Lake Mead’s elevation has dropped more than 100 feet since 2000
Lower Basin Drought Impacts

- Critical Mead Elevations
  - Water Quantity
    - 2007 Interim Guidelines Shortages
    - Worst Case
    - Nevada’s Ability to Deliver Water
    - Delivery Constraints at Glen Canyon Dam
  - Water Quality
  - Power Generation at Hoover Dam
- ICS Benefits to Mead Elevations
The Basin States developed a framework to manage shortages, utilizing Lake Mead water elevations as triggers.

**Nevada/Arizona’s share of Colorado River shortages**

- **1,075 ft.**
  - Nevada: 13,000 af / Arizona: 320,000 af

- **1,050 ft.**
  - Nevada: 17,000 af / Arizona: 400,000 af

- **1,025 ft.**
  - Nevada: 20,000 af / Arizona: 480,000 af
  - *Initiate reconsultation for shortage below 1,025 ft.*
Lake Mead Elevation Projections

- **Representation of Ongoing Drought**
- **August 24-Month Study**
  - *(7.48 MAF release in 2014 and 2015)*

**Shortage Conditions Begin**

**Elevation of Intake 1**
• Powell’s release becomes constrained below elevation 3,490 because only the bypass tubes are available to deliver water

<table>
<thead>
<tr>
<th>Powell Elevation</th>
<th>Maximum Annual Delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>3490</td>
<td>10,599,360.00</td>
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<tr>
<td>3480</td>
<td>10,483,520.00</td>
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<td>3470</td>
<td>10,193,920.00</td>
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<tr>
<td>3460</td>
<td>9,788,480.00</td>
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<td>3450</td>
<td>9,093,440.00</td>
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<tr>
<td>3440</td>
<td>8,282,560.00</td>
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<td>3430</td>
<td>7,413,760.00</td>
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<td>3420</td>
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<td>5,096,960.00</td>
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<td>1,158,400.00</td>
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<td>3370</td>
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</tbody>
</table>
Impact of Drought on Nevada’s Ability to Deliver Allocation

Current Intake’s could be lost if elevation continues to drop.

Pumping Station 1 = 1050 ft lake elevation.
Pumping Station 2 = 1000 ft lake elevation.

Pumping station 2 can currently handle delivery of current allocation

Long term plans include a pumping station 3
Water Quality Concerns from Lowering Lake Levels

- As Lake Mead lowers the warmer surface waters get closer to the Intakes.
- Using water below the thermocline avoids the presence of pollutants from the Las Vegas Wash.
- Third Intake will provide better water quality and less expensive treatment processes to meet Safe Drinking Water standards (to remove pollutants).
# Intentionally Created Surplus (ICS)

Storage in Lake Mead as of December 31, 2012

<table>
<thead>
<tr>
<th>State</th>
<th>Storage (AF)</th>
<th>Feet*</th>
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</thead>
<tbody>
<tr>
<td>Nevada</td>
<td>512,804</td>
<td>5.7</td>
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<tr>
<td>California</td>
<td>579,786</td>
<td>6.4</td>
</tr>
<tr>
<td>Arizona</td>
<td>103,050</td>
<td>1.1</td>
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<tr>
<td>Total</td>
<td>1,195,640</td>
<td>13.3</td>
</tr>
</tbody>
</table>

*90,000 acre feet storage per 1 foot of storage at elevation 1,100
Lake Mead Elevations Impact on Power Generation

- Hoover will be able to pass water and generate power down to low Lake Mead elevations
  - The efficiency and power output will be decreased
  - Cavitation damage and rough zones will increase

- Lower lake levels will force multiple units online thereby decreasing efficiency
  - 5 wide head turbines with better regulation capability will be operational by 2017
Hoover Dam Power Production

• Generator Description
  – 17 turbine generators
  – 2 at 62 MW; 15 at 130 MW unit capability
  – 2,074 MW combined installed capacity (full lake level)

• Lake Mead Elevation of 1050 feet
  – 1371 MW estimated capacity

• Lake Mead Elevation of 1000 feet
  – 1046 MW estimated capacity

• Lake Mead Elevation of 950 feet
  – 696 MW estimated capacity