Metropolitan Water District of Southern California

Colorado River Workshop

Item 6a/6b
August 9, 2022
Key Agreements
Colorado River is Highly Regulated

Key Agreements
Key Agreements

Colorado River Compact (1922)

Divides right to use Colorado River water between the Upper and Lower Basins in perpetuity

Apportions 7.5 million acre-feet (maf) of annual use to both the Lower Basin and Upper Basin

Recognizes the Lower Basin’s right to develop an additional 1 maf annually

Anticipated the treaty with Mexico (1944)
Upper Basin Differences

- The Secretary of the Interior is not the water master in the Upper Basin.
- The Upper Basin’s allocation is divided among the Upper Division States on the basis of percentage of native flow instead of a volumetric limit.
- Hydrologic shortages are common in the Upper Basin because water users mostly take water out of the river and tributaries rather than out of reservoir storage.
Art. III (d) Non-Depletion Obligation

- The Upper Division States will not cause the flow of river at Lee Ferry to be depleted below an aggregate of 75 MAF for any ten-year period.
- The meaning of this provision is unsettled.
- However, since the adoption of the Long-Range Operating Criteria in 1970, the Upper Division States’ obligation has been met and demonstrated through annual releases from Lake Powell to the Lower Basin.
“Prior Perfected” and “Present Perfected” Water Rights

- Excludes water rights perfected prior to November 24, 1922 from curtailment to meet non-depletion obligation.
- Provides that present perfected rights to beneficial uses existing at the time of the Compact are “unimpaired”. (Art VIII Colorado River Compact)
- Lower Basin Present Perfected Rights were adjudicated and settled by the U.S. Supreme Court in AZ v. CA.
Mexico Treaty Delivery Provisions

- Surplus water first
- If surplus water is unavailable then, equally from Upper Basin and the Lower Basin
  - Whenever necessary the Upper Division States deliver water to supply one-half of the deficiency
1944 Water Treaty with Mexico and Related Minutes
The Colorado River is a Binational River.
TREATY SERIES 994

UTILIZATION OF WATERS OF THE COLORADO AND TIJUANA RIVERS AND OF THE RIO GRANDE

TREATY BETWEEN THE UNITED STATES OF AMERICA AND MEXICO

Signed at Washington February 5, 1944
AND
PROTOCOL

Signed at Washington November 14, 1944.

Satisfaction accorded by the Senate of the United States of America April 26, 1946, subject to certain understandings.

Notified by the President of the United States of America November 11, 1946, subject to said understandings.

Notified by Mexico October 26, 1946.

Ratifications exchanged at Washington November 8, 1946.

Pursuant to the President of the United States of America November 25, 1946, subject to said understandings.

Effective November 8, 1941.

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON 1944
A Decade of Cooperation with Mexico

Minute 317 – Binational Cooperation

Minute 318 – Emergency Response to Earthquake

Minute 319 – Surplus and Shortage Sharing

Minute 323 – Extended and Expanded 319
Treaty with Mexico and Related Minutes

Highlights

Binational Water Scarcity Contingency Plan

Intentionally Created Mexican Allocation

U.S. Funds for Conservation Projects in Mexico

Support for Environmental Projects

Future Binational Projects
Binational Cooperation is Essential to Protect the Colorado River System

A Future Minute is Necessary
Metropolitan’s CRA Supplies
Base Supply

Transfers and Supply Programs

CR Surplus Supplies

Borrowed Water

Pre-QSA: Fill CRA with surplus Colorado River Supplies

Post-Quantification Settlement Agreement (QSA): Augment CRA with Transfer and Exchange Supplies

August 9, 2022

Special Board Meeting

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Lake Mead End-of-Year Storage Balance

*Metropolitan’s Estimated End-of-Year Storage in Lake Mead

August 9, 2022
Recent Drought Severity
Large Storage Volumes in Lakes Powell and Mead Have Historically Buffered Flow Variability

Lake Powell Has 15 Years Since 2000 with Inflow Below Historical Median

Historical Median Since 1964

Inflow Into Lake Powell (Million Acre Feet)

August 9, 2022

Special Board Meeting
Past Cooperative Efforts to Protect Lake Mead

Theoretical Mead Elevation without Conservation Efforts

Actual Lake Mead Elevation

Level 1 Shortage Condition

Level 2 Shortage Condition

Level 3 Shortage Condition

~65 ft

6 Years


Lake Mead Elevation

975 1,000 1,025 1,050 1,075 1,100 1,125 1,150

August 9, 2022

Special Board Meeting

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Decreased Runoff Efficiency Since the Drought Contingency Plan

Recent Drought Severity

<table>
<thead>
<tr>
<th>Year</th>
<th>Precipitation (% Average)</th>
<th>Runoff (% Median)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>81%</td>
<td>57%</td>
</tr>
<tr>
<td>2021</td>
<td>84%</td>
<td>37%</td>
</tr>
<tr>
<td>2022</td>
<td>91%</td>
<td>58%</td>
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</tbody>
</table>
Probability of Lake Mead Elevation
Less than 1,020’ in any month

Occurrence

Current Risk
Risk at time of DCP Approval (March 2019)
Lake Mead Elevation Forecast Shows CA DCP Contributions

- Actual Historical Pool Elevation
- Most Probable - July 2022 CRMMS-ESP Projection

Trigger Levels:
- Level 1 Shortage Condition: 1,075 ft
- Level 2 Shortage Condition: 1,045 ft
- Level 3 Shortage Condition: 1,015 ft

California DCP Contributions:
- Trigger: 200 TAF
- Trigger: 250 TAF
- Trigger: 300 TAF
- Trigger: 350 TAF

January 2020 to January 2025
Recent Drought Responses
Drought Contingency Plan (2019)

Recent Drought Responses

Efforts to Keep Reservoirs Above Critical Elevations

- Lower Division States AZ, CA and NV agreed to store water in Lake Mead at specific reservoir elevations – DCP Contributions
- Upper Division States CO, WY, NM and UT entered agreement for releases of water from reservoirs upstream of Lake Powell – DROA releases
Recent Drought Responses

Actions to Protect Lake Powell & Lake Mead (2022)

• The Lower Division States and Reclamation entered into an MOU to add or retain 500,000 acre-feet of water in Lake Mead in both 2022 and 2023 in an effort known as the “500+ Plan”
  • Metropolitan entered into the 500+ Plan for California

• Lake Powell Protection:
  • 500,000 acre-feet will be released from Flaming Gorge to Lake Powell;
  • Combined with a reduction in Glen Canyon Dam’s annual release volume from 7.48 maf to 7.0 maf in WY2022
  • These changes are “operationally neutral” for 2023 Tier Determination
Protection Volumes

- The Bureau of Reclamation Commissioner identified the need for Colorado River Basin water users to reduce their use by 2-4 maf of water per year.
- The Commissioner stated that the Department of Interior (DOI) has the authority to act unilaterally and will protect the system if consensus cannot be reached.
- DOI is working with States, Tribes, and others to reach a consensus about how to protect critical reservoir elevations.
## Shortages and DCP Contribution Table

(in thousand acre-feet)

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<tr>
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<tbody>
<tr>
<td></td>
<td>AZ</td>
<td>NV</td>
<td>AZ</td>
</tr>
<tr>
<td>At or below 1,090 and above 1,075</td>
<td>0</td>
<td>0</td>
<td>192</td>
</tr>
<tr>
<td>At or below 1,075 and at or above 1,050</td>
<td>320</td>
<td>13</td>
<td>192</td>
</tr>
<tr>
<td>Below 1,050 and above 1,045</td>
<td>400</td>
<td>17</td>
<td>192</td>
</tr>
<tr>
<td>At or below 1,045 and above 1,040</td>
<td>400</td>
<td>17</td>
<td>240</td>
</tr>
<tr>
<td>At or below 1,040 and above 1,035</td>
<td>400</td>
<td>17</td>
<td>240</td>
</tr>
<tr>
<td>At or below 1,035 and above 1,030</td>
<td>400</td>
<td>17</td>
<td>240</td>
</tr>
<tr>
<td>At or below 1,030 and at or above 1,025</td>
<td>400</td>
<td>17</td>
<td>240</td>
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<tr>
<td>Below 1,025</td>
<td>480</td>
<td>20</td>
<td>240</td>
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Lake Mead Reaches Critical Elevations Within the Next Few Years Without Additional Actions

<table>
<thead>
<tr>
<th>% of Average Inflow to Lake Powell</th>
<th>2023</th>
<th>2024</th>
<th>2025</th>
<th>2026</th>
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<tr>
<td>Greater than 95%</td>
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<tr>
<td>95%-80%</td>
<td></td>
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<tr>
<td>79% - 64%</td>
<td></td>
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<tr>
<td>Average Annual Conservation 1.3 MAF</td>
<td></td>
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<tr>
<td>63% - 50%</td>
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<td>Average Annual Conservation 2.7 MAF</td>
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<tr>
<td>Less than 50%</td>
<td></td>
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<tr>
<td>Average Annual Conservation 3.5 MAF</td>
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- Lake Mead > 1,020
- 1,020 > Lake Mead > 1,000
- 1,000 > Lake Mead > Dead Pool
- Lake Mead Reaches Dead Pool
Negotiations to Reduce Use of Colorado River Water

- Metropolitan is in difficult negotiations with other Colorado River users in California and across the Lower Basin on how to reduce water uses to meet the Commissioner’s call for 2-4 maf of reductions.

- Every type of water user could be affected, including urban and agricultural uses.

- The Secretary of the Dept of Interior could use authority to unilaterally reduce water use as early as next year.
Recent Drought Responses

2023 Drought Responses

Impacts on Metropolitan’s Colorado River Supply

• Metropolitan staff are working hard to protect our Colorado River supply in negotiations with other water users.

• However, due to reservoir conditions Metropolitan may have to take action to reduce use of Colorado River water as early as next year.

• If the water users don’t reach agreement to reduce uses, the Bureau of Reclamation may take action to reduce uses in 2023.
Next Steps

- Seek input from the Board later in this workshop
- Keep the Board updated on developments
- If a tentative agreement is reached, bring to the Board for input and approval
- Reach final agreement with Basin State partners