

SNWA Groundwater Development Project Activities

**The Southern Nevada Water Authority (SNWA)
was formed in 1991 to acquire and manage
water resources, build and operate facilities, and
promote conservation on a regional level.**



IRPAC Process

- The Integrated Resource Planning Advisory Committee (IRPAC) process was launched in 1994 to assist the SNWA in developing an Integrated Resource Plan for regional water resources.
- Process considerations:
 - Current and projected water demands
 - Resource and facility needs
 - Conservation
 - Cost/Funding
 - Environmental Impacts
- Process goal: To develop recommendations regarding the most viable and desirable set of options to meet future water demands.



IRPAC Recommendations

(Adopted by the Board in 1995)

- Based on IRPAC recommendations, the SNWA:
- Developed a water resource plan to project future demands and resources available to meet those demands over time; **placed top priority on Colorado River resources.**
- Implemented a water facilities program that is phased and expandable to respond to future uncertainties.
- Expanded treatment and transmission capacity and constructed a new treatment and transmission facility to improve system reliability.
- Implemented a conservation goal and incentive programs.
- Utilized diverse funding sources, based on a “growth-pays-for-growth” philosophy.

The SNWA Resource Plan, first adopted in 1996, reflects changing developments in Southern Nevada's water resource picture.

The plan includes a projection of current and future demands, and anticipated supplies available to meet those demands over time.

The SNWA Resource Plan has evolved over time, but has always included a portfolio of resource options.

Options are assessed and prioritized based on need, accessibility, availability and cost.

2009 Resource Portfolio

Colorado River Resources

- Basin Apportionment
- Return-Flow Credits
- Unused Apportionment
- Flood Control Surplus
- Domestic Surplus
- Intentionally Created Surplus
- Banked Resources
- Augmentation
- Transfers/Exchanges

Conservation

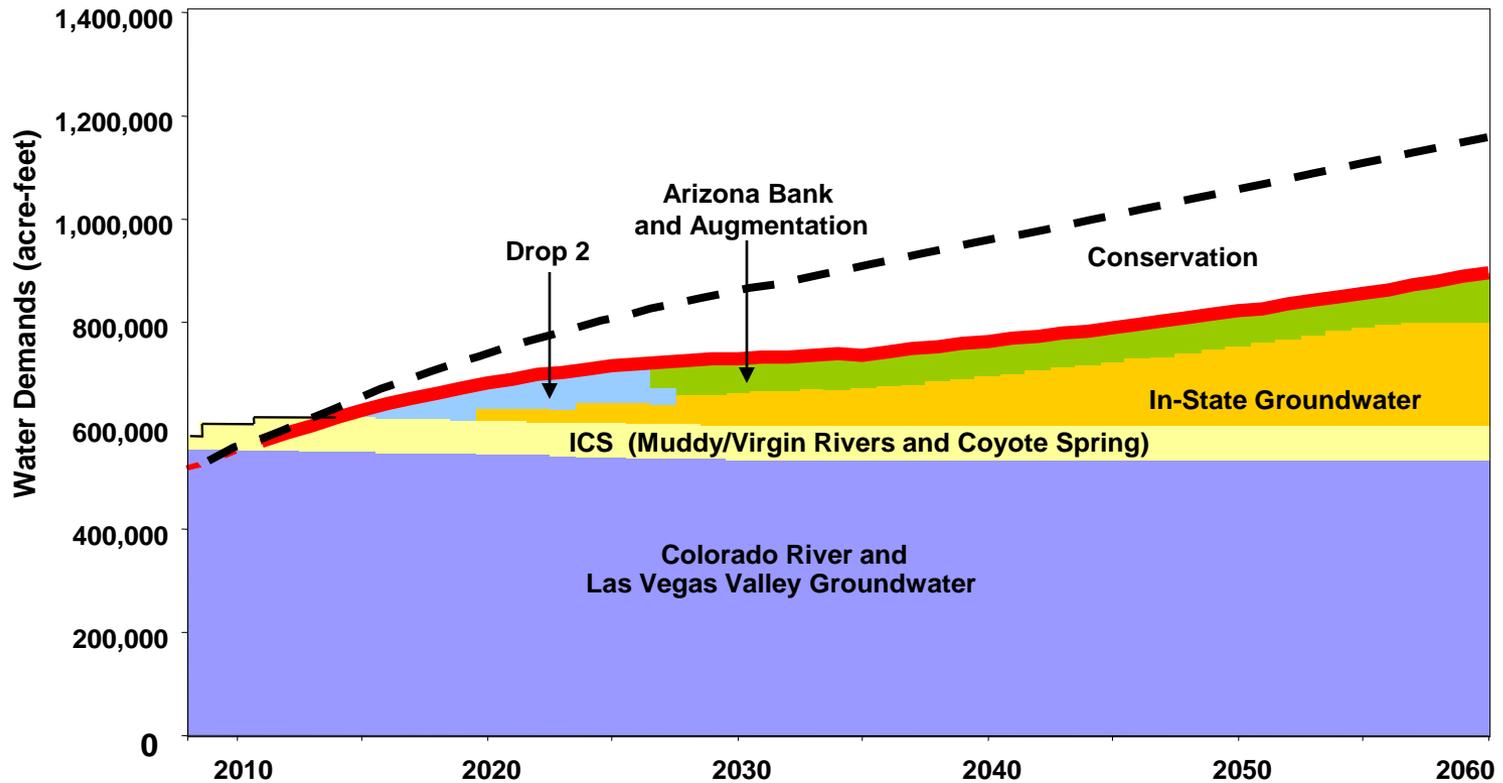
Reclaimed Water Resources

Groundwater

- Las Vegas Valley Groundwater
- **In-State Groundwater Resources**

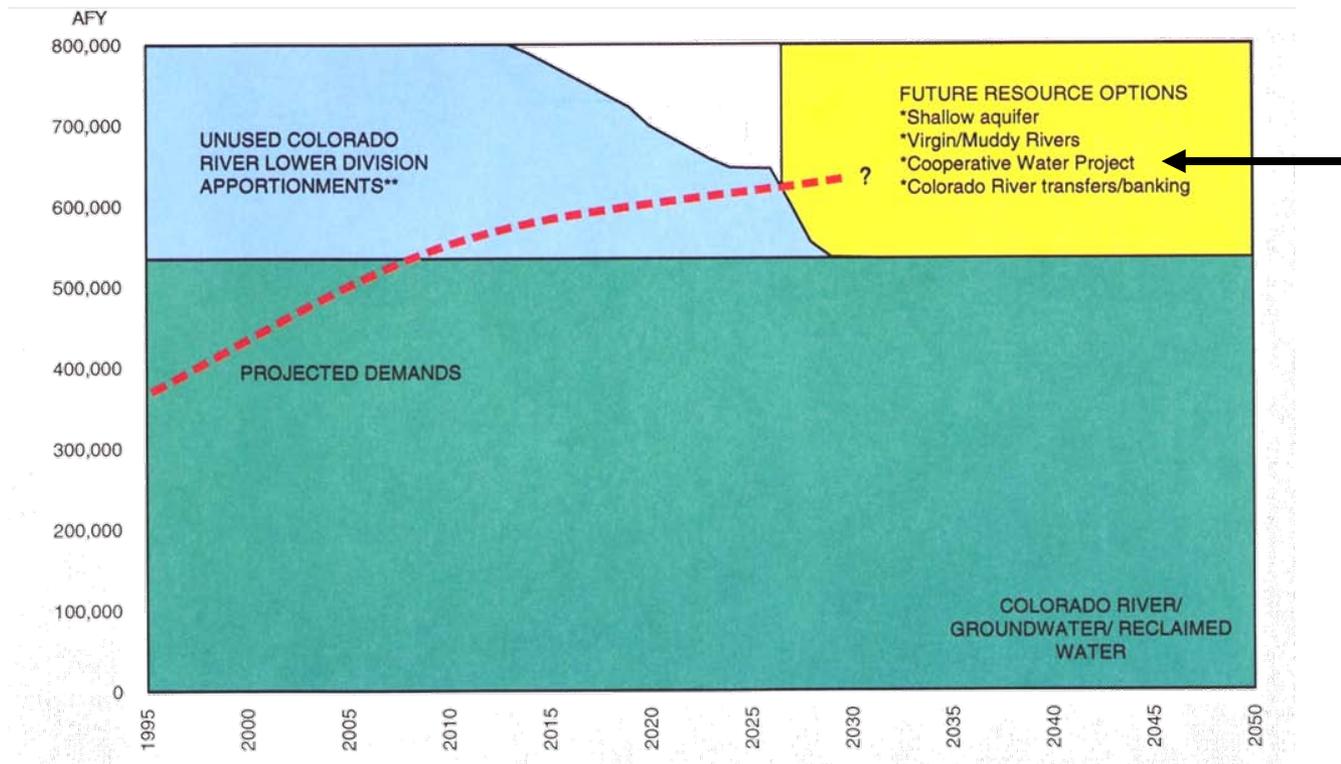
2009 Water Resource Plan

Adopted by the Board May 2009 and November 2010

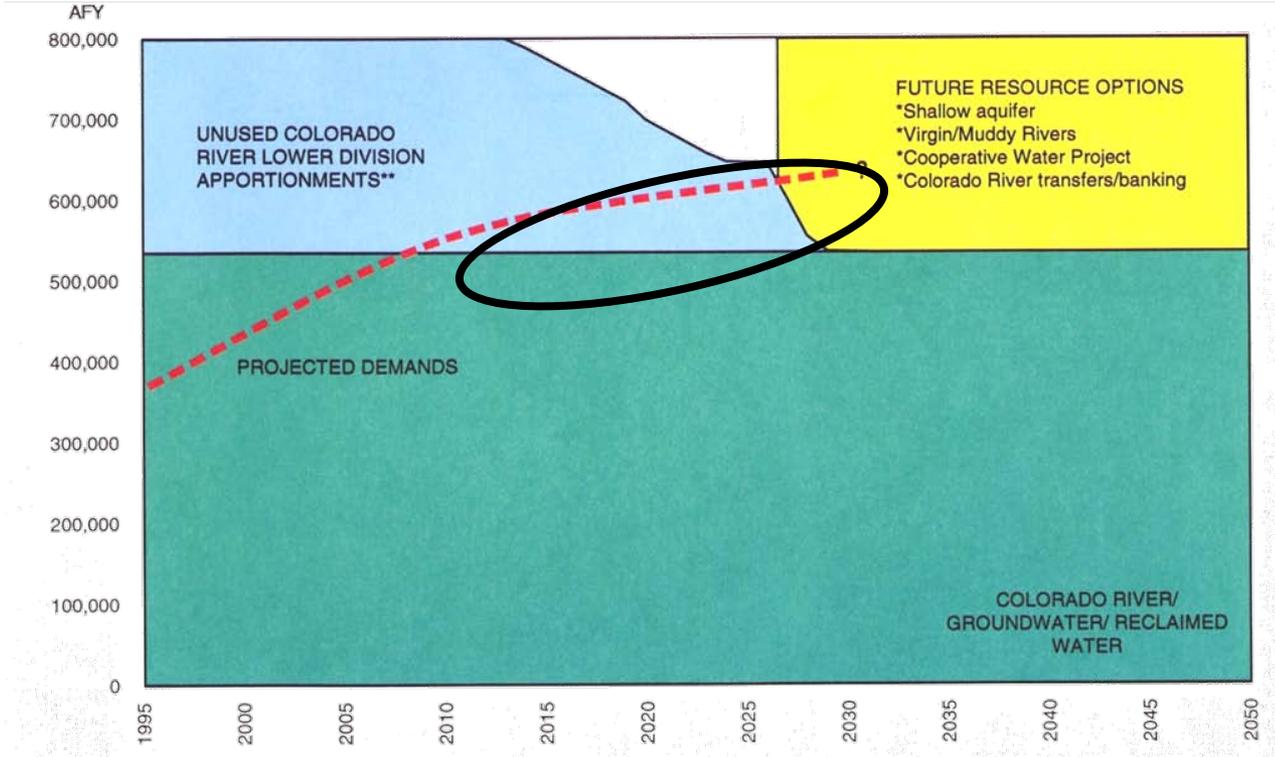


The SNWA's 1996 Resource Plan projected possible use of these resources between 2025 and 2050.

1996 Water Resource Plan



Interim Colorado River supplies were the highest priority for use at that time due to availability, accessibility and cost.

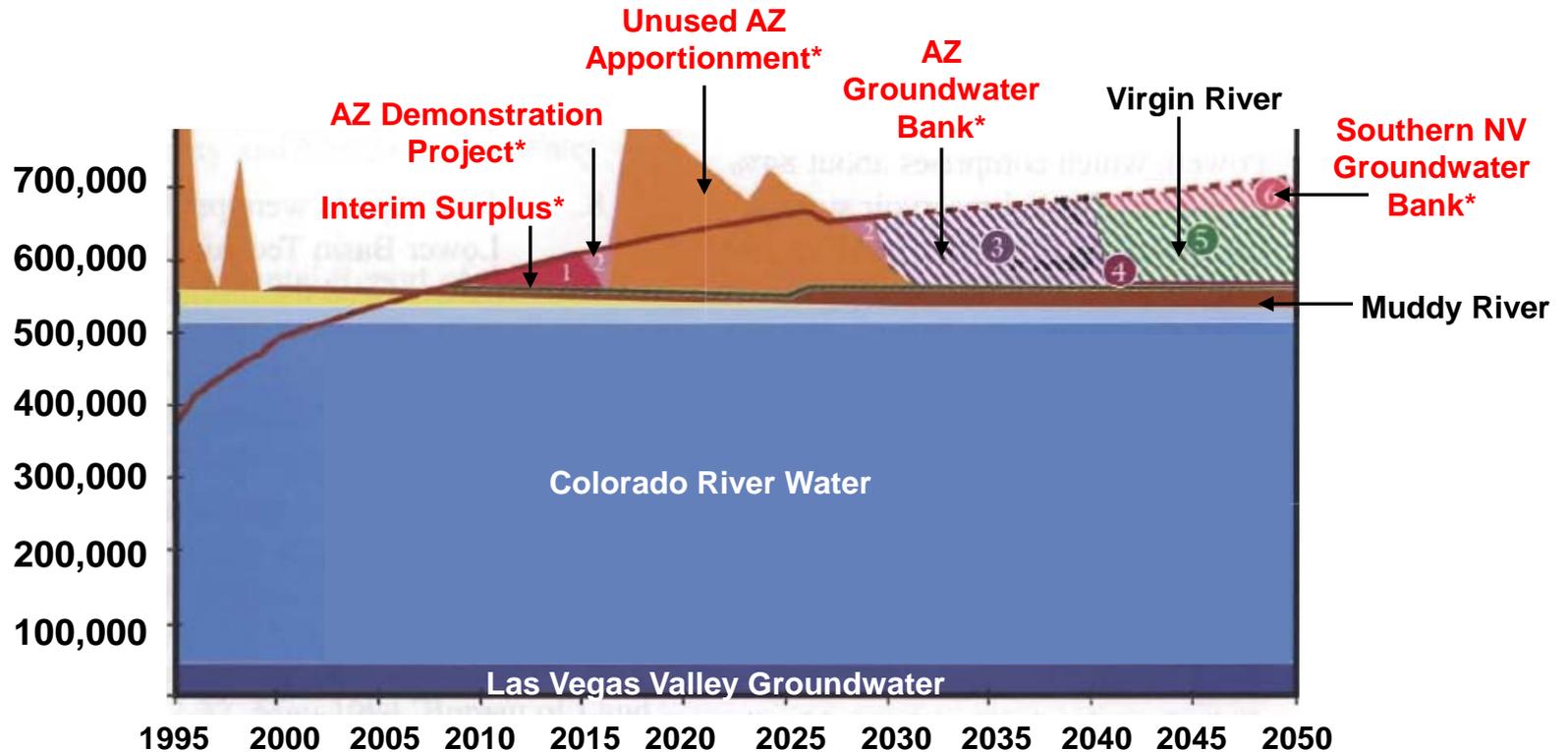


1996 - 2000

- **In 1996, the Arizona Banking Authority was formed to fully utilize the state's Colorado River resources, reducing Nevada's ability to access unused Lower Basin apportionments.**
- **By 1999, the seven states nearly finished an agreement that established guidelines for the use of Interim Surplus Colorado River supplies.**
- **Interim Surplus and other limited-term supplies were expected to meet a portion of Southern Nevada's demands until at least 2015, while permanent supplies were being developed.**
- **Interim Surplus, however, is still dependent on Lake Mead water levels being at elevation 1145 or above.**

The 1999 Water Resource Plan projected that Southern Nevada's near-term demands could be met by limited-term, available Colorado River supplies.

1999 Water Resource Plan



*Interim supplies

In 2004, the SNWA initiated an integrated water planning process to identify the appropriate combination of in-state resources, facilities and conservation needed to meet demands and protect the community from drought.

- The SNWA Board approved an Integrated Water Planning Concepts Document and Work Plan for the development of in-state resources and directed staff to initiate process activities.
- The SNWA convened a citizen's advisory committee to make recommendations on how to integrate in-state resources in overall planning efforts.

IWPAC Stakeholder Groups

SNWA Board Appointments

Nevada Taxpayers Association (1)
Gaming Industry (1)
Homebuilder (1)
Master Planner (1)
Developer (1)
Industrial/Commercial Business (1)
Small Business (2)
Paiute Tribe (1)
Financial Industry (1)
Union (2)
Environmental (2)
Senior Citizens (2)
Southern Nevada Residents (5)

Other Participants

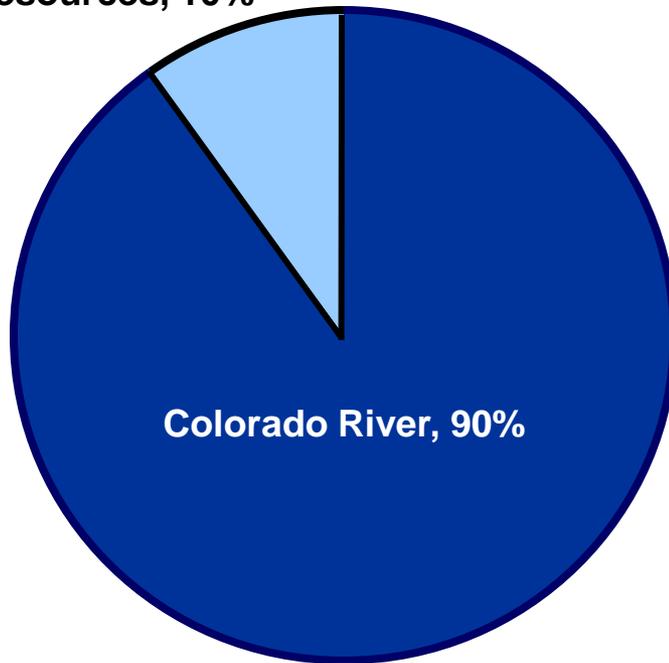
Lincoln County Resident (1)
White Pine County Resident (1)
Nye County Resident (1)
Moapa Valley Water District (1)
Virgin Valley Water District (1)

Ex Officio Members

Chair, Colorado River Commission
Chair, Committee on Public Lands
Office of the Governor (1)

Key Considerations

Other Water
Resources, 10%



Colorado River, 90%

Southern Nevada depends on the Colorado River to meet 90% of its water resource needs.

**In 2005, the SNWA Board of Directors
accepted the Advisory Committee's
Recommendations Report.**

**The report contained 22 recommendations
regarding how best to integrate in-state
resources into Southern Nevada's overall
planning and management activities.**

Conservation

- **Pursue more aggressive promotion of water conservation and regulation of water use through methods such as the reduction of turf**
 - Rebated \$150 million dollars for more than 136 million square feet of turf converted, saving Southern Nevada more than 7.5 billion gallons of water annually
- **Decrease total water demand from 272 GPCD to 250 GPCD by 2010 and to 245 GPCD by 2035**
 - Reduced water demand to less than 250 GPCD in 2008
- **Assess conservation achievement annually, investigate the potential for further GPCD reductions and revise conservation goals accordingly**
 - Set new conservation goal of 199 GPCD by 2035

Resource Development

- **Pursue development of all the resource options considered in the IW PAC planning scenarios**
 - AZ Water Bank
 - Coyote Spring Valley Groundwater Rights
 - Pre-Compact Water Rights (Virgin and Muddy Rivers)
 - Three Lakes Valley Groundwater Rights
 - Virgin River Water Rights
 - Augmentation Credits
 - Additional Conservation
 - Clark, Lincoln and White Pine Counties Groundwater Applications
- **Provide additional safeguards for communities and the environment in areas where in-state groundwater resources are developed**
 - Entered into monitoring, mitigation and protection plans for federal basins
- **Work with the Colorado River Basin States and the Bureau of Reclamation to implement augmentation credits for in-state, non-Colorado River resources**
 - Revised return-flow credit methodology to include in-state groundwater

Resource Development (Con't.)

- **Pursue delivery of pre-compact Muddy and Virgin River water rights through Lake Mead and the existing Southern Nevada Water System (“lake conveyance”)**
 - Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead Record of Decision allows for up to 50,000 AFY
- **Utilize the Southern Nevada Water Bank and California Water Bank as “bridge resources” to help meet any supply deficits**
 - Banked more than 300,000 AF in Southern Nevada and 70,000 AF in California, in addition to 1.25 million AF banked in Arizona
- **Utilize surplus and interim surplus Colorado River water, if and when they are available**
 - Lake Mead above elevation 1145 - Nevada’s allocation increases to 400,000 AFY
- **Continue to pursue ocean desalination as a long-term resource**
 - 7 states pursuing augmentation and Nevada will get first 75,000 AF

In 2005, following acceptance of the Advisory Committee's recommendations, the Board signed a Resolution supporting the development of in-state, non-Colorado River water resources.

The governing boards of SNWA's member agencies, along with the Clark County Board of County Commissioners and the Colorado River Commission signed similar resolutions.

2009 Water Resource Plan

Severe Shortage Plan

Lake Mead Elevation	Goal	Action
1,075 to 1,025 ft.	Preserve lead time for new facility development.	Construct Clark, Lincoln and White Pine Counties Groundwater Development Project. Examine demand-management needs over and above existing conservation goals/annual targets.
1,025 to 1,000 ft.	Preserve Lake Mead elevation of 1,000 ft.	Reconsult with the Secretary of the Interior and Basin States on additional Colorado River shortage management strategies. Implement additional demand-management measures through mandatory policies to offset further Colorado River Basin supply shortages. Examine potential for temporary infrastructure to extend the operational capabilities of SNWA's intakes in Lake Mead.
Below 1,000 ft.	Preserve water supply for health and safety uses.	Maximize use of available groundwater supplies (Southern Nevada Groundwater Bank and in-state resources). Significantly limit non-essential uses.

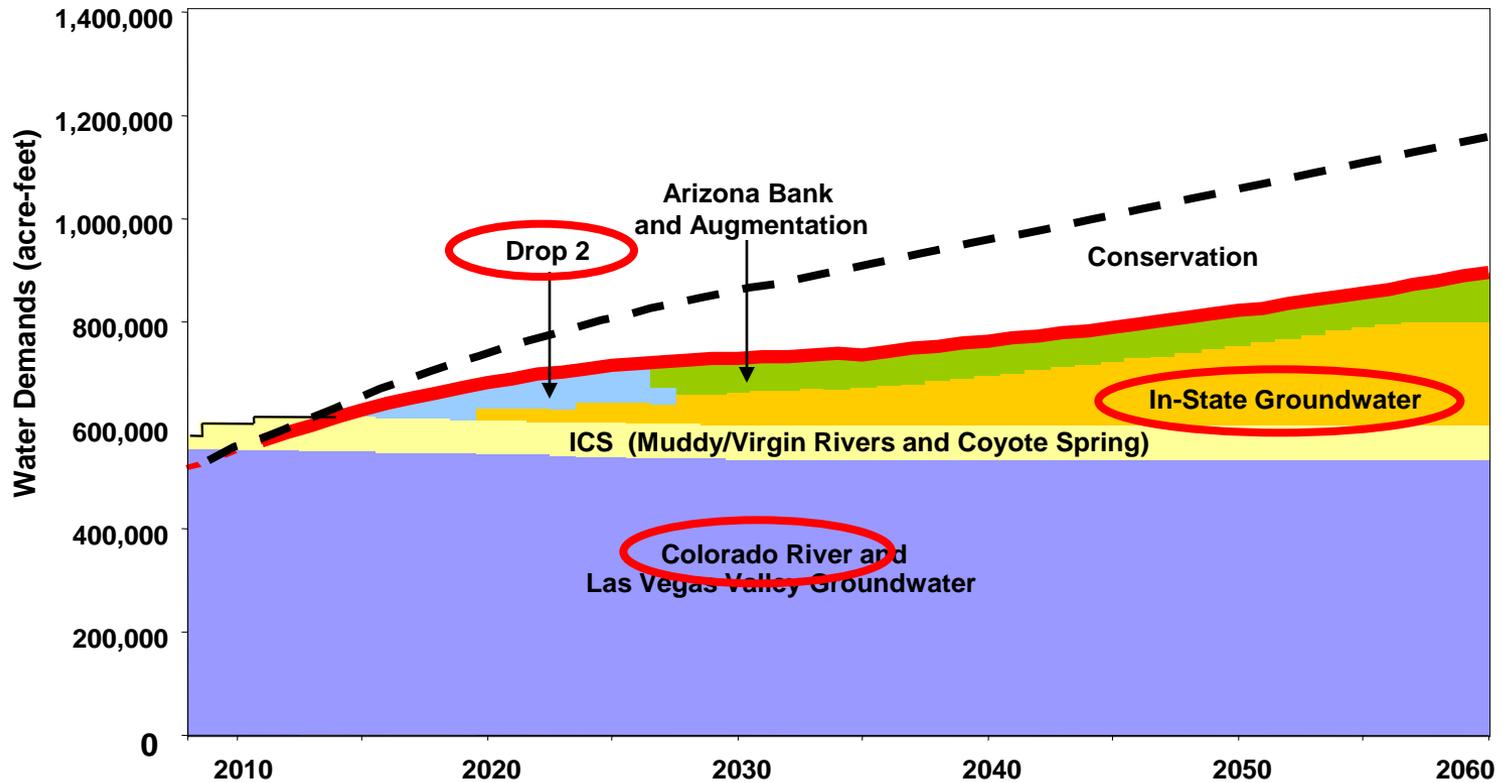
Environmental Permitting Process & Schedule

- **National Environmental Policy Act (NEPA)**
 - **Environmental Impact Statement (EIS)**
 - **Public Scoping - April to August 2005**
 - **Public Scoping - July to August 2006**
 - **Draft EIS – anticipated public review early 2010**
 - **Record of Decision – anticipated end of 2010**
- **Endangered Species Act (ESA)**
 - **Biological Assessment (BA) – early 2010**
 - **Biological Opinion – middle to end 2010**
- **National Historic Preservation Act (NHPA)**
 - **Programmatic Agreement - early 2010**
 - **Field Surveys – 2010 to 2012**

Federal Stipulation Activities

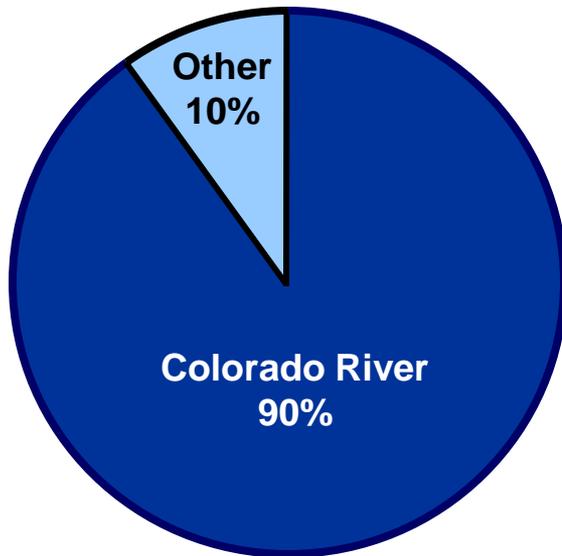
- **Implementing hydrologic and biologic monitoring plans for Spring Valley (finalized February 2009)**
- **Developing hydrologic and biologic monitoring plans for Dry Lake, Delamar and Cave Valleys**
- **Planning to collect and analyze water chemistry of more than 40 wells, piezometers and surface water sites**
- **Operating and maintaining a discharge monitoring site on Big Springs Creek and Cleve Creek**
- **Defining biologic and hydrologic baseline conditions**
- **Working with the Technical Review Panel, Biological Work Group and Executive Committee to oversee and implement the monitoring plans**
- **Monitoring and collecting data from 25 sites in Spring Valley including wells, springs and ecosystems**

As of 2009, the majority of water supplies available to our community consist almost exclusively of Colorado River resources.

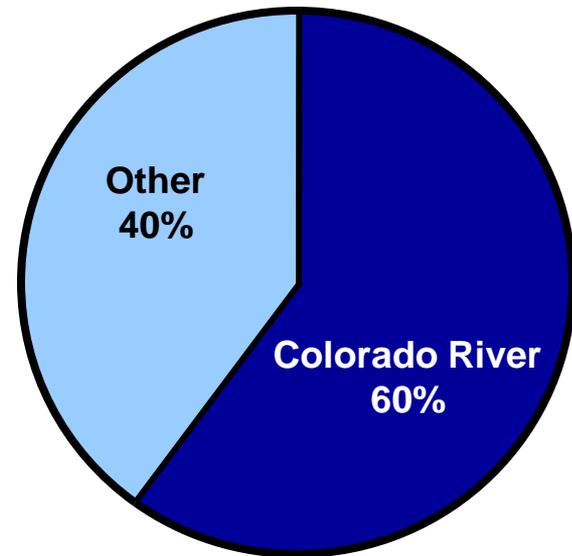


Resource Diversification

Current



Future



Staff Recommendations

- **Proceed with state and federal permitting processes, including the completion of an Environmental Impact Statement and State Engineer water rights processes**
- **Fulfill the requirements of stipulated federal agreements**
- **Complete the necessary biologic and hydrologic monitoring efforts to support these activities**



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