mexico through the bypass drain since 2004, and continue to implement measures that minimize the over-deliveries of water to Mexico.

"It will also be necessary for the Interior Department to aggressively pursue elimination of unauthorized uses of Colorado River Water in the Lower Basin."

-- The last part is augmentation of water supply.

That would include working with the Interior Department on a cloud-seeding program in both the Upper and Lower basins and to again look at desalinization technology.

"The states are discussing programs under which states may provide, and get the benefit of individual supply augmentation," the letter said, "including desalination; groundwater developed and conveyed to add to the Colorado River system; tributary water that has been used for irrigation that is retired to permit its flow into the river; temporary consumptive use of additional water from Lake Mead; and wastewater that is generated by the direct use of any water and that is permitted to flow into the river. The basin states will work with (Norton) to explore additional methods of augmentation."

By Harold Kitching, Staff Writer

# **Appendix Y**

## **News Articles**

**Y.8 September 20, 2005, Las Vegas Sun, States Meet Over Colorado River, by  
Launce Rake**

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**News Clip:**

The tough task of managing the Colorado River by committee continued with a Monday morning meeting of representatives from the seven states that use the river resource.

'A mid-year review of the annual operating plan of the Colorado River' might sound boring even for a collection of river-policy wonks, but the issues facing the group, which met at McCarran International Airport, could affect the critical issue of how much water is available for Las Vegas and its neighbors. Discussion focused on how much water to send to Lake Mead, which stores water for California, Arizona and Nevada.

Representatives from California and Arizona suggested striking the language calling for the mid-year review from the annual river plan. Their counterparts from the federal Bureau of Reclamation, the Department of Interior agency that actually oversees river management, and the four upper basin states, want to keep the review in the annual document.

The conversation comes as various parties, among them the four upper-basin states -- Colorado, Wyoming, Utah and New Mexico -- plus Arizona and Nevada have threatened legal actions to protect their water supplies. The upper basin states fear that the trio of lower basin states, Arizona, Nevada and California, could, under an existing interpretation of river law, demand 8.23 million acre-feet of water be delivered, regardless of river conditions.

Such a demand could mean cuts to the amount of water available to upper basin users. Last year the upper basin states wanted Interior Secretary Gale Norton to use the mid-year review to cut the annual operating plan's scheduled delivery of water from the upper reservoir, Lake Powell, to Lake Mead. Norton did not reduce the water deliveries last year, but Larry Dozier,

deputy general manager of the Central Arizona Project, which brings Colorado River water to consumers in Phoenix, worries that the mid-year review could open the door to another effort by the upper basin states to reduce the releases from Lake Powell.

Dozier noted that the states and Interior Department officials are simultaneously working on rules that would govern how much the states would get from the river if drought further diminishes reserves from both lakes Mead and Powell. Dozier said those discussions should produce any rules for cutting the amount released from Powell to Mead.

'We're corrupting the process,' he said. 'Certainly, if we had extreme hydrologic events between now and next spring, we'll take a second look at things. We can initiate discussions with the secretary of Interior.'

Ultimately Norton and the Interior Department will decide whether to include the mid-year review of the annual operating plan. Nevada representatives to the group discussions, which have become more frequent and more important as drought threatens the river, said they don't want to tangle with the secretary. 'We recognize the secretary's authority,' said Ke Albright, Southern Nevada Water Authority resource director.

Another man who recognizes the secretary's authority is Robert Johnson, who as Bureau of Reclamation regional director, works for Norton. He said Norton, with or without a mid-year review, can cut the amount of water flowing from Powell if it is necessary to protect supplies or power production in the upper reservoir.

'The secretary made it clear in her letter to the basin states (last spring) that she does have the authority to do a mid-year review, to reduce the 8.23 (million acre-feet),' Johnson said. 'We've made it clear we think we can do it.'

Johnson said federal officials would continue to take suggestions from the states on how to modify the plan through November. The states and federal officials also will meet again in November to discuss rules on how to handle potential cuts because of the drought.

The annual operating plan is finished before the end of the year.

Launce Rake



# **Appendix Y**

## **News Articles**

**Y.9 August 25, 2005, Arizona Republic, Arizona Braces for Water War: \$1.5 Million Sought to Fight Colorado River Lawsuits, by Shaun McKinnon**

2005 | 08 | 25      Arizona braces for water war: \$1.5 million sought to fight  
Colorado River lawsuits  
The Arizona Republic

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### News Clip:

Arizona has created a legal defense fund to protect its Colorado River allocation in the event a simmering dispute among other states flares into a regional water war.

The state hopes to raise at least \$1.5 million in the coming months to prepare for possible lawsuits, though officials admit costs could climb many times higher if the dispute spills into a courtroom.

At stake is Arizona's ability to grow. A worst-case loss in court could force the state to give up half of the water that flows through the Central Arizona Project Canal and leave it in reservoirs to benefit upstream users or satisfy a treaty with Mexico. Most of that water is now reserved for cities in Maricopa, Pima and Pinal counties or set aside to settle claims with Indian tribes.

Representatives from all seven Colorado River states will meet today in San Diego to consider a plan that might solve some of the issues without legal action. The plan is aimed at wringing every possible drop from the river even if it means punching holes in clouds.

The states hope to submit their proposals to Interior Secretary Gale Norton next week as part of a larger effort to create a long-term drought plan for the Colorado. Drought and growth have pushed the river past its limits and renewed tensions among the states, whose bickering dates back decades.

Without a workable plan, "litigation is inevitable at some point," said Herb Guenther, director of the state Department of Water Resources. "We've been staring at it for a long time. But we're trying to avoid the head-on

collision and see if we can't work together on these issues."

Guenther's agency ponied up the first \$200,000 for the defense fund, and the state will ask boards governing the CAP and Salt River Project to contribute similar amounts. Guenther said a fund-raising committee will then seek donations from others with a stake in the river, including cities and home builders.

The state has also retained a lawyer who specializes in water to help with legal research and planning.

The decision to begin raising money for legal action pushes Arizona further into a battle that it had largely avoided in recent years, though the state is certainly no stranger to river wars. Arizona vs. California, a landmark case that helped define the way the Colorado is managed, grew out of Arizona's refusal to ratify the original river compact.

"The Colorado River is extremely important to the state of Arizona," said John Sullivan, associate general manager of SRP's water group and a member of the fund-raising committee. "When other states begin to make noises about threatening Arizona's supply, I think the whole state needs to get involved."

The threat stems from arguments over how the river and its tributaries are divided among users. In states along the upper river, which include Colorado, Wyoming, New Mexico and Utah, water taken from tributaries is counted against the states' shares.

In states on the lower river - Arizona, Nevada and California - tributaries are not included in the accounting. That means Arizona, the primary beneficiary to the difference in rules, can use water from the Salt and Verde rivers, for example, and still take its full share of the Colorado.

Arizona won the tributary issue during negotiations over the original Colorado River compact, the set of laws and agreements that governs the river. But, in recent years, Colorado and other upper river states have argued that the lower river states have abused the rule and, as a result, take more than they should.

What may force the argument to the table is a plan by Nevada to divert water from the Virgin River to thirsty Las Vegas, which has exhausted its Colorado River allocation. The Virgin flows into the Colorado at Lake Mead.

Officials from Colorado and Wyoming protested the proposal, telling federal

regulators it would rob the Colorado River of a significant amount of water. Those states say that, because the Virgin flows into the Colorado, any water taken from it should be counted against Nevada's share.

Arizona officials fear that, if the dispute over the Virgin River lands in court, the upper river states could demand that other states account for water taken from their tributaries. In addition, the upper river states could ask the court to force the lower river states to deliver all the water that Mexico gets from the Colorado, an obligation all seven states now share.

State officials believe as much as 750,000 acre-feet could be lost. Because the CAP holds the most junior rights to the river, the water would be taken from the canal, leaving it at half-strength. (An acre-foot covers an acre to the depth of 1 foot, or 325,851 gallons. It would meet the needs of a family of five for a year.)

CAP officials believe the seven states can forge an agreement and avoid court, but they acknowledge the risk.

"We all have something at risk when we litigate," said Sid Wilson, the CAP's general manager. "If we could work together on a program of management, we could all be winners for a good long while."

The plan under consideration today would focus on augmenting the river's flow, adding water by seeding clouds, removing non-native vegetation such as salt cedar, adding storage on the lower river and simply managing the water more efficiently.

Wilson said he is confident such an approach could add 1 million acre-feet of water or more per year, easing the pressure on the lower river states.

Pat Mulroy, general manager of the Southern Nevada Water Authority, said what is happening now could be "a lot of saber-rattling," but she said Nevada can't just do nothing.

"It would show a real failure on everyone's part if we end up in court," she said. "If we're pushed, we may not have a choice. Given what our resource picture is, we have no choice but to be dogged."

Colorado created its own legal fund earlier this year and staked out its position that the lower river states, Arizona in particular, have taken more than their share of Colorado River water. Officials there have softened their public stance and have pledged to work on a cooperative plan.

"We believe that we water professionals should be able to do a better job of managing the river than leaving it up to a judge or a court," said Scott Balcomb, Colorado's representative on the Upper Colorado River Commission. "Our thrust right now is to attempt to get some kind of a seven-states agreement in place"

"(Still), I don't blame Arizona for being concerned about the situation that is unfolding," he said.

"My boss was quoted in the Colorado papers indicating that if we needed to, we would have our own legal defense fund ready. Being ready to litigate, if that turns out to be the only option, is only prudent. None of us is gambling on an agreement."

Shaun McKinnon

# Appendix Y

## News Articles

- Y.10 June 9, 2005, The Vail Trail, A Colorado River Tug-of-War; Norton Ruled in Favor of Lower Basin States, but More Problems are Sure to Come, by Matt Jenkins**

2005 | 06 | 09 | COLORADO RIVER SUPPLY: A Colorado River tug-of-war; Norton ruled in favor of lower basin states, but more problems are sure to come  
The Vail Trail (Colorado)

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**News Clip:**

In the 83 years since representatives of the seven Colorado River Basin states first divvied up the river's water, there's always been enough to meet the states' needs. Not anymore. A relatively wet winter has done little to offset five years of the worst drought in the region's recorded history, and Lake Powell and Lake Mead, the river system's "backup batteries," are at less than half of their combined capacity.

Representatives from the seven states are squinting hard at the fine print in the 1922 Colorado River Compact and arguing about what, exactly, will happen when there's not enough water to go around.

A lot is at stake: Twenty-five million people depend on water stored behind the Colorado River dams, which are operated by the federal Bureau of Reclamation. If water levels drop low enough, U.S. Secretary of the Interior Gale Norton will declare a "shortage" on the river. The Central Arizona Project, which supplies water to Phoenix and Tucson, and Las Vegas, Nev., will be the first to lose their shares. If the drought deepens, Denver and its suburbs, which draw water from the Colorado River across the Continental Divide, may not be far behind.

Last December, Secretary Norton directed the seven states to come up with a plan for weathering a continuing drought. She warned that, without agreement among the states, she would be forced to impose new federal rules that would reduce water deliveries. That ultimatum touched off a series of meetings between the states this spring. But at the end of April, the talks ended in stalemate.

All eyes turned to Norton, who did something no one expected: She blinked.

#### Low-flow negotiations

At the center of the struggle is Lake Powell, the uppermost of the two reservoirs. The Upper Basin states - Colorado, Utah, Wyoming and New Mexico - use the reservoir to meet water-delivery requirements to the Lower Basin states - California, Arizona and Nevada - and Mexico during dry years, rather than cutting off their own users.

During the meetings this spring, Colorado and Arizona, which under the complex calculus of the law of the river have the most at stake, fought a tug-of-war over how much water should be released from Lake Powell.

Traditionally, the Bureau of Reclamation releases 8.23 million acre-feet of water every year from Lake Powell downstream to Lake Mead. (One acre-foot of water is about 326,000 gallons, a year's supply for a family of four.)

But in response to the drought, late last year Norton pledged to review the water conditions this April and determine how much water to release through the end of September.

The Upper Basin states, citing a long-standing difference in interpretation of how the river should be "operated," argued that Norton should reduce releases below 8.23 million acre-feet. They pointed out that the Lower Basin is already getting plenty of water, thanks to the first wet year since the drought began, which pumped twice as much as normal into Lower Basin tributaries.

"The release of 8.23 million acre-feet is not a number required in the compact," says Don Ostler, the director of the Upper Colorado River Commission. "It's just a number that the Bureau developed ... in about 1970." Upper Basin states maintain it's simply a rough average that includes an ample cushion to ensure that downstream users won't be shorted.

But Arizona and the other Lower Basin states argued for the standard 8.23 million acre-feet release. That would make more water available to Arizona, which could "bank" much of its share in underground aquifers for use in the future, as well as ensuring that Las Vegas' water intakes in Lake Mead actually stay below the water.

The meetings between the various state representatives this spring only hardened their differences. Arizona Department of Water Resources director Herb Guenther says that, at one point, "We were going to hire a



plane and tow a banner that said '8.23 or Bust' over Hoover Dam." "Discretion," he says, dictated otherwise; he simply showed up at the meeting brandishing a gag "8.23" sign.

#### Betting against the future

Finally in late April, after the states failed to come up with a plan, they turned to Secretary Norton. On May 2, citing the slightly above-average snowpack this winter, Norton announced that the Bureau of Reclamation would deliver the full 8.23 million acre-feet this year.

The wet winter has, indeed, pushed the risk of a shortage declaration off to at least 2008. But long-term river flow models based on tree-ring studies show that the likelihood of continued, severe drought is fairly high. While nobody will be shorted water this year, Norton's decision has placed the Upper Basin states at greater risk in the future by eroding more of their drought hedge in Lake Powell.

By Matt Jenkins, a High Country News (HCN)

# **Appendix Y**

## **News Articles**

- Y.11 April 28, 2005, Salt Lake Tribune, Norton Holds Tap on Lake Powell; States Still at Odds: Interior Secretary to Decide Flow of Colorado River, by Joe Baird**

2005 | 04 | 28 Norton holds tap on Lake Powell; States still at odds:  
Interior secretary to decide flow of Colorado River  
Salt Lake Tribune

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**News Clip:**

The water is in Gale Norton's hands now.

Ending weeks of mostly fruitless discussions, the seven states along the Colorado River have reached a stalemate over how the river should be managed in the midst of a drought. Specifically, the upper- and lower - basin states are at odds over how much water should be released downstream from Lake Powell this year and have left it to the Interior secretary to make the call - which she is expected to do by Friday.

"We finally agreed that we could not come to a consensus," Larry Anderson, the director of Utah's Division of Water resources, said Wednesday.

"We're all friends," he added. "But they know and we know that these are tough decisions, and because of the drought, we're going to have to resolve them."

The upper-basin states - Colorado, Wyoming, Utah and New Mexico - have asked for a reduction in the 8.23 million acre-foot allotment of water they deliver annually to Nevada, Arizona and California in the lower basin, citing the chance to begin refilling Lake Powell after six years of drought. Snowmelt into the upper basin of the Colorado is forecast to be 107 percent of normal this year.

But the lower-basin states have balked, arguing that because of the generous snowpack, there is more than enough water for a normal release. Any reduction would short Lake Mead, their largest source for water storage. And that could ultimately lead to a legal challenge.

The seven states - which formed the Colorado Compact in 1922 - have been meeting regularly since last December, when Norton ordered them to devise their own drought management plans for the river. But little headway has been made, and after no agreement was forged during Tuesday's final gathering in Las Vegas, the states officially handed off the issue to the feds.

"The idea was that the states would develop some middle ground," Tom Werner, an assistant secretary with the Department of Interior, told the Rocky Mountain News.

"We clearly didn't get there."

Anderson says the upper-basin states have never formally asked that a specific amount of Lake Powell water be held back. But Bureau of Reclamation officials provided two possible scenarios in Las Vegas - one in which the upper basin keeps an extra 200,000 acre-feet, another in which 500,000 acre-feet is withheld.

If Norton were to adopt the smaller figure, Anderson says, Powell would rise an additional two feet above the 45 to 50 feet it is projected to climb this year. Adopting the larger figure, the reservoir would go up an additional five feet. Powell is currently filled at just 33 percent of capacity.

"We've got an opportunity here," said Anderson. "All we're asking is that the secretary leave a little extra water in Powell, just in case this is a wet year in a continuing drought cycle. It would give us a little more security; help ensure we don't drop below the power [intakes] at Lake Powell. We think the drought justifies it."

But that opinion is not shared below the Glen Canyon Dam. At least not now.

"If the drought had worsened, we were open to a lower release. But we had a wetter-than-average year and [Powell and Mead] will refill to almost an identical capacity," said Vince Alberta, spokesman for the Southern Nevada Water Authority. "Our view is we don't need to do this right now. This is not the right time to make a change how the reservoirs are operated."

Alberta downplayed the possibility of a legal challenge should Norton rule in favor of the upper basin. But he didn't rule it out, either.

"Let's get there and then see what happens," he said. Water issues

The Colorado River's four upper basin states (Colorado, Wyoming, Utah and Arizona) have called for a reduction in the amount of water released from

Lake Powell to Nevada, Arizona and California in the lower basin because of water losses incurred during the drought.

The lower basin states have balked at the proposal, citing above-average precipitation during the winter months.

Interior Secretary Gale Norton will make a decision about the Powell release by the end of the week, perhaps igniting a legal challenge.

By Joe Baird, staff writer

# **Appendix Y**

## **News Articles**

**Y.12 December 31, 2004, Denver Post, Right Move on West's Water**

**News Clip:**

Interior Secretary Gale Norton has taken a much-needed step to prevent chaos if the drought that's haunted the West for five years doesn't loosen its grip. She and her top aides recently told the seven states that use the Colorado River to come up with a shared drought response plan by April, or else the federal government will write one.

For Colorado, the stakes are high. Even in years when the West gets normal rain and snowfall, there isn't enough water in the Colorado River to meet all the demand. Major problems have been avoided because a 1922 legal agreement, called the Colorado River Interstate Compact, allocates the stream's water among four upper basin states, Colorado, Wyoming, Utah and New Mexico; and three lower basin states, Nevada, Arizona and California. The pact has worked largely because, even during past droughts, the lower basin could get its full allocation by drawing down water in Lake Mead and Lake Powell.

That system is now at risk. Water levels in Powell and Mead are historically low, yet the lower basin states - and Mexico, too, which also taps into the Colorado River - are still taking water at pre-drought rates. The annual difference between how much water is being drained and how much is needed to refill Lake Mead, for example, is about a million acre-feet, or three times what Denver uses in an average year. At that pace, even if the West gets normal rain and snow in coming years, Mead will never return to its previous levels.

If the water continues to drop, the hydropower station at Hoover Dam may stop making electricity, and Las Vegas won't be able to use its existing intake pipe to bring water to its citizens.

In such an extreme situation, the lower basin could issue a "call" on the river, demanding that the upper basin let more water flow downstream.

That could mean Colorado would have to stop diverting water east over the Continental Divide, a move that could severely reduce supplies to Denver, Aurora, Colorado Springs and other communities that pump from the Colorado River's tributaries. Lake Dillon and other Front Range reservoirs might be particularly at risk because they were built after the 1922 compact was signed.

Colorado leaders vow they'd fight such a call. They believe that even under the 1922 agreement, the federal government can't order a user like Denver to shut down parts of its water system, because the compact gives the interior secretary clout only over water use in the lower basin.

It's a nice legal theory, but it'd be better if it never had to be tested. A legal fight would be long, costly and bitter, and there's always a risk that Colorado and the upper basin might lose.

The key to avoiding a crisis is to reduce the rate at which lakes Mead and Powell are being depleted. All states should have trimmed use years ago. But while Colorado cities such as Denver and Aurora imposed water use restrictions long ago, the lower basin states by and large have not. Arizona has been particularly profligate.

Norton clearly wants to avoid chaos in Western water use. During 2002's record drought, she ordered California to stop using more than its legal share of Colorado River water. She also brokered a deal among feuding California water users. Then, about a year ago, she told the lower basin states to come up with a plan to maintain water levels at Mead and Powell. They didn't.

So now, Norton has given the lower basin the April deadline to craft a drought strategy or else she'll impose one on them. The order is designed to get an action plan in place before the arrival of another summer and maximum demand on the Colorado River. Her move may be the only way to make the lower basin face reality.



# **Appendix Y**

## **News Articles**

**Y.13 December 11, 2004, Rocky Mountain News, State Preparing for Water Battle,  
by Jerd Smith**

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**News Clip:**

Colorado will spend as much as \$2 million in the next two years to build a legal war chest shoring up its rights to the drought-plagued Colorado River.

The new initiative comes as Lake Powell and Lake Mead - the river's giant storage ponds - have reached historic lows, triggering anxiety over future supplies from Los Angeles to Denver.

"About a year ago the people at the Colorado Water Conservation Board began sounding the alarm, saying we need to move to protect ourselves, and I agreed," said Russell George, executive director of the Colorado Division of Natural Resources. "Essentially we're building the best legal case that Colorado can have so that we presumably prevail when it comes down to making decisions.

"I think we have a couple of years (before the river's supplies could drop low enough to trigger a demand for more water for Nevada, Arizona and California). But we can't waste time."

The money is being spent on new computer models detailing how the river's supplies will be affected by ongoing drought and on creating a computerized historic archive documenting Colorado's use of the river under the 1922 Colorado River Compact. It also will pay for new legal research to help guide the state in the unlikely event that the lingering drought prompts new claims to Colorado's share of the river's supplies, George said.

In all, seven states have rights to its waters. How much each state gets is outlined in the 1922 Colorado River Compact, a hard-fought document that envisioned plenty for all.

Next week at the annual meeting of all the river's users in Las Vegas, Colorado plans to push to open new talks over long-standing problems on the river surfacing because of the drought and the West's population boom.

"The last 20 years have been a positive period for coming up with imaginative solutions on the river," said Jim Lochhead, a water attorney who advises Colorado cities on river compact issues and a former executive director of the Colorado Division of Natural Resources. "The next 20 years, though, may produce more difficult challenges if we continue to be in a dry cycle and the system continues to go down."

Colorado's destiny is intimately tied to the river whose birthplace lies high in the Never Summer Mountains in Rocky Mountain National Park. It supplies roughly half the drinking water 3.6 million Front Range residents use annually, provides water for snowmaking from Winter Park to Vail and irrigates the peach and apple orchards that dot the Western Slope.

All told, roughly 25 million people in the West depend on its liquid bounty.

Nearly a century ago, before computer models could track snowmelt and streamflows, most believed the river's largesse was boundless.

The compact assumed, for instance, the river generated about 20 million acre-feet of water annually. Compact writers divided up 16 million acre-feet of its supplies among the seven states, saying they could argue over the rest later, according to Lochhead.

Experts now believe that surplus never existed and that the river generates 13 million to 13.5 million acre-feet (maf), on average. An acre-foot equals 326,000 gallons, enough to serve up to two urban families for one year.

The seven basin states rely on excess water generated in exceptionally wet years to make up the difference between the 13.5 maf and the 16 maf, with Lake Powell and Lake Mead acting as liquid bank accounts.

But the past five years have been harsh and dry, robbing Powell and Mead of their surpluses, threatening critical electric generating stations, endangering fish and drinking supplies.

How to deal with shortages has never been detailed before, George said. He and others believe all the basin states must move deliberately and calmly to decide how the water will be shared should the drought and the population boom continue.

"Ultimately the goal is to have an understanding among the seven states that everybody is cutting back and not wasting water so that we don't have to get to a true shortage that forces us back into our corners. That's never occurred, but we think it would get really ugly," he said.

In Colorado that means Front Range cities and Western Slope ski towns must begin planning now for potential cutbacks in their share of the river's supplies, George said.

The state's new water models are designed to help them determine what would happen under a number of different cutback scenarios, with spring snowmelt being the wild card.

For utilities with large storage reservoirs, such as Denver Water and the Northern Colorado Conservancy District, it will likely mean pushing hard to refill their own drought-stressed systems and to safeguard supplies until it's clear that Powell and Mead are beginning to refill, several water officials said.

"Maybe we have three years to accumulate a reserve," said Eric Wilkinson, manager of the Northern Colorado District. The district serves several Front Range cities including Fort Collins, Boulder and Broomfield. "That means we'll want to build an absolutely full (storage system) in case there is a call (for water from the Lower Basin states.)"

In the meantime, Colorado wants three key issues resolved:

\* Under the 1922 compact, Mexico is entitled to 1.5 million acre-feet of water, to be delivered from surplus supplies. The Upper Basin was to contribute only in times of shortage. But since 1970, 750,000 acre-feet has been delivered from Lake Powell annually. That means, in Colorado's view, that the Upper Basin has delivered too much water. "That's a fundamental issue that has to be resolved," Lochhead said.

\* Colorado also has asked U.S. Secretary of Interior Gale Norton to reduce the historic outflow from Lake Powell, in light of the drought. Reducing the flows from Powell would mean the Upper Basin states could maintain a stronger buffer against a possible demand for extra water from Nevada, Arizona and California.

\* And Colorado also wants Arizona to stop storing river water it doesn't need in aquifers, further draining the two giant storage ponds. "We're very concerned about that. We would like to see it fixed right away," George said.

Even if snows come through this winter, most experts believe it will take Powell and Mead years to recover, leaving Colorado and other Upper Basin states vulnerable to demands for more water, particularly if a state of chronic, low-grade drought develops.

John Keys, commissioner of the U.S. Bureau of Reclamation, hopes his agency can forestall those demands by carefully evaluating the river's supplies and asking each state to figure out ways to live with less.

"Our biggest fear," Keys said, "is that when this drought breaks, we'll still be short of water."

By Jerd Smith, staff writer

# **Appendix Y**

## **News Articles**

**Y.14 October 8, 2004, Reuters, Drought in the West Might Get Worse, by Maggie Fox**

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**News Clip:**

WASHINGTON - The U.S. West, already suffering from a long drought, could be in for worse if past patterns hold up, experts said Thursday.

A study of tree rings showed that a 400-year-long drought dating back 1,000 years occurred during a time when the planet was warmer than usual - like now.

If the pattern holds up, it could mean a cruel drought, the researchers write in this week's issue of the journal *Science*.

"The western United States is experiencing a severe multiyear drought that is unprecedented in some hydro-climatic records," the researchers, led by Edward Cook of the Lamont-Doherty Earth Observatory in New York, wrote.

"Using gridded drought reconstructions that cover most of the western United States over the past 1,200 years, we show that this drought pales in comparison to an earlier period of elevated aridity and epic drought in AD 900-1300, an interval broadly consistent with the 'Medieval Warm Period,'" they added.

"If elevated aridity in the western United States is a natural response to climate warming, then any trend toward warmer temperatures in the future could lead to a serious long-term increase in aridity over western North America."

The journal article is ominous news for places like Orange County, which has received below-average rainfall for two of the past three years, raising the danger of wildfire. The county also hasn't received an inch or more of rain from a single storm since Feb. 26.

Cook, an expert in tree rings and climate, said the culprit seems to be a weather pattern called La Niña.

It is marked by an upwelling of cold water from the bottom of the Pacific Ocean in eastern tropical waters.

Climate models show this reduces rainfall in the U.S. West.

"Modeling results now suggest the same thing may have happened during the so-called Medieval Warm Period 800 to 1,000 years ago," Cook said in a telephone interview.

During that time the world was a little warmer than average.

"It looks like the long period of elevated aridity in the western United States that has been reconstructed from my tree rings could very well be associated with prolonged La Niña-like conditions," Cook said.

Cook said he did not know how long it would last.

"This says nothing about what the future is going to be.

"But if warming increases in the future, we ought to at least consider the possibility that we are going into a more drought-prone period than we have seen over the last few hundred years," he said.

By Maggie Fox, staff writer



# Appendix Y

## News Articles

**Y.15 August 16, 2004, San Diego Union-Tribune, Drought's Grip Has the West by Throat, by Michael Gardner**

**News Clip:**

SACRAMENTO - Struggling Utah farmers sacrificed water to save a school on the verge of shutting down because its well ran dry. Montana ranchers are selling off their herds. In Arizona, the Marines pitched in to help build watering holes to keep rare sheep from dying of thirst.

A persistent drought has upset lives and livelihoods from Montana to New Mexico, drawing comparisons to the Dust Bowl days. Fields have been left unplanted. Homeowners are being paid to tear out lawns. Hydropower generation is threatened. Ducks are disappearing and forests are becoming kindling.

"The drought threatens to change the very fabric of Montana's rural communities and landscape, placing the birthright of descendants of pioneer families on the auction block," Gov. Judy Martz said in a recent speech.

Although Mother Nature has punished the West for several years in a row, the developing crisis also can be traced to other factors: growth, resistance to tough conservation, global warming and an overly optimistic estimate of the Colorado River's ability to deliver water.

The spine of the West - fused by the Colorado River and the Rockies - has been hit the hardest. Although supplies of water have been squeezed along the coast, from Seattle to San Diego, the pain there is not as widespread or as deep.

Urban water purveyors across California, while nervous, say there is no need for rationing this year because of average-sized snowpacks in the north and adequate storage.

For now, climate experts can offer only hope that relief will arrive.

"I don't think we can discount the possibility of a recovery, but the likelihood is one out of four, maybe one out of five, for a really wet year," said Dan Cayan, a climatologist at Scripps Institution of Oceanography in La Jolla.

Scariest still is this emerging question: What if stubborn dry spells are the norm and the traditional cycle of normal-to-wet bounty is the exception? Tree ring records and other data suggest the West may be in for longer, drier periods in the coming decades, some experts say.

### Scramble for water

This latest string of dry years has hit states dependent on the Colorado River basin, at one time a seemingly eternal well for 25 million people, millions of acres of farmland and an assortment of endangered and other animals.

Lakes Powell and Mead, the two massive reservoirs that catch the Colorado, are less than half full, exposing long-submerged landscapes to direct sunlight for the first time in decades. It could take a 10-year run of average rain and snow to refill the reservoirs.

Lake Powell, which straddles the Utah-Arizona border, is at a historic low level. Nevada's Lake Mead has been lower only twice before, counting the period when Lake Powell was filled for the first time.

"We are at a critical juncture in the history of the Colorado River, a river we all depend on for our lives," said Jack August, an Arizona historian who studies water trends.

California draws enough water out of the Colorado for more than 1 million households a year. Seventy percent of San Diego County's drinking water comes from the river.

The frantic hunt for more supplies has states pondering expensive options. Colorado and Nevada are scouting pipeline routes to ship water to parched regions. Some farmers may be paid far more than their crops are worth to leave fields unplanted. Las Vegas home builders have been banned from planting grass in front yards.

California plans to increase the size of a handful of reservoirs, but squabbles over who should pay for the work have slowed progress.

Shrinking Colorado River flows sent Metropolitan Water District, the Los Angeles-based wholesaler for most of Southern California, scurrying to secure more water from Lake Oroville, north of Sacramento.

In Colorado, reservoirs remain about half full. New Mexico's largest lake, Elephant Butte, is critically low. In Oregon, southeastern farmlands are in dire straits. Wyoming's thirst is the worst it's been in 110 years.

"My cattle are gone," lamented Montana rancher Bob Redfield, forced to sell 100 head because there was no water for hay.

Said Utah farmer Charlie Holmgren: "We always thought we were invincible." That mood has darkened with each day of blue skies. His water source, Bear Lake, "is pretty well gone."

"It will force some people out of agriculture in this valley," Holmgren said. "We're hanging on - this year."

Farther south, farmers in Blanding, Utah, decided to put classrooms before crops. When the school's well ran dry, they gave up water to keep kids from being bused out of town, Mayor Toni Turk said. Power generators and water purveyors grow more nervous as Lake Powell evaporates.

The coal-fired Navajo Generating Station in northern Arizona may be forced to spend millions to extend a water line that draws cooling water from Lake Powell.

"Without that water, a major coal-fired plant goes down," warned Sid Wilson, general manager of the Central Arizona Project, the state's major water supplier.

The facility generates the power to pump water throughout Arizona and helps keep the lights on in Los Angeles, Las Vegas and Tucson.

The Western Area Power Administration, which delivers energy to 15 states, has for the first time formed a drought emergency planning team. It has spent \$500 million over the past few years on outside power, much of it in response to drought-imposed limits on hydropower generation.

Outside Las Vegas, Lake Mead, which stores water for Southern California households and Imperial Valley farms, is circled by bathtub rings. If the lake's level continues to drop, even power out of mighty Hoover Dam could be at risk.

Recreation tourism, a large part of the West's economy, may suffer if the drought persists. Rivers without rapids are no fun to run and shriveled streams are no lure to fish.

"If you own a vacation cabin in Bear Lake you used to have waterfront property. Now you have beachfront property," said Larry Anderson, Utah's director of water resources.

In California, docked boats already have been ordered out of Folsom Lake. In Page, Ariz., the National Park Service has spent \$5 million to extend boat ramps to Lake Powell and its 145 miles of shore. Ramps are open, but "launch at own risk" signs are posted in some spots.

Looking on the sunny side, National Parks Service official Char Obergh said, "I don't say it's bad. The lake looks different. People who have never been here don't realize it's low."

#### Wildlife concerns

Wildlife is suffering, too. Resource managers are working to save bighorn sheep in the Cabeza Prieta refuge in Arizona, prairie chicken along the eastern plains of New Mexico and silvery minnow in the Middle Rio Grande.

"The effects are going to be tougher on wildlife than I've ever seen," said Dale Hall, southwest regional director for the U.S. Fish and Wildlife Service. Conservation groups report dramatic reductions in the number of fish and ducks in some areas. The Dolores River, which runs 250 miles through Colorado and Utah, has lost 75 percent of its trout.

Anxious federal fish and wildlife officials are mapping plans to net rare fish and hold them in captivity, a distasteful but perhaps necessary step to preserve some species.

Duck numbers are down 11 percent nationally, pressuring officials to scale back season and bag limits.

Water development has almost always clashed with the environment. If the drought deepens, so, too, will that rift.

In Las Vegas, for example, plans to drill wells could deplete groundwater needed for a nature refuge. Environmentalists worry about Metropolitan Water District's bid to acquire more water from Northern California.

"The big question is how much water can you divert without the environment

going to hell," said Tom Graff, an attorney with Environmental Defense, a nonprofit organization.

MWD officials insist there are adequate safeguards for fish and wildlife.

Elsewhere, bark beetles have overrun trees weakened by drought. Subsequent infernos devour forests and the firefight consumes billions of gallons of water.

"The precious water we did have was being used to put out fires" during a miserable 2002, said Dawn Taylor Owens of the Colorado Department of Water Resources.

Pressured by shortages and the U.S. Interior Department, water managers along the Colorado River basin for the first time are scrambling to map emergency responses. They are negotiating deals to clear historic legal and political barriers to water sharing and storage. Farmers across the West will likely be pressured to sell more of their water.

Closed-door talks have been "animated" and "at times, intense," said Bennett Raley, the Bush administration's lead negotiator on water issues. "The history of the Colorado River is, if the states fail to solve issues, the federal government steps in."

Environmentalists and water managers say the drought is more than just a lack of rain and snow over the past five years. Some cities were slow to impose restrictions. Financial woes and environmental foes have stalled storage projects. And experts say pollution may be accelerating a warming trend, reducing the number and intensity of storms.

Yet lingering dry spells are nothing new. Some believe the West has been blind to the Colorado's limits, relying on overly optimistic projections for more than 80 years. Original calculations done in 1922 to divide the river were based on a wet year.

"Demand is far more than the river can deliver," said Owen Lammers, executive director of Living Rivers, a Utah environmental group.

Population pressures

Growth is exploding in areas more suited for saguaros than subdivisions.

Nevada's population increased from 500,000 in 1970 to nearly 2 million in 2000. During that same period, Arizona grew from 1.8 million to 5.1 million

people, Utah increased from 1 million to 2.2 million residents and Colorado's population nearly doubled, topping 4.3 million.

Sprawl also has exacerbated problems in California. As more families migrated to inland from the coast or to the Central Valley from San Jose, outdoor water use has skyrocketed to keep lawns lush and pools filled.

There are nearly 36 million Californians, compared with 20 million three decades ago. Riverside County's population more than tripled to 1.5 million during that period. San Bernardino County had 700,000 residents in 1970. Now it has 1.7 million.

Previous droughts have inflicted harsh lessons on the Southern California, forcing strict conservation. Residents use less water today than they did in 1990, according to the Metropolitan Water District. The MWD also spent \$2 billion to build an 800,000 acre-foot reservoir near Hemet in Riverside County that could supply more than 1 million households if needed.

"Conservation has become a way of life," said Dennis Underwood, an MWD vice president.

The past winter and spring delivered some relief in a few states, but not enough snow fell to refill depleted lakes and groundwater basins. A warm spring accelerated the melting of snow, making it difficult in some areas to capture flows.

California's outlook remains tenuous after a hot, dry spring. The state's fortunes seemed to be looking up in February, said Maurice Roos, California's chief hydrologist.

"Things looked pretty bright," he said. "Then the bottom fell out."

By Michael Gardner, staff writer, Copley News Service

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