INNOVATION

MEETING WATER DEMANDS IN SOUTHERN NEVADA

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DEPUTY GENERAL MANAGER
OPERATIONS

SOUTHERN NEVADA WATER AUTHORITY®

SOUTHERN NEVADA OVERVIEW

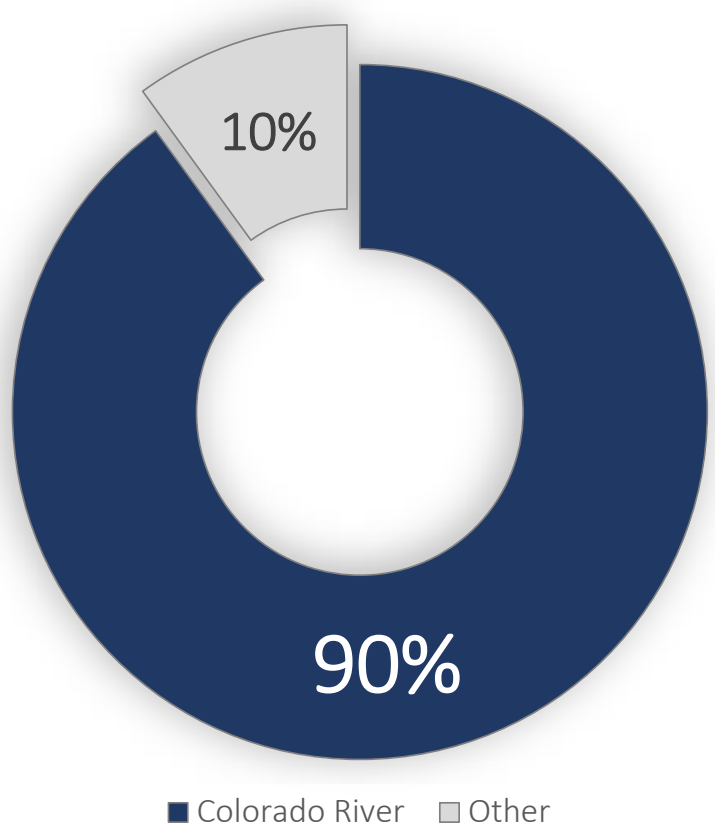
- 2.3 million residents
- 40 million annual visitors (pre-2020)
- Approx. 1,500 square kilometers (metropolitan area)
- $110 billion in Gross Domestic Product
- 10 centimeters in annual precipitation

SOUTHERN NEVADA WATER AUTHORITY

- 7 water and wastewater agencies
- Includes 4 cities and unincorporated county
- Coordinates resource management at regional level

WATER RESOURCES

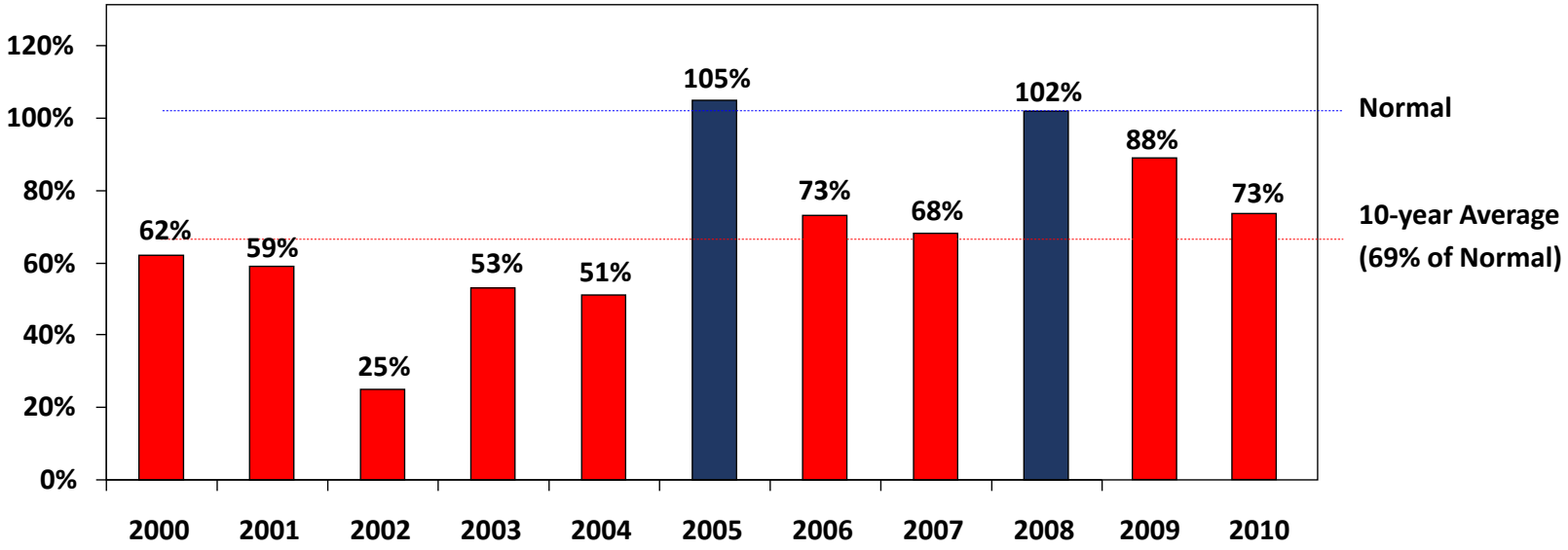
Southern Nevada is nearly fully reliant on the Colorado River to meet the community's water demands.




Facing the
Challenge

DROUGHT

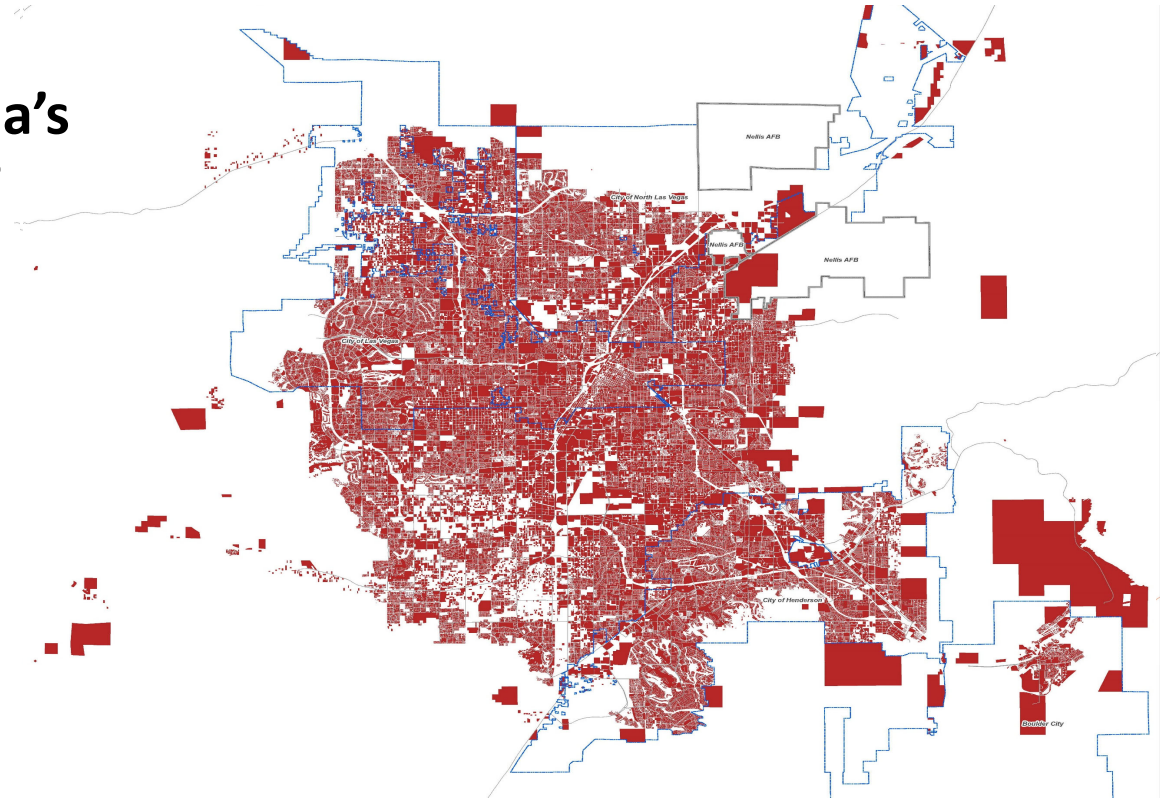
In the early 2000s, the Colorado River began to experience significantly decreased inflows.

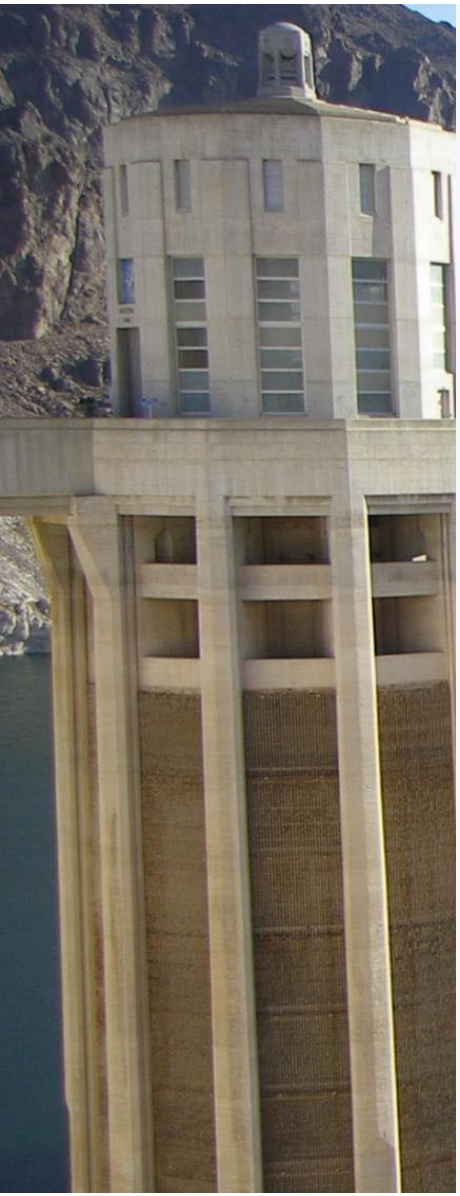


DROUGHT – 2000s

During this time, Southern Nevada's population showed no signs of slowing.

1980: 460,000
1990: 740,000
2000: 1.4 million
2010: 1.9 million
2020: 2.3 million





DROUGHT – 2000s

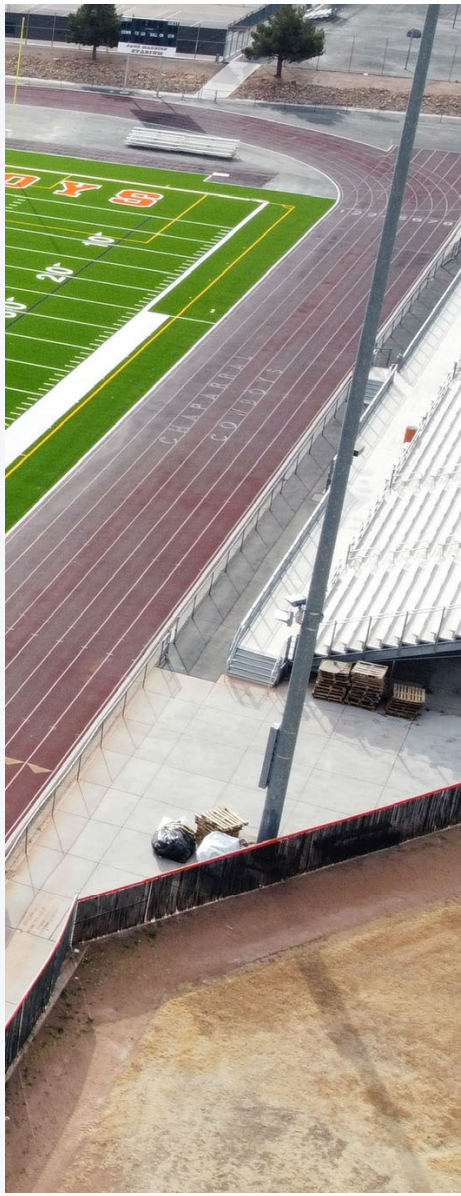
Drought response required four major activities for the SNWA:

- **Reducing demands/water conservation**
- **Colorado River negotiations**
- **Securing alternate supplies**
- **Addressing infrastructure needs**

REDUCING DEMANDS

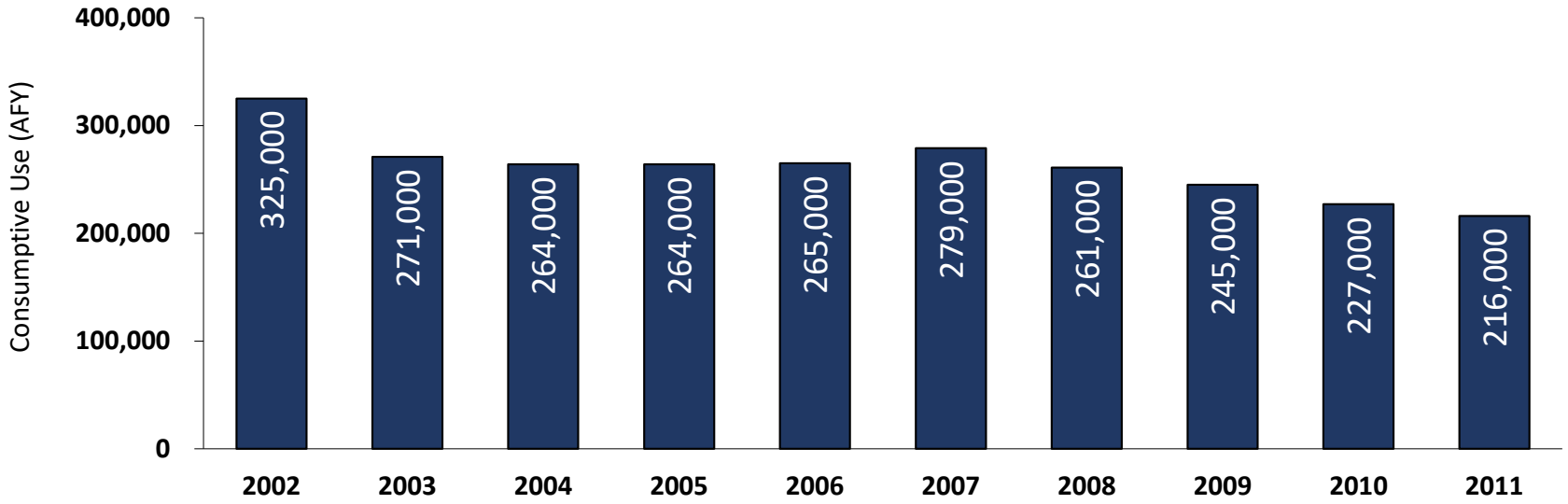
Community participation and innovation were key to our success.

- **Landscape development codes**
- **Golf course water budgets**
- **Mandatory watering schedules**
- **Water waste enforcement**
- **Tiered water rates**
- **Incentive programs**



CONSERVATION RESULTS

In less than 10 years, Southern Nevada's consumptive water use declined by about 136 billion liters, despite the addition of nearly 400,000 people.



DROUGHT

Mitigating drought required an innovative approach to resource management.

INFRASTRUCTURE

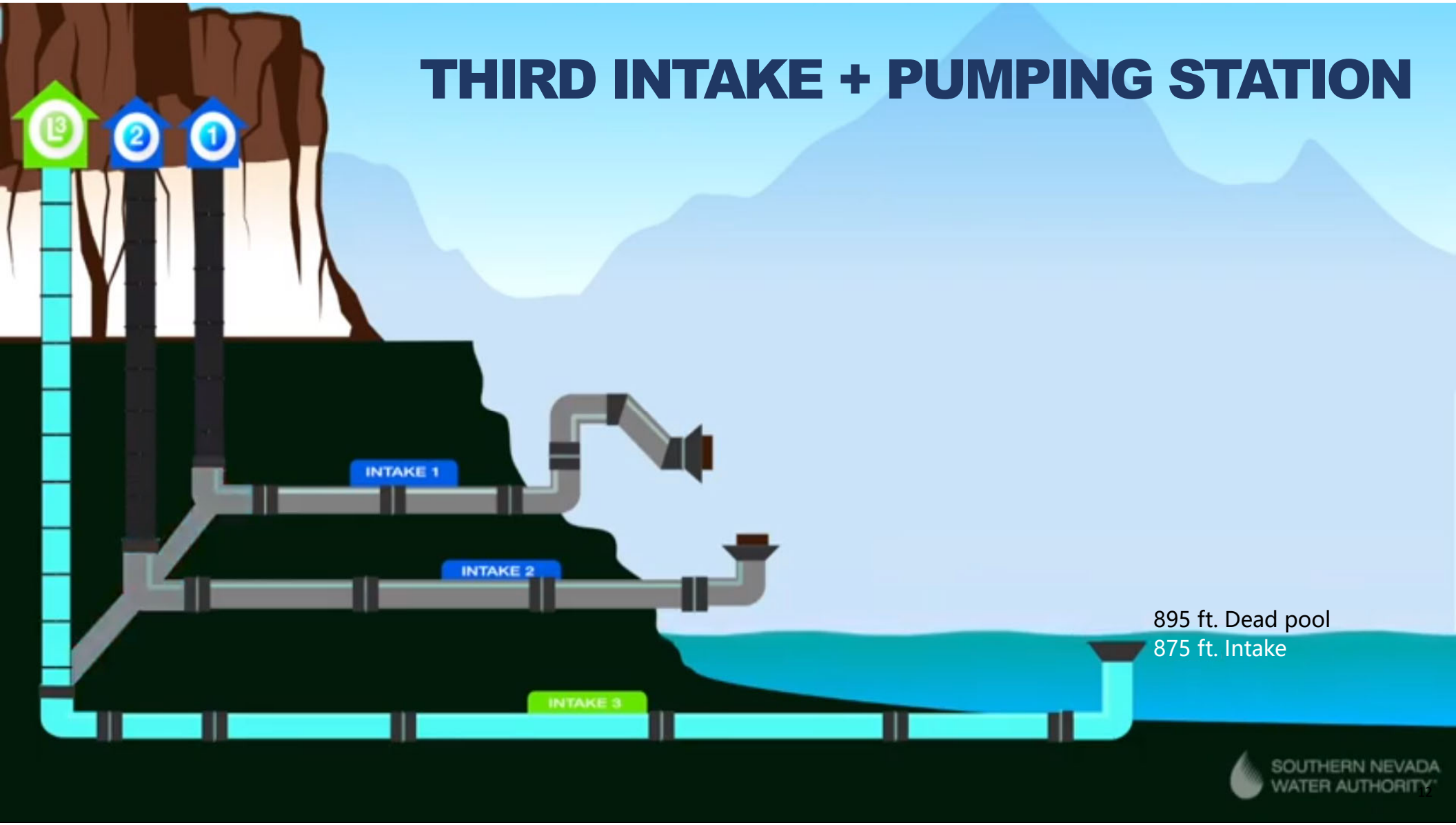
Constructing major facilities and asset management

WATER BANKING

Storing water supplies for the future

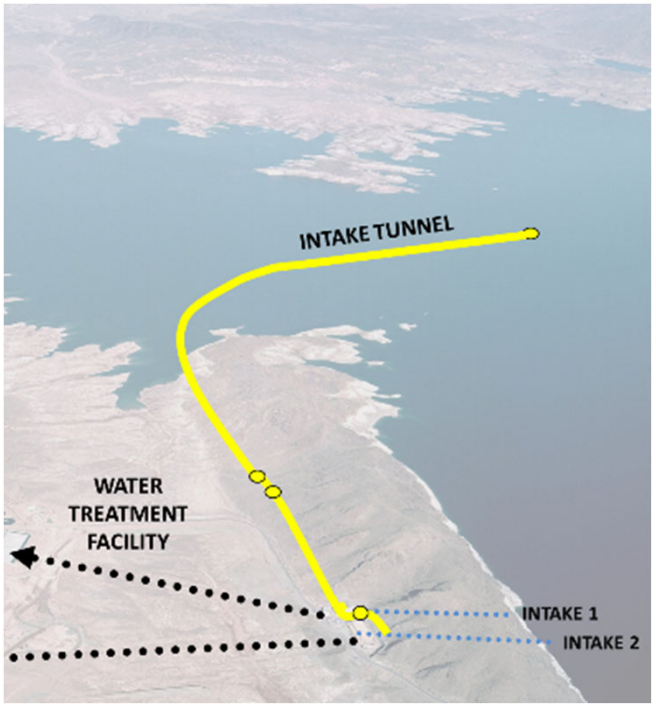
RESOURCE PLANNING

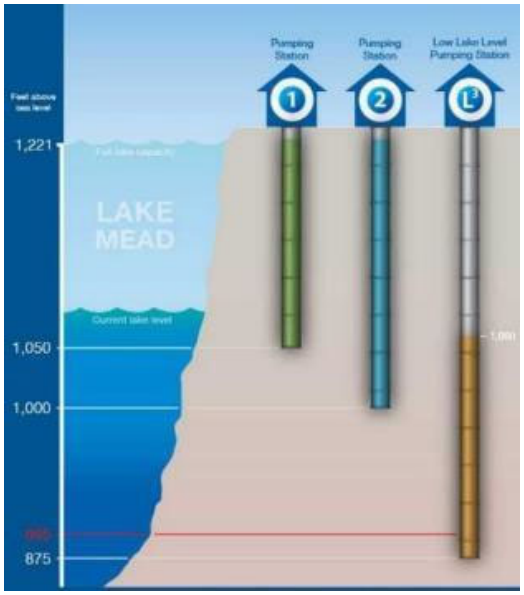
Working with partners & developing comprehensive plans to manage supplies


THIRD INTAKE + PUMPING STATION
L3
2
1
INTAKE 1
INTAKE 2
INTAKE 3
895 ft. Dead pool
875 ft. Intake
SOUTHERN NEVADA
WATER AUTHORITY

In 2015, Intake No. 3 was put into operation

- Protects water quality
- Avoids additional treatment processes
- Maintains access to Colorado River allocation
- $817 million project





Low Lake Level Pumping Station

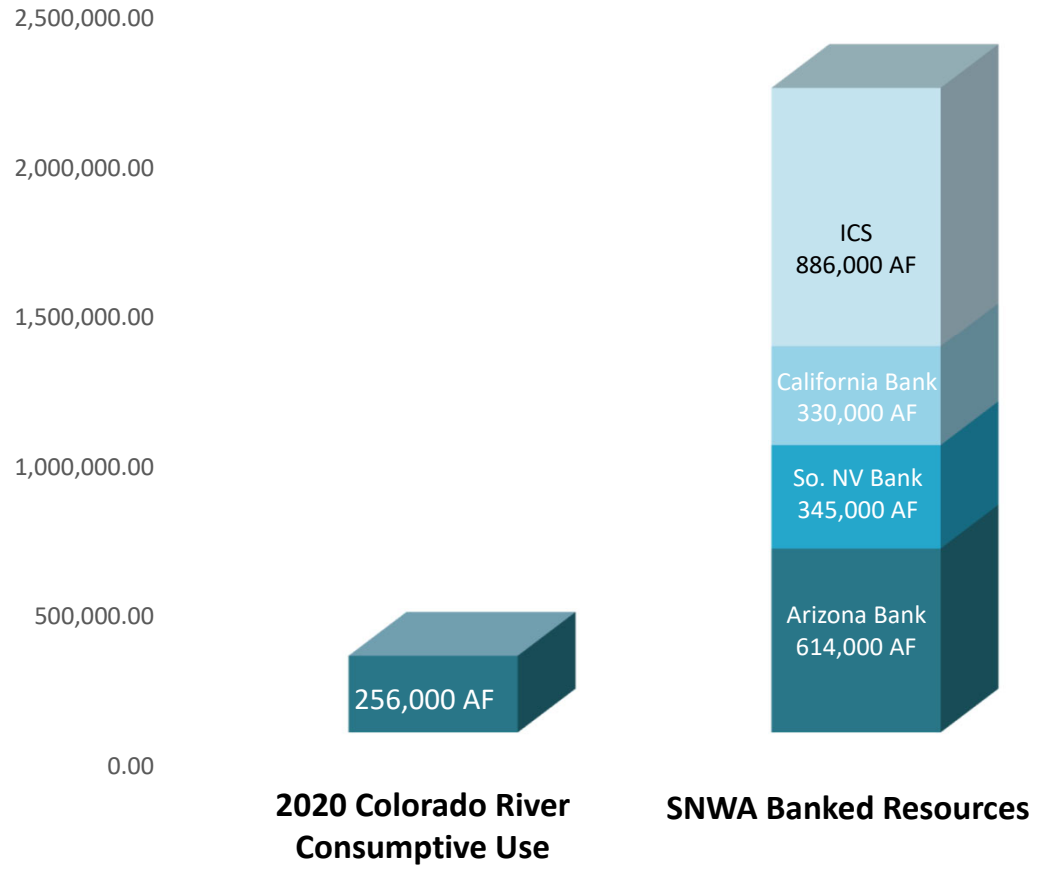
- Construction on the Low Lake Level Pumping Station near Lake Mead was completed in April 2020
- The pumping station ensures water deliveries if elevations fall as low as 875 feet
- $650 million project

WATER BANKING

Southern Nevada has stored 2.1 million acre-feet of water.

This is more than eight times Nevada's 2020 consumptive Colorado River water use.

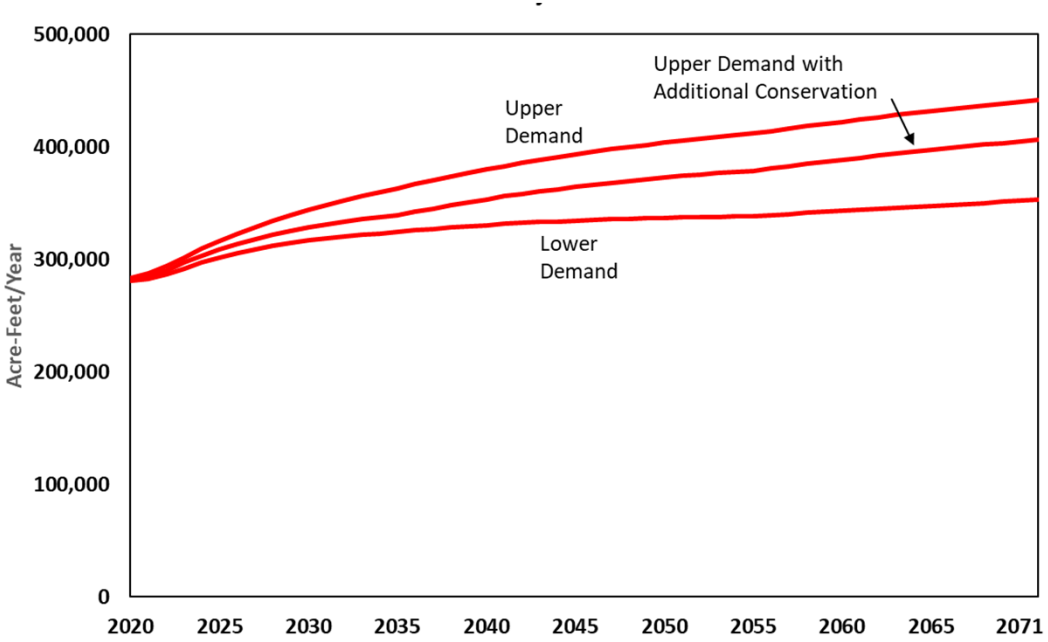
1 acre-foot = 1,233 cubic meters



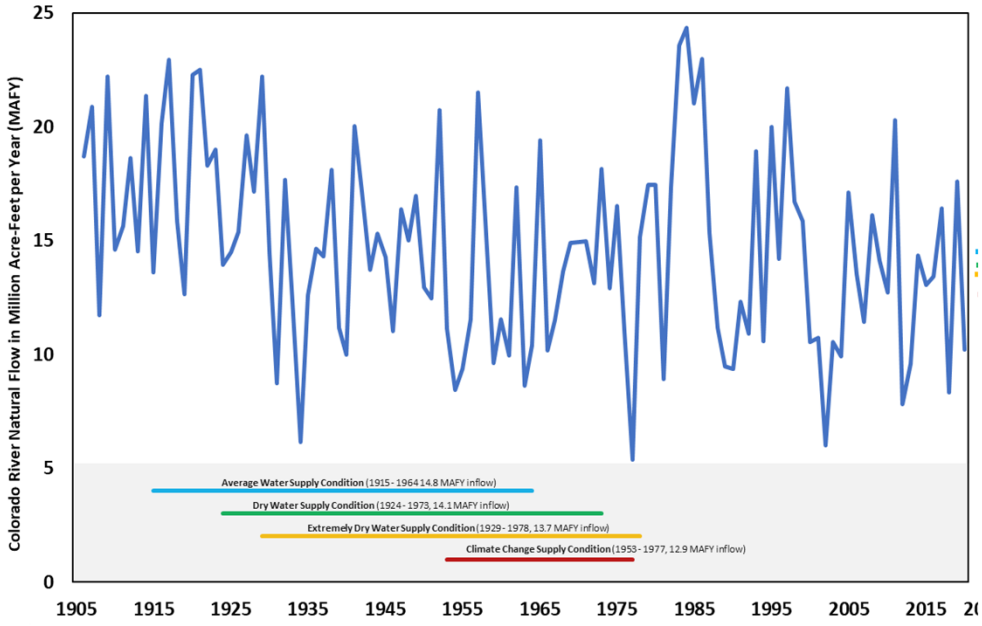
RESOURCE PLANNING

The SNWA's Water Resource Plan considers demand and hydrology under a multitude of scenarios over a 50-year planning horizon.

Projected Demands

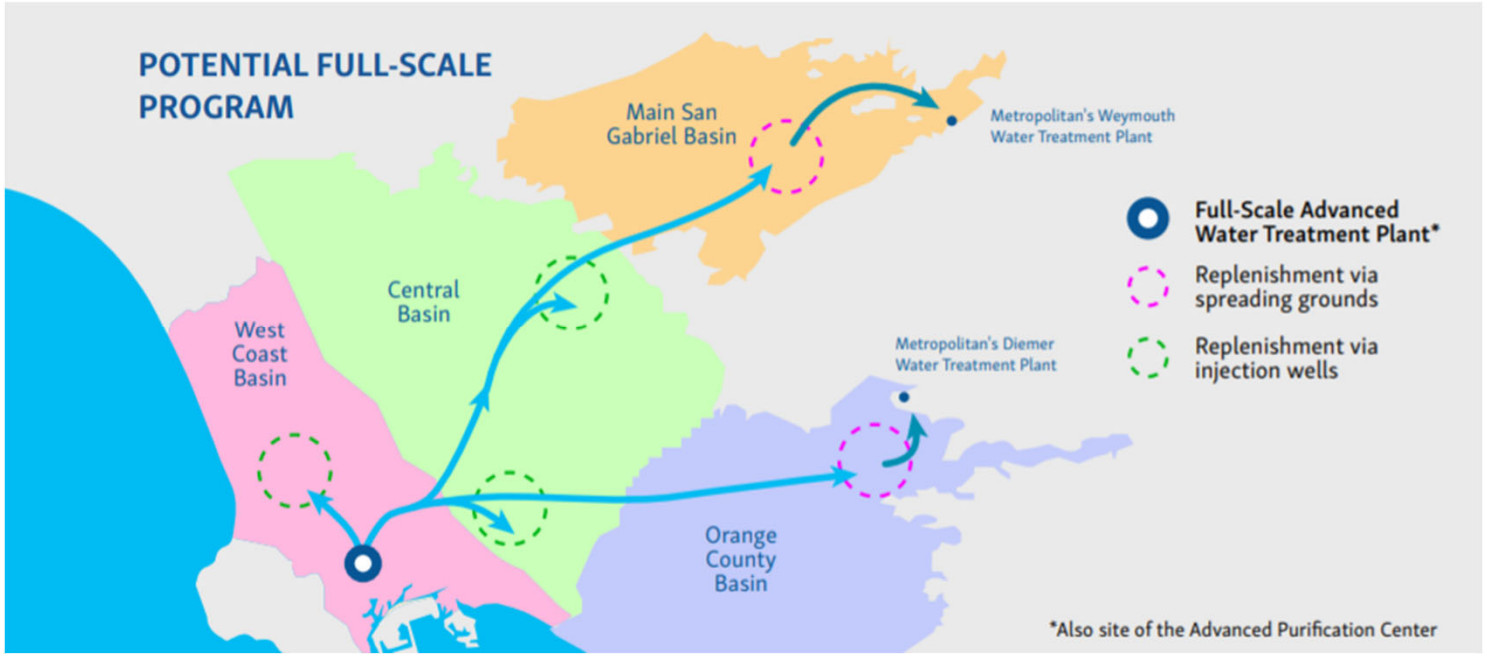


Hydrology Scenarios



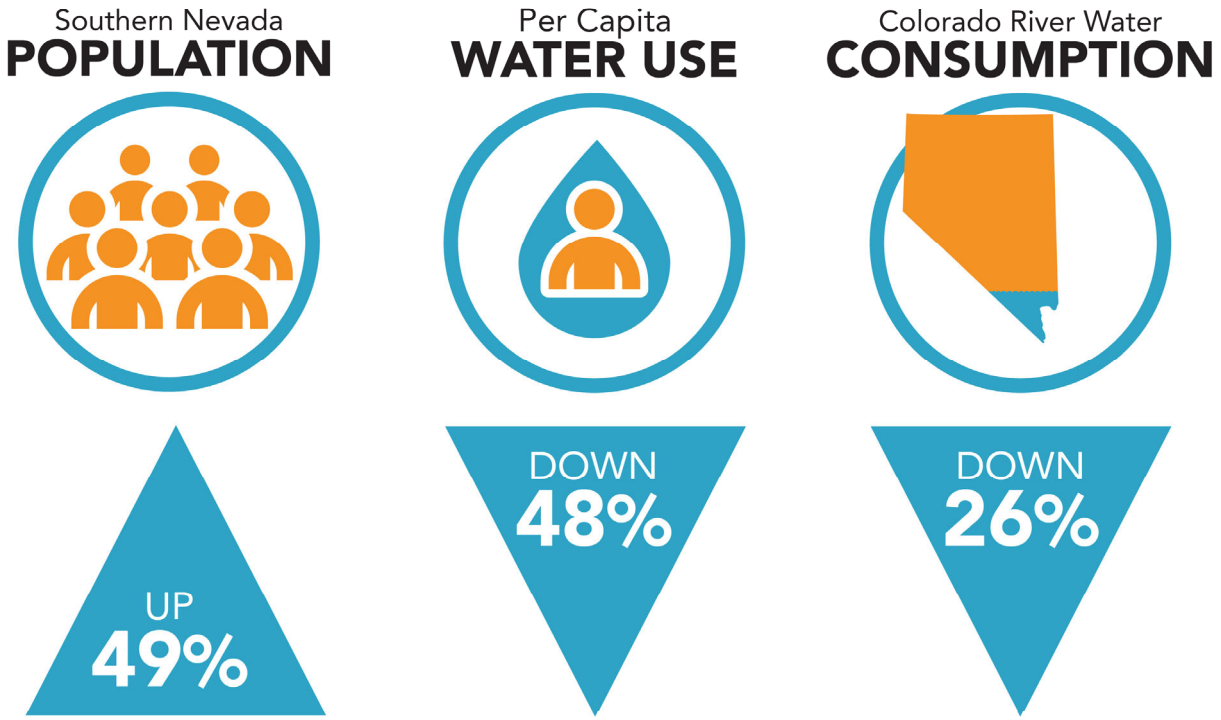
WATER RECYCLING PROJECT

Southern California's Recycled Water Project represents an innovative opportunity for Southern Nevada to secure additional Colorado River resources to meet future demands.



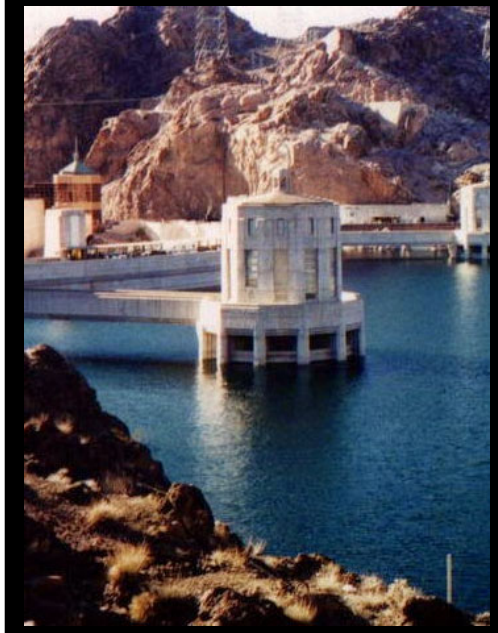

Present Day

Southern Nevada has made progress since 2002, but considerable work remains.

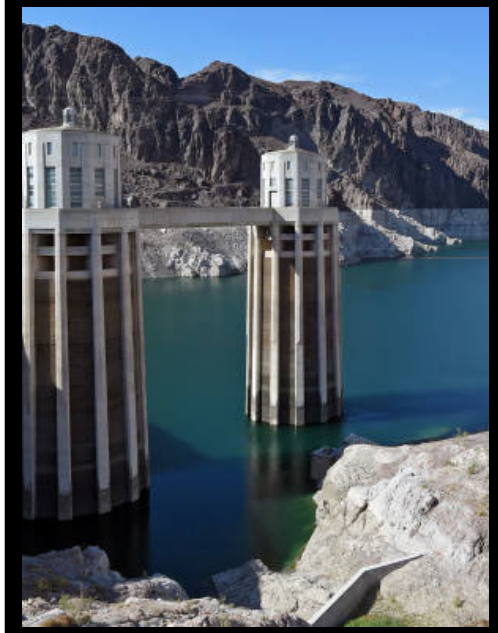


Drought conditions have significantly depleted Lake Mead's storage.

1999



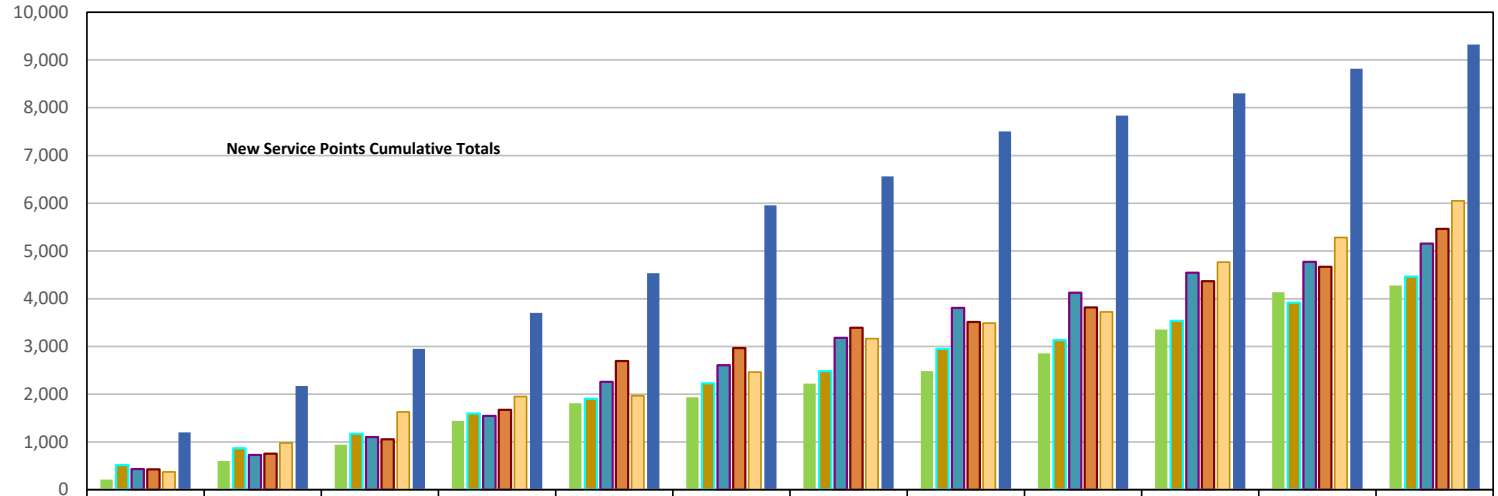
2004



2022

GROWING COMMUNITY

New account growth is much higher than previous years.



	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2016	212	601	940	1,440	1,811	1,935	2,221	2,482	2,855	3,355	4,136	4,277
2017	515	869	1,172	1,594	1,903	2,230	2,483	2,950	3,135	3,536	3,917	4,464
2018	432	727	1,101	1,546	2,258	2,607	3,180	3,806	4,125	4,546	4,772	5,155
2019	426	754	1,056	1,672	2,696	2,965	3,391	3,512	3,816	4,367	4,668	5,464
2020	371	978	1,628	1,949	1,967	2,463	3,164	3,489	3,722	4,766	5,283	6,049
2021	1,200	2,172	2,949	3,704	4,535	5,957	6,562	7,506	7,832	8,298	8,814	9,323

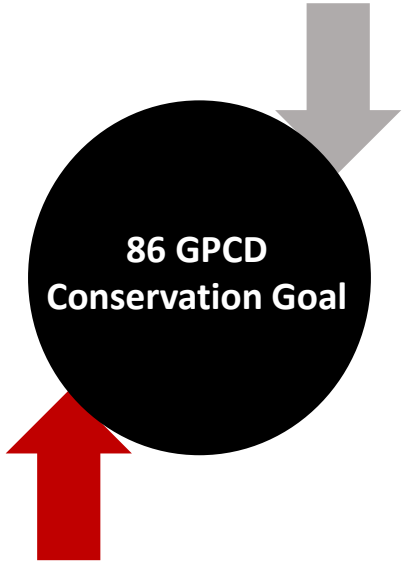
New Account Growth (LVVWD)

WATER USE

Warming climates add additional challenges in reducing water use.

Climate Change & Aging System

Increasing consumptive water demands due to warmer temperatures, drier soils lower precipitation, and increased system loss due to aging infrastructure.

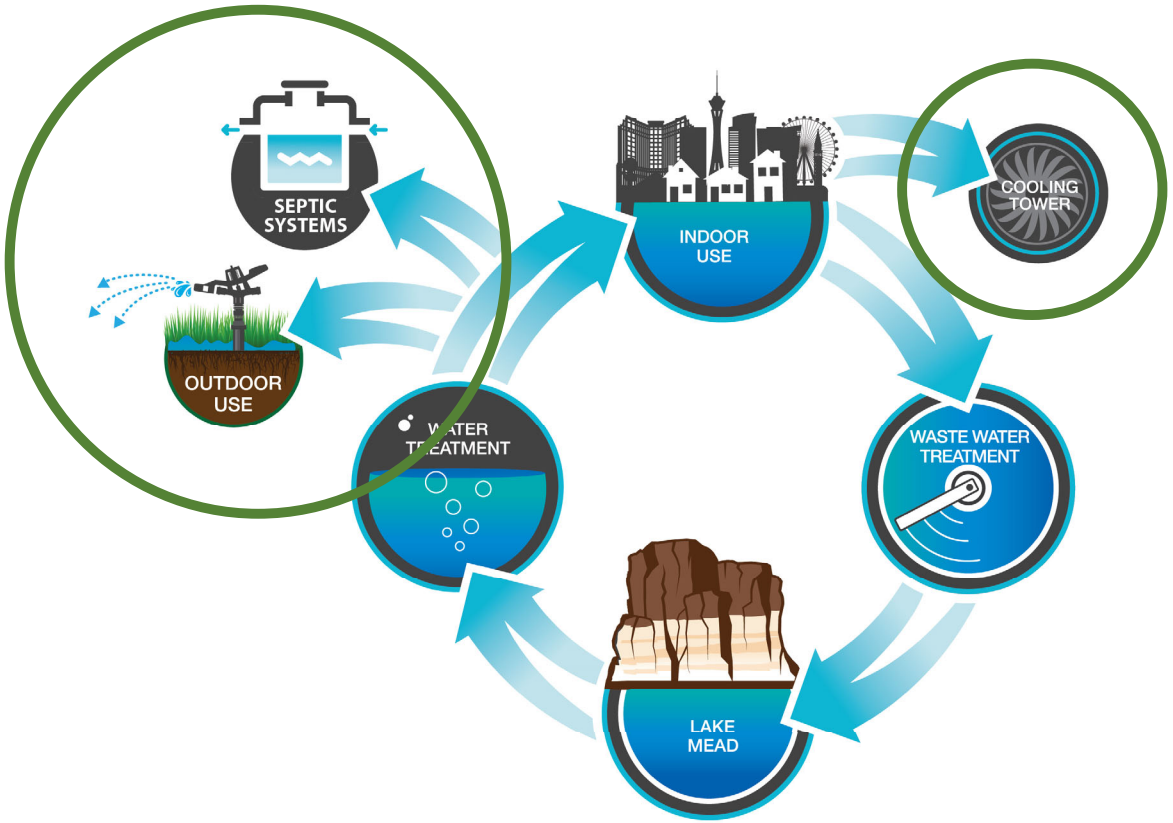


Adaptive Management

Significant additional effort will be required to reduce consumptive water use to meet our conservation goal and maximize the availability of water supplies.

FUTURE RESOURCES

Southern Nevada must reconsider how it grows to ensure sustainable long-term supplies.



REMOVING NON-FUNCTIONAL TURF

Unused turf is wasted water
(25 liters per square meter lost each year!)

- **Medians**
- **Roundabouts**
- **Neighborhood entries**
- **Pocket parks**
- **Front yards**
- **Unused back yards**

Non-functional turf is aesthetic only;
only walked on by landscapers.


NO NEW TURF
A recently-approved resolution will prohibit new installations of turf except at schools, parks and cemeteries.

EVAPORATIVE COOLING MORATORIUM

Behind irrigation, evaporative cooling represents the largest consumptive water use.

An approved moratorium will limit cooling towers and water-cooled HVAC systems.

The SNWA is seeking input from stakeholders (developers, manufacturers, industry, facility managers, etc.) on anticipated impacts to develop policy.

ACHIEVING THE CONSERVATION GOAL

Achieving higher levels of efficiency will extend the availability of current resources and reduce the need for temporary and future resources.

CURRENT INITIATIVES

Continue to drive down water use:

- **Convert non-functional turf**
- **Make new development as efficient as possible**
- **Ensure all wastewater is returned to Lake Mead**
- **Forge agreements among Colorado River partners**


SOUTHERN NEVADA WATER AUTHORITY®