

# SOUTHERN NEVADA WATER BRIEFING

*Prepared for the Public Lands Committee*

---

John J. Entsminger, General Manager  
Southern Nevada Water Authority



SOUTHERN NEVADA WATER AUTHORITY

## EXHIBIT C - LANDS

Document consists of 38 pages.

Entire exhibit provided.

Meeting Date: 2-16-16

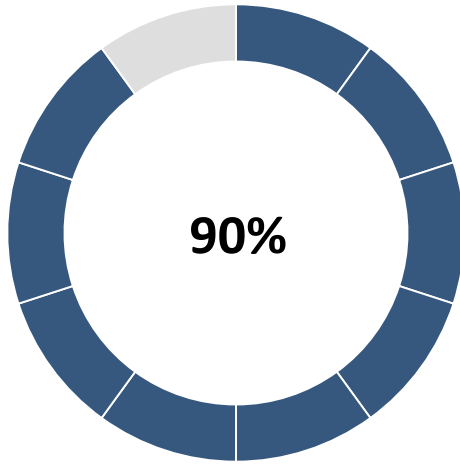


- **Regional water supply planning**
- **Conservation programming**
- **Water quality**
- **Facility construction**
- **Operate major regional facilities**

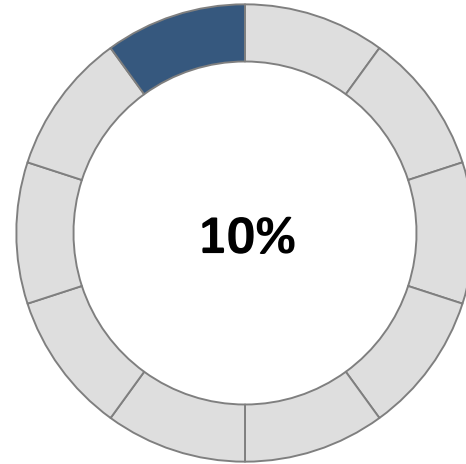
**More than two million Nevadans rely on the SNWA  
to provide a safe and reliable water supply  
for their homes and businesses.**



**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.



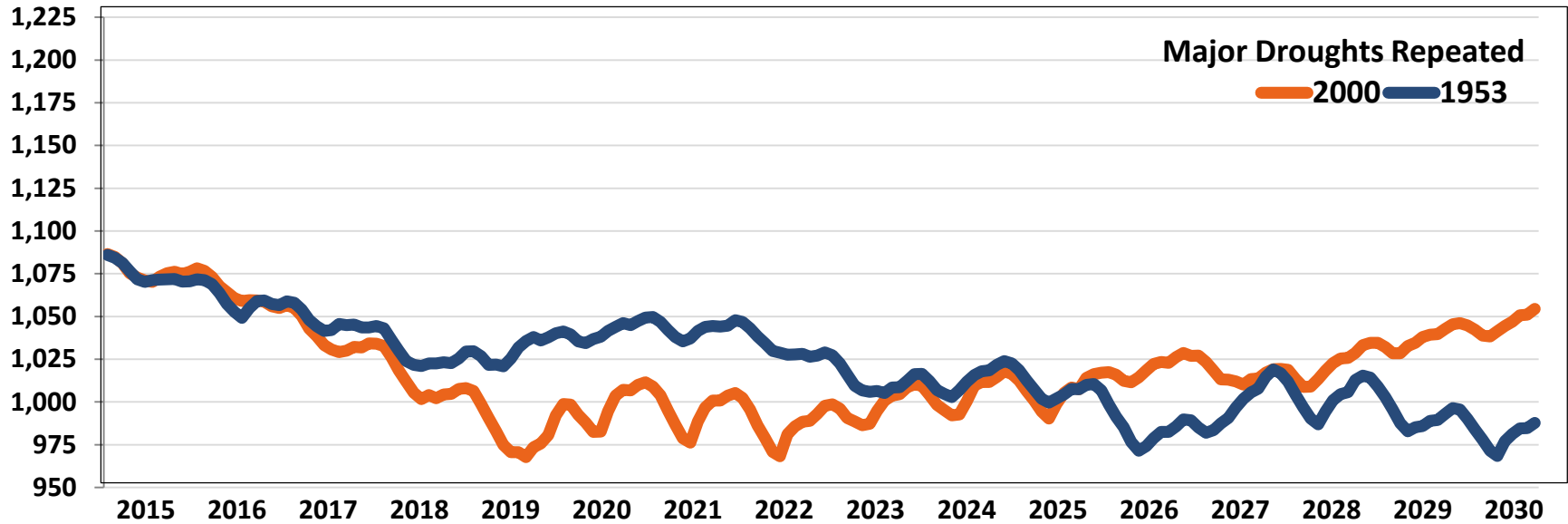
**Present 2000**

**Elevation: 1,083 ft.**



# Lake levels are projected to continue to decline

Lake Mead Elevation





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



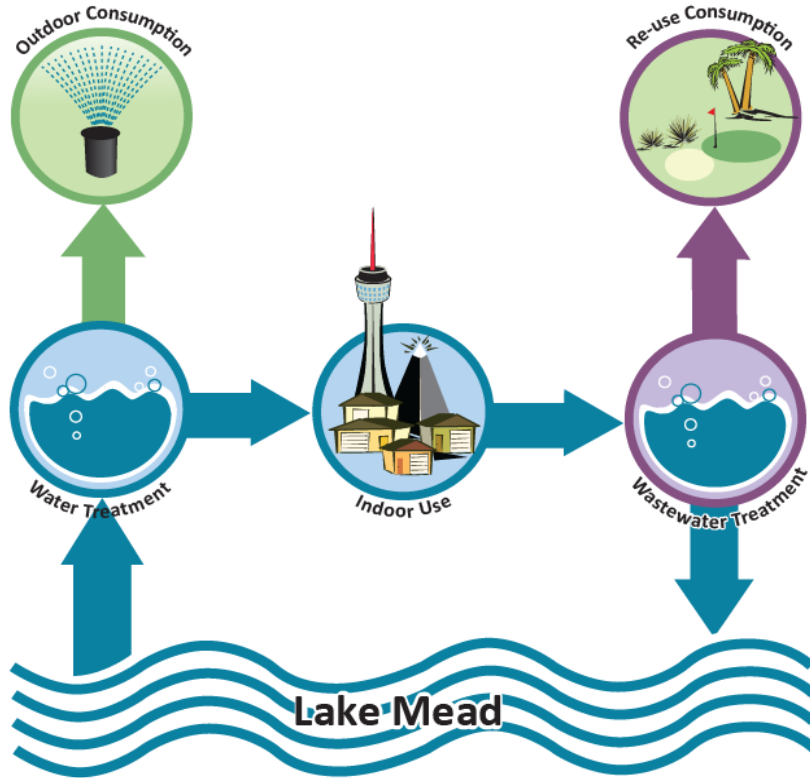
**CONSERVATION**



**INFRASTRUCTURE**



**RESOURCES**



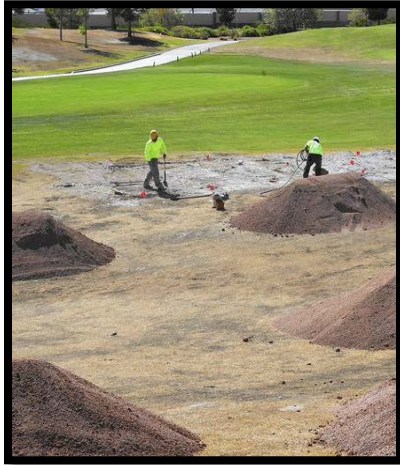
More than 99% of water used indoors is captured, treated and reused.

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



# CONSERVATION

**The SNWA administers one of the nation's most comprehensive and successful water conservation programs.**





# CONSERVATION

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

MANDATORY WATERING RESTRICTIONS			
<small>Mandatory restrictions mean you may not water only on the assigned days for your watering group. Check your bill for your watering days, visit <a href="http://snwa.com">snwa.com</a> or call your water provider. Post this schedule by your watering shutoff.</small>			<small>My assigned group:</small>
Watering Group	Winter November - February	Spring / Fall March - April / September - October	Summer May - August
A	Monday	Monday, Wednesday, Friday	Any Day
B	Tuesday	Tuesday, Thursday, Saturday	Any Day
C	Wednesday	Monday, Wednesday, Friday	Any Day
D	Thursday	Tuesday, Thursday, Saturday	Any Day
E	Friday	Monday, Wednesday, Friday	Any Day
F	Saturday	Tuesday, Thursday, Saturday	Any Day

Run sprinklers 3 times, 4 minutes per cycle on your assigned days. For drip systems, see inside.





# CONSERVATION

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



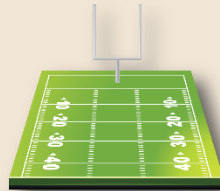
## WATER SMART LANDSCAPES PROGRAM FACTS

**175 MILLION**

Square feet of grass that has been removed  
since the WSL program began in 1999

### THAT'S EQUIVALENT TO:

Enough grass to  
cover more than



**3,000**  
FOOTBALL FIELDS

OR

Rolling an 18" wide  
strip of sod nearly



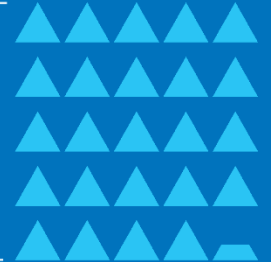
**90%**  
AROUND THE EARTH

**88 BILLION**

Gallons of water saved to date.

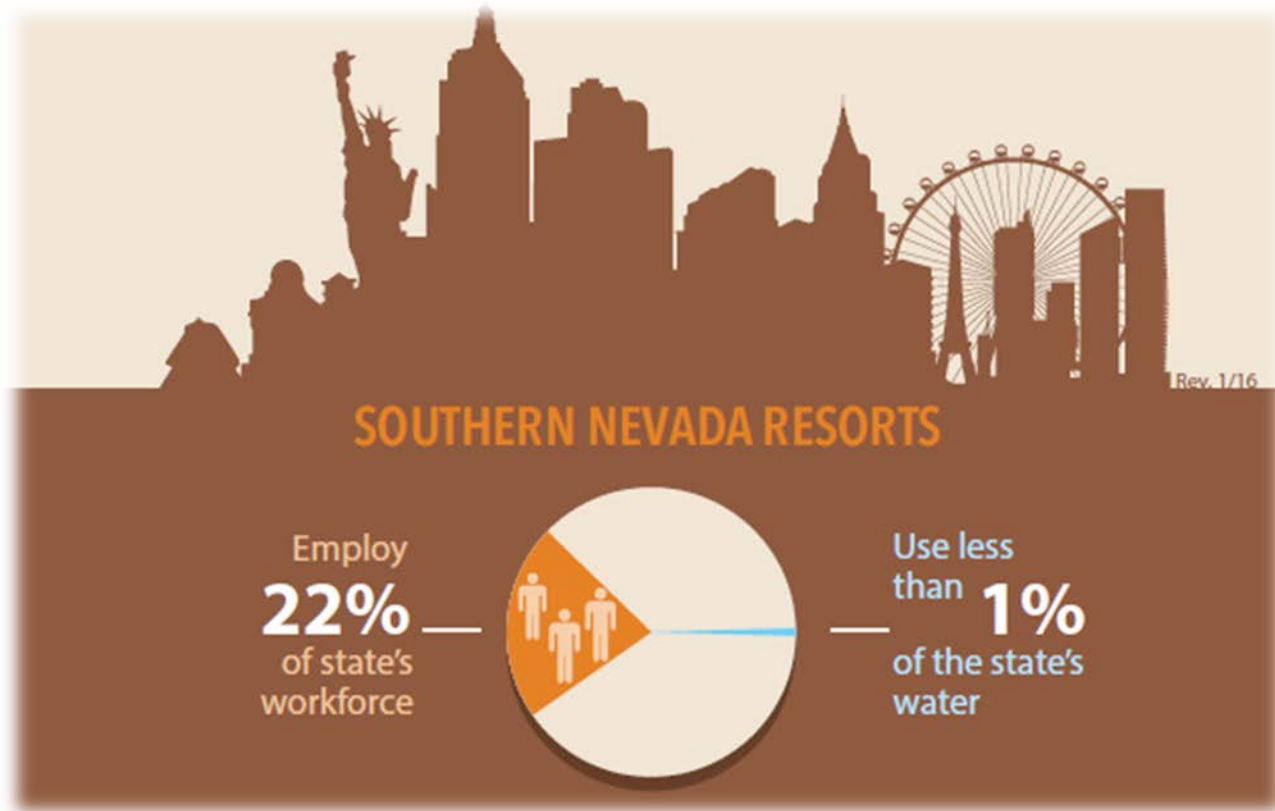
That's enough  
water to fill the  
Luxor Hotel  
Pyramid

**244**  
TIMES





# CONSERVATION: resort water use







# CONSERVATION: resort water use

## PERCEPTION







# CONSERVATION: resort water use

## REALITY:

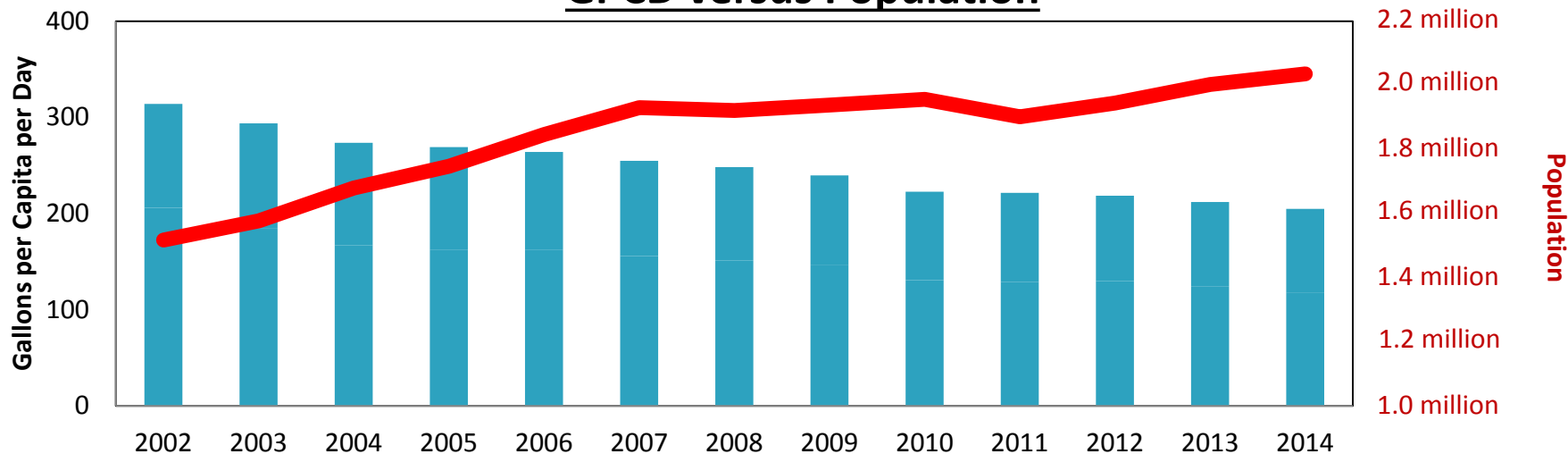
**Water features account for 1.5% of average resort land use.**

**Landscape accounts for less than 4% of land use.**



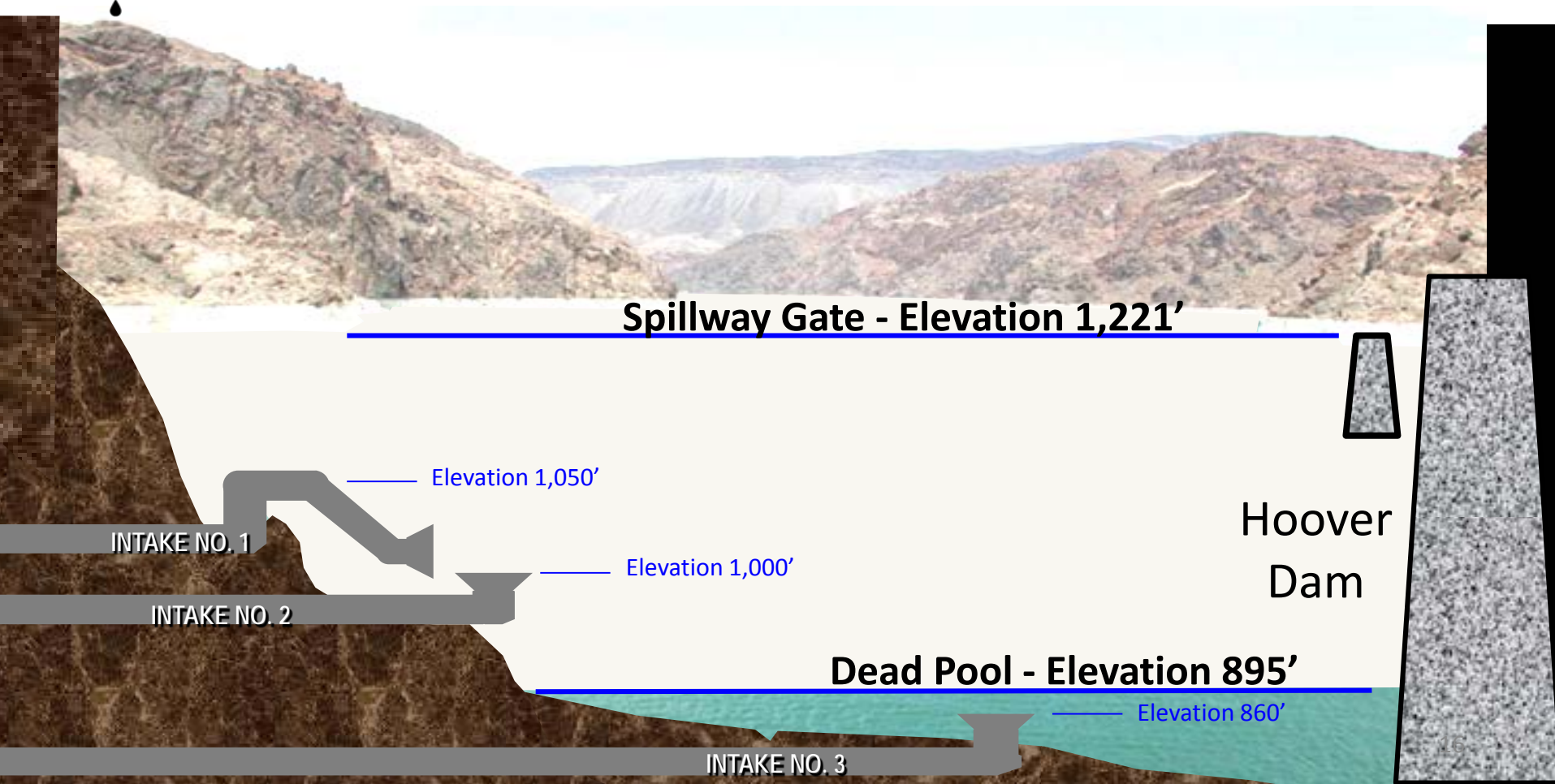
**The community has achieved considerable success  
in the past 14 years.**

**GPCD versus Population**



Southern Nevada customers used 32 billion gallons less Colorado River water in 2014 than in 2002, despite population increase of more than 520,000 people.

# INFRASTRUCTURE





The SNWA has been working to construct major infrastructure to meet demands during extreme drought conditions

- Intake No. 3
- Low Lake Level Pump Station



# INFRASTRUCTURE



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





# INFRASTRUCTURE



**Intake Structure before it was lowered,  
being tugged out to final destination**



**Tremi Concrete Pour:**  
**Concrete poured for 12 days, 24-hours a day.**

**Concrete filled 12,000 cubic yards to  
encase intake structure.**

# INFRASTRUCTURE

**Intake No. 3 ensures system capacity and protects customers from water quality issues**

**Construction began in 2008**

**Operations began in September 2015**

## **Project details:**

- 2.5 mile tunnel underneath Lake Mead
- Approximately 2,400 concrete rings—each weighing more than 32 tons—used to line tunnel
- Elevation 860'



Before Intake No. 3 was put into service

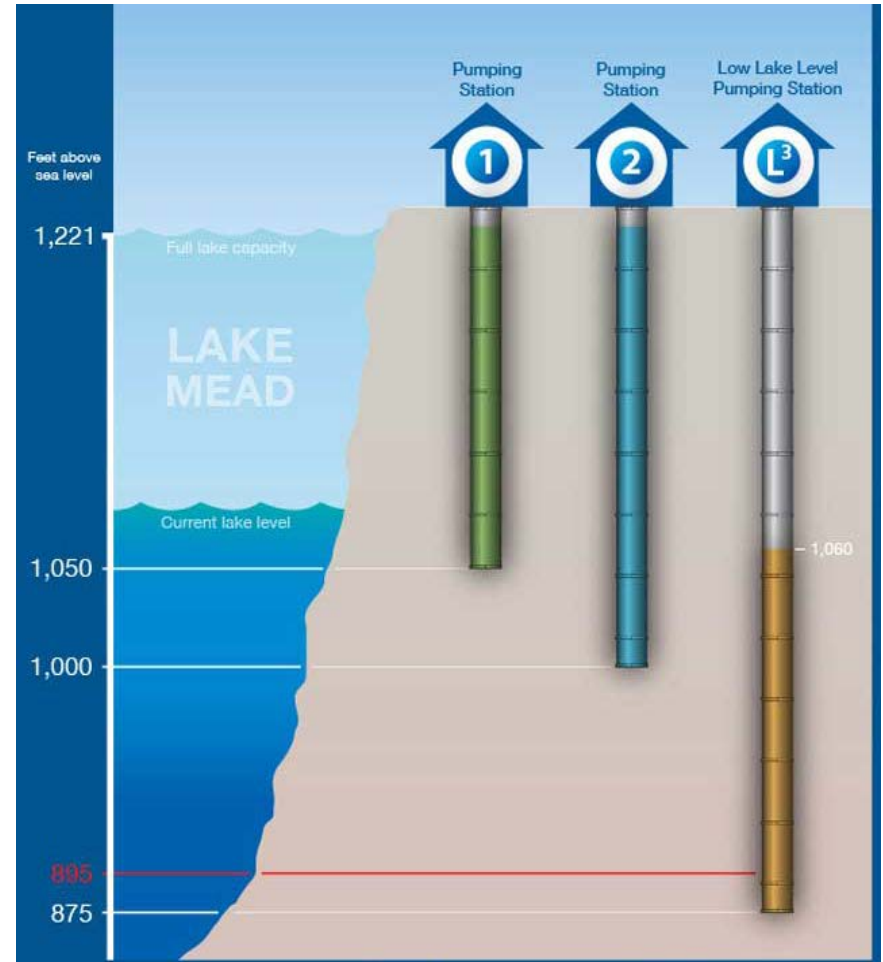
# INFRASTRUCTURE

## NEW PUMP STATION

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.

Estimated cost: \$650 million



# INFRASTRUCTURE

## Low Lake Level Pumping Station

**Well shafts:** 34 total, 6-foot diameter, 500 feet deep, blind bore method (top down)

**Access shaft:** 26-foot diameter, 526 feet deep

**Forebay:** 377 feet long, 33 feet wide, 36 feet high, horseshoe shape

**Pumps:** 34 submersible pumps, each capable of 30 mgd. A single pump could fill an average swimming pool in 20 seconds.





# RESOURCES

**The SNWA relies upon a mix of permanent, temporary and future water resources to meet Southern Nevada's water demands.**





# RESOURCES | PERMANENT

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



# RESOURCES | TEMPORARY

Temporary Resources	Current Right or Storage Amount (EOCY 2015)
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
<b>TOTAL TEMPORARY RESOURCES</b>	<b>1,817,636 AF</b>



# RESOURCES

## 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

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

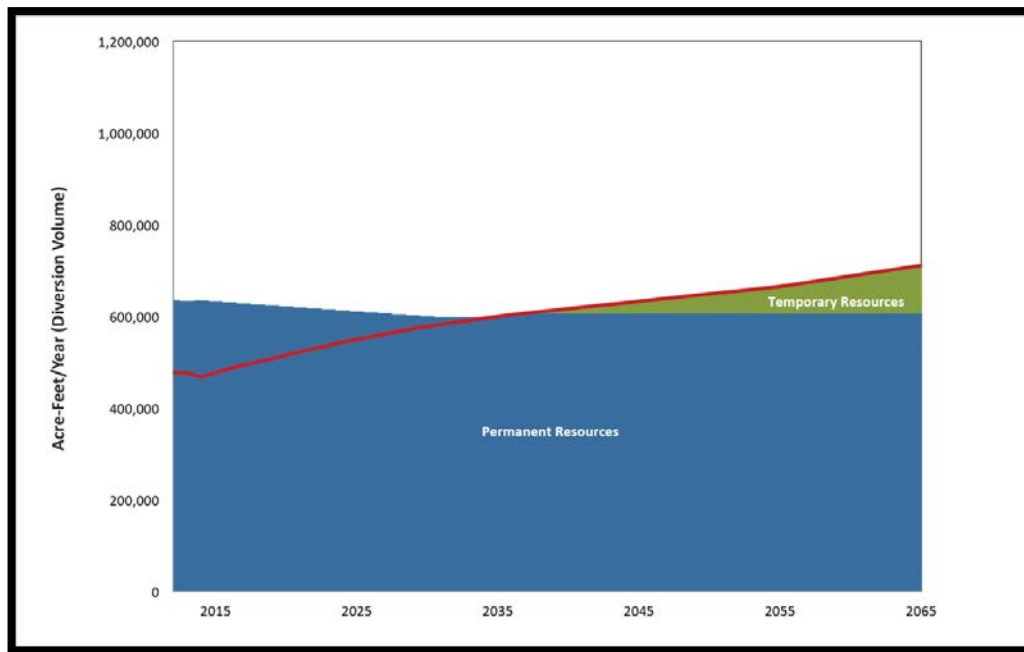




# RESOURCES

## 2015 SNWA WATER RESOURCE PLAN

### Lower Demand – No Shortage

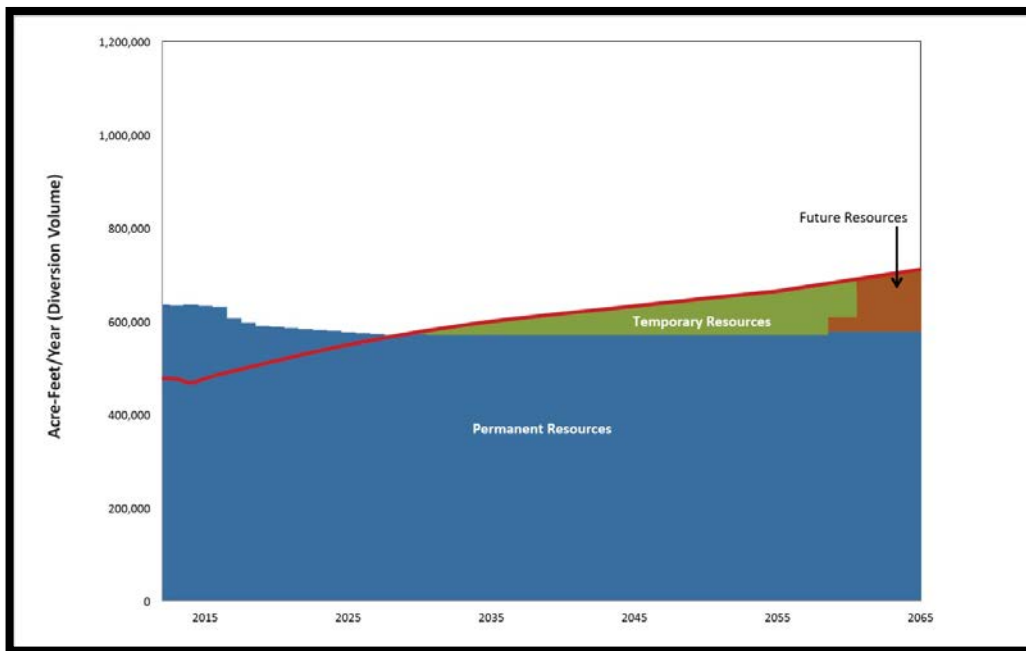




# RESOURCES

## 2015 SNWA WATER RESOURCE PLAN

### Lower Demand – 20,000 AFY Shortage

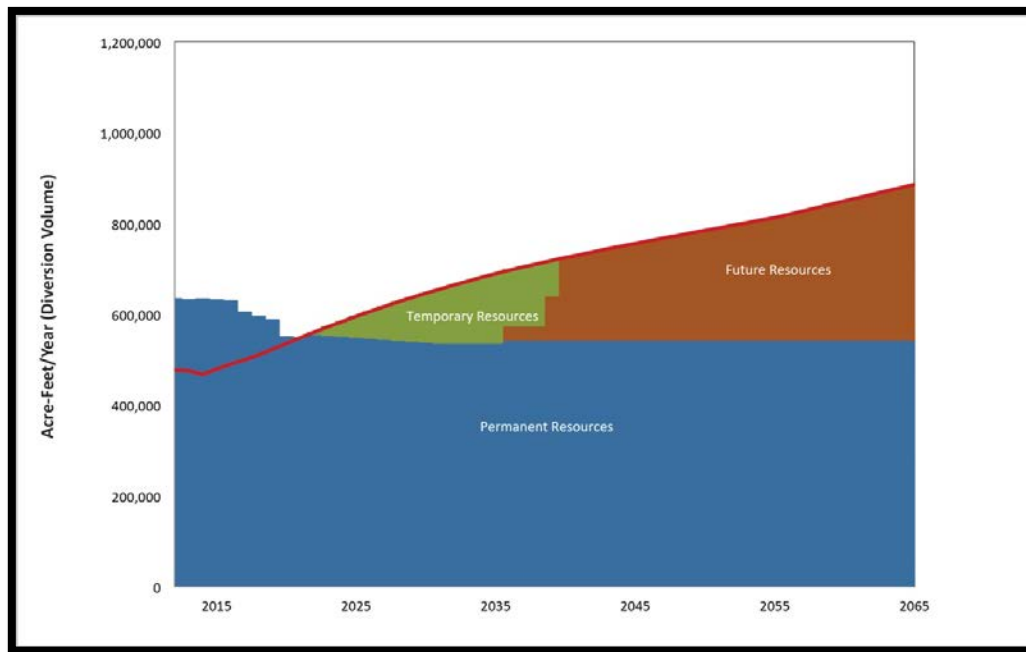




# RESOURCES

## 2015 SNWA WATER RESOURCE PLAN

Upper Demand – 40,000 AFY Shortage

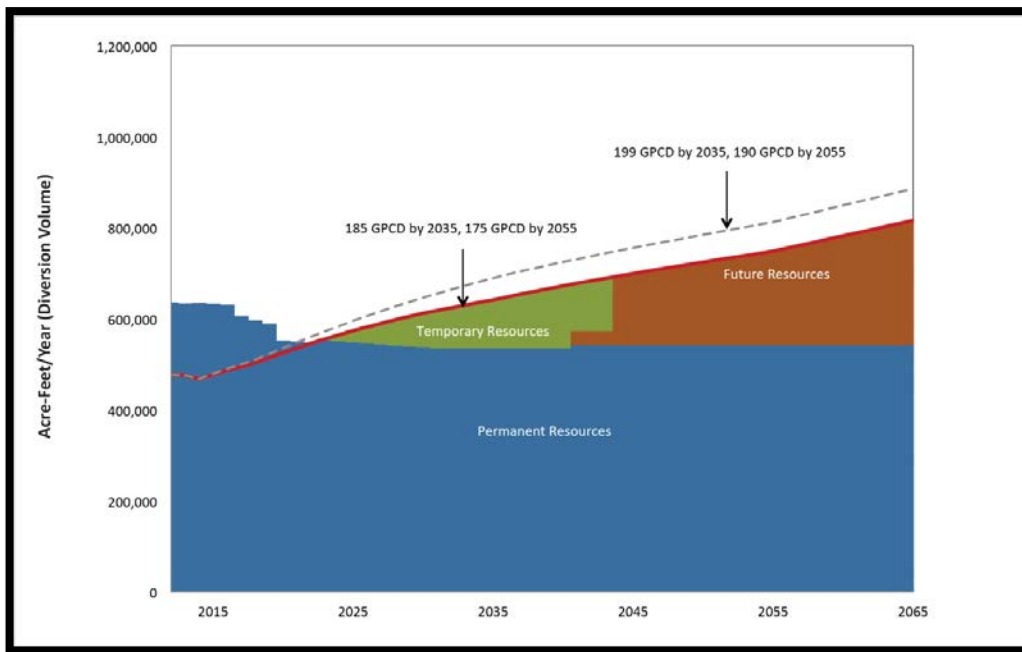




# RESOURCES

## 2015 SNWA WATER RESOURCE PLAN

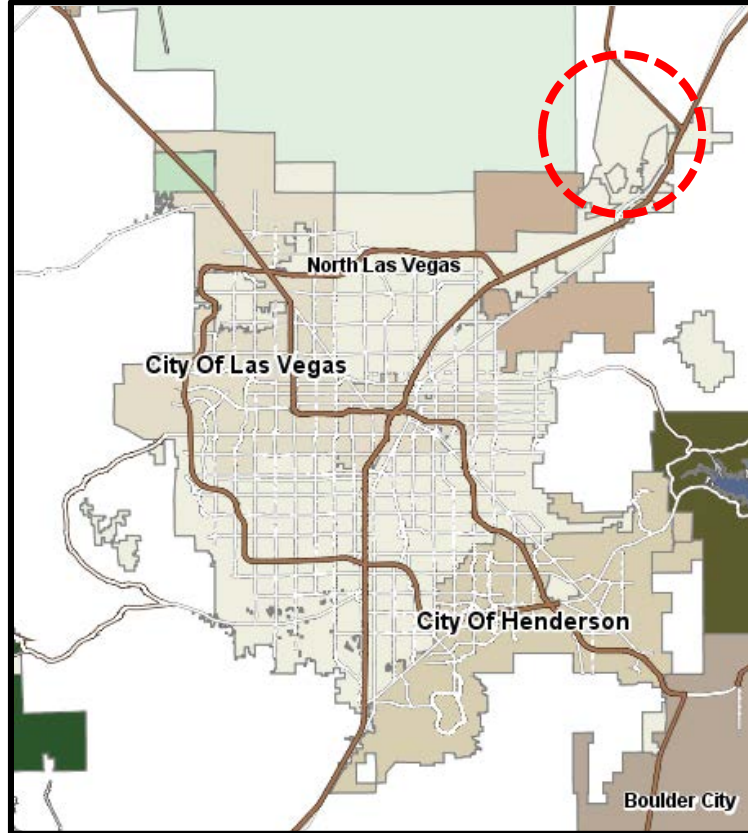
### Additional Conservation



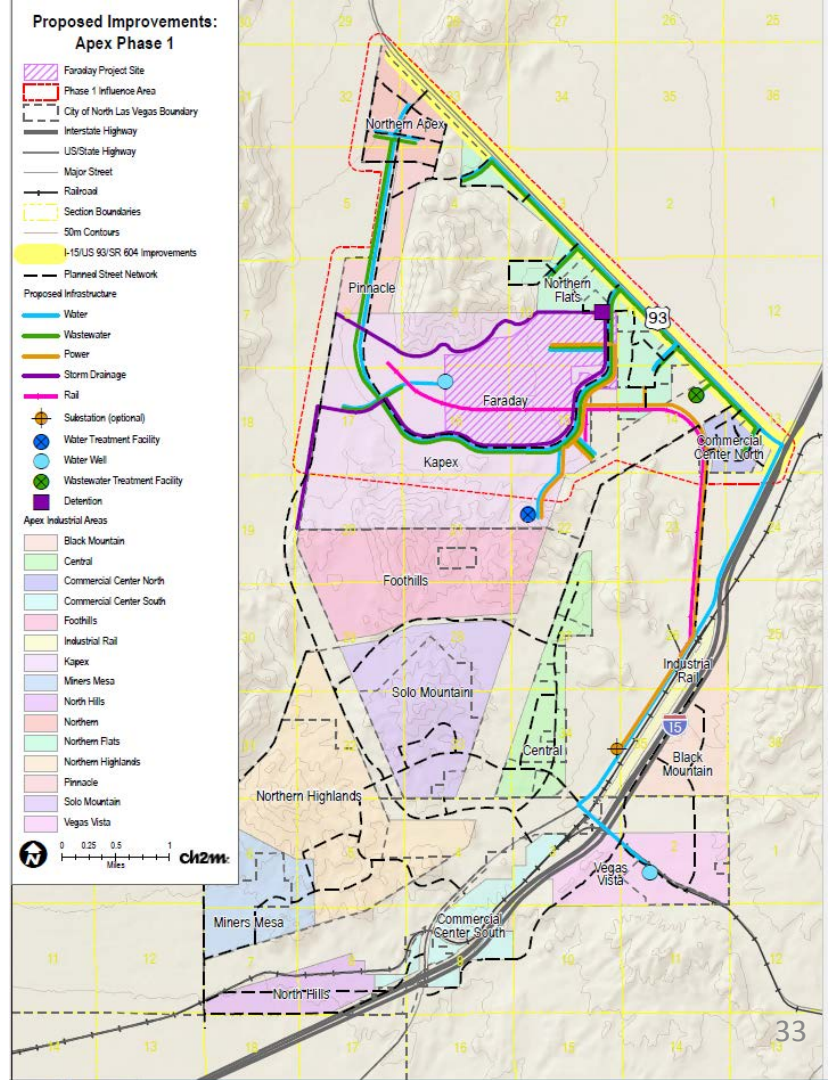
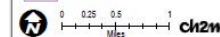
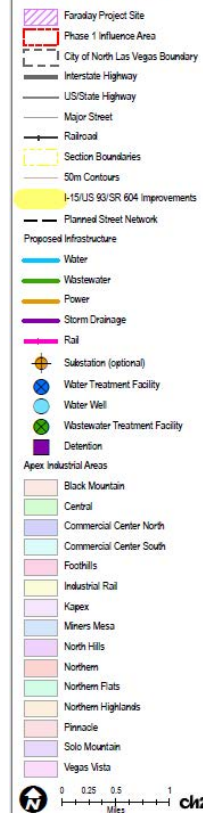


# APEX UPDATE





### Proposed Improvements: Apex Phase 1



# MEETING WATER DEMANDS

---

Water Source	Acre feet per year
Available groundwater supplies in Garnet Valley	900 AFY
Transfer of SNWA water rights	1,700 AFY
<b>Total water rights to serve Apex (Phase I)</b>	<b>2,600 AFY</b>



# FUNDING

**Estimated Cost: \$67 million from state bond sales**

A Special Improvement District and Tax Increment Financing area will be created to repay the bonds

The water system will be funded by Faraday and other water system customers

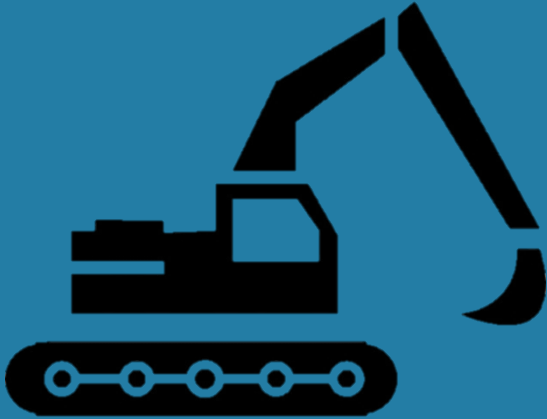
Water rates will pay for:

- System operation and maintenance
- Sinking fund to pay for eventual pipeline from the valley
- Asset management

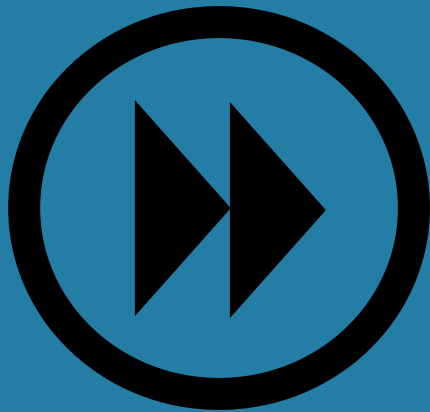


# CONSTRUCTION ACTIVITIES

**Faraday requested water for construction activities beginning February 1**



- Construction water coming from three existing wells owned by NV Energy
- Water demands range from 1 – 1.5 million gallons per day
- The Nevada State Engineer has approved the temporarily transfer of water rights and change in the manner of use for these wells



## NEXT STEPS

**In partnership with North Las Vegas, a stakeholder group will be formed to address water system needs**

- Establish service rules
- Determine water rates
- Coordinate efforts among multiple agencies
- Will include SNWA, LVVWD, North Las Vegas, NV Energy, land owners and other stakeholders
- Publicly posted and open to the public

