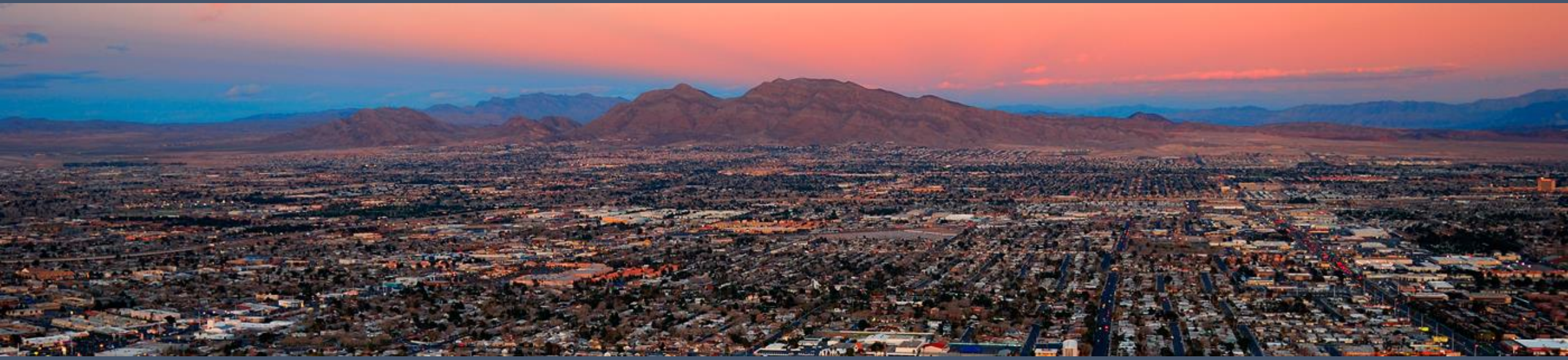
SOUTHERN NEVADA WATER BRIEFING

Prepared for the Legislative Commission's Subcommittee to Study Water

John J. Entsminger, General Manager
Southern Nevada Water Authority



SOUTHERN NEVADA WATER AUTHORITY

EXHIBIT C - WATER
Document consists of 50 pages.
Entire exhibit provided.
Meeting Date: 4-22-16

SOUTHERN NEVADA WATER AUTHORITY®

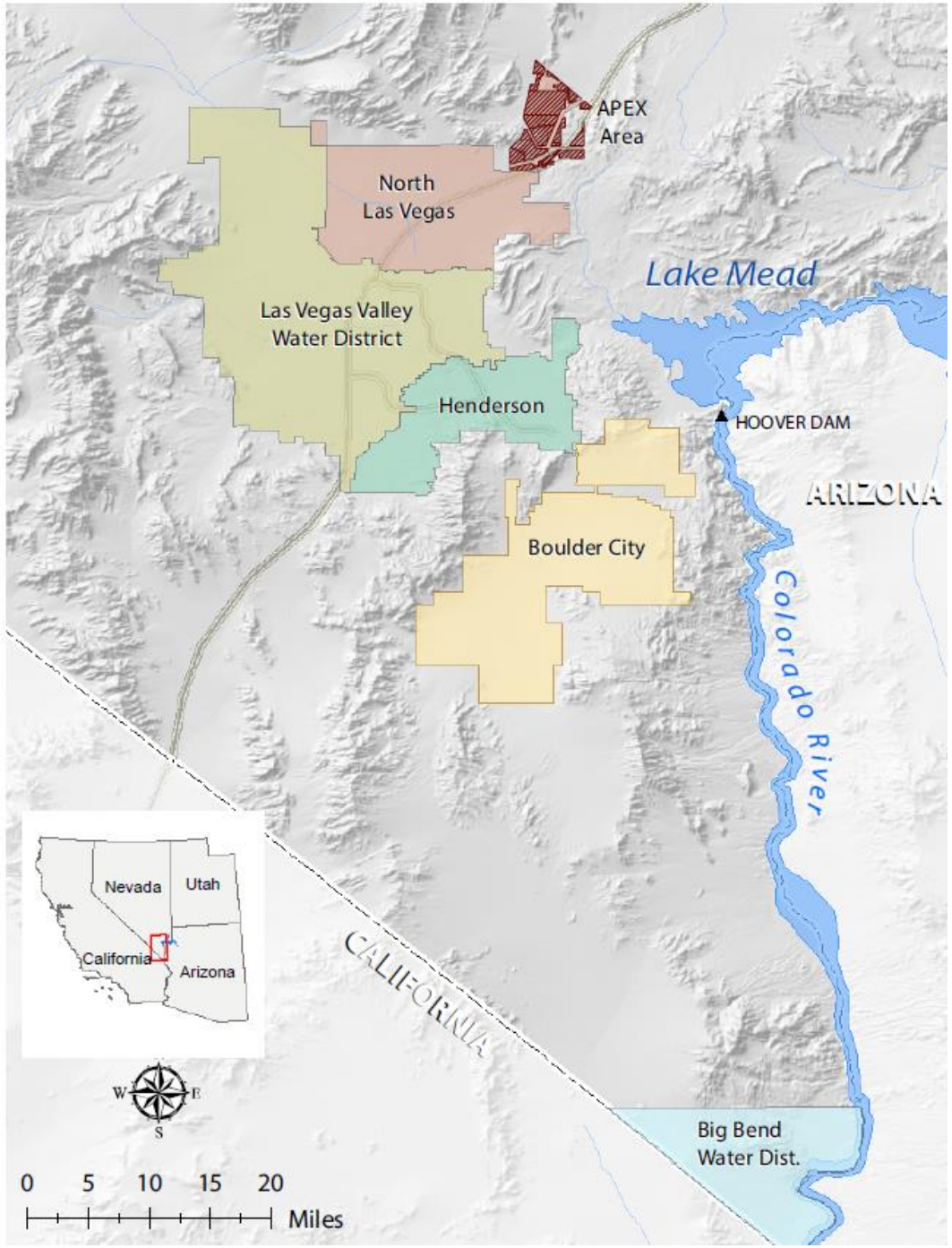
- Regional water supply planning
- Water quality
- Facility construction
- Operate major regional facilities
- Conservation

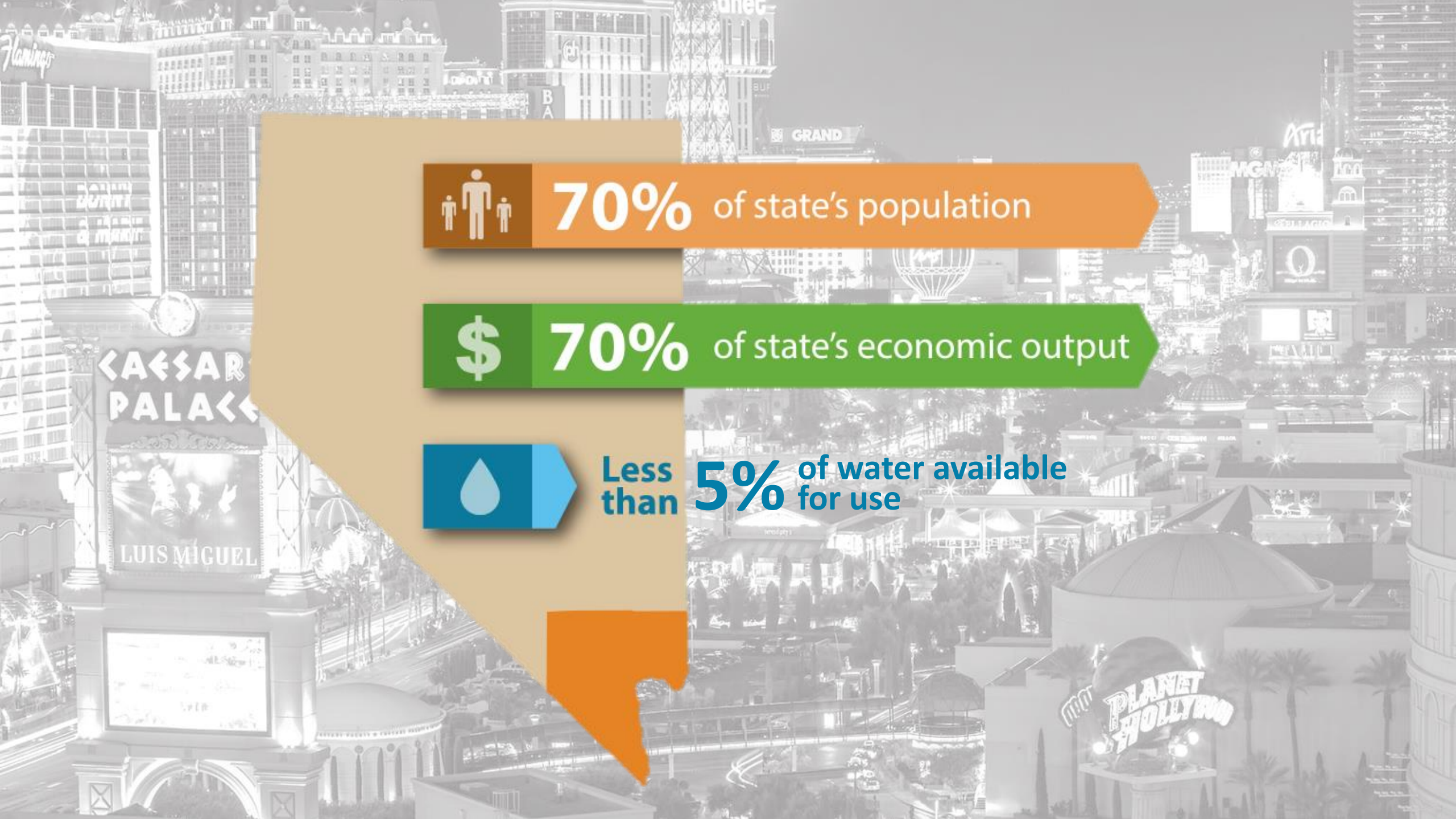
More than two million Nevadans rely on the SNWA
to provide a safe and reliable water supply
for their homes and businesses.



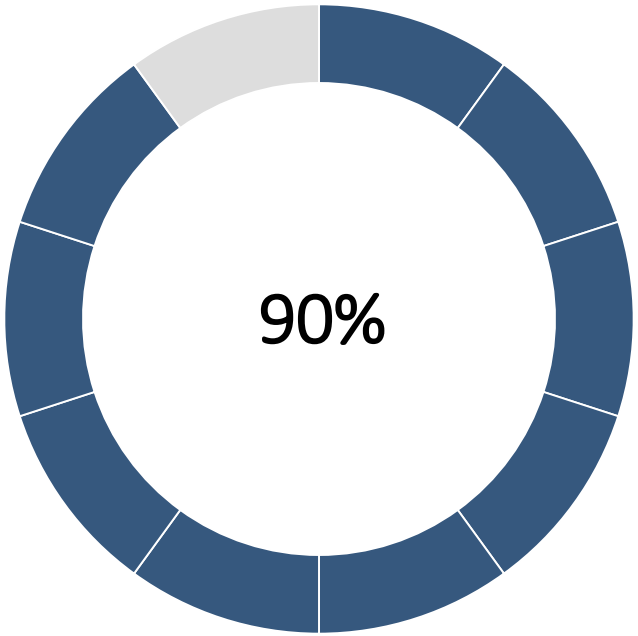
SNWA SERVICE AREA

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

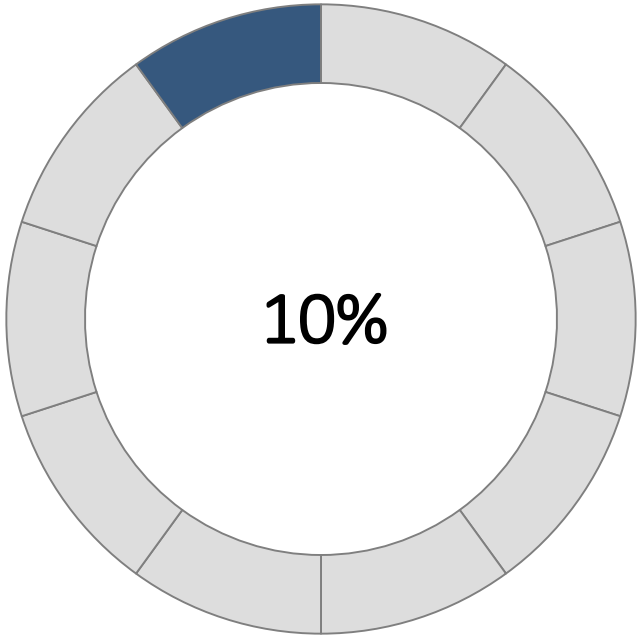



70% of state's population
$ 70% of state's economic output
Less than 5% of water available for use

The Colorado River meets 90 percent of the community's water demands.



Colorado River Resources

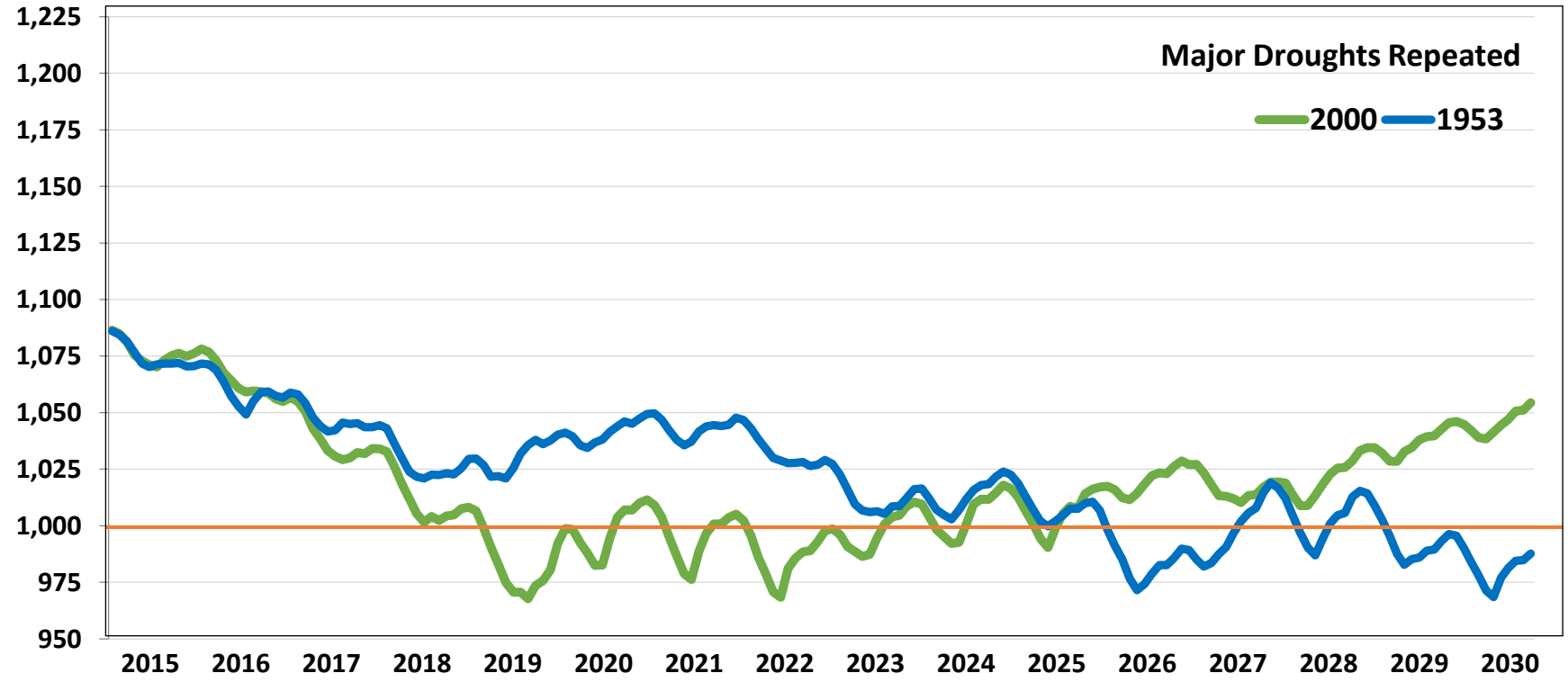


Las Vegas Valley Groundwater

Since 1999, the Basin has been experiencing the worst drought conditions in recorded history.

Lake levels are projected to continue to decline.

Lake Mead Elevation



Prior to the drought, the SNWA relied exclusively on Colorado River water to meet long-term demands.

When the drought hit, the SNWA evaluated alternative supplies of water.

The drought caused the SNWA to:

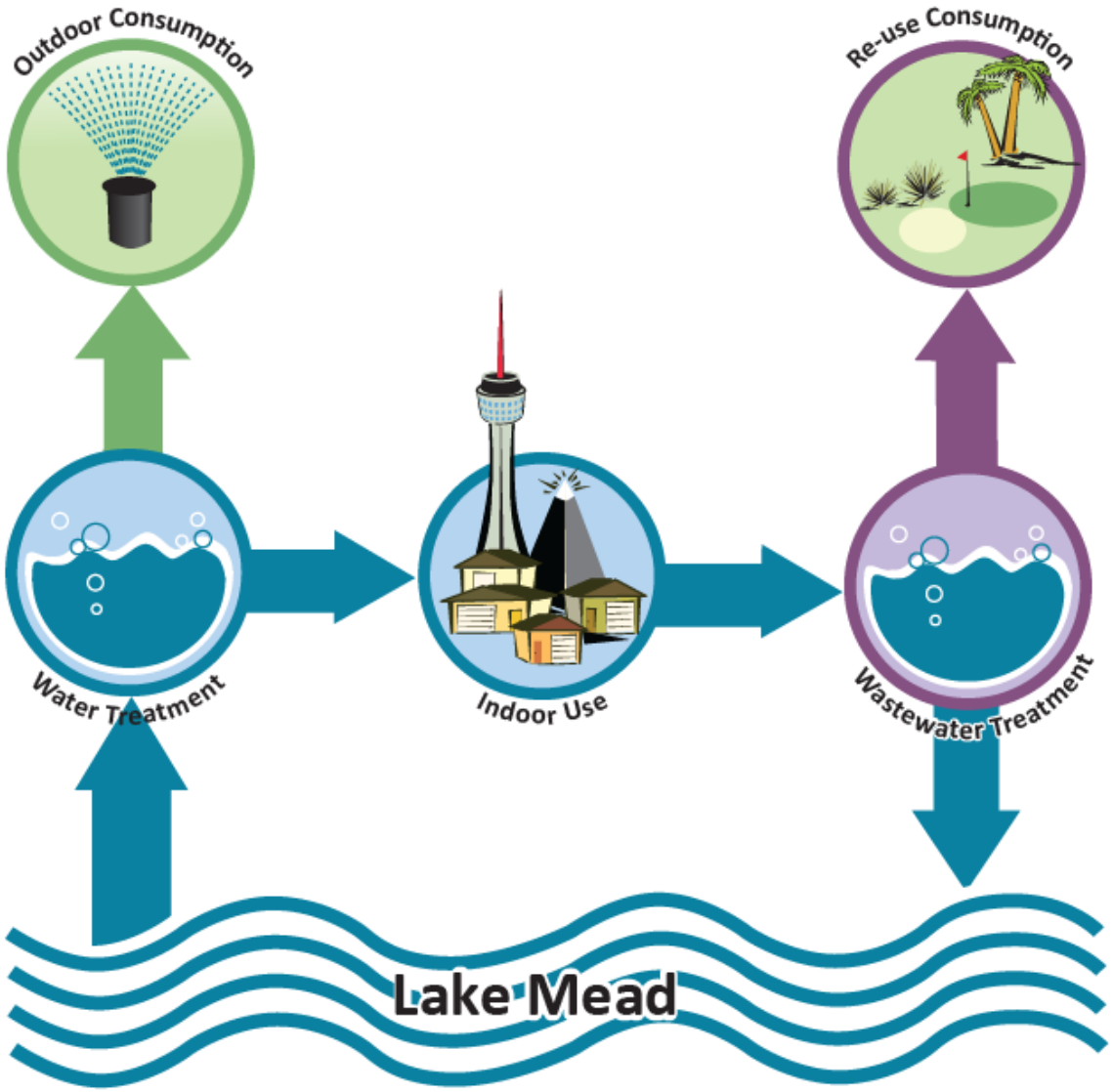
- Enhance conservation measures
- Form agreements with other states and Mexico
- Look at pre-compact rights on the Virgin and Muddy River
- Evaluate in-state solutions
- Evaluate desalination

The SNWA utilizes a suite of tools to provide a reliable water supply for Southern Nevada.

CONSERVATION

RESOURCES

INFRASTRUCTURE

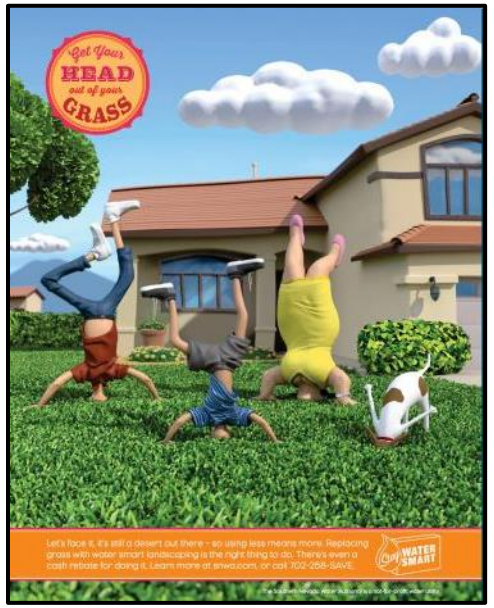


More than 99% of water used indoors is captured, treated and reused.

Only water used outdoors is lost. Southern Nevada can reuse water used indoors indefinitely.

CONSERVATION

The community has adopted a “culture of conservation” through programs, rebates, policies and education.



CONSERVATION

- Landscape Development Codes
- Golf Course Water Budgets
- Watering Restrictions
- Pool cover and Smart Controller rebates
- Industry partnerships (home developers, landscapers, hospitality)
- Car Wash coupons
- Teacher training
- Youth Advisory Council
- Demonstration Gardens
- WaterSmart Innovations Conference
- Springs Preserve

CONSERVATION

The SNWA's award-winning advertising campaigns have helped communicate the importance of water conservation.

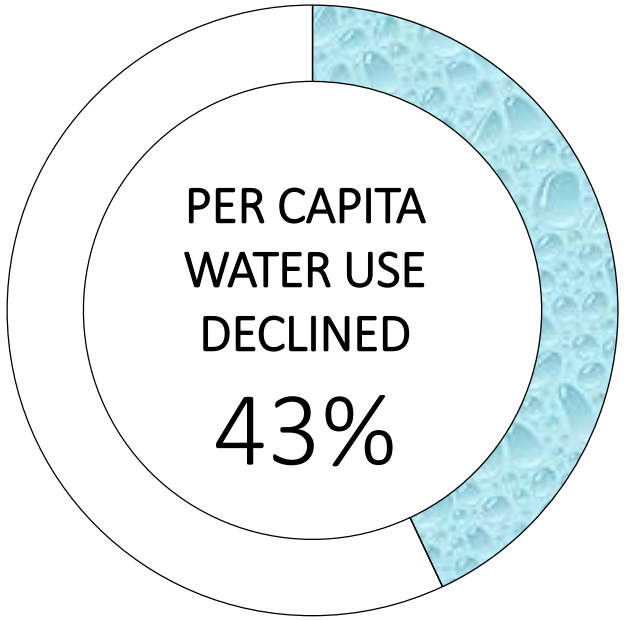
ADVERTISING CAMPAIGN:
“Suburban Moms”

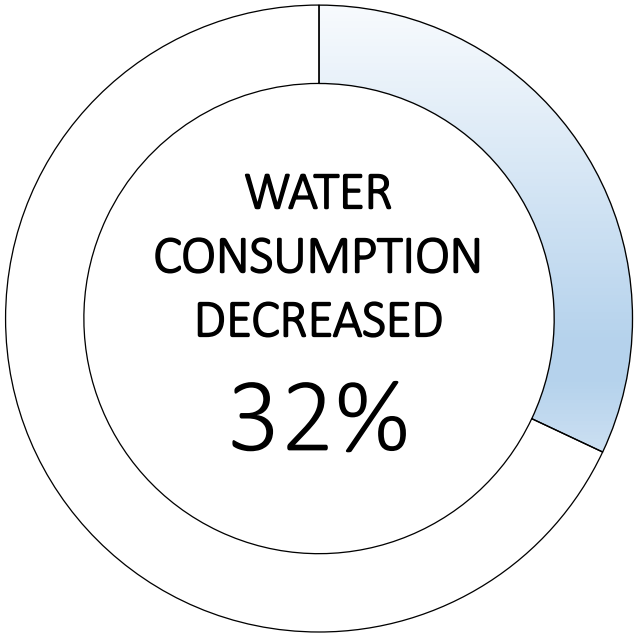

SOUTHERN NEVADA RESORTS
Employ
22%
of state's
workforce
Use less than
1%
of the state's
water

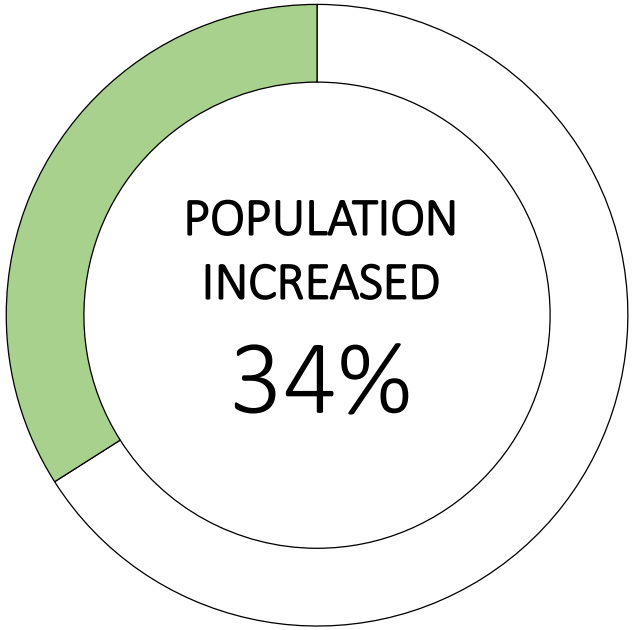
The SNWA's Water Smart Landscapes Program has yielded remarkable water savings for Southern Nevada.

CONSERVATION

Since 2002…







CONSERVATION

We are continuing to implement opportunities to reduce water use in Southern Nevada and maximize the use of water resources.

WaterSmart Landscape Rebate increased to $2 per square foot

Revising Fountain Ordinances

Removing Sunday from the summer watering schedule

A mix of permanent, temporary and future water resources are utilized to meet Southern Nevada's water demands.

PERMANENT

TEMPORARY

FUTURE

PERMANENT RESOURCES

Permanent Resources	Current Right or Storage Amount
Colorado River (SNWA)	272,205 AFY
Return-flow Credits (Indirect Reuse)	~0.75 times Consumptive Use of Colorado River
Nevada Unused Colorado River (Non-SNWA)	20,947 (2014) to 0 (2031) AFY
Tributary Conservation / Imported ICS	~29,000 AFY
Las Vegas Valley Groundwater Rights	46,830 AFY
Direct Reuse	21,800 AFY

TEMPORARY RESOURCES

Temporary Resources	Current Right or Storage Amount
Southern Nevada Groundwater Bank	336,787 AF
California Water Bank	330,225 AF
Arizona Water Bank	601,041 AF
Short-term Leased Tributary Conservation ICS	~10,000 AFY
Brock Reservoir ICS	400,000 AF
Yuma Desalting Plant ICS	3,050 AF
Extraordinary Conservation ICS	112,783 AF
Binational ICS (credits pending)	23,750 AF
TOTAL TEMPORARY RESOURCES	**1,817,636 AF**

FUTURE RESOURCES

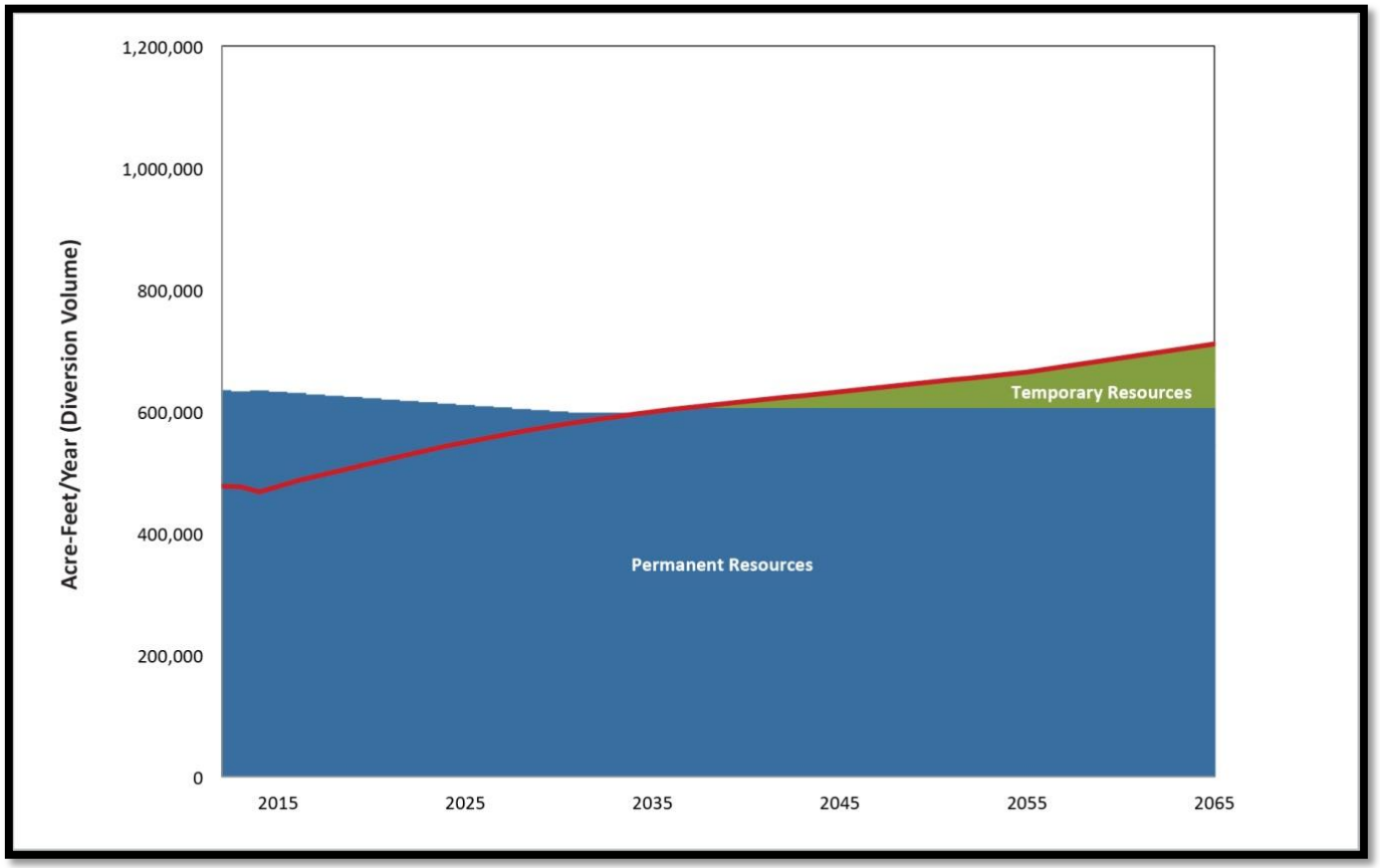
Desalination: The SNWA is exploring opportunities at Yuma Desalting Plant, Rosarito Beach and options in California.

Unallocated Nevada Groundwater: Options developed when and if needed. Permits/ Rights-of-way undergoing legal review.

Virgin River/ Colorado River Augmentation: Up to 108,000 af in opportunities

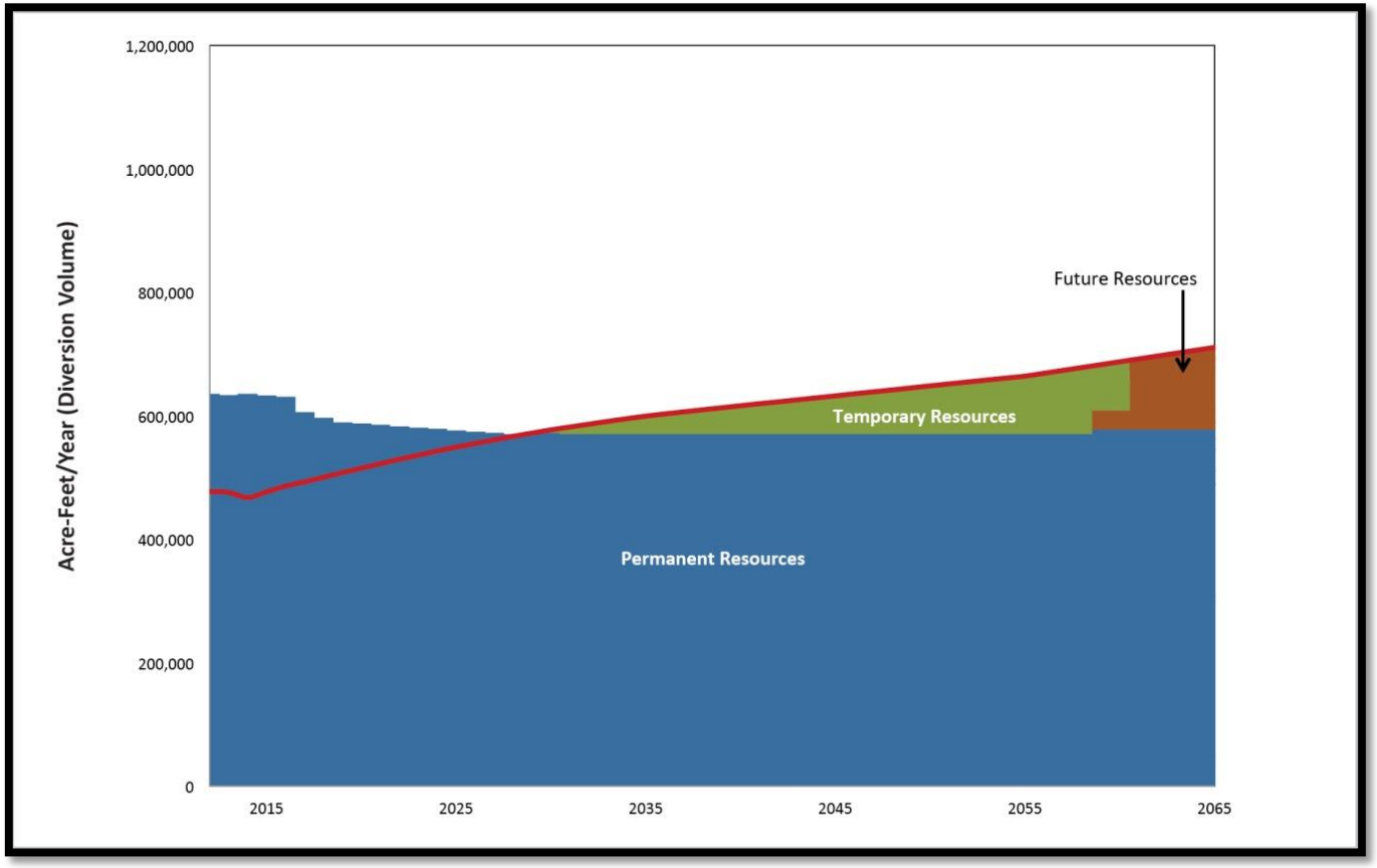
2015 SNWA WATER RESOURCE PLAN

Lower Demand – No Shortage



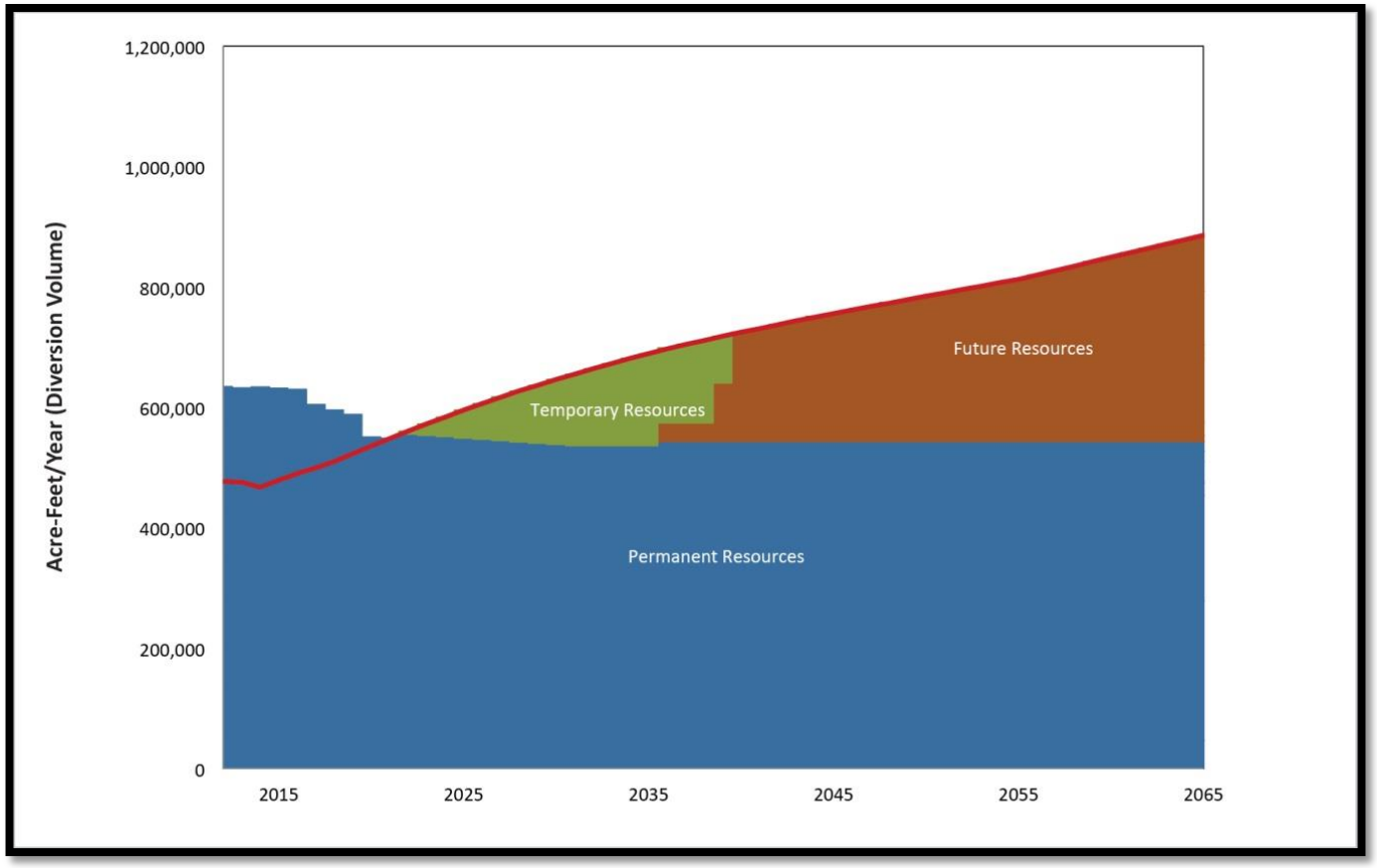
2015 SNWA WATER RESOURCE PLAN

Lower Demand – 20,000 AFY Shortage



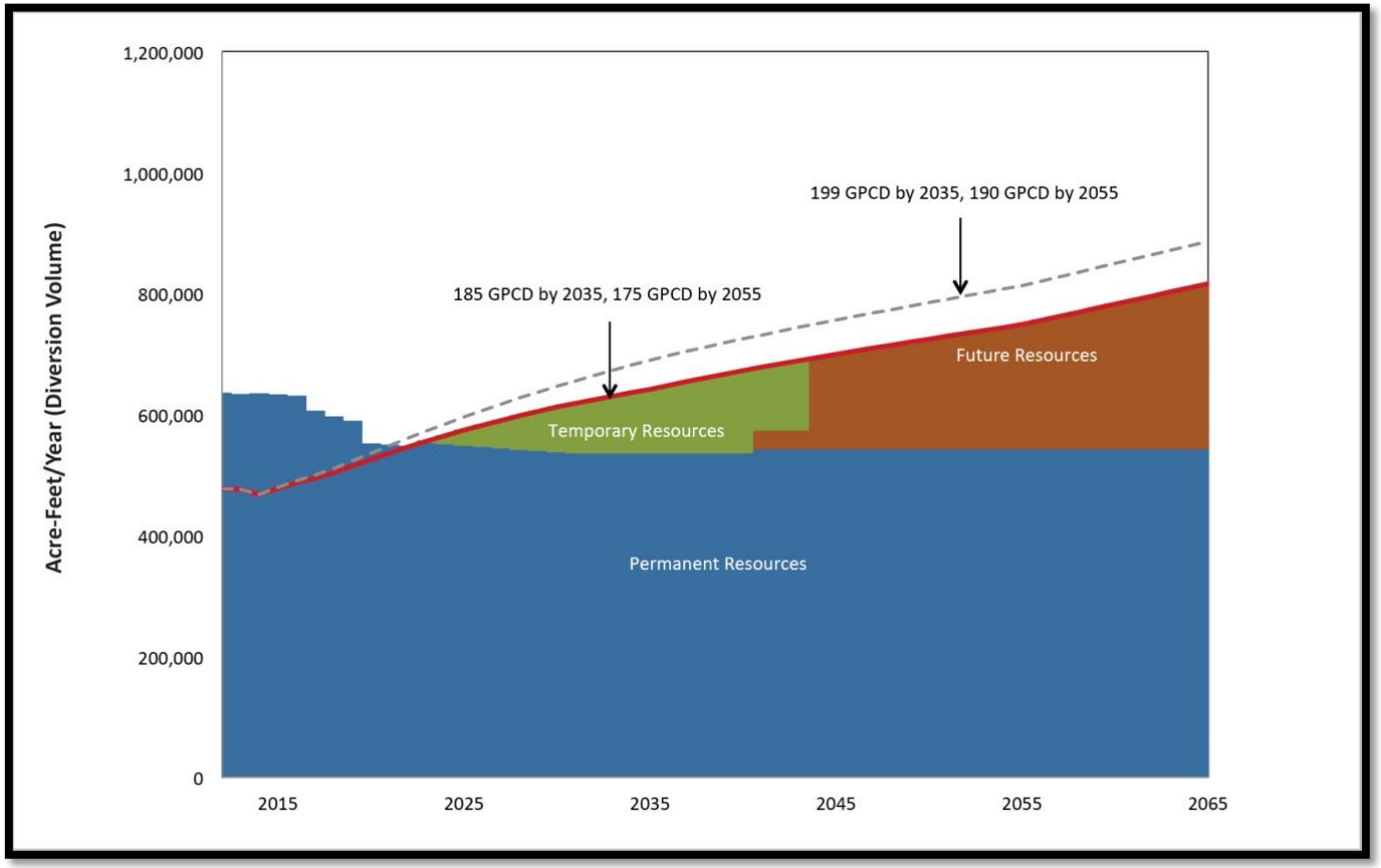
2015 SNWA WATER RESOURCE PLAN

Upper Demand – 40,000 AFY Shortage



2015 SNWA WATER RESOURCE PLAN

Additional Conservation



Major infrastructure is needed to meet demands during extreme drought conditions.

- **Intake No. 3**

- **Low Lake Level Pump Station**

Shape charges were used to blast the bottom of the lake to make way for the intake structure.

Cement trucks for intake structure placement

Intake structure

Intake tunnel, before it was put into service

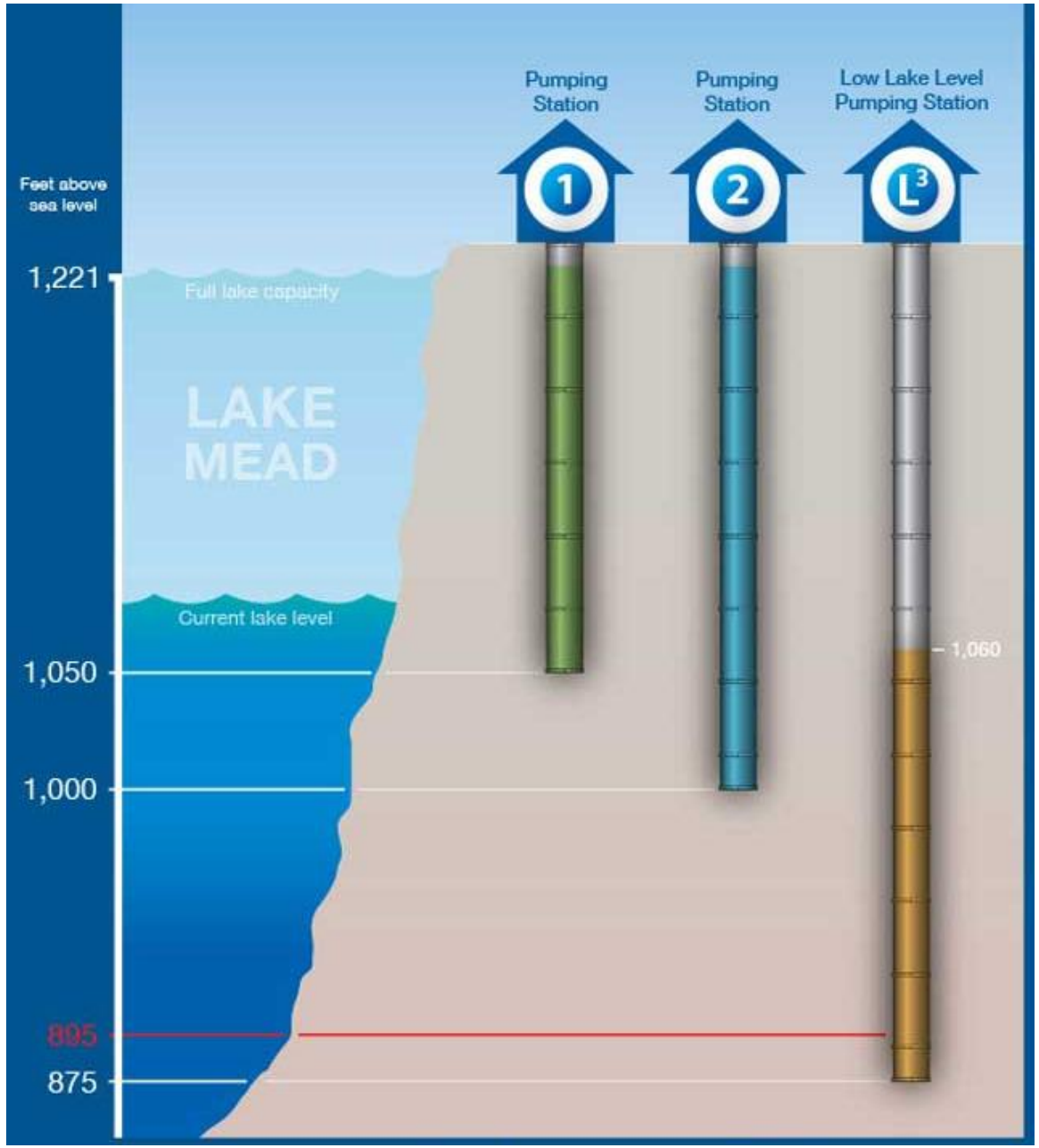
December 2014: Successful dock of TBM with Intake Structure

June 2015: Chemical Feed Line Installation


SOUTHERN NEVADA WATER AUTHORITY®

Construction has begun on a new Low Lake Level Pumping Station near Lake Mead.

When completed, the pump station will ensure water deliveries down to 875 feet.



Mass excavation for new pumping station

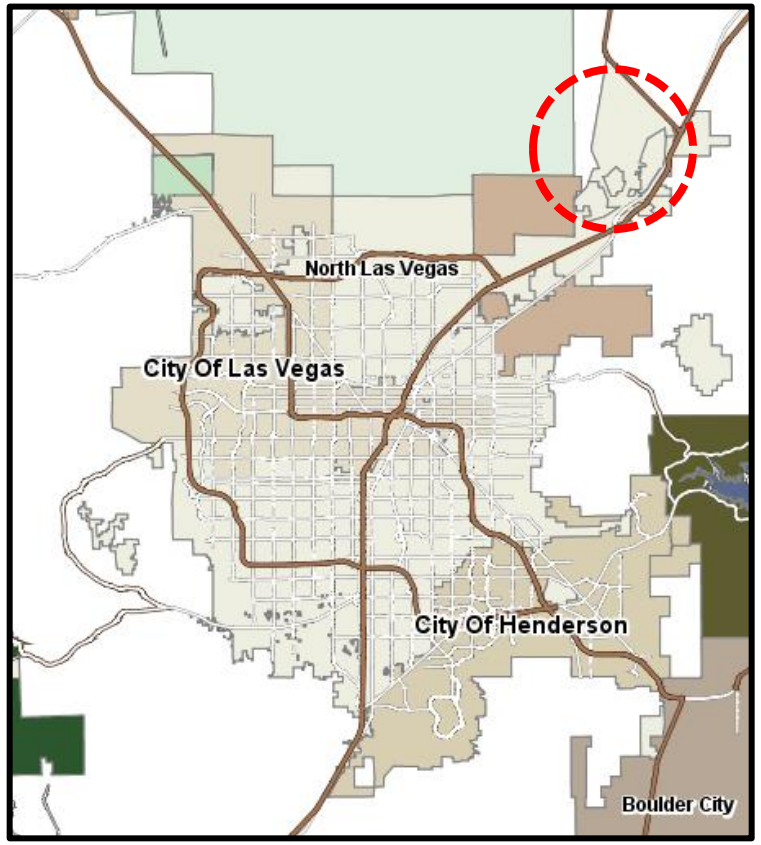
July 14, 2015 – First Blast

8-Foot Diameter Well Shaft Drill Rigs

February 29, 2016

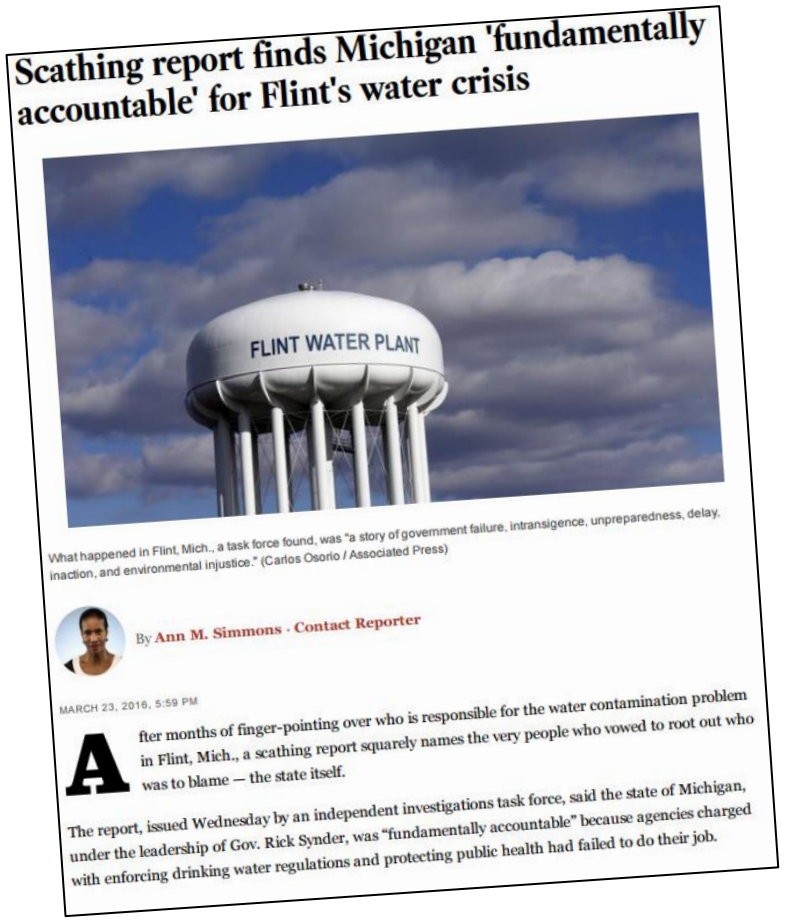
8-Foot Diameter Drills

SNWA RECENT ACTIVITIES



The SNWA is working with local and regional partners to construct a water system in Garnet Valley, Clark County.

- Water system authorized by Nevada Special Session (Dec. 2015)
- Water needed for industry in the area, specifically Faraday Future automobile manufacturer
- Water system will include a treatment facility, production wells, storage and conveyance systems



Scathing report finds Michigan 'fundamentally accountable' for Flint's water crisis

What happened in Flint, Mich., a task force found, was "a story of government failure, intransigence, unpreparedness, delay, inaction, and environmental injustice." (Carlos Osorio / Associated Press)

By Ann M. Simmons . Contact Reporter

MARCH 23, 2016, 5:59 PM

After months of finger-pointing over who is responsible for the water contamination problem in Flint, Mich., a scathing report squarely names the very people who vowed to root out who was to blame — the state itself.

The report, issued Wednesday by an independent investigations task force, said the state of Michigan, under the leadership of Gov. Rick Synder, was "fundamentally accountable" because agencies charged with enforcing drinking water regulations and protecting public health had failed to do their job.

The SNWA is committed to protecting water quality.

- In 2014, the SNWA collected 36,000 water samples on which scientists conducted 327,000 analyses.
- Moreover, the SNWA conduct tests for 91 regulated contaminants as well as more than 50 unregulated contaminants.
- Water quality is monitored in "real time", 24 hours a day, 365 days a year.
- Cost effective measures are not taken at the expense of safety.

The SNWA is committed to working with Nevada's partners to address drought impacts.

Last year, Governor Sandoval convened the Nevada Drought Forum, comprised of state water experts to make recommendations to the Governor.

FORUM RECOMMENDATIONS

- Water conservation efforts
- Remove barriers to conservation in Nevada Water Law
- Increase monitoring and research data efforts
- Seek financial and technical assistance
- Support supply augmentation and long-range planning
- Increase information sharing and outreach
- Further refine drought declarations and emergency actions
- Codify 3M plans and other State Engineer practices

Las Vegas Valley Groundwater Management Program

Years of over pumping in the Las Vegas Groundwater Basin led to basin impacts:

- Groundwater subsidence
- Declining groundwater table
- Affected water users

In 1997, the Nevada Legislature directed the SNWA to establish a groundwater management program to address the issues.

Las Vegas Valley Groundwater Management Program

- In 1997, the Nevada Legislature created the Advisory Committee for Groundwater Management to address the Las Vegas Valley's unique groundwater issues.
- The process included public participation and outreach.
- The law authorized the collection of $10 per acre-foot or a domestic well charge to pay for local solutions.

Las Vegas Valley Groundwater Management Program

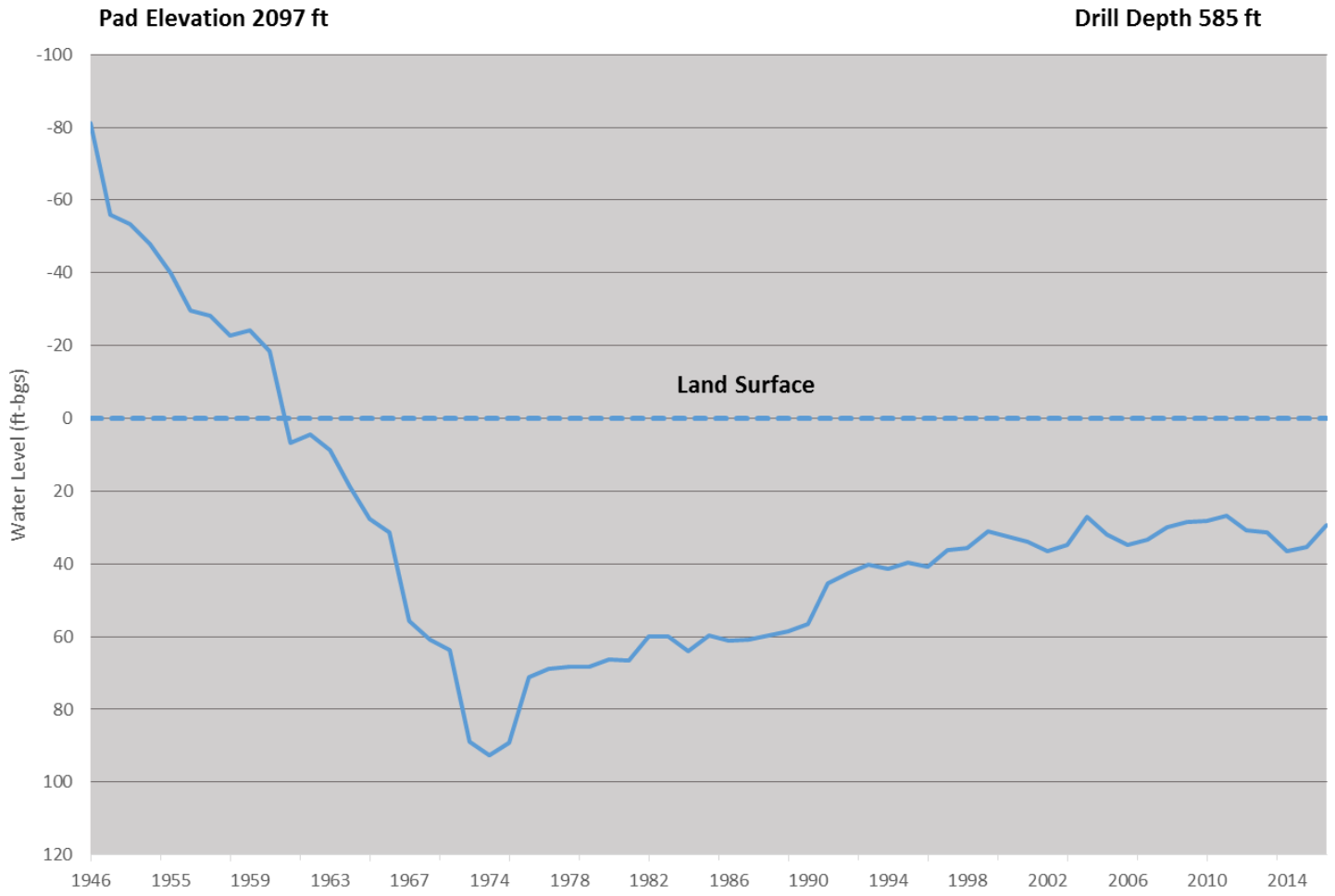
The committee studied the issues for two years and made recommendations to the 1999 Legislative Session that address the unique needs of the Las Vegas Valley Water basin and its users:

- Introduction of permanent artificial recharge program in 1989
- Well conversion grant program
- Aquifer protection (water quality monitoring)
- Well plugging and abandonment program
- Conservation programs (sub-meter assistance and turf rebates for well users)
- Increase the fee up to $30 per acre-foot and increase the fee for domestic wells to implement recommendations

Las Vegas Valley Groundwater Management Program

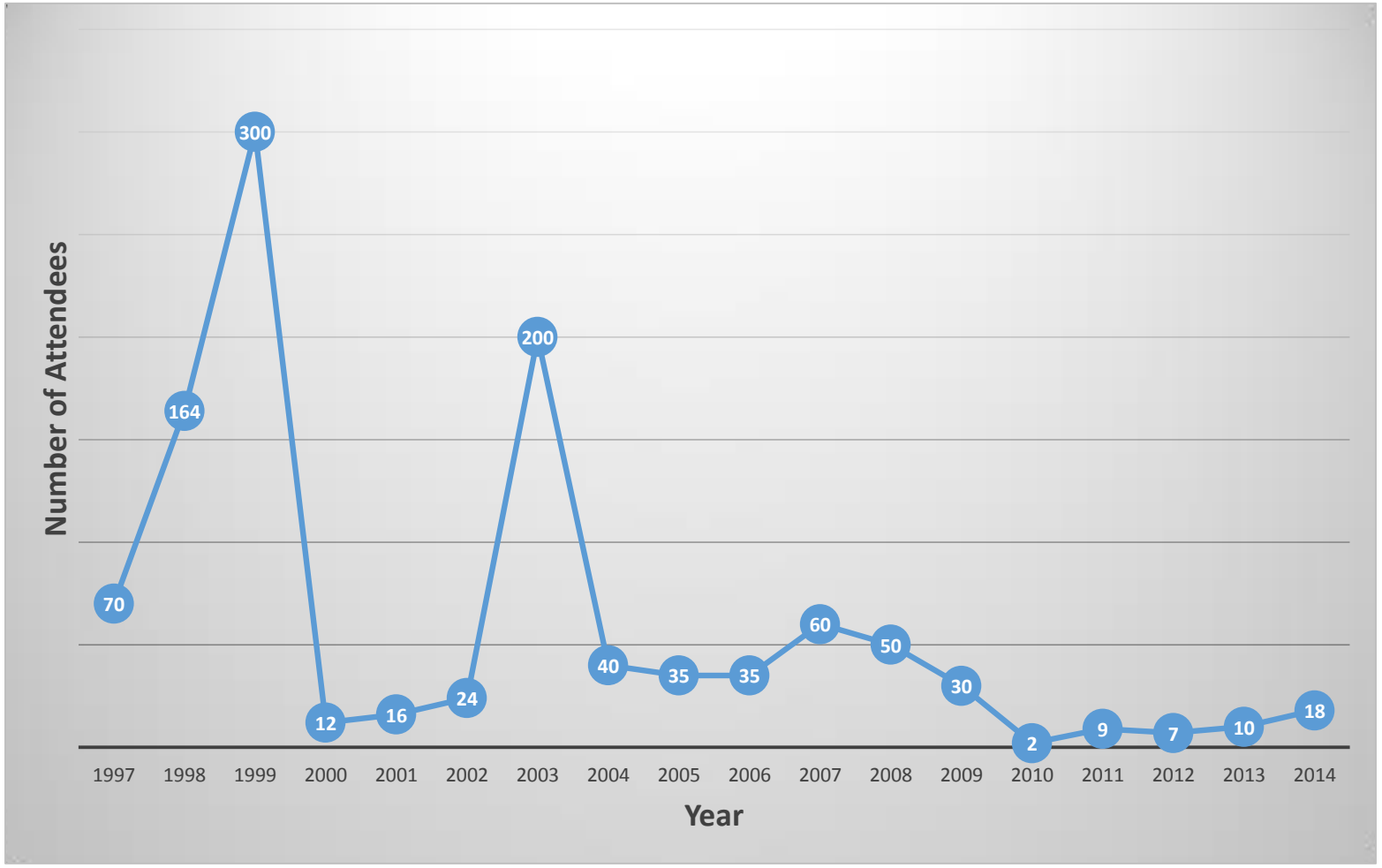
LAS VEGAS VALLEY GROUNDWATER LEVELS

Groundwater levels have been steadily maintained since the introduction of the artificial recharge program in 1989.



Las Vegas Valley Groundwater Management Program

Public participation has waned as issues affecting well users have been resolved.



Las Vegas Valley Groundwater Management Program

PROGRAM ACHIEVEMENTS

- Provided financial assistance to more than 500 well users to connect to a municipal water supply
- Distributed more than 398 sub-meters to well owners
- Plugged more than 359 unused wells, protecting the aquifer

LEGISLATIVE RECOMMENDATIONS FOR 2017

Support Drought Forum recommendations:

- Address and clarify monitoring, management and mitigation (3M) plans
- Require metering of all water uses across the state
- All significant water users should submit a simplified conservation plan.

SOUTHERN NEVADA WATER AUTHORITY®