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Revised Draft Supplemental Environmental Impact Statement for Near-term Colorado River Operations

Virtual Public Meetings – November 9, 2023

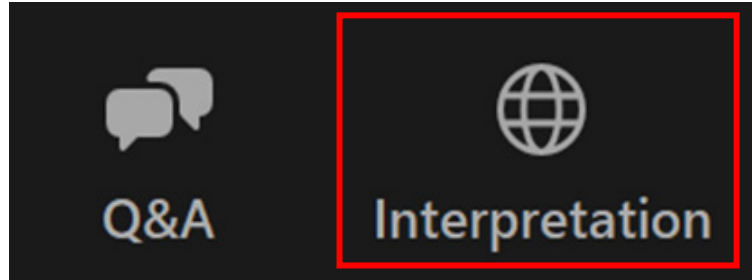
The meeting will begin at 5:30 p.m., Mountain Time

La interpretación en vivo será disponible en español. Live interpretation will be available in Spanish.

Dial In: (720) 928-9299 or (602) 753-0140; Webinar ID: 915 8730 9775

For technical support, please contact Jessica Sams: jessica.sams@swca.com

La interpretación en vivo está disponible en español



Live language interpretation is available in Spanish



Meeting Agenda

- Welcome and Agenda Review
- Presentation
 - ✓ Background
 - ✓ Overview of Revised Draft Supplemental Environmental Impact Statement (SEIS)
 - ✓ Alternatives
 - ✓ Impacts Analysis
- Question and Answer (Q&A)



Zoom Etiquette



Webinar is being recorded



Microphones are muted



Chat feature is turned off



Submit questions via Q&A during the presentation



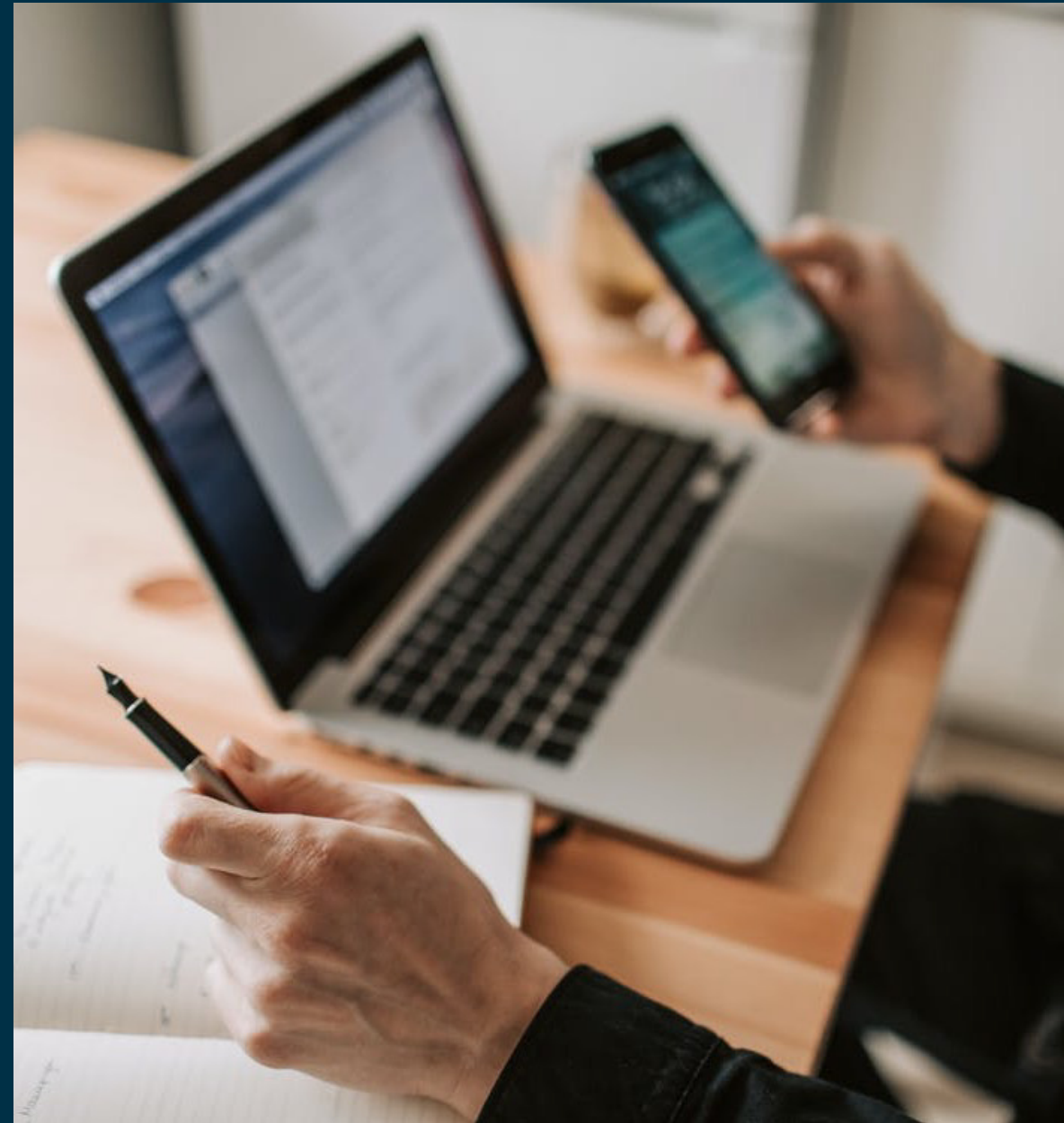
Chat



Q&A



Interpretation





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Welcome and Introductions

Camille Calimlim Touton, Commissioner
Bureau of Reclamation



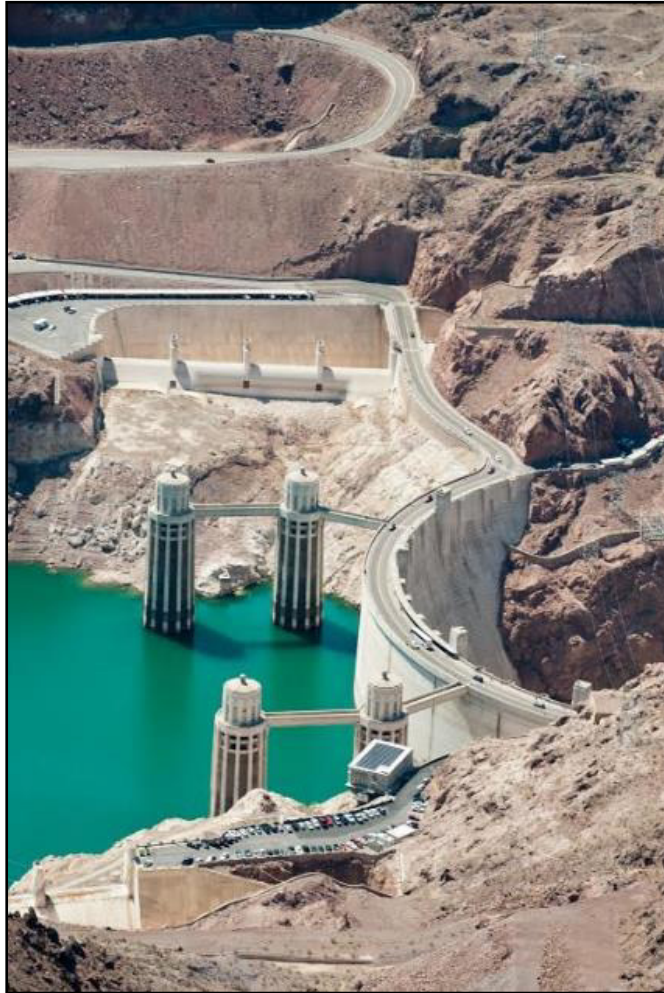
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Background

Colorado River – Current Conditions



Lake Powell near Glen Canyon Dam



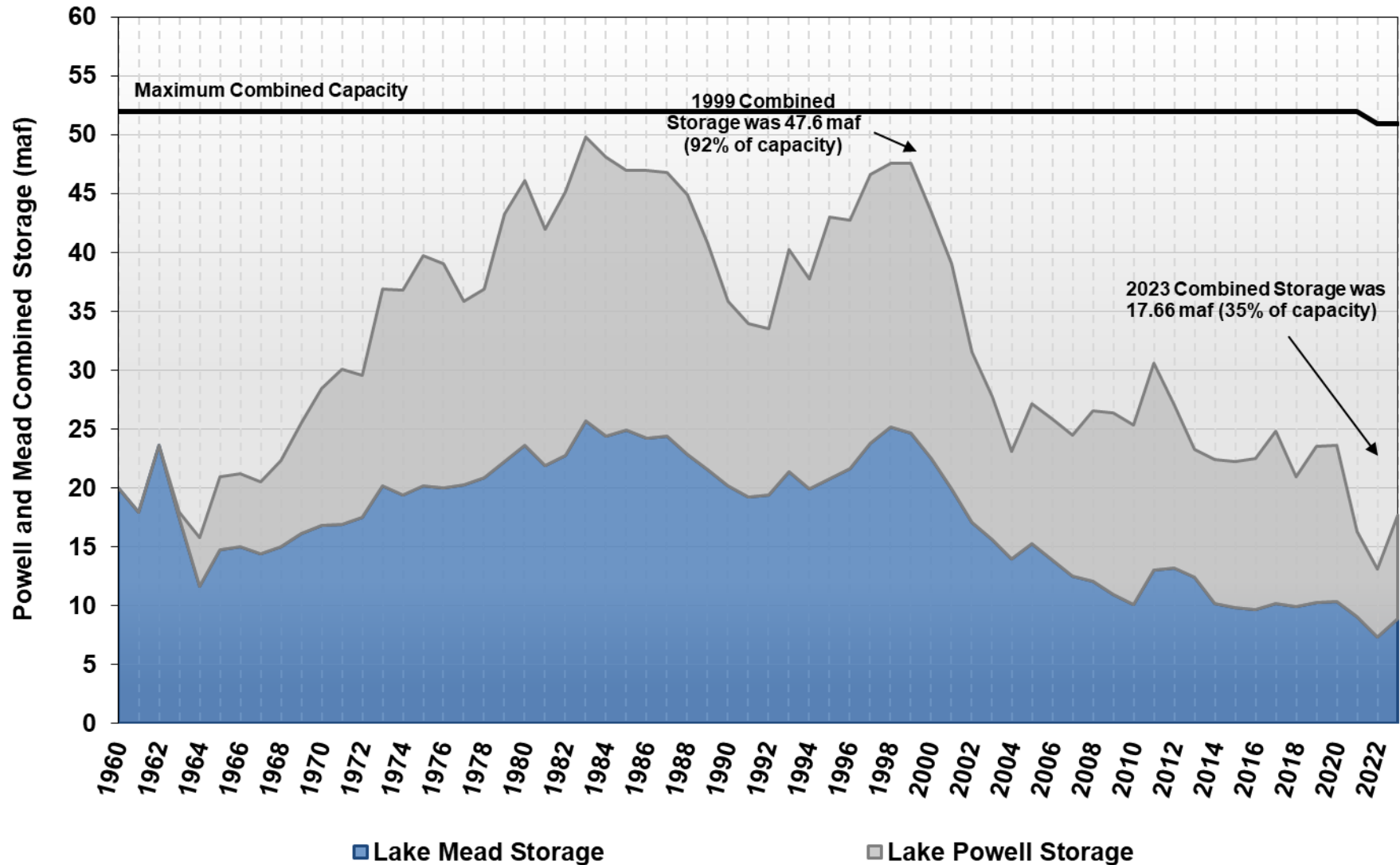
Lake Mead near Hoover Dam

- Driest 23-year period on record (2000-2022)
- Flows in 2020-2022 were 37% to 63% of average
- Lake Powell and Lake Mead are near historically low water levels

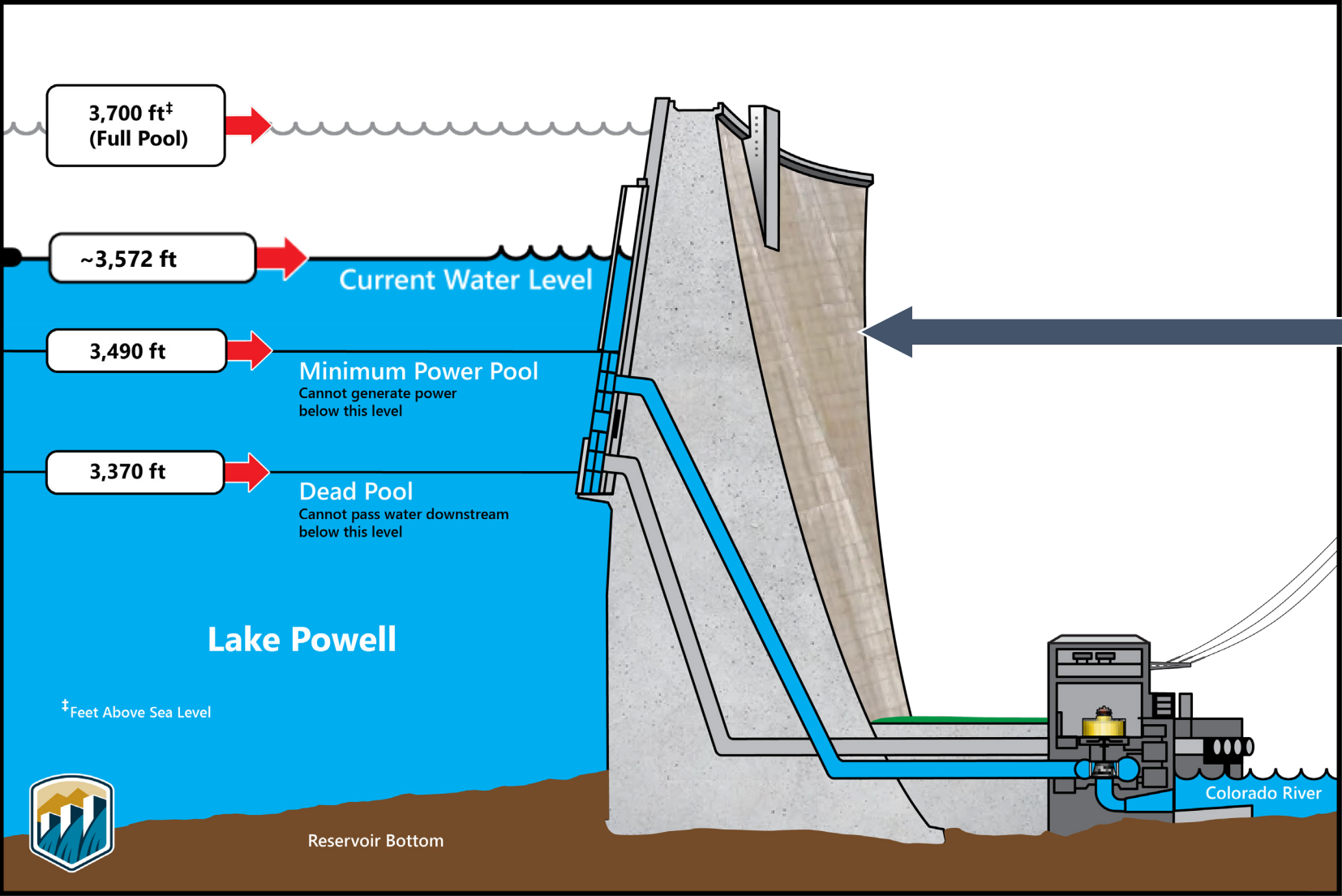


Lake Powell and Lake Mead End of Water Year Storage

Water Years 1960 through 2023



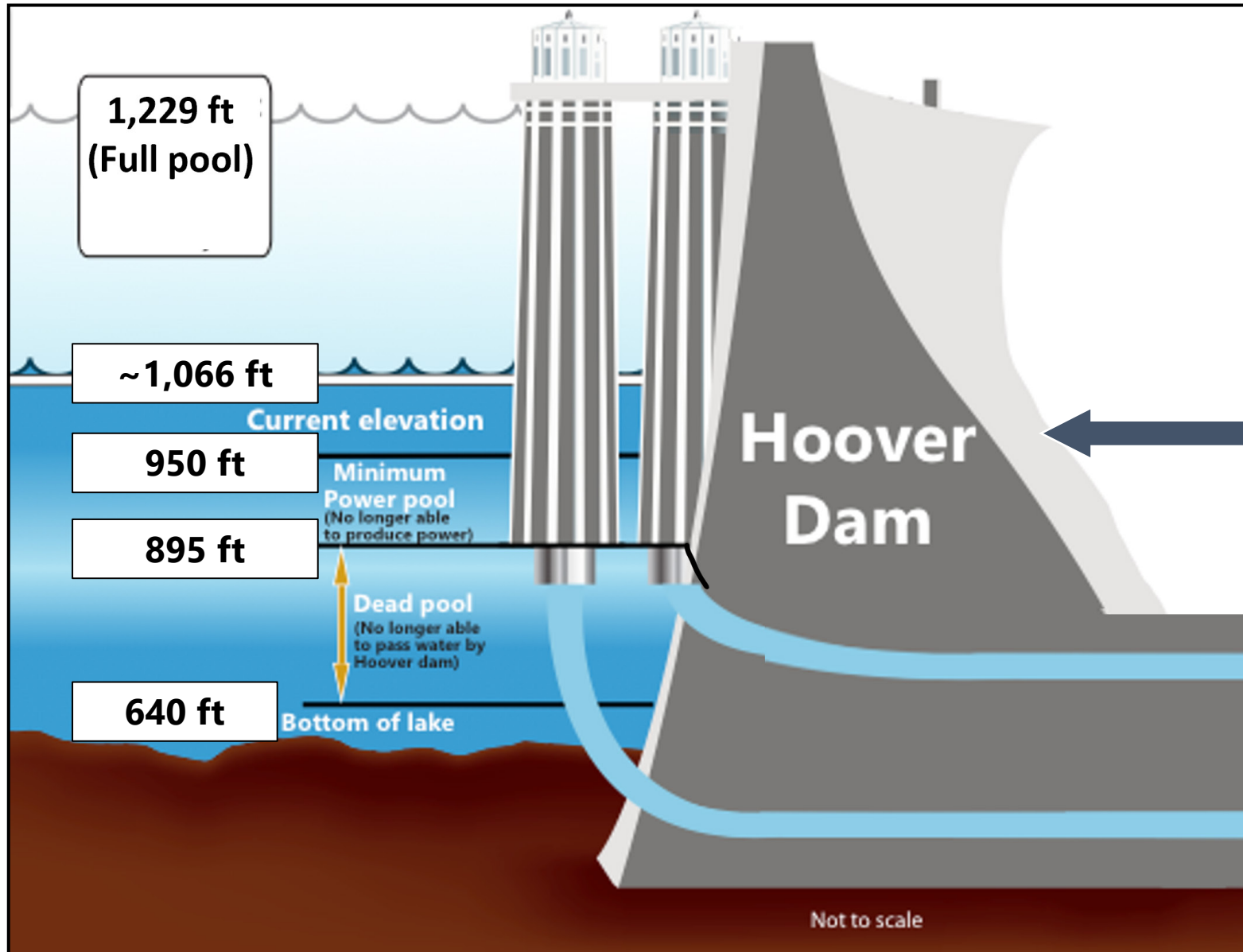
Lake Powell Key Elevations



Draft SEIS references elevation 3,500 ft – which is 10 ft above minimum power pool



Lake Mead Key Elevations



Draft SEIS references elevation 1,000 ft – which is 50 ft above minimum power pool





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Project Overview

Supplemental EIS and Why it is Important

- In November 2022, the Department of the Interior proposed development of a Supplemental Environmental Impact Statement (SEIS) to:
 - ✓ Supplement the 2007 EIS and Interim Guidelines
 - ✓ Respond to the potential for worsening drought conditions
 - ✓ Modify operating guidelines to inform operations in Water Years through 2026
- The SEIS does not replace, supplant, or supersede the post-2026 guidelines development process.



Supplemental EIS and Why it is Important - cont.

- Focuses on 2024-2026 (remainder of interim period)
- Addresses continued potential low-runoff and low-reservoir elevations
- Analyzes scenarios to react to low-level conditions, but doesn't predict actual operations
- Doesn't change other operational agreements or contractual distribution of water within Reclamation projects
- Focuses on Lake Powell, downstream along the Colorado River floodplain, to international boundary with Mexico



How does the Draft SEIS differ from other planning activities in the Basin?

PLANNING EFFORT	NEAR-TERM COLORADO RIVER OPERATIONS <i>(Interim Guidelines SEIS)</i>	GLEN CANYON DAM LONG-TERM EXPERIMENTAL AND MANAGEMENT PLAN <i>(LTEMP SEIS)</i>	LONG-TERM COLORADO RIVER OPERATIONS <i>(Post-2026 Process)</i>
RANGE OF OPERATIONS	Limited sections of the 2007 Interim Guidelines Focus on annual releases	Limited sections of the 2016 LTEMP ROD; Sub-annual flows - timing of hourly, daily, monthly and experimental releases from Glen Canyon Dam	Revisit all sections of the 2007 Interim Guidelines and other operating agreements that expire in 2026. Focus on annual releases
DURATION	2024 – 2026 (3 YEARS)	2024 – 2027 (Flow Alternatives) 2024 – 2036 (HFE protocol)	2026 AND BEYOND



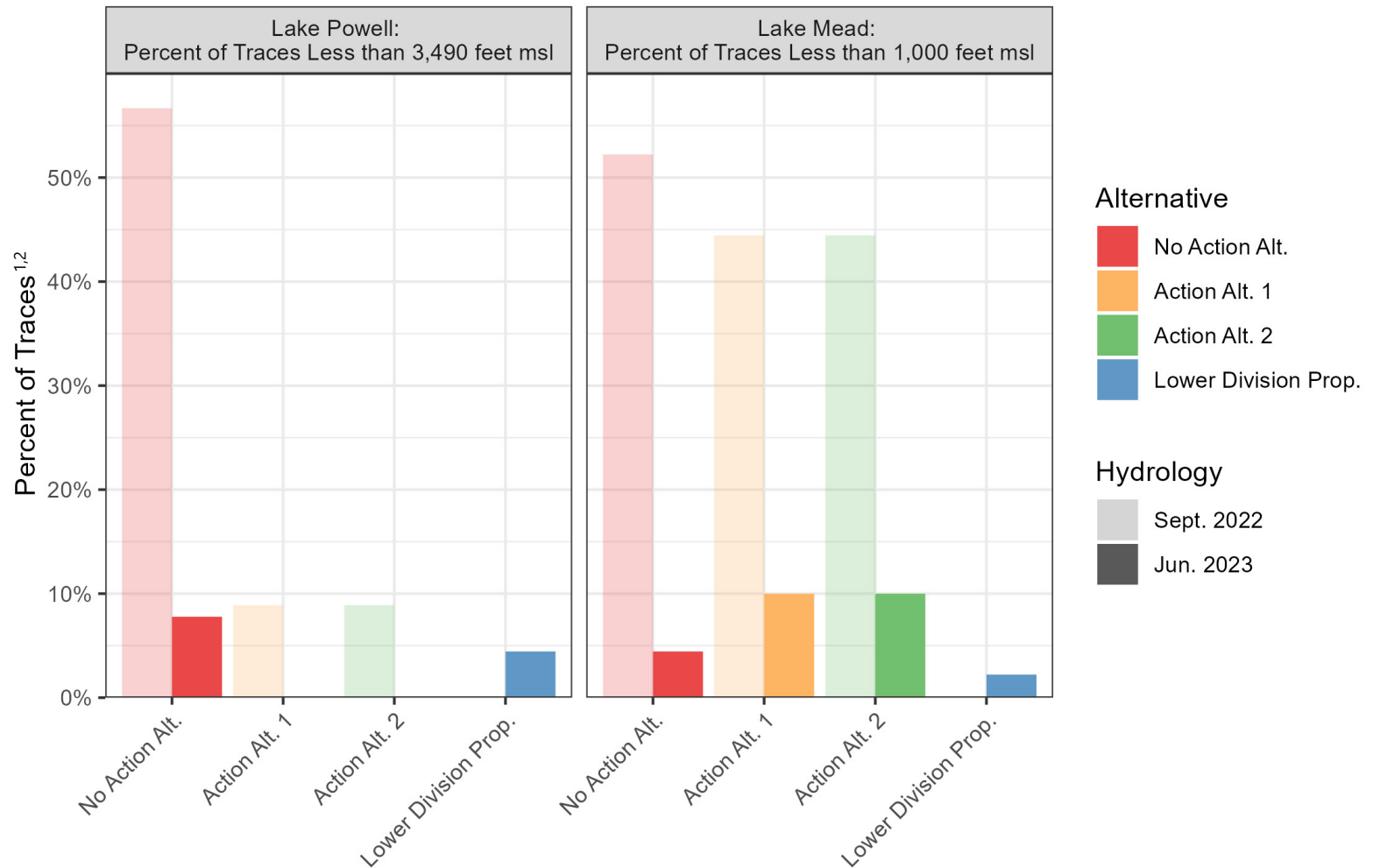
Revised Draft SEIS

- **Draft SEIS issued April 14, 2023**
 - ✓ Analyzed No Action Alternative and Action Alternatives 1 and 2
 - ✓ Based on hydrology modeling from September 2022
- **Key Developments**
 - ✓ New proposed alternative – Lower Division Proposal (May 2023)
 - ✓ Updated hydrologic modeling
 - Improved Colorado River Basin hydrology
 - Utilized June 2023 hydrologic modeling
 - Substantial risk reduction in reaching critical elevations at Lake Powell and Lake Mead
- **Reclamation withdrew Draft SEIS (May 2023)**
- **Develop Revised Draft SEIS**



Action Alternatives 1 and 2 Considered but Eliminated from Detailed Analysis

Based on the June 2023 hydrologic modeling, the Proposed Action would provide additional risk reduction compared with original Action Alternatives 1 and 2, while achieving the same purpose and need objectives.

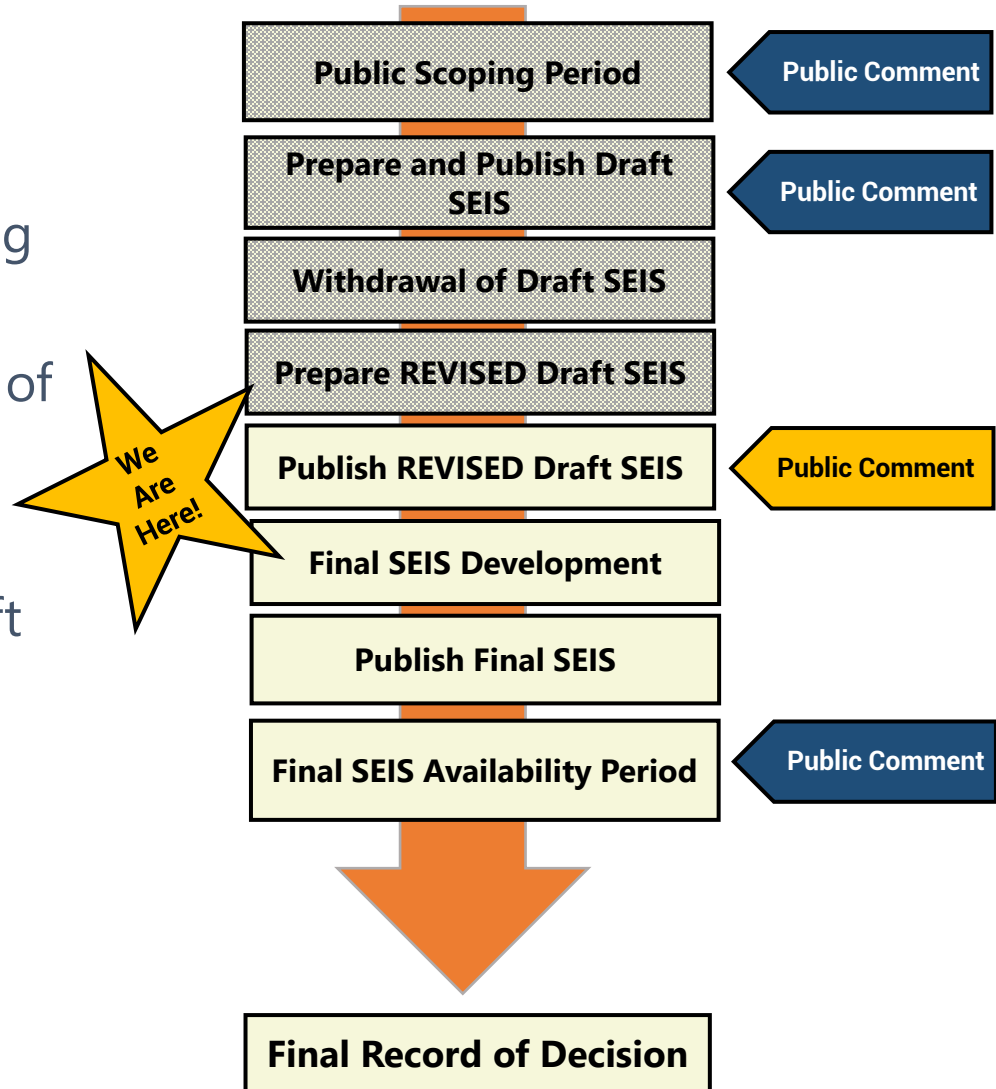


¹No modeling was performed for the Lower Division Proposal using September 2022 conditions.

²No traces were modeled to drop below elevations 3,490 feet in Action Alt. 1 and 2 with June 2023 conditions.

Revised Draft SEIS NEPA Schedule

- November 17, 2022 - Notice of Intent (NOI) to develop a SEIS published in the *Federal Register*
- November 17-December 20, 2022 - Public Scoping Period
- April 14, 2023 – EPA’s Notice of Availability (NOA) of the Draft SEIS published in the *Federal Register*
- May 2023 – Reclamation withdrew Draft SEIS
- October 27, 2023 – EPA’s NOA of the Revised Draft SEIS published in *Federal Register*
- **October 27-December 11, 2023 – Public Comment Period (45 days)**
- Spring 2024 – Final SEIS and Record of Decision



Revised Draft SEIS Public Comment Period

- We are seeking public feedback on:
 - ✓ Alternatives
 - ✓ Draft impacts/missing impacts
 - ✓ Other issues within scope of the document





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Alternatives Analyzed

Overview of Alternatives

Reclamation is proposing to modify and/or add to the following sections of the 2007 Interim Guidelines:

- Determination of Lake Mead Operation/Shortage Conditions (Section 2.D)
- Coordinated Reservoir Operations/Mid-Elevation Release Tier and Lower Elevation Balancing Tier (Section 6.C and 6.D)
- Implementation Guidelines/Mid-Year Review (Section 7.C)



Overview of Alternatives

- Alternatives include No Action Alternative and Lower Division Proposal
- Both alternatives present much lower risk of reaching critical elevations with updated modeling
- Lower Division Proposal is the Proposed Action
- For all operations, the Secretary reserves the right to operate Reclamation facilities to address extraordinary circumstances



No Action Alternative

- Current operations do not change
- Continued implementation through 2026:
 - ✓ 2007 Interim Guidelines for Operation of Lake Powell and Lake Mead
 - ✓ Minute 323 to the 1944 Water Treaty with Mexico including the Binational Water Scarcity Contingency Plan
 - ✓ 2019 Drought Contingency Plan (DCP) for the Lower Basin including DCP contributions by the Lower Division States
 - ✓ 2019 DCP for the Upper Basin



No Action Alternative – cont.

- Models operational changes for both Glen Canyon and Hoover Dams:

- ✓ Lower Basin Deliveries

- Total Lower Division States' shortages and DCP contributions according to priority of 200,000 acre-feet (af) below 1,090 feet up to 1.1 million acre-feet (maf) below 1,025 feet
- Shortages are distributed across Lower Basin water users according to priority

- ✓ Coordinated Reservoir Operations

- Below 3,575 feet at Lake Powell, release 8.23 or 7.48 maf (Mid-Elevation Release Tier) or balance releases between 7.0 and 9.0 maf (Lower Elevation Balancing Tier) depending on the operating tier and elevations at Lake Powell and Lake Mead

- ✓ Implementation Guidelines

- Mid-year review may adjust Lake Powell operations up or down or reduce shortages from Lake Mead (allow additional deliveries to Lower Basin water users)



Proposed Action

- Lower Basin Deliveries

- ✓ Same shortages and DCP contributions as No Action Alternative
- ✓ Additional total of 3.0 maf of SEIS conservation through 2026 with a minimum of 1.5 maf conserved by the end of operating year 2024

- Coordinated Reservoir Operations

- ✓ Same as the No Action Alternative, except releases could be as low as 6.0 maf if any minimum probable scenario in the 24-Month Study shows Lake Powell dropping below elevation 3,500 feet
- ✓ Sub-annual releases would comply with the LTEMP and would not drop below LTEMP minimum flows, with the goal of keeping the Lake Powell's elevation above 3,500 feet



Proposed Action – cont.

- Implementation Guidance

- ✓ If April minimum probable 24-Month Study indicates the end-of-year elevation in Lake Mead will fall below 1,025 feet, Lower Division States have 45 calendar days to propose an implementable plan to protect Lake Mead from reaching an elevation of 1,000 feet. If an acceptable plan is not developed, Reclamation may independently take action(s) to protect 1,000 feet at Lake Mead.



Alternatives Considered but Eliminated from Detailed Analysis

- Fill Lake Powell First
- Decommission Glen Canyon Dam or Operate for Run of the River
- Fill Lake Mead First
- One-Dam Alternative
- Evaporation, Seepage, and System Losses
- Ecosystem-Based Alternative
- Worst-Case Drought Alternative
- Hydropower Prioritization Alternative
- Importation of Water
- Action Alternatives 1 and 2 from original draft SEIS





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Operational Assumptions and Scenarios

Hydrologic Modeling Assumptions

Assumptions Common to all Alternatives

- Modeling performed in the Colorado River Mid-term Modeling System (CRMMS) - June 2023
- Modeling compares alternatives and impacts using a wide range of low-flow hydrologies, including conditions drier than those observed in the last 30 years (1991-2020)
- Glen Canyon Dam operating tiers and releases are consistent with 2007 Interim Guidelines
- Shortage volumes and DCP contributions are consistent with the 2007 Interim Guidelines and 2019 Lower Basin DCP
- Reductions and savings in Mexico will continue to be implemented per Minute 323



Hydrologic Modeling Assumptions

Assumptions for Proposed Action

- Operational changes for Glen Canyon Dam consistent with 2007 Interim Guidelines with the protection of 3,500 feet at Lake Powell
 - ✓ Below 3,575 feet at Lake Powell, releases could be as low as 6.0 maf while maintaining minimum LTEMP releases, with the goal of keeping the Lake Powell's elevation above 3,500 feet
- Additional 3.0 maf of Lower Division State SEIS conservation through 2026
 - ✓ The modeled 3.0 maf of SEIS conservation is a combination of system conservation and creation of ICS
 - ✓ Modeled system conservation volumes of 2,468 kaf for 2023-2026 were provided by the Lower Division States (consistent with the official June 2023 CRMMS, 665 kaf for 2023-2026 was modeled in the No Action Alternative)





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Analysis of Impacts

Resources Analyzed in Detail

- Air Quality
- Biological Resources
- Cultural Resources
- Environmental Justice
- Hydrologic Resources
- Hydropower
- Indian Trust Assets
- Paleontological Resources
- Recreation
- Socioeconomics
- Visual Resources
- Water Deliveries
- Water Quality

Potential Impacts of No Action

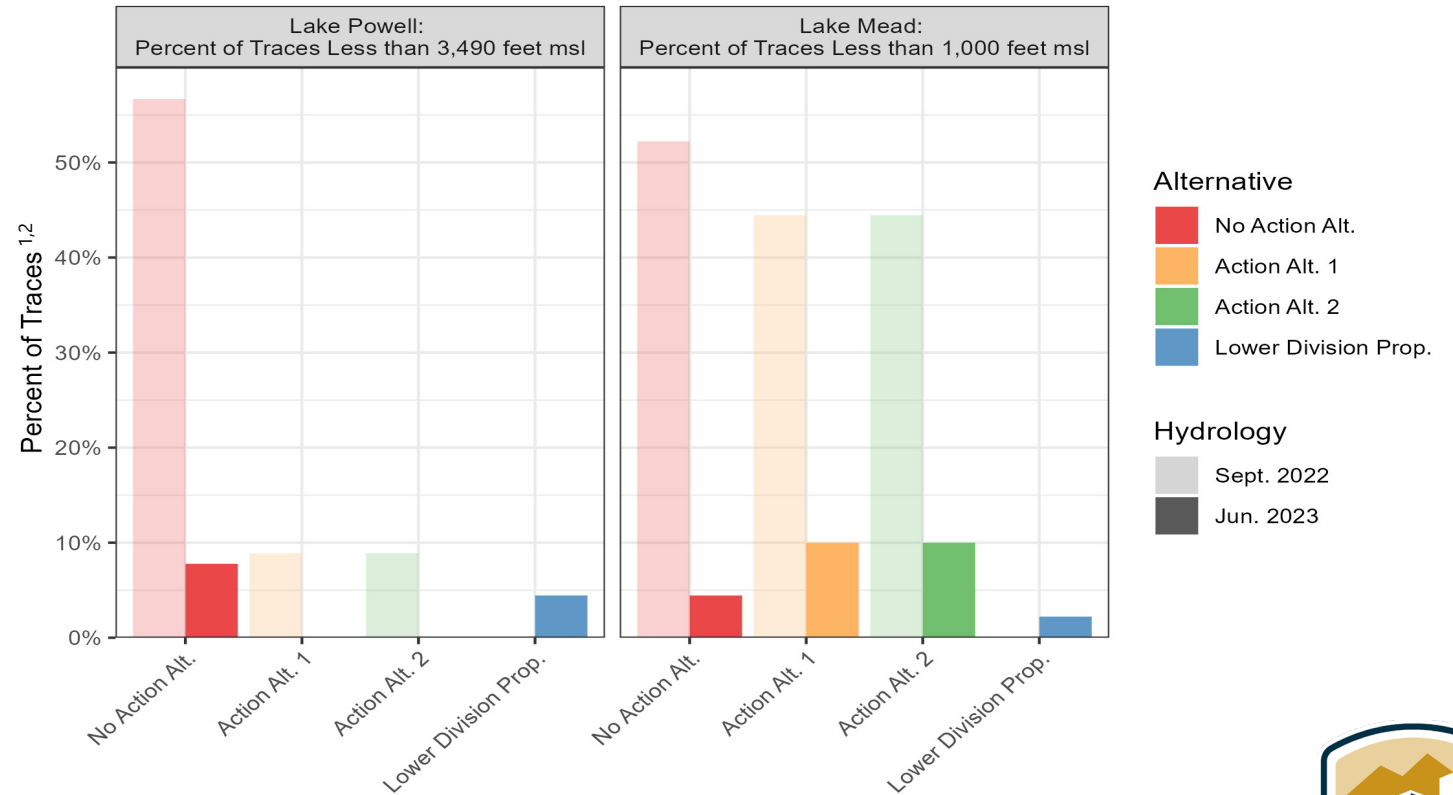
- Critically low elevations at Lake Powell and Lake Mead
- Water delivery and operations limitations
- Loss of hydropower production
- Flow limitations in the Grand Canyon
- Limited flows for ecological programs
- Reduced water availability to water users basin-wide
- U.S.-Mexico Water Treaty obligation



Hydrologic Resources

Reservoir Releases and Elevations

As a reminder, the revised Draft SEIS includes updated hydrology

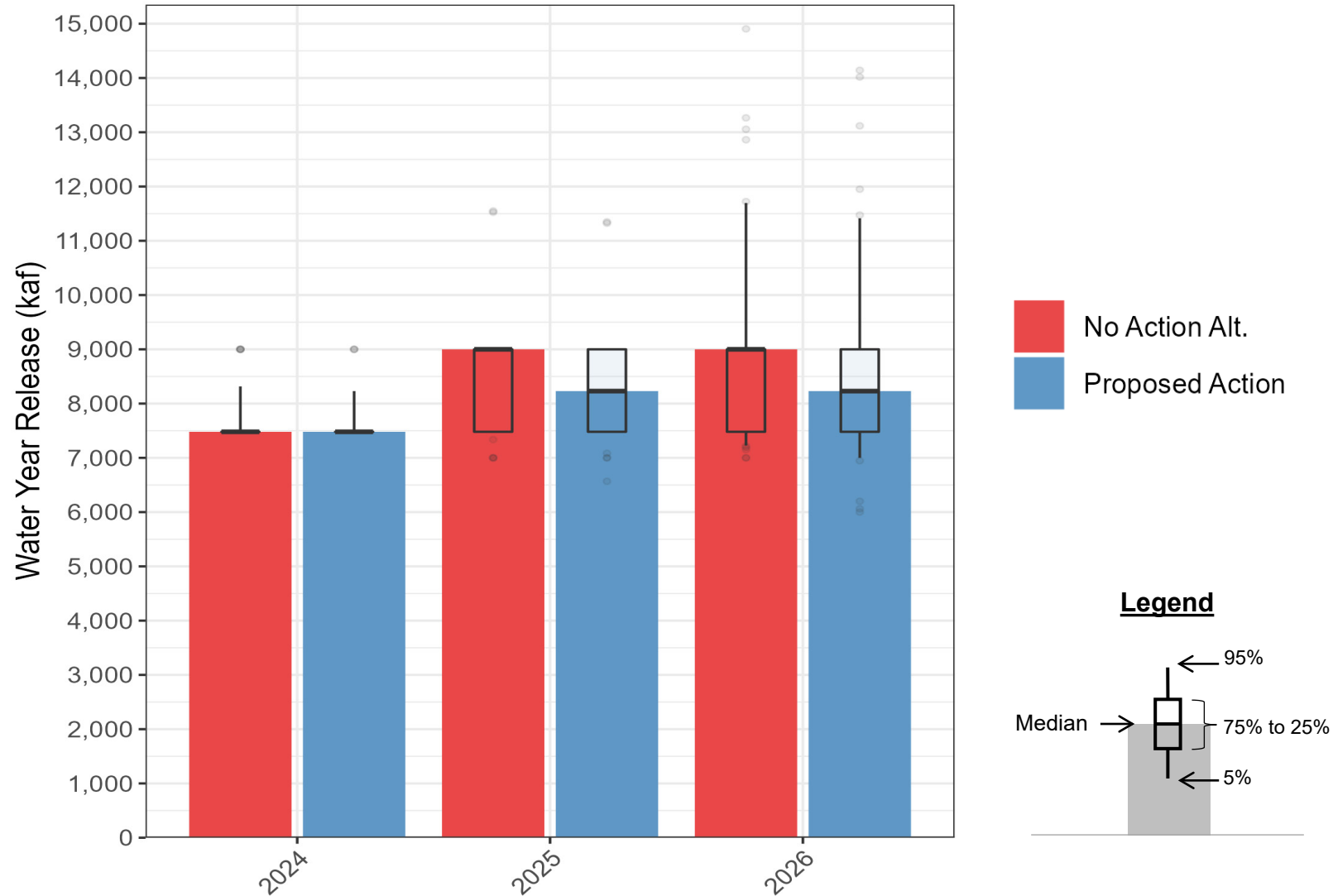


For more details on resource impacts, see Draft SEIS Chapter 3

¹No modeling was performed for the Lower Division Proposal using September 2022 conditions.
²No traces were modeled to drop below elevations 3,490 feet in Action Alt. 1 and 2 with June 2023 conditions.

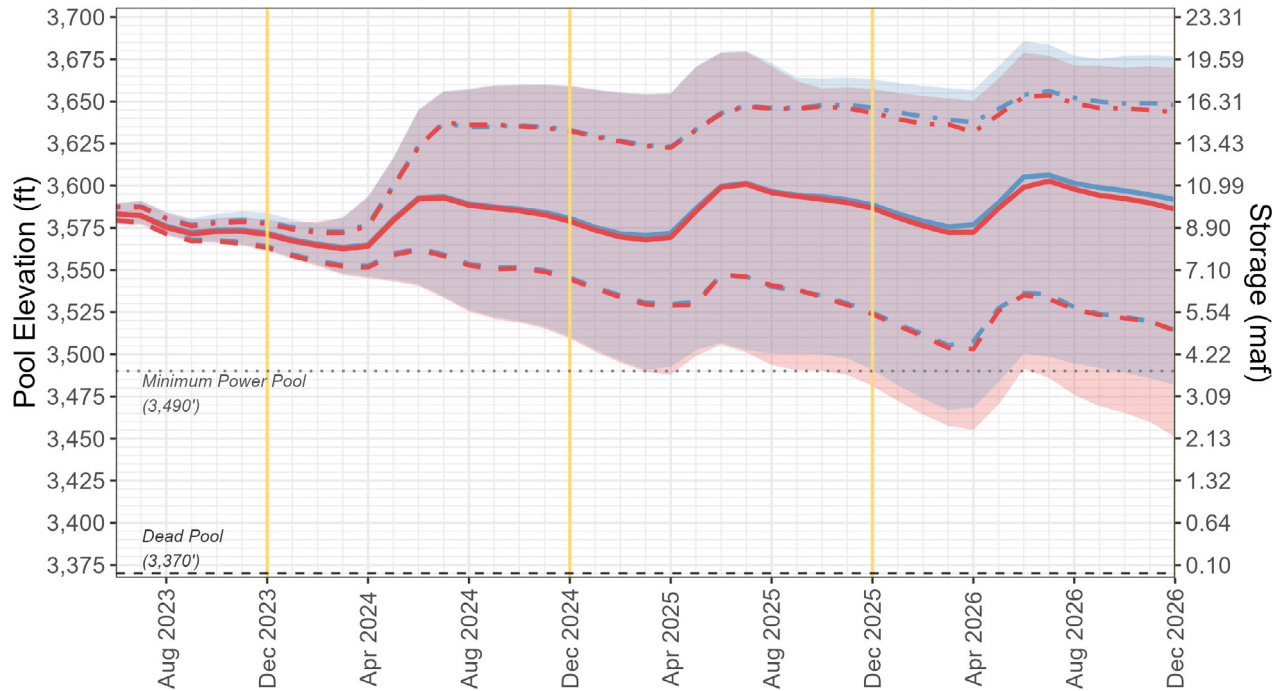


Glen Canyon Dam Water Year Releases

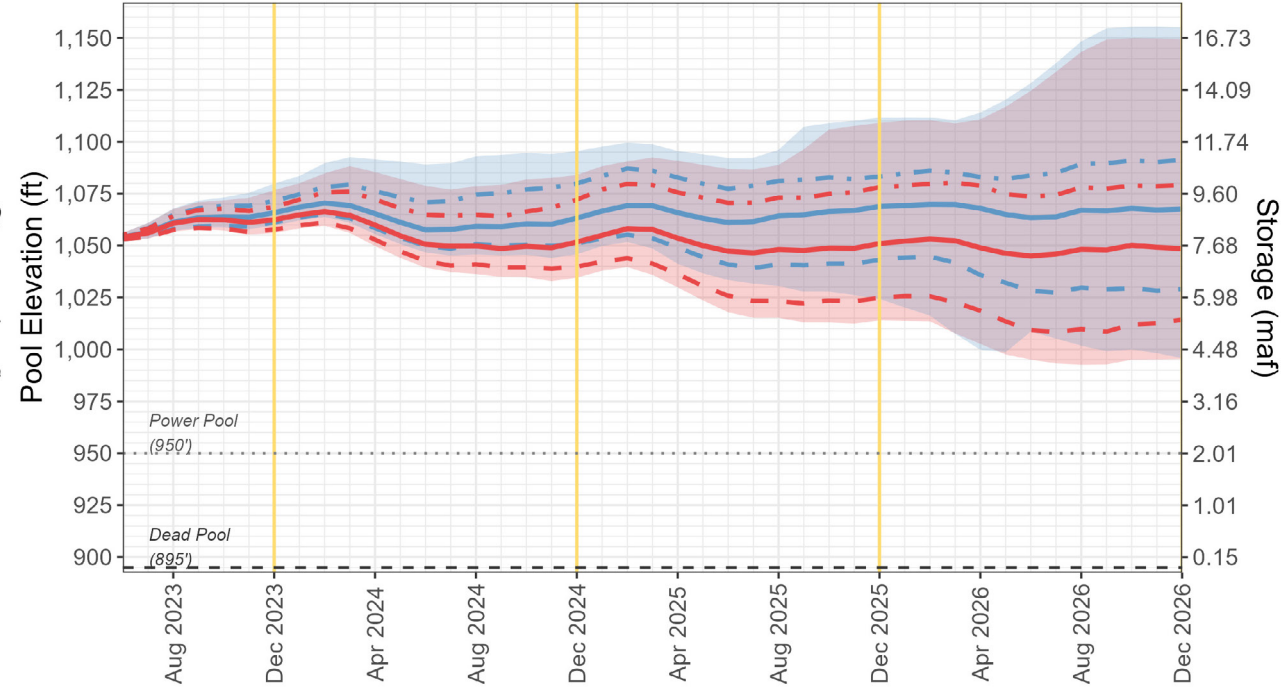


Reservoir Elevations

Lake Powell End-of-Month Pool Elevations



Lake Mead End-of-Month Pool Elevations



Percentile

- - - 10%
- 50%
- - - 90%

- No Action Alt.
- Proposed Action

Range

- No Action Alt. Range
- Proposed Action Range

*All statistics calculated are reflective of the hydrology scenarios and other assumptions used in modeling and they are not intended to be predictive. However, it is meaningful to compare statistics across alternatives to differentiate performance.



Example Streamflow Trace Analysis – 80% ESP of 1999-2002

- To illustrate the continued need, despite the good hydrology in 2023, Reclamation modeled plausible hydrological scenarios (an Ensemble Streamflow Prediction or ESP trace), using climate (temperature and precipitation) data from 1999 to 2002.
- This trace represents 2023 hydrology followed by 3 dry years.
- Reclamation modeled 80% of the 1999-2002 streamflow trace to provide a more conservative analysis.

Lake Powell Water Year (WY) Unregulated Inflow

	2024	2025	2026
% of Avg. (1991-2020)	63%	65%	27%
WY Volume (kaf)	6,020	6,260	2,620

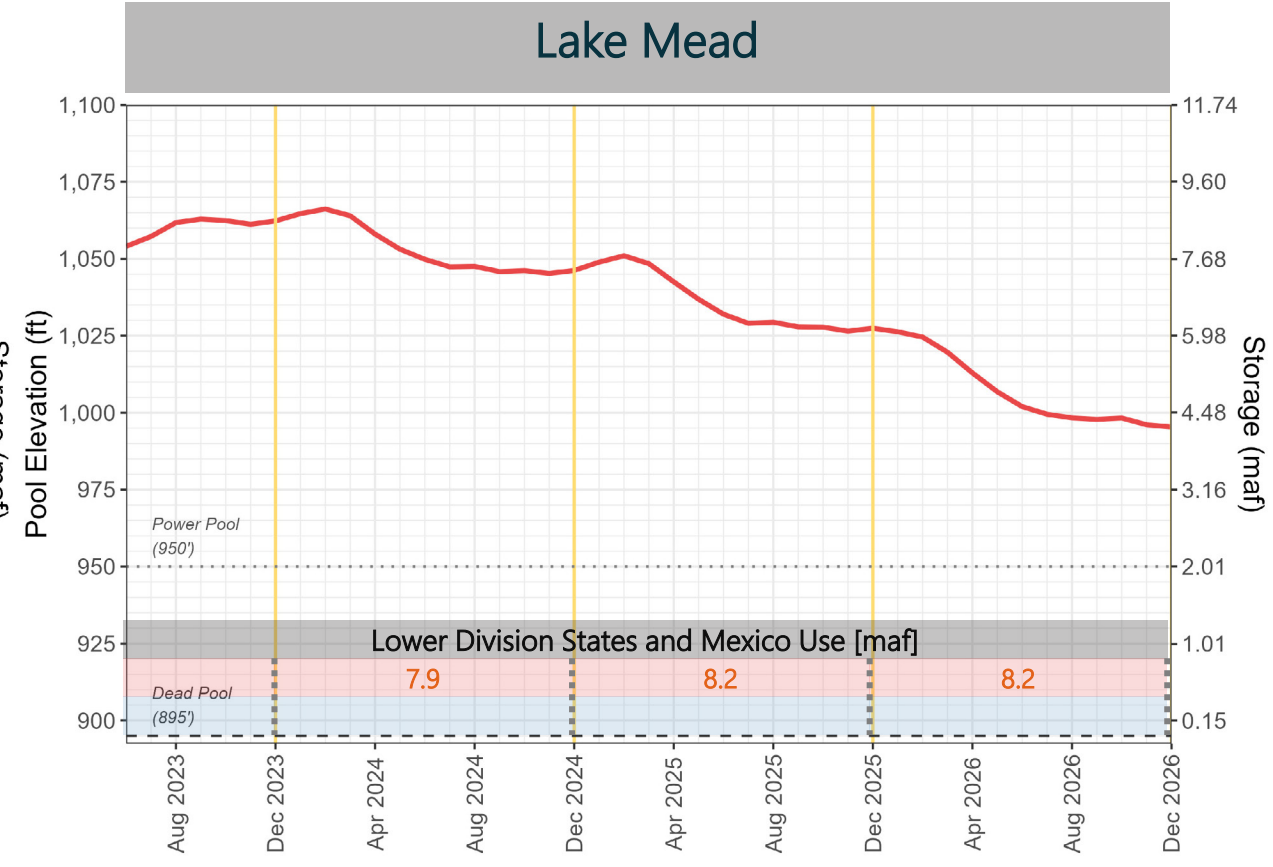
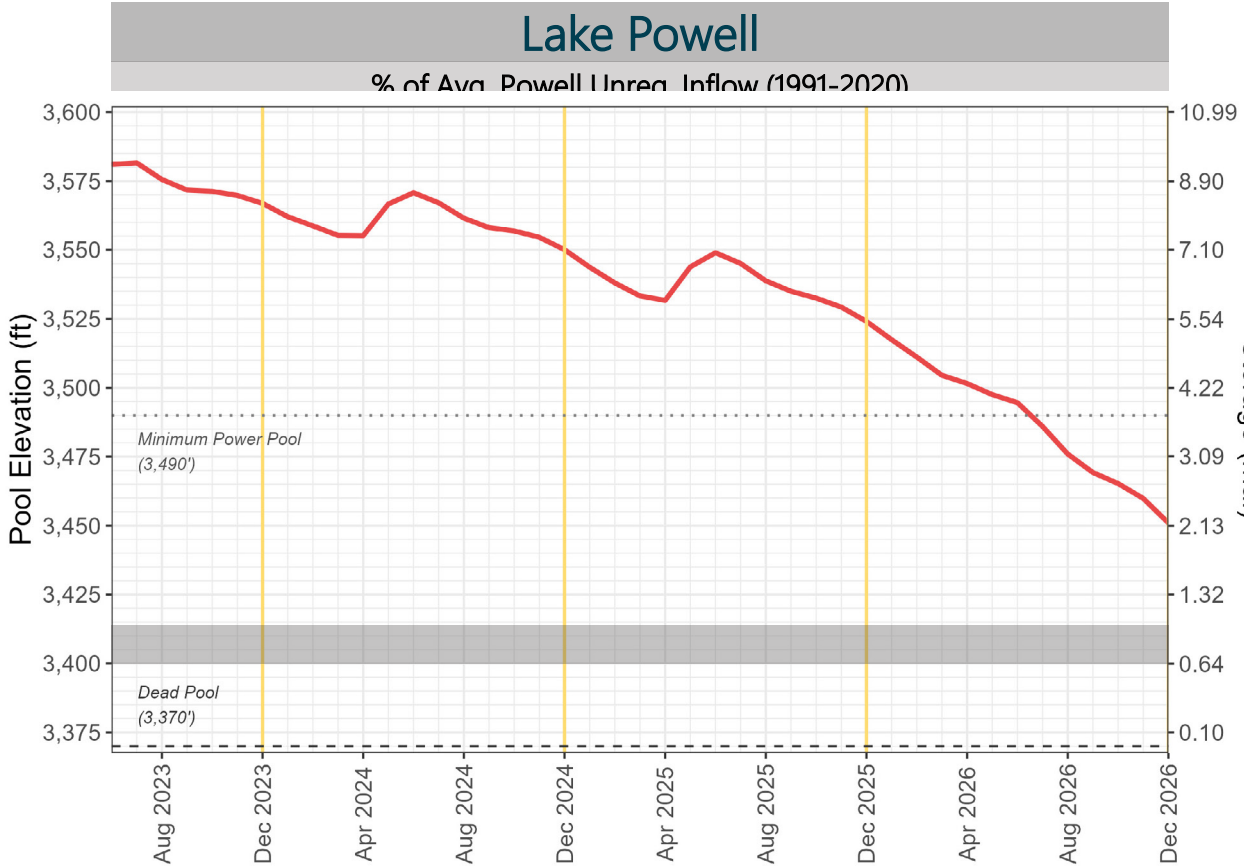
2024 and 2025 are similar to:
 2020 (5,850 kaf) &
 2022 (6,370 kaf)

2026 is similar to:
 2021 (3,500 kaf)



Example Streamflow Trace Analysis – 80% ESP of 1999-2002

End-of-Month Pool Elevation

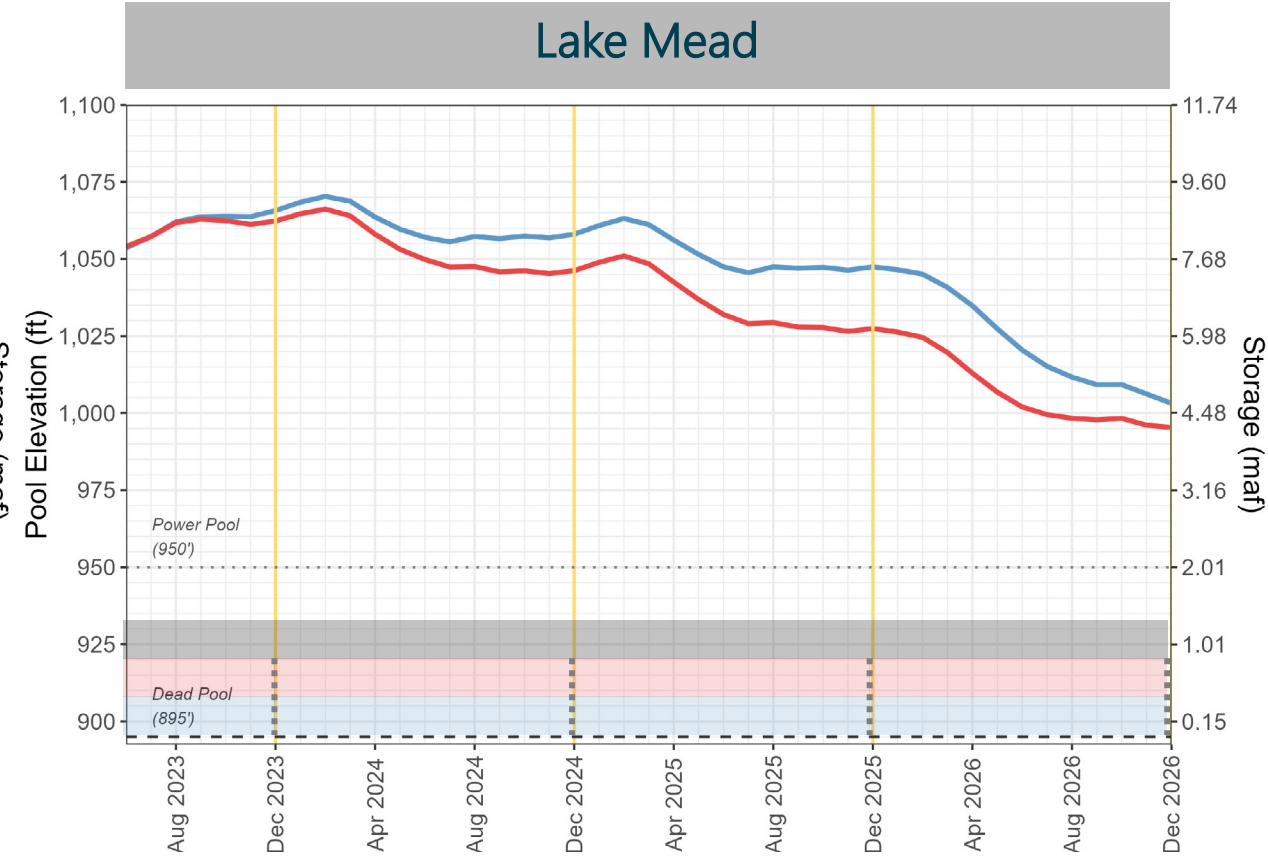
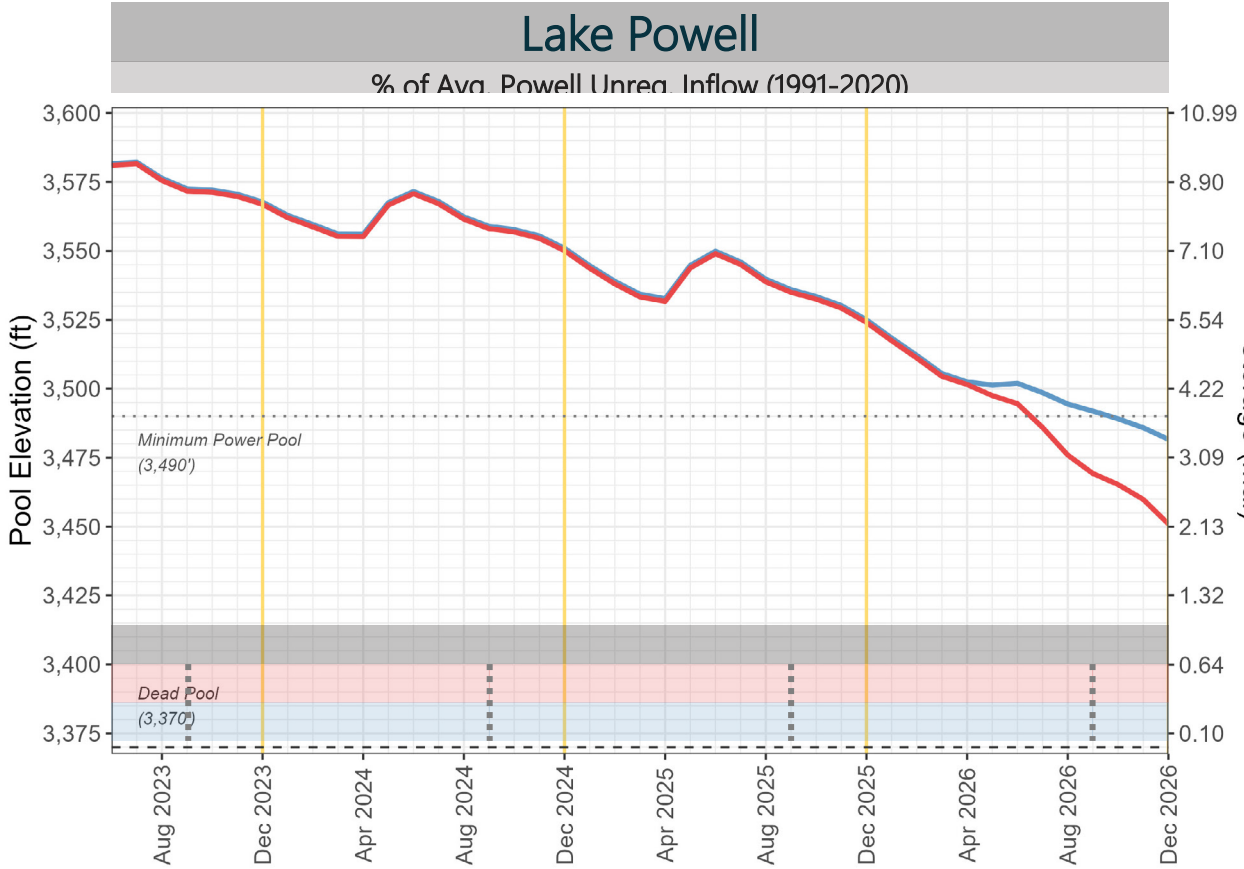


— No Action Alt.



Example Streamflow Trace Analysis – 80% ESP of 1999-2002

End-of-Month Pool Elevation

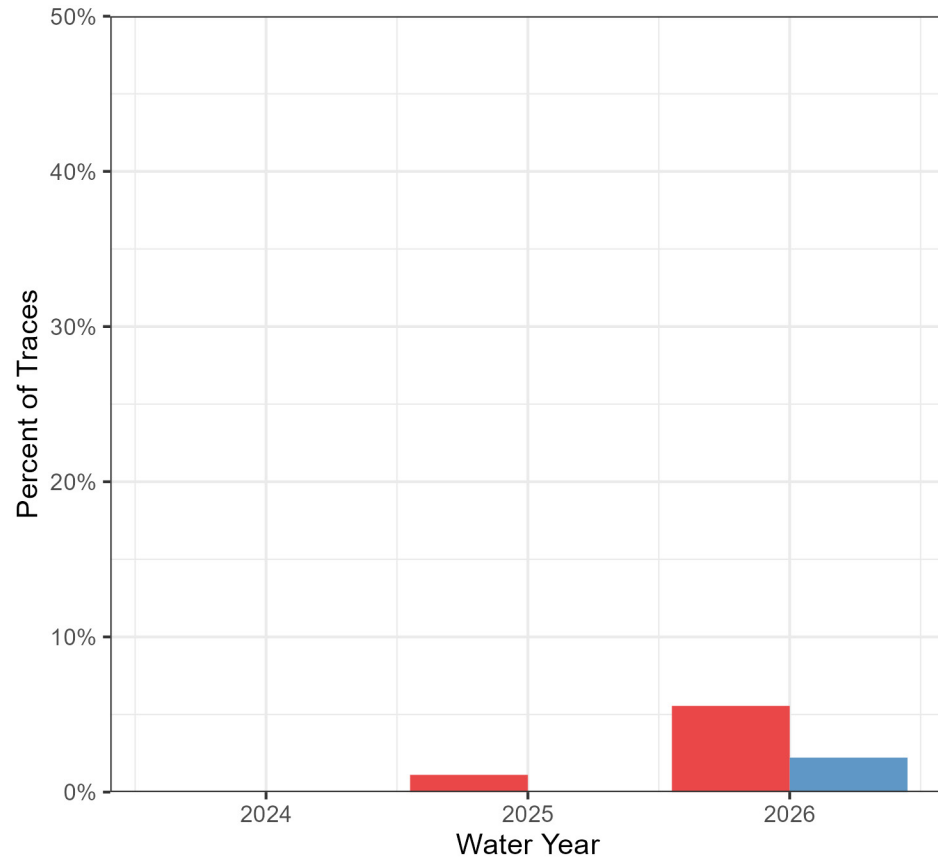


- No Action Alt.
- Proposed Action

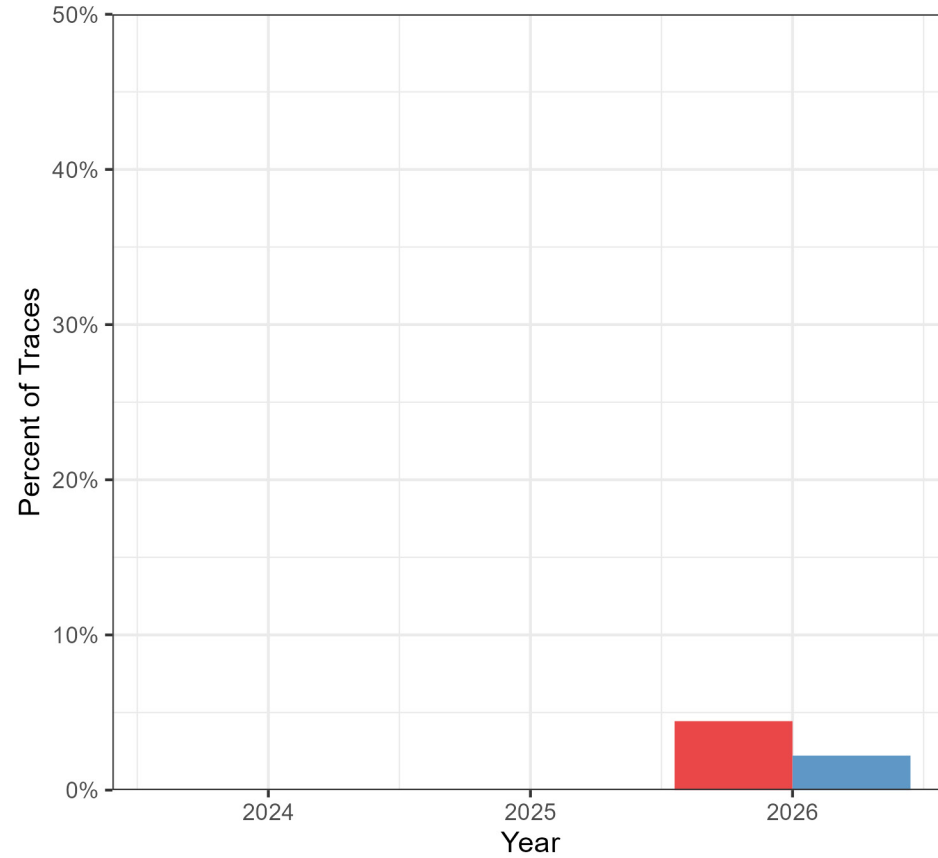




Reservoir Elevations

Lake Powell Minimum Water Year Elevation Percent of Traces Less than Elevation 3,490 feet



Lake Mead Minimum Annual Elevation Percent of Traces Less than Elevation 1,000 feet



 No Action Alt.
 Proposed Action

*All statistics calculated are reflective of the hydrology scenarios and other assumptions used in modeling and they are not intended to be predictive. However, it is meaningful to compare statistics across alternatives to differentiate performance.

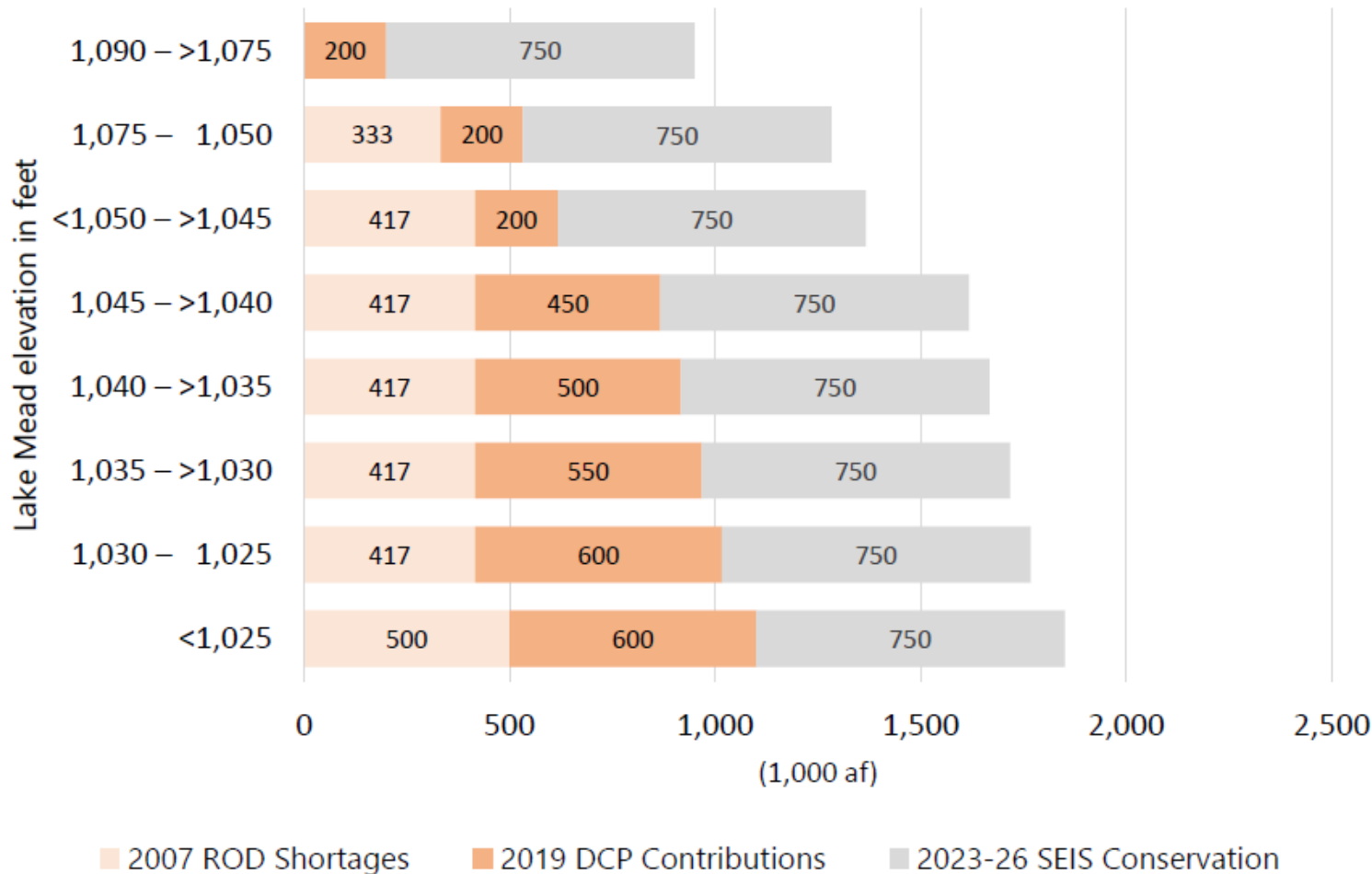


Water Deliveries

- Total Water Deliveries to Lower Division States
- Deliveries to Mexico



Modeled Lower Division States' Shortages, DCP Contributions, and Estimated SEIS Conservation, Proposed Action (2023-2026)



Estimated annual SEIS conservation volumes in this table are used for comparative analysis purposes only and do not represent annual commitments by each state.

Actual SEIS conservation by state may vary each year such that collectively a total of 3.0 maf of SEIS conservation would occur through 2026.



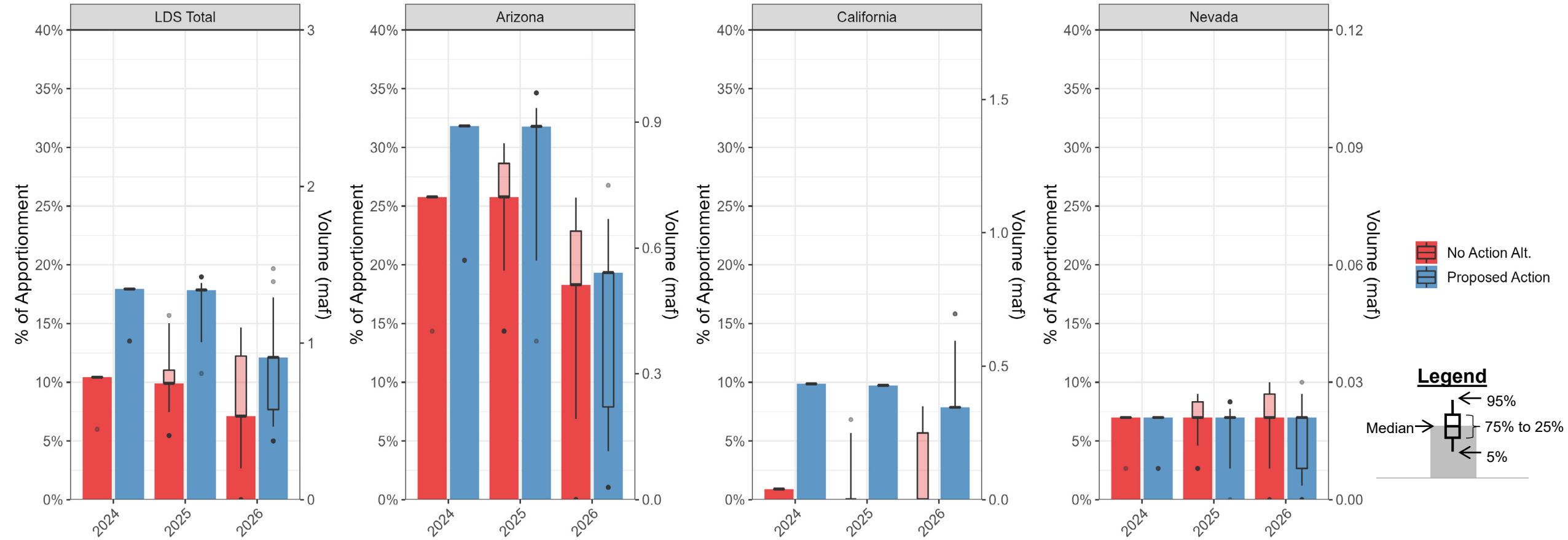
Lower Division States' Shortages, DCP Contributions, and SEIS Conservation by State, Proposed Action (2023-2026)

Lake Mead Elevation (feet)	2007 ROD Shortages + 2019 DCP Contributions (1,000 af)				Proposed Action Modeled SEIS Conservation (1,000 af)*				Total ROD Shortages + DCP Contributions + SEIS Conservation (1,000 af)			
	AZ	NV	CA	Total	AZ	NV	CA	Total	AZ	NV	CA	Total
1,090 – >1,075	192	8	0	200	280	70	400	750	472	78	400	950
1,075 – 1,050	512	21	0	533					792	91	400	1,283
<1,050 – >1,045	592	25	0	617					872	95	400	1,367
1,045 – >1,040	640	27	200	867					920	97	600	1,617
1,040 – >1,035	640	27	250	917					920	97	650	1,667
1,035 – >1,030	640	27	300	967					920	97	700	1,717
1,030 – 1,025	640	27	350	1,017					920	97	750	1,767
<1,025	720	30	350	1,100					1,000	100	750	1,850

*Estimated annual SEIS conservation volumes in this table are used for comparative analysis purposes only and do not represent annual commitments by each state. Actual SEIS conservation by state may vary each year such that collectively a total of 3.0 maf of SEIS conservation would occur through 2026.



Distribution of Lower Division States Shortages, DCP Contributions, and System Conservation



Deliveries to Mexico

- The Revised Draft SEIS does not affect Mexico's allotments.
- Water deliveries to Mexico are set according to 1944 Water Treaty and Minute 323.
- Mexico can create water for or take delivery from Mexico's Water Reserve. The Water Reserve can be converted into Mexico's Recoverable Water Savings, which offset savings contributions when Lake Mead is at low elevations.
- The Proposed Action affects projected Lake Mead elevations – these differences could result in different modeled reductions and recoverable savings for Mexico.



Summary of Hydrologic and Water Delivery Modeling

- Potential for continued low runoff conditions in the Colorado River Basin could lead Lake Powell and Lake Mead to decline to critically low elevations.
- In the Proposed Action, the chances of falling to critical elevations through 2026 are reduced.
 - ✓ To achieve this, a combination of reduced releases from Lake Powell to protect 3,500 feet and Lower Basin SEIS conservation up to 3.0 maf are needed.
- The Proposed Action does not impose additional mandatory shortage reductions on water users through 2026.



Biological Resources

- Vegetation
- Wildlife
- Special-Status Species



Cultural Resources

- Archaeological sites around reservoirs
- Archaeological sites along the river
- Native American Traditional Cultural Properties (TCPs) and resources of concern



Recreation

- Recreation at Lake Powell
- Recreation from Glen Canyon to Lake Mead (downstream of Lake Powell)
- Recreation at Lake Mead
- Recreation from Hoover Dam to Southern International Boundary (downstream of Lake Mead)



Socioeconomics

- Agriculture
- Recreation
- Municipal and Industrial Uses



Indian Trust Assets

- Water Rights and Trust Lands
- Cultural and Biological Resources



For More Information

- Project Website:
<https://www.usbr.gov/ColoradoRiverBasin/SEIS.html>
- Revised Draft SEIS is posted on the Project Website
 - ✓ Paper copies are located at the Lower Colorado Basin and Upper Colorado Basin Regional Offices and at area offices in the Colorado River Basin.
- Send Questions to: CRInterimops@usbr.gov
- Call the Project Telephone Line: **(602) 609-6739**



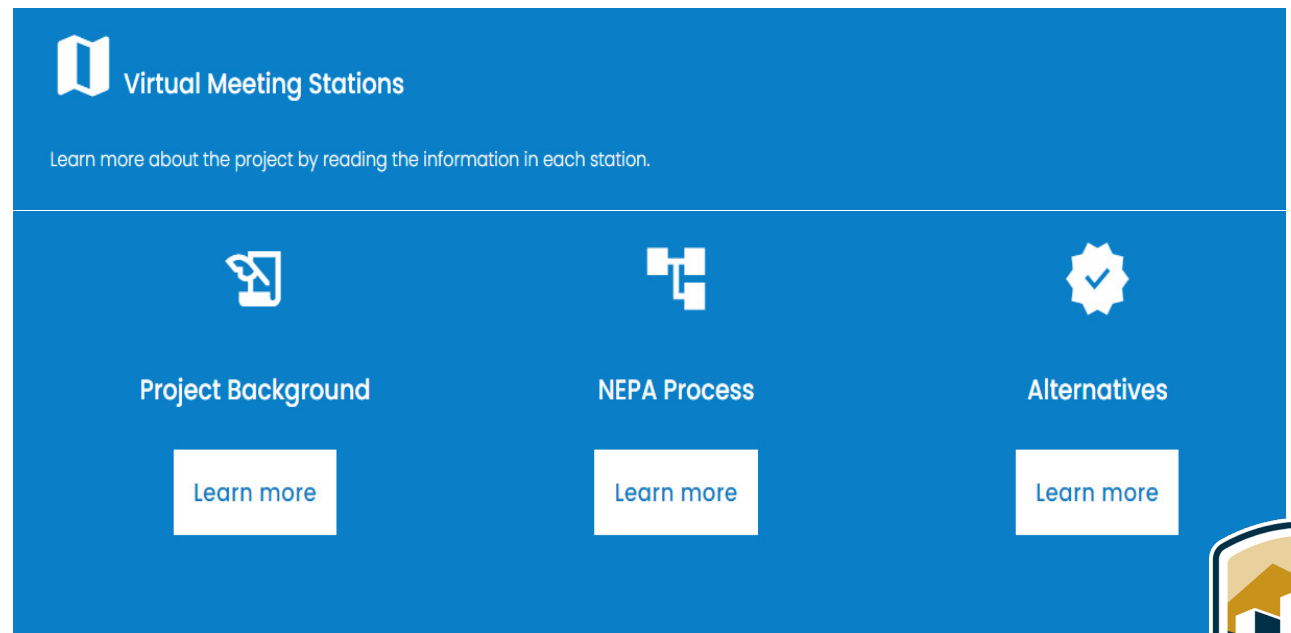


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More Information and Public Comment Opportunities

Interactive Webpage for More Information

- Interactive webpage with background information and summaries of the Revised Draft SEIS alternatives and analyses:
<https://www.swcavirtualpublicinvolvement.com/seis-near-term-operations>
- Scroll down to the blue section and click on topics to explore background information.



Ways to Comment

Comments should be submitted by
December 11, 2023

- Webform via the Project Website:

<https://www.usbr.gov/ColoradoRiverBasin/SEIS.html>

- Send an Email: **CRinterimops@usbr.gov**

- Telephone Message: **(602) 609-6739**

- By Mail to:

**Reclamation 2007 Interim Guidelines SEIS Project Manager
Upper Colorado Basin Region
125 South State Street, Suite 8100
Salt Lake City, Utah 84138**





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Clarifying Questions for Presenters

Q&A Guidelines

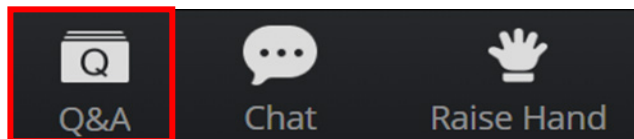
- This is a period to ask clarifying questions about the presentation. Questions are not part of the official record.
- Please keep questions as focused and brief as possible so we have time to answer as many questions as we can.



Q&A

To ask a question from Zoom

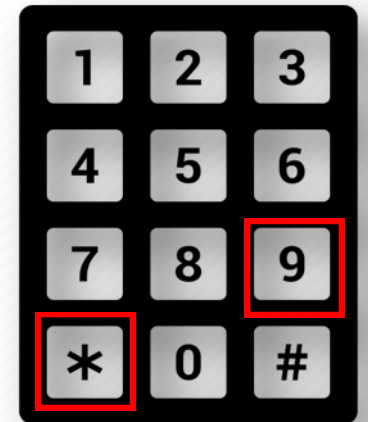
- Click the Q&A button
- A box will pop up
- Type your question
- Click send
- Question may be responded to live or in the Q&A box



To ask a question from the phone

- Press * 9 to raise hand
- Facilitator will call your number
- Press * 6 to unmute to speak

Telephone



Additional Questions?

Send Questions to: CRInterimops@usbr.gov

Call the Project Telephone line: (602) 609-6739

Or attend future Public Meeting:

- Friday, November 17, 2023, at 12:00 – 1:30 p.m. Mountain Time





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Thank you for joining us!

For more information

visit: <https://www.usbr.gov/ColoradoRiverBasin/SEIS.html>

Submit comments by **December 11, 2023**,
to: CRinterimops@usbr.gov