



## **The Colorado River Basin States Representatives of Arizona, California, and Nevada**

March 6, 2024

The Honorable Camille Calimlim Touton  
Commissioner  
Bureau of Reclamation  
1849 C Street, NW  
Washington, DC 20240

Re: Lower Basin Alternative for the Post-2026 Coordinated Operation of the Colorado River Basin

Dear Commissioner Touton:

The undersigned Governors' Representatives of Arizona, California, and Nevada (Lower Division States) appreciate the opportunity to submit the attached alternative (Lower Basin Alternative) for the Bureau of Reclamation (Reclamation) to analyze as part of Reclamation's National Environmental Policy Act (NEPA) review to adopt guidelines and coordinated reservoir management strategies to address future operations of Lake Powell and Lake Mead. These new guidelines will take effect when the 2007 Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead (2007 Interim Guidelines) expire in 2026 as described in the Scoping Report for Post-2026 Colorado River Reservoir Operations (88 FR 72535, October 20, 2023) (Scoping Report).

This Lower Basin Alternative is designed to provide for the sustainable management of the Colorado River system and its resources under a wide range of potential future system conditions due to a changing climate, consistent with the Scoping Report. Since Reclamation initiated this action in June 2023, the Colorado River Basin States (Basin States) have been working to develop a consensus alternative, as noted in the Basin States' August 15, 2023, scoping letter. Although there is agreement among the Basin States regarding the need to provide for operations of Lake Powell and Lake Mead under a wide range of potential future system conditions due to a changing climate, at this point the seven Basin States have been unable to agree on a consensus alternative. The Lower Division States look forward to further discussions with the Upper Division States, as well as Tribes, non-governmental organizations, and other stakeholders, to develop a consensus while Reclamation evaluates alternatives.

### **Participation by Mexico**

The Lower Basin Alternative includes assumptions regarding participation by Mexico in reductions; surplus deliveries; and the conservation, augmentation, and storage program commensurate with prior Treaty Minutes. We recognize that any participation by Mexico will be determined in a separate process with Mexico. However, to provide sufficient information for analysis of the full range of impacts within the United States, changes in flows associated with Mexico's potential participation in surpluses, reductions, conservation and storage need to be analyzed. We look forward to future collaboration with Mexico in this work through the International Water and Boundary Commission and Reclamation.

### **Background and Key Alternative Concepts**

When the Basin States worked with Reclamation and the Department of the Interior (Department) to develop the 2007 Interim Guidelines, the Colorado River Basin had been in drought for seven years and Lake Powell and Lake Mead - nearly full in 2000 - had started to decline. To address the drought and declining reservoirs, the 2007 Interim Guidelines incentivized conservation through the creation of Intentionally Created Surplus and established Lower Basin shortage provisions. But it soon became clear that the 2007 Interim Guidelines were insufficient to reduce the risks of Lake Powell and Lake Mead declining to critically low elevations. In response, the Basin States, Tribes, Mexico, water managers, Reclamation, the Department, and Congress took action through a range of voluntary measures and the 2019 Drought Contingency Plan. These efforts were successful in stabilizing reservoir elevations some of the time, but they have not adequately reduced the risk of the reservoirs declining to critical elevations.

The 2007 Interim Guidelines are expiring as the Colorado River now enters the twenty-fifth year of drought – conditions that have been exacerbated by climate change. Hotter and drier conditions have resulted in reduced run-off into the River that has led to significant declines in Colorado River system storage. The Lower Basin Alternative is designed to address the impacts of drought and climate change through a holistic and sustainable approach to the coordinated operations of Lake Powell and Lake Mead that improves predictability for water users by:

1. Addressing the structural deficit in the Lower Basin. This Alternative includes reductions from Lower Basin state apportionments and deliveries to Mexico by 1.5 million acre-feet (maf) (static reduction) under most system conditions. The static reduction is larger than the structural deficit in the Lower Basin regardless of the various ways that the structural deficit may be calculated.
2. Operating the reservoirs based on system contents rather than elevations at Lake Powell and Lake Mead. The Lower Basin Alternative shifts to a more holistic, system wide, approach that is based on actual hydrology and total system contents instead of forecasts and individual reservoir elevations.

3. Sharing water use reductions broadly. This Alternative recognizes the need to make water use reductions from state apportionments under most system conditions and shares those reductions predictably among the Lower Basin water users and Mexico. Under the most critical system conditions, the Alternative shares water use reductions between the Upper Basin and Lower Basin including Mexico.
4. Including provisions for storage and delivery of stored water. The Lower Basin Alternative's approach includes opportunities for storage and augmentation that will encourage innovation and investment.
5. Establishing releases from Lake Powell that are adaptable to a broad range of hydrologies and respond to "hydrologic shortages." This Alternative adjusts releases to respond to factors impacting Upper Basin use. Additionally, most balancing conditions are removed to avoid conflict between the Upper and Lower Basins.

The Lower Basin Alternative is designed to achieve a sustainable volume of water in system storage. That storage will help to protect infrastructure and habitat and provide predictability for water users. The Alternative's reduction framework is triggered by total system contents (as opposed to forecasts) to determine the operations of Lake Powell and Lake Mead. The Alternative also includes opportunities for storage, augmentation, demand management, and other water management strategies.

The Lower Basin Alternative represents a compilation of strategies based on the lessons learned from the 2007 Interim Guidelines as well as hydrologic supply and demand information gleaned over recent decades. The elements of this Alternative are related and interdependent; removing or replacing one or more of these elements without full consideration of the entire Alternative would likely diminish the management value.

This letter describes various aspects of the Lower Basin Alternative and should be read in conjunction with the attached technical document.

### **Total System Contents**

The Lower Basin Alternative shifts away from the reliance in the 2007 Interim Guidelines on the 24-Month Study forecasts and elevations in Lake Powell and Lake Mead to determine reservoir releases and Lower Basin shortages. This Alternative instead primarily uses actual hydrology and total system contents—a recognition that, whatever the elevation of a particular reservoir in the system may be, sustainable management must be focused on contents that are actually available in the system as a whole. "Total system contents" includes the contents of Flaming Gorge, Blue Mesa, Navajo, Powell, Mead, Mohave, and Havasu.<sup>1</sup> In addition to more holistically

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<sup>1</sup> For purposes of this Lower Basin Alternative, "total system contents" is the total volume of water in live storage within Flaming Gorge Reservoir, Blue Mesa Reservoir, Navajo Reservoir, Lake Powell, Lake Mead, Lake Mojave, and Lake Havasu. Inclusion of the Colorado River Storage Project Act Initial Units is not intended to open the Records of Decision for those facilities.

managing the system, moving away from forecasts and reservoir elevations and instead relying on actual hydrology and system contents should reduce disagreements among and between the Basins that have resulted from reliance on Lake Powell and Lake Mead elevations and 24-Month Study forecasts in the past.

### **Water Use Reductions**

The Lower Basin Alternative proposes a new framework for determining annual water use reductions when total system contents are:

- 69% - 58%: cuts to Lower Basin water uses increasing from 0 to 1.5 maf
- <58% - 38%: static cut to Lower Basin water uses of 1.5 maf
- <38% - 23%: static cut to Lower Basin water uses of 1.5 maf plus additional, evenly split cuts to Upper Basin and Lower Basin water uses as total system reductions increase from 1.5 maf to 3.9 maf.<sup>2</sup> Reductions would remain at 3.9 maf below 23%.

This approach resolves the structural deficit in the system between Lee Ferry and the U.S.-Mexico border, reduces the risk of the system declining to critical levels, shares water use reductions broadly, improves predictability for water users, and includes the Upper Basin in water reductions under the most critical system conditions. Most fundamentally, this framework commits stakeholders to the simple principle that when less water is available in the system, less water should be taken from the system.

### **Releases from Glen Canyon Dam**

Linking Lower Basin water use reductions to total system storage rather than the elevation of Lake Mead reduces the significance of the relative volumes of water in Lakes Powell and Mead. The Lower Basin Alternative includes a Glen Canyon Dam release regime designed to minimize risk of noncompliance with the 1922 Compact while providing benefits to power generation, in-stream resources at the Grand Canyon and habitat below Lake Powell, and the recreational attributes of Lakes Powell and Mead.

Like Lower Basin water use reductions, annual release volumes from Lake Powell are set based on live storage in the Colorado River Storage Project (CRSP) Initial Units: Flaming Gorge Reservoir, Blue Mesa Reservoir, Navajo Reservoir, and Lake Powell (described in this Alternative as “Total UB System Contents”). In most years, Glen Canyon Dam releases will be determined by a combination of Total UB System Contents and Upper Basin depletions in the previous three years. When Upper Basin depletions decrease due to aridification and/or “hydrologic shortage,” releases from Lake Powell decrease as well.

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<sup>2</sup> The Lower Division States are also requesting that Reclamation model a range of reductions in the Upper Basin up to 2.4 maf in this zone to provide a full range of analysis.

The attached technical document provides more detail, but in general the Glen Canyon Dam annual release regime is based on four bands of Total UB System Contents, with a potential April adjustment to protect Lake Mead elevation 1000 ft. When Total UB System Contents are:

Greater than 80% (“Equalization Release”). Balance the contents of Lakes Powell and Mead as closely as practicable with releases between 8.5 maf to 11.0 maf.

Greater than 30% and less than or equal to 80% (“Hydrologic Shortage-Based Release”). Releases vary in a stepwise fashion between 7.0 maf and 8.5 maf depending on the extent of Upper Basin “hydrologic shortage.”

Greater than 20% and less than or equal to 30% (“Reduced Release Ramp”). Releases of 6.0 maf to 7.0 maf determined as a linear function.

Total UB System Contents less than or equal to 20% (“Static Release”). Release of 6.0 maf.

### **Conservation, Innovation, and Investment**

Since the 2007 Interim Guidelines were adopted, water managers in the Lower Division States have been working individually and in partnership to adapt to the stresses on the Colorado River system resulting from drought and climate change. The Lower Basin, in partnership with the United States and Mexico, has invested billions of dollars over the interim period to conserve water for the benefit of the Colorado River system and the development of intentionally created surplus. Many of these investments are ongoing and will continue well beyond 2026.

As a result of that investment, water users in the Lower Basin and Mexico have conserved enough water to bolster the elevation in Lake Mead by 91 feet. The success of these collaborative efforts enabled the Lower Division States to propose the Lower Basin Plan to conserve 3 million acre-feet over 4 years to address short-term protection of the Colorado River system, adopted as the preferred alternative in the Supplemental Environmental Impact Statement released yesterday. In 2023 alone, the Lower Basin reduced its consumptive use to 5.8 million acre-feet – leaving 1.7 million acre-feet in the system.

The Lower Basin Alternative seeks to retain the core concepts of conservation, augmentation, and storage from the 2007 Interim Guidelines but will include updates to the program based on operational experience. The Lower Basin Alternative recommends a broad range of parameters for evaluation at this time. We are still developing the details and expect to narrow the range as we work with our respective stakeholders in the coming months. Ultimately, we support a program that allows for the storage of conserved and augmentation water to incentivize

conservation, innovation, and investment that does not influence the coordinated operations of Lake Powell and Lake Mead.

### **Intrastate Processes and Federal Support**

Although we have proposed the Lower Basin Alternative, we still have work to achieve consensus support within our respective states, allocate reductions within our states, and seek support from the Upper Division States, Basin Tribes, non-governmental organizations, and Mexico. Throughout the Lower Basin both tribal and non-tribal water users will be significantly affected by water supply reductions.

To achieve the necessary stakeholder support within our respective states, we will likely need to work together to find partnership and funding opportunities to further the conservation programs and augmentation projects necessary to achieve the Alternative's water use reductions. We are seeking federal support in those intrastate conversations, including federal resources to reduce the impacts to both tribal and non-tribal water users.

### **Analysis of Alternatives with Respect to Glen Canyon Dam Infrastructure**

The Lower Basin Alternative was designed to meet the purpose and need as described by Reclamation in the Scoping Report. Reclamation more recently has articulated concerns regarding potential cavitation in the river outlet works and scouring in the river bottom below the river outlet works that may occur with greater intensity at lower Lake Powell elevations. We understand the following based on the 38 Sovereigns webinar discussion led by Reclamation on February 28, 2024:

- i. Reclamation continues to evaluate the extent of its Glen Canyon Dam infrastructure concerns through both physical and computer modeling and will invite stakeholder technical support in completing its reviews.
- ii. For purposes of the Post-2026 coordinated river operations NEPA process, Reclamation will neither set a floor for Lake Powell operations in its "No-Action" alternative nor screen any reasonable alternative from consideration that does not maintain Lake Powell above any particular elevation.
- iii. Reclamation is considering several potential infrastructure modifications that may mitigate or eliminate concerns with operations occurring at Lake Powell elevations requiring use of the river outlet works.

We look forward to working with Reclamation to evaluate the infrastructure vulnerabilities mentioned and help develop solutions. We anticipate that protecting Glen Canyon Infrastructure may involve a host of strategies including infrastructure modifications, strategic releases from CRSP units, and water use reductions in both the Upper and Lower Basins.

Importantly, however, based on our preliminary reviews, the Lower Basin Alternative is highly effective at keeping Lake Powell above critical elevations. Even during drier hydrologies, when

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Lake Powell's elevation may temporarily fall below 3500 feet, the use of total system contents in the Lower Basin Alternative improves flexibility to protect critical infrastructure by enabling the movement of water through the system as necessary for infrastructure protection and environmental flows while satisfying water delivery requirements and Compact obligations.

### **Reservation of Rights**

By providing this alternative, we do not waive any rights, including any claims or defenses, we may have or that may accrue under federal or state law. Recommendation by the undersigned that Reclamation analyze the Lower Basin Alternative shall not be construed as an endorsement or an admission with respect to any factual or legal issue for the purposes of any future legal, administrative, or other proceeding. Moreover, we reserve the right to provide further comments and engage with Reclamation as it proceeds with subsequent phases of the NEPA process.

### **Conclusion**

We appreciate your consideration of the attached Lower Basin Alternative, and we are available to discuss the details with you and with other stakeholders as appropriate. We remain committed to collaborating with other stakeholders, including the Upper Division States, the Republic of Mexico through the International Boundary and Water Commission, Tribes, non-governmental organizations, and other water users in the Colorado River Basin. The Lower Basin States look forward to working with Reclamation through the next steps of developing the Post-2026 Operational Guidelines and Strategies.

Respectfully Submitted,



Thomas Buschatzke, Director  
Arizona Department of Water Resources



J.B. Hamby, Chairman & Commissioner  
Colorado River Board of California



John J. Entsminger, General Manager  
Southern Nevada Water Authority

## **Attachment: Lower Basin Alternative**

### **1. Introduction**

Arizona, California, and Nevada (collectively referred to as the Lower Division States) have developed this alternative for analysis and consideration as part of the preparation of an Environmental Impact Statement (EIS) for the development of the Post-2026 Operational Guidelines and Strategies for Lake Powell and Lake Mead. This alternative meets the purpose and need of the EIS by updating and expanding management guidelines for Colorado River reservoirs, improving predictability of reductions for Lower Basin water users and water supply reliability, and providing additional mechanisms for conservation, storage, and delivery under a wide range of potential future system conditions due to a changing climate. Moreover, this alternative takes into consideration the imbalance between water supply and demand below Lee Ferry, as climate change continues to impact temperatures, precipitation, and run-off in the Basin. This document should be read and considered in conjunction with the letter to which it is attached.

As explained in the letter, the Lower Basin Alternative incorporates assumptions regarding Mexico's participation in reductions, surplus deliveries, and the conservation, augmentation, and storage program. The assumptions regarding Mexico are commensurate with provisions in past minutes to the 1944 Treaty. While we recognize that any participation by Mexico in these components will be determined in a separate process through the International Boundary and Water Commission with Reclamation's assistance, the impact analysis must consider the cumulative effects of the contemplated actions.

### **2. Lower Basin Alternative**

The Lower Basin Alternative proposes total system contents as a trigger mechanism for water use (including reductions) to provide predictability to Colorado River water users and to address the structural deficit.

#### **Total System Contents Approach**

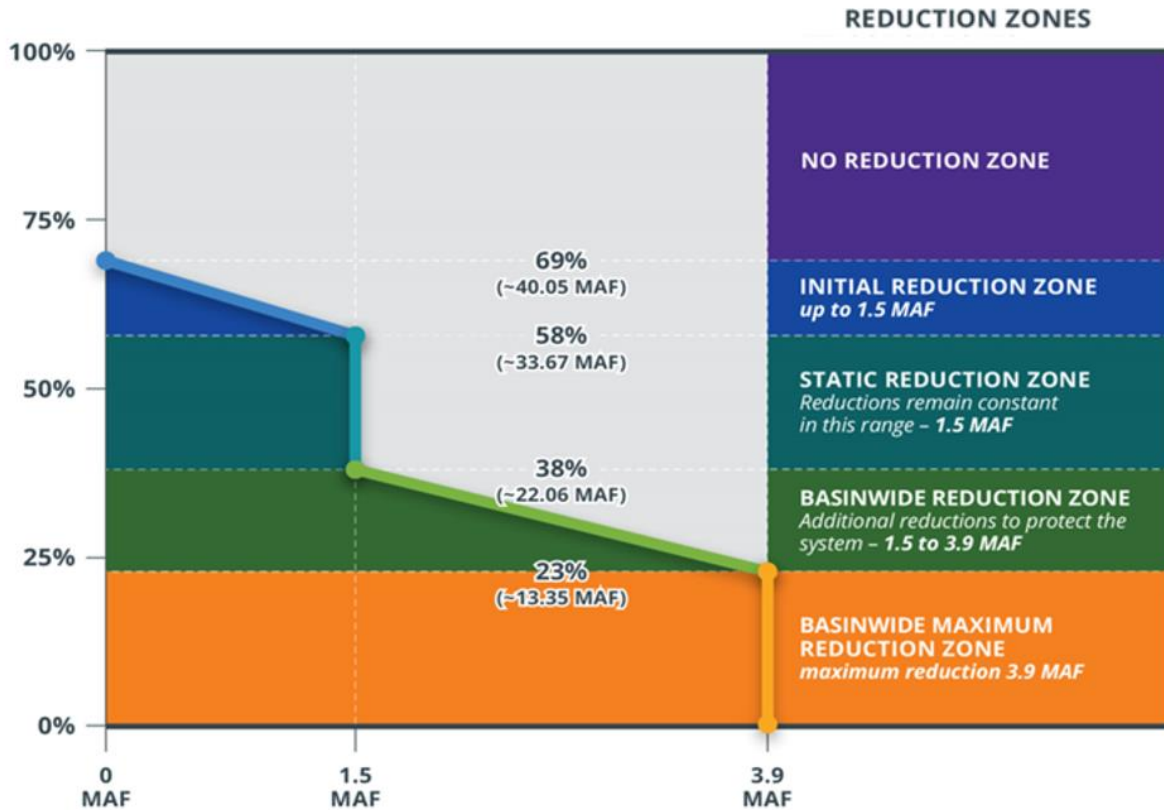
Under the Lower Basin Alternative, the permitted consumptive use of Colorado River water is a function of the total volume of water in live storage (water above deadpool) within Flaming Gorge Reservoir, Blue Mesa Reservoir, Navajo Reservoir, Lake Powell, Lake Mead, Lake Mojave, and Lake Havasu (hereinafter referred to as "total system contents") so that hydrology and system contents dictate water availability rather than forecasts and individual reservoir elevations. Under most hydrologic conditions, these actions are sufficient to protect approximately 13 million acre-feet of water in live storage (23% of total system contents), a necessary buffer against future hydrologic and operational uncertainties, including potential infrastructure issues.



The Lower Basin Alternative will address water use at all reservoir conditions: Surplus, Normal, and during reductions. The formulation of the three operational elements of the proposed federal action are as follows:

**a. Reductions**

The Lower Basin Alternative provides discrete levels of reductions associated with specific levels of total system contents as presented below. These reductions are based on decreases in consumptive use for the specified state<sup>1</sup> or reductions in deliveries to Mexico. In some cases, these reductions may be “pre-conserved,” as discussed in section (e). The alternative provides criteria for annual basin-wide reductions up to a maximum of 3.9 million acre-feet (MAF). Reductions under the Lower Basin Alternative follow a rule curve (colloquially referred to as the “Z-curve”) illustrated below.



<sup>1</sup> At this time, we are proposing reductions to the apportionment of each of the Lower Division States. Intra-state discussion will be necessary to determine how reductions are distributed among water users.

The Z-curve identifies the total system contents of the reservoirs and five distinct reduction zones: No Reduction, Initial Reduction, Static Reduction, Basin-wide Reduction, and Basin-wide Maximum Reduction. Each reduction zone is described below. Reduction volumes should be rounded to the nearest acre-foot and two decimal places should be used to compute total system contents. Reductions in consumptive use resulting from “Bucket 2” projects should also count towards the reductions described below.

**i. Initial Reduction Zone**

When the total system contents are at or below 69% on August 1, but at or above 58%, the reduction volume for water users in the Lower Division States and Mexico for the subsequent calendar year would be a linear function of total system contents increasing from 0 at 69% to 1.5 million acre-feet at 58%.

The reductions in this zone would be shared as follows: Once the total reduction has been calculated, AZ, NV, and Mexico would share proportionally in reductions up to 300,000 acre-feet, distributed 80.00%, 3.33%, and 16.67%, respectively. For reduction volumes above 300,000 acre-feet, the first 300,000 acre-feet would be calculated as previously mentioned and the incremental reduction above 300,000 acre-feet would be shared proportionally among AZ, CA, NV, and Mexico at a rate of 43.33%, 36.67%, 3.33%, and 16.67%, respectively.

**ii. Static Reduction Zone**

When the total system contents are below 58% on August 1, but at or above 38% the reduction volume imposed on water users in the Lower Division States and Mexico for the subsequent calendar year would be 1.5 million acre-feet, distributed as follows:

State/Country	Reduction Volume (AF)
Arizona	760,000
California	440,000
Nevada	50,000
Mexico	250,000

**iii. Basin-wide Reduction Zone**

When the total system contents are below 38% on August 1, but at or above 23%, the reduction volume that would be imposed on water users in the Lower Division States, the Upper Division States, and Mexico for the subsequent calendar year would be a linear function of total system contents increasing from 1.5 million acre-feet at 38% to 3.9 million acre-feet at 23%.

The reductions in this zone above 1.5 million acre-feet would be shared so that 50% is allocated to the Lower Division States and Mexico and 50% is allocated to the Upper Division States. For example, if the calculated reduction is 2.0 million acre-feet, the first 1.5 million acre-feet would be contributed as described in section ii above. The additional 500,000 acre-feet would be shared with the Lower Division States and Mexico reducing use by 250,000 acre-feet and the Upper Division States reducing use by 250,000 acre-feet. At this time, we are not proposing a distribution of the Lower Basin and Mexico share of the additional reduction volume.

Additionally, the Lower Division States request that Reclamation model reductions in the Upper Basin of up to 2.4 million acre-feet per year on the Second Linear Ramp. This will provide a full range of analysis for compliance purposes.

**iv. Basin-wide Maximum Reduction Zone**

When the total system contents are below 23% on August 1, the reduction volume imposed on water users in the Lower Division States, the Upper Division States, and Mexico for the subsequent calendar year would be 3.9 million acre-feet, to be distributed as described in part 2(a)(iii).

**b. Lower Division States and Mexico Surplus**

Surplus would occur under a narrower range of conditions than the current operating rules. These rules need further refinement. However, the Lower Basin Alternative envisions surplus would increase as a part of a linear function instead of in step-wise fashion. Surplus would also start occurring with more water in storage. During these surplus conditions, Arizona will receive 240,000 acre-feet of surplus before California receives access to surplus. The Lower Basin Alternative assumes that Mexico will participate in surplus volumes commensurate with Minutes 319 and 323 to the 1944 Treaty.

The Lower Basin States would like Reclamation's assistance in further refining the proposed surplus criteria to evaluate the appropriate triggers, given the total system contents approach for reductions. Because surplus is, at least in part, intended to offset the risk of spilling water, it is important to fully explore how Lake Mead's elevation relates to total system contents and surplus triggers and volumes. We would also like to explore and understand the drivers of the 70R criteria to ensure they are appropriate for our current understanding of hydrologic projections and associated risks.

**c. Coordinated Operations of Lake Powell and Lake Mead**

Lake Powell's release to Lake Mead will also use a broader system contents approach than the current guidelines that is more consistent with section 602(a) of the Colorado River Basin Project Act. The elements of these releases are described below the following summary table.

Lake Powell Operational Tiers												
BOWY CRSP Live Capacity (%)	Operational Tier	CRSP Live Storage Volume (MAF)										
100	<b>Equalization Release</b> (release between 8.5 and 11.0 MAF*)	29.51										
80	<b>Hydrologic Shortage-Based Release Regime</b>  <table border="1"> <thead> <tr> <th>UB Depletions* (3-yr Avg) (MAF)</th> <th>Release (MAF)</th> </tr> </thead> <tbody> <tr> <td>&lt; 3.80</td> <td>7.0</td> </tr> <tr> <td>3.81 - 4.30</td> <td>7.5</td> </tr> <tr> <td>4.31 - 4.80</td> <td>8.0</td> </tr> <tr> <td>&gt; 4.80</td> <td>8.5</td> </tr> </tbody> </table> <p>*Includes net reservoir evaporation from Colorado River mainstem reservoirs.</p>	UB Depletions* (3-yr Avg) (MAF)	Release (MAF)	< 3.80	7.0	3.81 - 4.30	7.5	4.31 - 4.80	8.0	> 4.80	8.5	23.61
UB Depletions* (3-yr Avg) (MAF)		Release (MAF)										
< 3.80		7.0										
3.81 - 4.30		7.5										
4.31 - 4.80	8.0											
> 4.80	8.5											
30	<b>Reduced Release Ramp</b> (release between 6.0 and 7.0 MAF)	8.85										
20	<b>Static Release</b> (release no more than 6.0 MAF)	5.90										
0		0.00										

\*Flood control operations occur when Powell elevation is greater than 3,700-ft.

**April Adjustment Release:** Reservoirs balance when Mead's forecasted EOWY elevation is less than 1,000-ft while Powell's forecasted EOWY elevation is greater than 3,510-ft. Releases from Powell are constrained between 6.0 MAF and 11.0 MAF. The balancing determination is made each April and lasts through September.

**i. Equalization release**

The total system contents approach to reductions reduces the urgency of equalization as it no longer directly affects the Lower Basin’s shortage risk. As such, equalization rules could be simplified to provide more flexibility for releases to protect water deliveries, critical infrastructure, power, and Glen and Grand Canyon resources.

If the live storage in the Colorado River Storage Project (“CRSP”) Initial Units (Flaming Gorge Reservoir, Blue Mesa Reservoir, Navajo Reservoir, and Lake Powell) on October 1 exceeds 80%, the water-year release will range between 8.5 million acre-feet and 11.0 million acre-feet to equalize live contents in Lake Powell and Lake Mead at the end of the water year to the greatest extent practicable. Should flood control criteria be activated, that criteria will then control the release.

**ii. Hydrologic Shortage-Based Release Regime**

The Lower Basin Alternative would result in most releases occurring in the “Hydrologic shortage-based release regime.” During this operating condition, Upper Basin use is a proxy for ongoing aridification and “hydrologic shortages”<sup>2</sup> occurring within the Upper Basin. As Upper Basin use decreases due to aridification and/or “hydrologic shortages” the volume of water released from Lake Powell decreases as well. If conditions are dry, releases will be less, holding other variables constant.

When the live storage in the CRSP Initial Units on October 1 is greater than 30% but less than or equal to 80%, the release from Lake Powell will vary between 7.0 and 8.5 million acre-feet per water- year based on the average amount of Upper Basin depletions over the three prior water years (including net evaporation from reservoirs) as described further in the table below:

UB Depletions* (3-yr Avg) (MAF)	Release (MAF)
< 3.80	7.0
3.81 - 4.30	7.5
4.31 - 4.80	8.0
> 4.80	8.5

<sup>2</sup> There is no agreed upon definition of the term “hydrologic shortage.” It is used colloquially herein to describe a broad range of factors that affect water supply availability in the Upper Division states without taking a position on which of these factors are “shortages.”

**iii. Reduced Release Ramp**

When the live storage in CRSP Initial Units on October 1 is greater than 20% but less than or equal to 30%, the water year release volume from Lake Powell shall be a linear function of live storage in the CRSP Initial Units increasing from 6.0 million acre-feet at 20% to 7.0 million acre-feet at 30%.

**iv. Static Releases**

When the live storage in the CRSP Initial Units on October 1 is less than or equal to 20%, the water year release volume from Lake Powell shall be 6.0 million acre-feet unless such release volume is not physically possible.

**v. April Adjustment**

Except during equalization conditions, if on April 1 Lake Mead is projected to end the water-year below elevation 1,000 feet and Lake Powell is projected to end the water-year above elevation 3,510 feet, the water-year release will be adjusted to range between 8.5 million acre-feet and 11.0 million acre-feet to achieve as practicable equal live contents in Lake Powell and Lake Mead at the end of the water year. Once triggered, the release shall be adjusted monthly and occur through the end of the water year.

**vi. Emergency Response Actions**

The Lower Basin Alternative assumes that the United States will incorporate response operations at upstream Colorado River reservoirs, consistent with their statutory purposes, to protect critical infrastructure at Glen Canyon Dam.

**d. Storage and Delivery**

The current Intentionally Created Surplus (ICS) Program has proven to be a valuable tool by encouraging water conservation and helping to bolster reservoir elevations. However, there are also inequities (both real and perceived) in access to and accounting for ICS. As such, the Lower Basin Alternative proposes concluding the ICS program and developing a new set of rules for future conservation, augmentation and storage.

**i. Existing ICS**

There are existing provisions for the post-2026 management of ICS created prior to 2026 ("Existing ICS"). The Lower Basin Alternative also contemplates additional rules to allow Existing ICS to be used to offset a portion of the required reductions. The Lower Division

States would like to work with Reclamation to analyze different approaches to the outstanding variables.

**ii. Post-2026 Conservation, Augmentation and Storage Program**

The Lower Basin Alternative proposes a new program to incentivize conservation and augmentation by allowing storage of that water. The Lower Division States have identified certain parameters for consideration, while others remain under discussion.

The Lower Basin Alternative includes the following parameters for conservation, augmentation and storage:

- The Lower Division States propose that Reclamation analyze accumulation volumes ranging from 5.0 – 10.0 million acre-feet of water for storage by water users in the Lower Division States and Mexico based on conservation and augmentation. The Lower Division States intend to continue our discussions with Reclamation and Mexico, as we determine the appropriate parameters for storage based on conservation and augmentation.
- This stored water will provide flexibility in managing reductions, including allowing for the “pre-conservation” of reductions so that water stored in a previous year could be delivered to offset reduction volumes and/or to avoid inadvertent overruns.
- Delivery of stored water should not allow any state to exceed its basic apportionment when reductions apply in the Lower Basin (except limited inadvertent overruns, augmentation, and tributary conservation water).
- The volume of water stored should be subtracted from the total system contents before reductions are calculated so as not to diminish the volume of reduction that would otherwise occur absent the stored water.