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SLIDES: Tightening Water Supplies

Kay Brothers

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The Southern Nevada Water Authority (SNWA) was formed in 1991 to address Southern Nevada’s unique water needs on a regional basis.
SNWA Member Agencies

- City of Las Vegas
- City of Henderson
- City of Boulder City
- City of North Las Vegas
- Big Bend Water District
- Clark County Water Reclamation District
- Las Vegas Valley Water District
SNWA Water Resource Plan

• First issued in 1996

• Defines water resource portfolio and priorities for use

• Reviewed annually and revised as necessary

• Priorities are adjusted for:
  - Environmental compliance
  - Availability
  - Accessibility
  - Cost
2002 Water Resource Plan

1. Interim surplus (through 2016)
2. Clark County groundwater
3. Arizona Demonstration Project
4. Arizona Groundwater Bank
5. Las Vegas Valley shallow aquifer
6. Muddy River
7. Virgin River
8. Southern Nevada Groundwater Bank
9. Colorado River transfers
**Interim Surplus Guidelines**

**Without Interim Surplus**
- Normal Operation (deliver 7.5 maf)

**With Interim Surplus**
- Partial Domestic Surplus
- Full Domestic Surplus
- Normal Operation (deliver 7.5 maf)

**Mead Elevation**
- 1,204’
- 1,198’
- 1,145
- 1,125
Historical and Forecast Lake Mead Elevation

End of Month Elevation (feet)

Source: Bureau of Reclamation, May 2005.
Develop supplies to meet projected demands and ensure resource availability during times of drought.
What We’re Doing Now

• Emphasizing local water conservation and drought response

• Pursuing short-term Colorado River water supplies

• Developing in-state non-Colorado River water supplies
Conservation & Drought Response
Southern Nevada has made significant conservation gains

<table>
<thead>
<tr>
<th>Year</th>
<th>Consumptive Use (acre-feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>325,000</td>
</tr>
<tr>
<td>2003</td>
<td>270,000</td>
</tr>
<tr>
<td>2004</td>
<td>265,000 *</td>
</tr>
</tbody>
</table>

* Based on Preliminary 2004 Estimates
Policy

• Development codes (commercial & residential)
  – Indoor fixtures (for example, low flow devices)
  – Outdoor landscaping, misting systems and fountains

• Time-of-day and day-of-week watering restrictions

• Water budgets for golf courses

• Water efficiency plans for resorts
Penalties for Water Waste

Between 2003 and 2004, over 62,000 water waste investigations were conducted.
Pricing

• SNWA member agencies utilize tiered rate structures.

• These structures target high water users, while protecting the rates for the smallest users.

• The lowest tier represents what most customers use indoors.
Tiered water pricing encourages conservation for the highest water users.
Incentive Programs

• Water Smart Landscapes
• Irrigation Clock Rebate
• Water Efficient Technologies
Water Conservation & Drought Response

Water Smart Landscapes Program

• Instituted in 1999

• Provides rebates to customers that replace turf with water-smart landscaping

• Over 52.3 million square-feet converted since program inception

• Over 2.8 billion gallons saved annually

• Over $47 million have been rebated since program inception
Conservation will continue to play a significant role in water management activities for Southern Nevada.
Short-Term
Colorado River Supplies
Arizona Water Bank

- State-to-State Agreement signed in 2001 between SNWA, Nevada CRC, Arizona Water Banking Authority, and USBR.
- Provided for the banking of up to 1.25 million acre-feet.
October 2004 agreements between SNWA, Nevada CRC, Metropolitan Water District of Southern California, and USBR.

Allows Southern Nevada to bank a portion of its unused apportionment in California for Nevada’s future use.

SNWA banked about 10,000 acre-feet of water under this agreement in 2004.
In-State Non-Colorado River Resources
Today, the Colorado River meets 90% of Southern Nevada’s resource needs

<table>
<thead>
<tr>
<th>Year</th>
<th>Colorado River</th>
<th>Non-Colorado River</th>
</tr>
</thead>
<tbody>
<tr>
<td>1940</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>1975</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>2005</td>
<td>90%</td>
<td>10%</td>
</tr>
</tbody>
</table>
Southern Nevada’s goal is to achieve a more balanced portfolio by 2050

<table>
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<tr>
<th>Year</th>
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</tr>
<tr>
<td>1975</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>2005</td>
<td>90%</td>
<td>10%</td>
</tr>
<tr>
<td>2050</td>
<td>60%</td>
<td>40%</td>
</tr>
<tr>
<td>Colorado River Resources</td>
<td>Non-Colorado River Resources</td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>- Nevada Basic Apportionment</td>
<td>- LV Valley Groundwater</td>
<td></td>
</tr>
<tr>
<td>- Return Flow Credits</td>
<td>- LV Valley Shallow Aquifer</td>
<td></td>
</tr>
<tr>
<td>- Surpluses/Interim Surplus</td>
<td>- LV Valley Reclaimed Groundwater</td>
<td></td>
</tr>
<tr>
<td>- Unused Apportionment (AZ/NV)</td>
<td>- In-State Non-Colorado River Water</td>
<td></td>
</tr>
<tr>
<td>- Arizona Water Bank</td>
<td>- Muddy River</td>
<td></td>
</tr>
<tr>
<td>- California Water Bank</td>
<td>- Virgin River</td>
<td></td>
</tr>
<tr>
<td>- Southern Nevada Water Bank</td>
<td>- Groundwater in Clark, Lincoln &amp; White Pine counties</td>
<td></td>
</tr>
<tr>
<td>- Transfers/Exchanges</td>
<td>- Reclaimed In-State Resources</td>
<td></td>
</tr>
</tbody>
</table>
SNWA In-State Resources

Clark, Lincoln, and White Pine counties groundwater development

Three Lakes Valley groundwater development

Virgin/Muddy rivers surface water development
In-State Resource Projects Status
Three Lakes Project
Three Lakes Project

Environmental Process

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apr. 2004</td>
<td>Rights-of-Way application to BLM</td>
</tr>
<tr>
<td>Aug. 2004</td>
<td>BLM “public meetings” completed</td>
</tr>
<tr>
<td>2005</td>
<td>Anticipated completion of Draft EA</td>
</tr>
<tr>
<td>2005</td>
<td>Anticipated completion of Final EA/FONSI</td>
</tr>
<tr>
<td>2005 – 2006</td>
<td>Anticipated well construction</td>
</tr>
<tr>
<td>2006 – 2008</td>
<td>Anticipated transmission system construction</td>
</tr>
</tbody>
</table>
Virgin/Muddy River Surface Water Project
# Environmental Process

<table>
<thead>
<tr>
<th>Year</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>October 2004</td>
<td>Rights-of-Way application to BLM</td>
</tr>
<tr>
<td>2005</td>
<td>Public scoping period (BLM)</td>
</tr>
<tr>
<td>2006</td>
<td>Anticipated release of Draft EIS</td>
</tr>
<tr>
<td></td>
<td>Anticipated completion of Final EIS/ROD</td>
</tr>
<tr>
<td>2009</td>
<td>Anticipated design completion</td>
</tr>
<tr>
<td>2012</td>
<td>Anticipated construction completion</td>
</tr>
</tbody>
</table>
Clark, Lincoln and White Pine Groundwater Project
# Environmental Process

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>August 2004</td>
<td>Rights-of-Way application to BLM</td>
</tr>
<tr>
<td></td>
<td>MOU/Cost Recovery Agreement approved</td>
</tr>
<tr>
<td>2005</td>
<td>Public information meetings (BLM)</td>
</tr>
<tr>
<td></td>
<td>Public scoping meetings (BLM)</td>
</tr>
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<td>2012 – 2014</td>
<td>Anticipated construction completion</td>
</tr>
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2002 Water Resource Plan

- Interim surplus (through 2016)
- Clark County groundwater
- Arizona Demonstration Project
- Arizona Groundwater Bank
- Las Vegas Valley shallow aquifer
- Muddy River
- Virgin River
- Southern Nevada Groundwater Bank
- Colorado River transfers
Projected Water Demands and Resources

- **Bank Recovery**
- **Transfers and Exchanges**
- **Shallow System**
- **Reclaimed In-State**
- **In-State Resources**
- **AZ Recovery**
- **Current Resources**

**Where We’re At**

**In-State Resources**

- **Reclaimed In-State**

**Transfer and Exchanges**

- **200,000**
- **400,000**
- **600,000**
- **800,000**
- **1,000,000**
- **1,200,000**

*Projected Water Demands and Resources (Acre-Feet/Year)*

- 2004
- 2008
- 2012
- 2016
- 2020
- 2024
- 2028
- 2032
- 2036
- 2040
- 2044
- 2048
• Southern Nevada needs in-state resources to reduce dependence on Colorado River water (drought tolerance)

• Southern Nevada needs in-state resources to meet projected future demands