Near-Term Risks: Options to Address Declining Reservoirs

Thomas W. McCann
December 12, 2013
2007 Guidelines

- Lower Basin apportionments are reduced when Lake Mead falls below specified elevations:

<table>
<thead>
<tr>
<th>Elevation</th>
<th>Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1075’</td>
<td>333,000 AF</td>
</tr>
<tr>
<td>1050’</td>
<td>417,000 AF</td>
</tr>
<tr>
<td>1025’</td>
<td>500,000 AF</td>
</tr>
</tbody>
</table>

- If Lake Mead is projected to fall below 1000’, the Secretary will consult with Basin States to discuss further measures.
Shortage Sharing

- Arizona and Nevada share Lower Basin shortages under the 2007 Guidelines
- Mexico voluntarily agreed in Minute 319 to accept reductions in its deliveries at the same elevations

<table>
<thead>
<tr>
<th>Lake Mead Elevation</th>
<th>Arizona Reduction</th>
<th>Nevada Reduction</th>
<th>Mexico Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1075’</td>
<td>320,000 AF</td>
<td>13,000 AF</td>
<td>50,000 AF</td>
</tr>
<tr>
<td>1050’</td>
<td>400,000 AF</td>
<td>17,000 AF</td>
<td>70,000 AF</td>
</tr>
<tr>
<td>1025’</td>
<td>480,000 AF</td>
<td>20,000 AF</td>
<td>125,000 AF</td>
</tr>
</tbody>
</table>

- No reductions to California under 2007 Guidelines
2016 Level 1 Shortage

- Ag Pool (Shorted): 245,000
- Ag Pool: 155,000
- NIA Priority: 215,000
- Indian Priority: 317,000
- M&I Priority: 465,000
- Priority 3: 68,400

- Other Excess (Shorted): 75,000

- CAP Delivery Priority:
  - Low: 1.5 MAF
  - Medium: 1.0 MAF
  - High: 0.5 MAF
  - Critical: 0 MAF
Lake Mead Elevation Since 2000

January 2000
91% Active Storage

12.52 MAF Release
WY 2011

Projected 24 Month
8.23 MAF Releases
First Shortage Tier
Water Budget at Lake Mead

- Inflow
  (release from Powell + side inflows) = 9.0 maf

- Outflow
  (AZ, CA, NV, and Mexico delivery + downstream regulation and gains/losses) = -9.6 maf

- Mead evaporation losses = -0.6 maf

- Balance = -1.2 maf

Given basic apportionments in the Lower Basin, the allotment to Mexico, and an 8.23 maf release from Lake Powell, Lake Mead storage declines about 12 feet each year.
Lake Mead Elevation Since 2000

January 2000
91% Active Storage

12.52 MAF Release
WY 2011

12.23 MAF Releases

First Shortage Tier

Hydrology

Structural
Deficit
Collision Course

- Lower Basin depends on equalization releases from Lake Powell to sustain level of Lake Mead
- Upper Basin wants to maximize storage in Lake Powell to protect existing and planned uses
- Under the 2007 Guidelines, the equalization elevation goes up every year
  - By 2026, equalization will only occur when Lake Powell is at 3666’ (approx. 80% full)
- Unless there is a concerted effort to “bend the curve,” it will be very difficult to reach agreement on new guidelines
“Bending the Curve”

- Requires significantly reducing or eliminating the structural deficit in the Lower Basin
- Benefits accrue to both Upper and Lower Basins
- Ultimately, there are only three ways to slow the decline of Upper and Lower Basin reservoirs:
  - Reduce system losses
  - Reduce demand
  - Augment supply
Collaboration Required

- Strong history within the basin of working together to reach agreement when needed
  - 2001 Interim Surplus Guidelines
  - 2007 Interim Guidelines
  - Minute 319
- Creative models developed to fund projects
  - Brock Reservoir
  - YDP pilot run
- Collaborative, consensus solutions are better than those imposed by administrative, legislative or judicial fiat
Questions?