

Colorado River Reservoir Operation: Development of Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead, Particularly Under Low Reservoir Conditions¹

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Description of Alternatives to be Considered in the Draft Environmental Impact Statement

The Bureau of Reclamation (Reclamation), acting at the direction of and on behalf of the Secretary of the Interior (Secretary), proposes to take action to adopt specific Lower Colorado River 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 is designed to provide a greater degree of certainty to all water users and managers in the Colorado River Basin by providing more detailed objective guidelines for the operation of Lake Powell and Lake Mead and by providing guidance to water users in the Lower Basin in advance as to when, and by how much, water deliveries will be reduced during drought and other low reservoir conditions. The environmental impact statement (EIS) process will provide an opportunity to consider the tradeoffs between the frequency and magnitude of shortages and the benefits of water storage in Lakes Powell and Mead, including water storage, power production, recreation, and environmental benefits.

Pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended, and the Council on Environmental Quality's regulations for implementing the procedural provisions of NEPA, the Department of the Interior (Department) published in the *Federal Register* (FR) a Notice of Intent on September 30, 2005 (70 FR 57322-57323), and issued a Scoping Summary Report on March 31, 2006 (71 FR 16341-16344), for the development of Lower Basin shortage guidelines and coordinated management strategies for the operation of Lake Powell and Lake Mead. The Scoping Summary Report presents and summarizes all public comments received from the *Federal Register* Notice published on June 15, 2005 (70 FR 34794-34795), through March 1, 2006, and is available at <http://www.usbr.gov/lc/region/programs/strategies/scopingreport/index.html>. The report also describes the Department's current assessment of the proposed federal action and scope of the environmental analyses to be included in the EIS. The proposed federal action has been crafted to reflect, among others, three important considerations that were identified by commentors:

- *Importance of Encouraging Conservation of Water:* Many comments focused on 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.
- *Importance of Consideration of Reservoir Operations at all Operational Levels:* Many comments emphasized the importance of management and operational guidelines for the full range of operational levels at Lake Powell and Lake Mead.
- *Term of Operational Guidelines:* Many comments noted the advantages of interim, rather than permanent, additional operational guidelines.

¹ Refinement of the information presented in this description will occur as Reclamation prepares a draft EIS, which is anticipated to be published in late 2006.

As a result of analysis of comments and public input received to date, the Department anticipates that the operational guidelines will be implemented through 2025 and that the elements of the proposed action will include:

- 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 the 7.5 million acre-feet apportionment (a “Shortage”) pursuant to Article II(B)(3) of the Supreme Court Decree in *Arizona v. California*;
- 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;
- adoption of guidelines for the storage and delivery of water in Lake Mead to increase the flexibility to meet water use demands from Lake Mead, particularly under low reservoir conditions. These guidelines are anticipated to address the storage and delivery pursuant to applicable federal law of non-system water, exchanges, and/or water conserved by extraordinary measures; and
- modification of the substance and term of the existing Interim Surplus Guidelines (ISG), published in the *Federal Register* on January 25, 2001 (66 FR 7772-7782), from 2016 to coincide with the proposed new guidelines described above.

Each of the draft alternatives includes some expression of the four elements of the proposed action noted above. These elements are described in more detail below:

Shortage Guidelines: This element is the primary aspect of the proposed action. Its purpose is the orderly management of water supplies during drought and low reservoir conditions. While Lake Powell and Lake Mead have large storage capacities, demands for Colorado River water supplies have continued to increase and prudent management of existing water supplies will help ensure sufficient supplies are available. The shortage guidelines would apply to the Lower Division states of Arizona, California, and Nevada, and would range from substantial shortages to no reduction of water deliveries until the reservoirs are empty. Most of the alternatives have discrete levels of shortage associated with various Lake Mead reservoir elevations.

Coordinated Reservoir Operations: Lake Powell and Lake Mead operations are currently coordinated only under high reservoir conditions through storage equalization. The draft alternatives consider various options designed to better utilize existing reservoir storage under lower reservoir conditions, both to enhance water supplies and to help balance the various benefits of the reservoirs.

Storage and Delivery of Conserved Water: One way to increase water deliveries during droughts is the augmentation and conservation of existing water supplies. The alternatives consider options for the creation of a mechanism for the storage and delivery of conserved system and non-system water in Lake Mead, with various limits on the maximum size, storage, and delivery of the conserved system and non-system water pursuant to applicable federal law.

Interim Surplus Guidelines: The 2001 ISG were implemented to provide a greater degree of certainty to water users in the Lower Division states as to the availability of water in excess of normal apportionments. The ISG are due to expire in 2016, and since the Lower Basin shortage guidelines are anticipated to extend through 2025, consideration of an extension of the surplus guidelines is one of the elements of the proposed action. This element of the draft alternatives varies from terminating the ISG after 2007 to an extension of the existing surplus guidelines through 2025. This element of the alternatives helps establish an operational strategy for the full range of reservoir operations at Lake Mead.

Following issuance of the Summary Scoping Report on March 31, 2006, and after extensive coordination with interested stakeholders, cooperating agencies, and other interested parties, the following draft alternatives have been formulated for consideration. These draft alternatives represent a broad range of the possible alternatives that meet the purpose and need of the proposed action. Furthermore, these draft alternatives have been developed to allow a broad range of potential impacts to be evaluated in the draft EIS. The key assumptions for the alternatives are summarized in tables 1, 2, and 3.

No Action Alternative

Future conditions under No Action represent what is likely to occur if the proposed action is not taken. Pursuant to the Criteria for the Coordinated Long-Range Operation of Colorado River Reservoirs (Criteria), the Secretary makes a number of determinations at the beginning of each operating year through the development and execution of the Annual Operating Plan, including the water supply available to users in the Lower Basin and the annual release volume from Lake Powell. The Annual Operating Plan is issued after consultation with various Colorado River Basin stakeholders, pursuant to applicable federal law. In some respects, the Criteria do not require specific operational results; for example, the Criteria do not identify specifically when the Secretary would declare a shortage in the Lower Basin, or identify by how much releases would be reduced. Furthermore, there is no actual operating experience under very low reservoir conditions; i.e., there has never been a shortage declared in the Lower Basin. Therefore, absent specific guidelines, the outcome of the annual determination in any particular year in the future cannot be precisely predicted. However, a reasonable representation of future conditions under No Action (while not representing official policy of the Department with regard to future operations) is modeled to provide a comparison of potential associated impacts with each action alternative.

Basin States Preliminary Alternative

The seven Colorado River Basin States (Basin States) submitted a Preliminary Proposal Regarding Colorado River Interim Operations in a letter to the Secretary dated February 3, 2006 (available at <http://www.usbr.gov/lc/region/programs/strategies/documents.html>). The Basin States' alternative proposes a coordinated operation of Lake Powell and Lake Mead that would minimize shortages and avoid risk of curtailments of use in the Upper Basin, while providing a mechanism for promoting water conservation in the Lower Basin as well as providing for the use of additional water supplies to meet current and future needs.

Conservation Before Shortage Alternative

A consortium of non-governmental organizations (NGO's) developed and submitted an alternative referred to as the "Conservation Before Shortage" Alternative in a letter dated July 18, 2005. The consortium includes Defenders of Wildlife, Environmental Defense, National Wildlife Federation, Pacific Institute, Sierra Club, and the Sonoran Institute. The NGO's recommendation proposed that voluntary, compensated small-scale reductions in water use would be preferable to involuntary, large-scale disruptions in water deliveries that would potentially create unmitigated impacts. Since the publication of the Summary Scoping Report, the NGO's have modified elements of their proposal. Their revised proposal, "Conservation Before Shortage II (July 7, 2006)" is available at <http://www.usbr.gov/lc/region/programs/strategies/documents.html>.

Water Supply Alternative

This alternative was developed in consultation with a wide range of stakeholders and is intended to maximize water deliveries at the expense of retaining water in storage in the reservoirs for future use. This alternative would implement shortages only when insufficient water to meet full entitlements is available in Lake Mead.

Reservoir Storage Alternative

This alternative was developed in coordination with the cooperating agencies and other stakeholders. The general strategy of this alternative is to keep more water in storage in Lakes Mead and Powell by reducing water deliveries and increasing shortages to benefit power and recreational interests.

Next Steps

The potential hydrologic effects of each draft alternative will be determined, followed by the analysis of the potential impacts to environmental resources. The results of the hydrologic and resource analyses will be documented in the draft EIS, targeted to be published by December 2006.