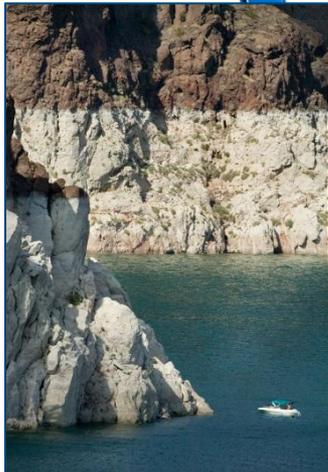


**Conservation Loves a Crisis:**  
*Lessons from North America's  
Driest City*



# Southern Nevada snapshot

- 4 inches (100 mm/yr) annual rainfall
- 1,600 square miles (4,100 km<sup>2</sup>)
- 2,000,000 Residents
- 41 Million Visitors Annually
- \$92 Billion Gross Domestic Product
- 73% of Nevada GDP



Regional water supply planning



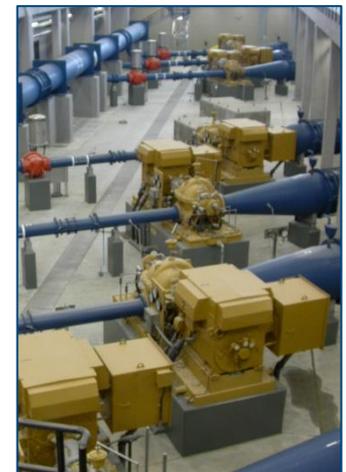
Conservation programming



Water Quality



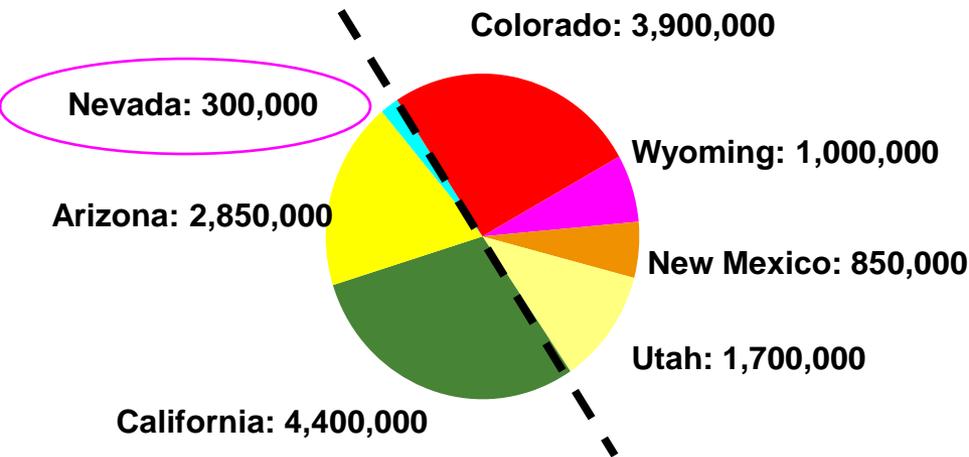
Facility construction



Operate Major Regional Facilities

# Colorado River System

**UPPER DIVISION**  
7.5 million afy

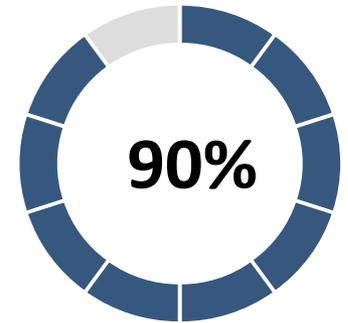
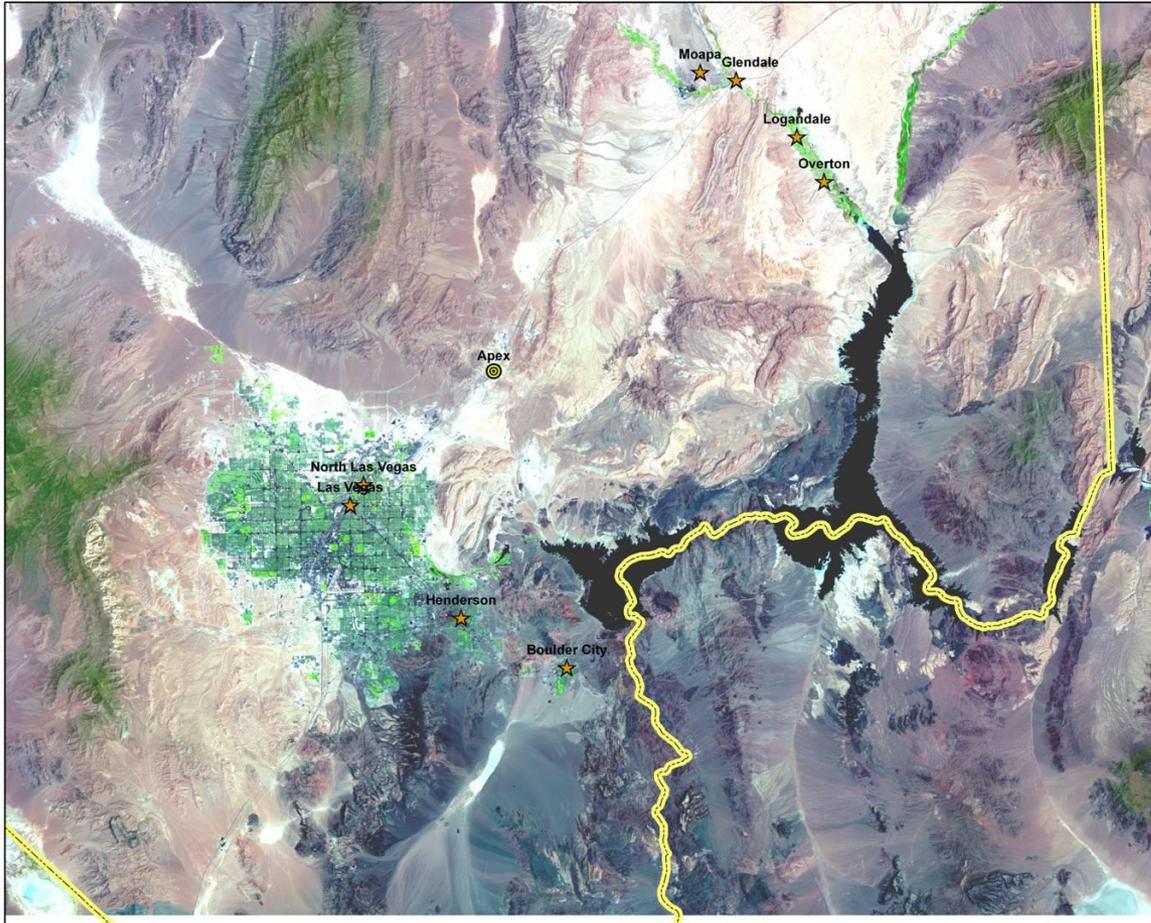


**LOWER DIVISION**  
7.5 million afy

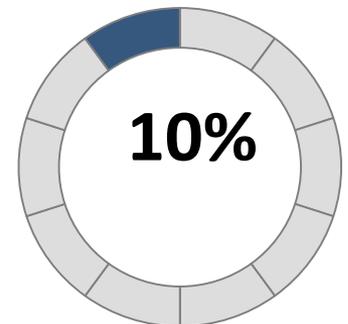
Country of Mexico: 1,500,000 afy



# Current Water Supplies

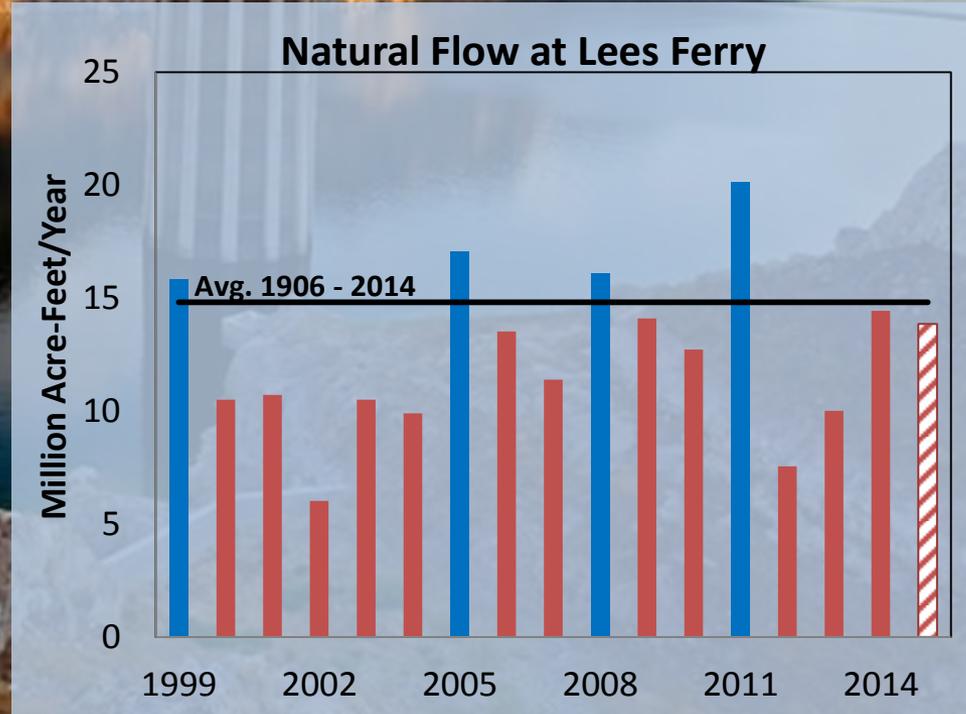


**Colorado River Resources**

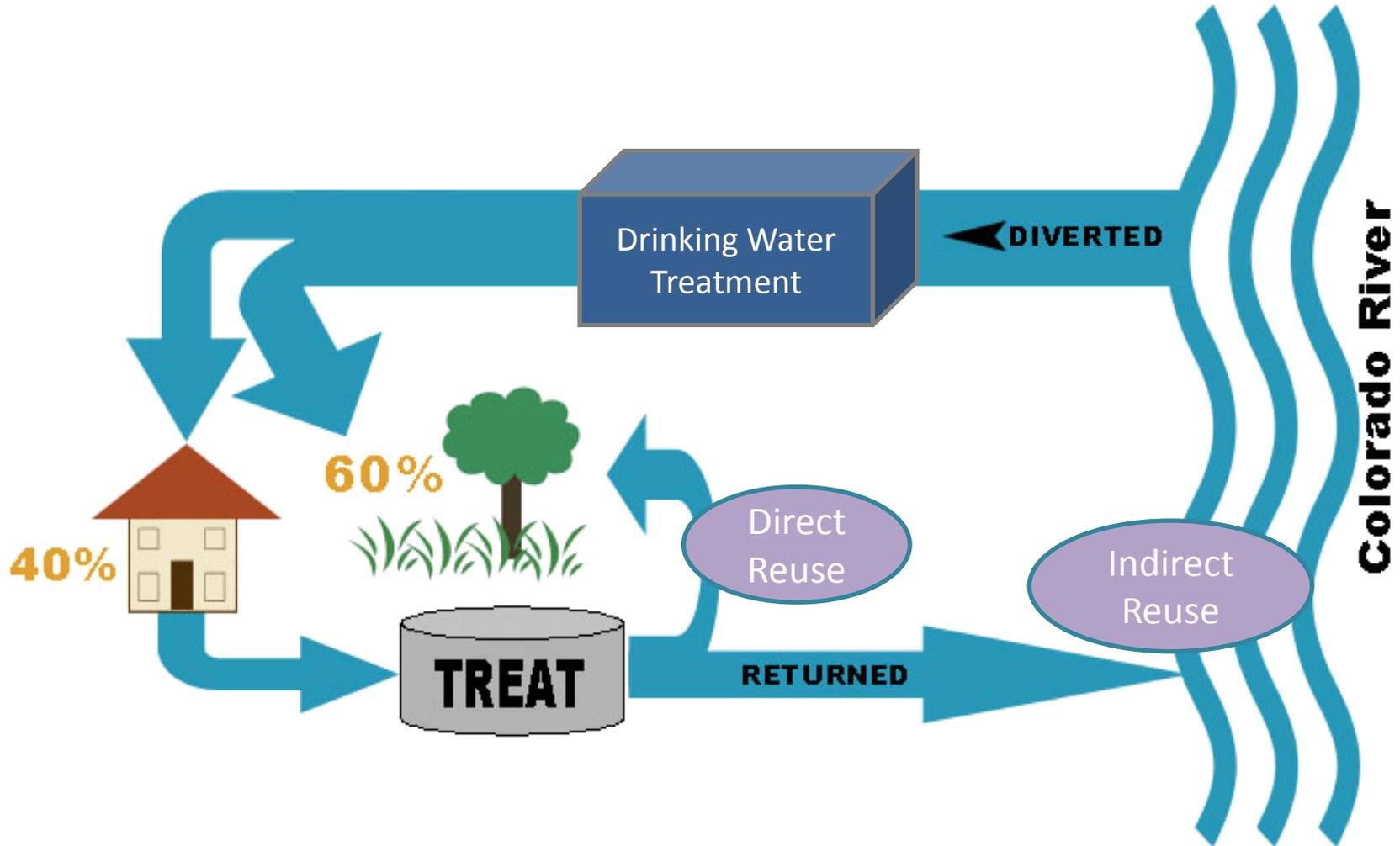


**Las Vegas Valley Groundwater**

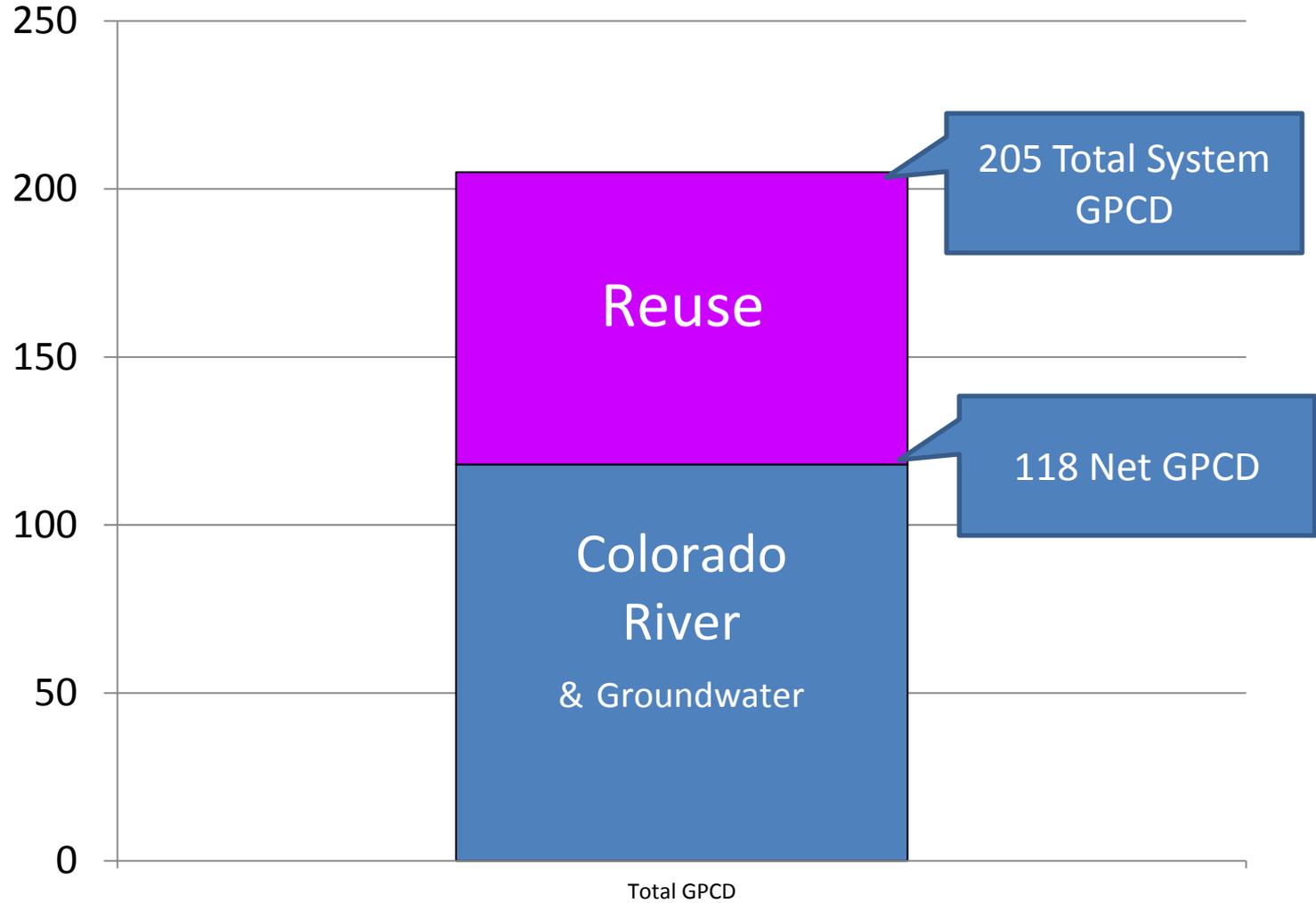
The Colorado River Basin is facing one of the worst droughts in recorded history.



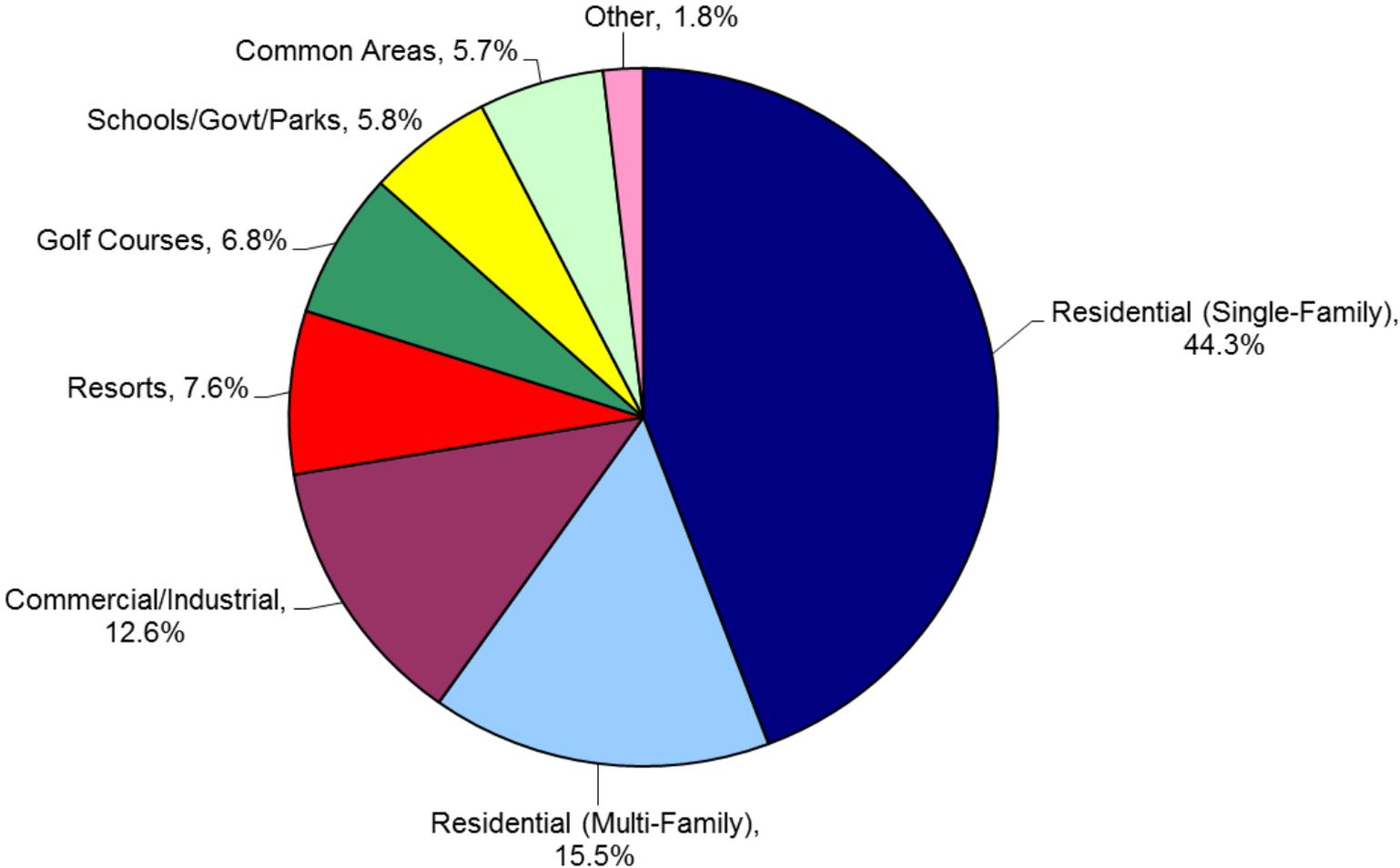
# Direct reuse and return-flow credits allow Southern Nevada to reuse all our treated wastewater.



# Reuse Extends Water Resources by 70 percent



# Municipal Metered Use (2014)



**The SNWA is taking a series of actions to address long-term drought and provide a sustainable supply for Southern Nevada.**



**Conservation**



**Planning and Water Resources**



**Infrastructure**



## CONSERVATION

**Through regional collaboration we've adopted plans and policies to change the way water is used in Southern Nevada.**

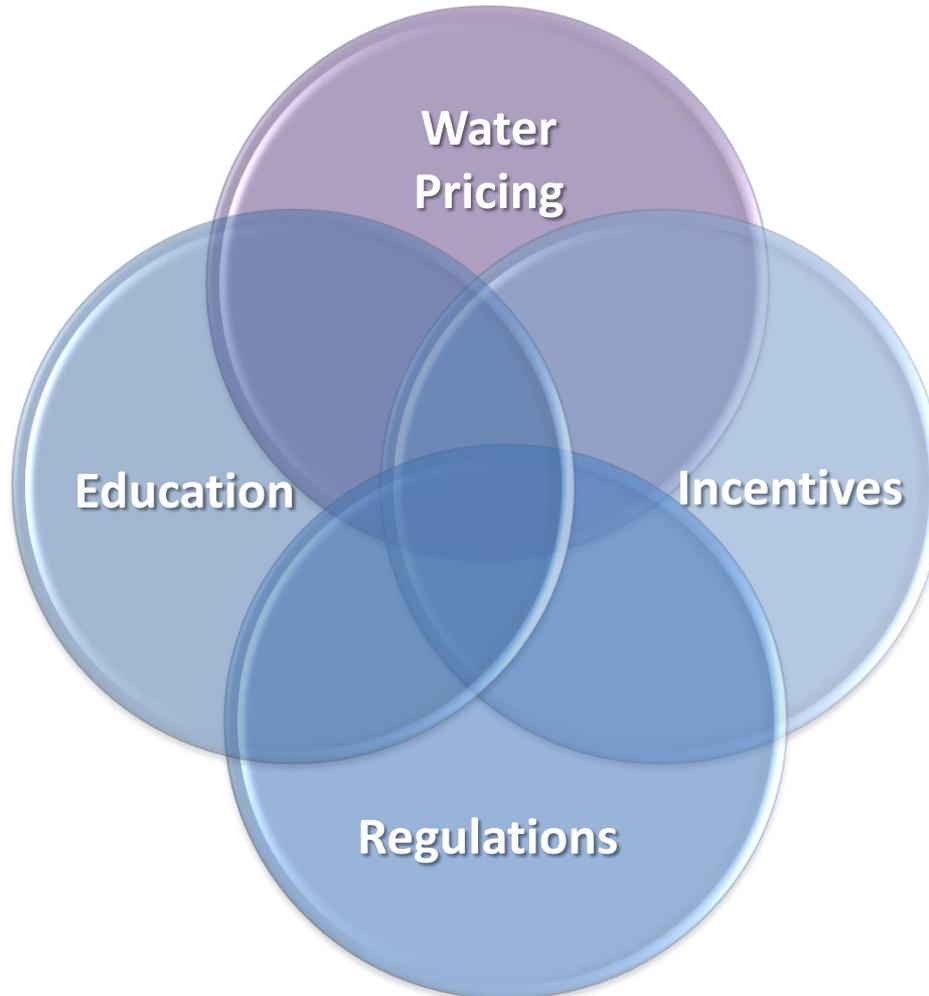
### **Key efforts:**

- **Land development codes**
- **Amplified conservation programs & incentives**
- **Watering restrictions & Water Waste Enforcement**
- **Golf course water budgets**
- **Community Outreach**
- **Infrastructure improvements**

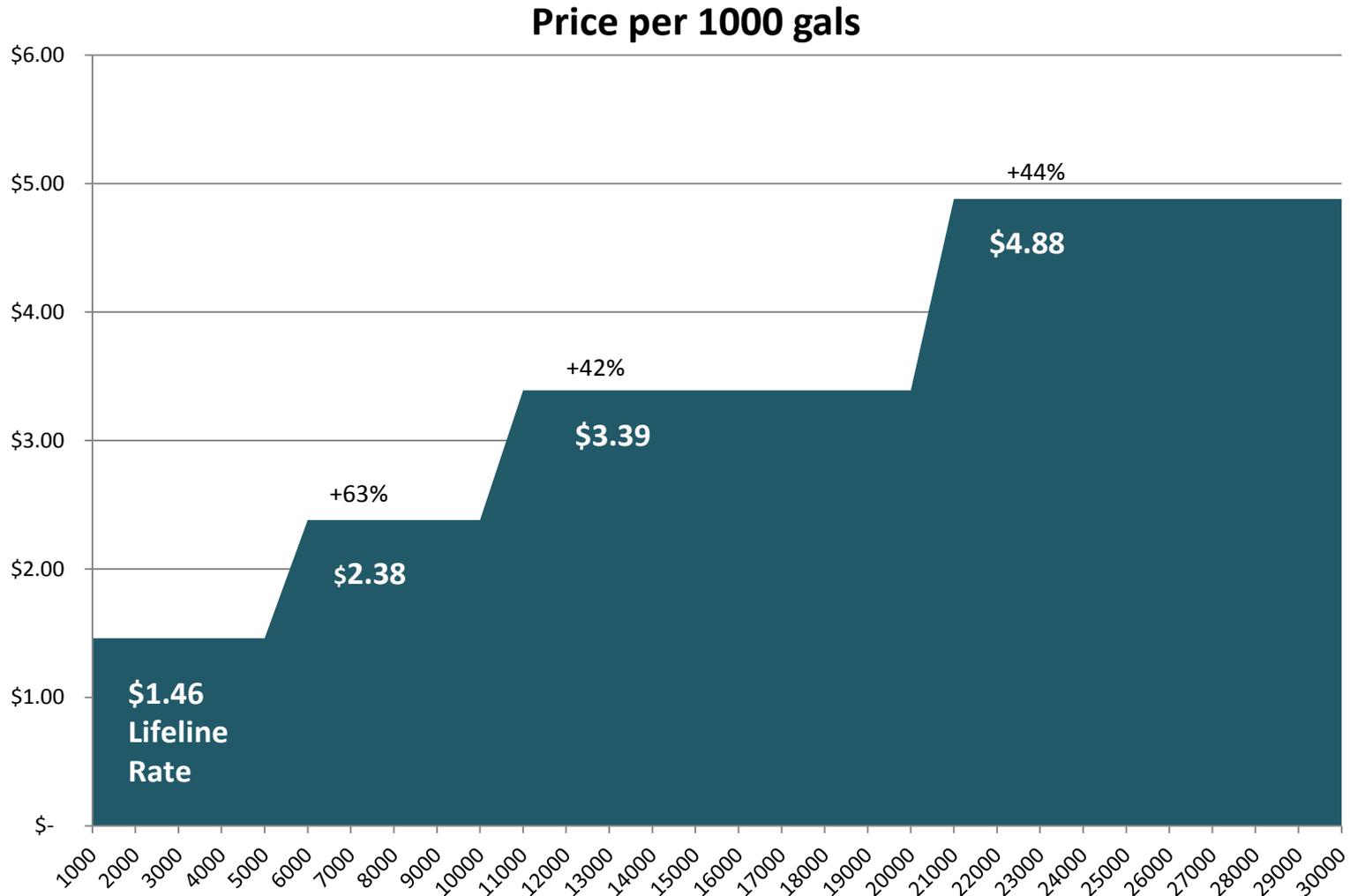


## CONSERVATION

**Southern Nevada has one of the nation's most aggressive and comprehensive water conservation programs.**



# 4- Tier Inclining Rate Structure



LVVWD 2015 rates for 5/8 inch residential meter. Includes \$0.30 per kgal SNWA regional commodity charge.



Lawns use up to  
10 feet of water  
per year!

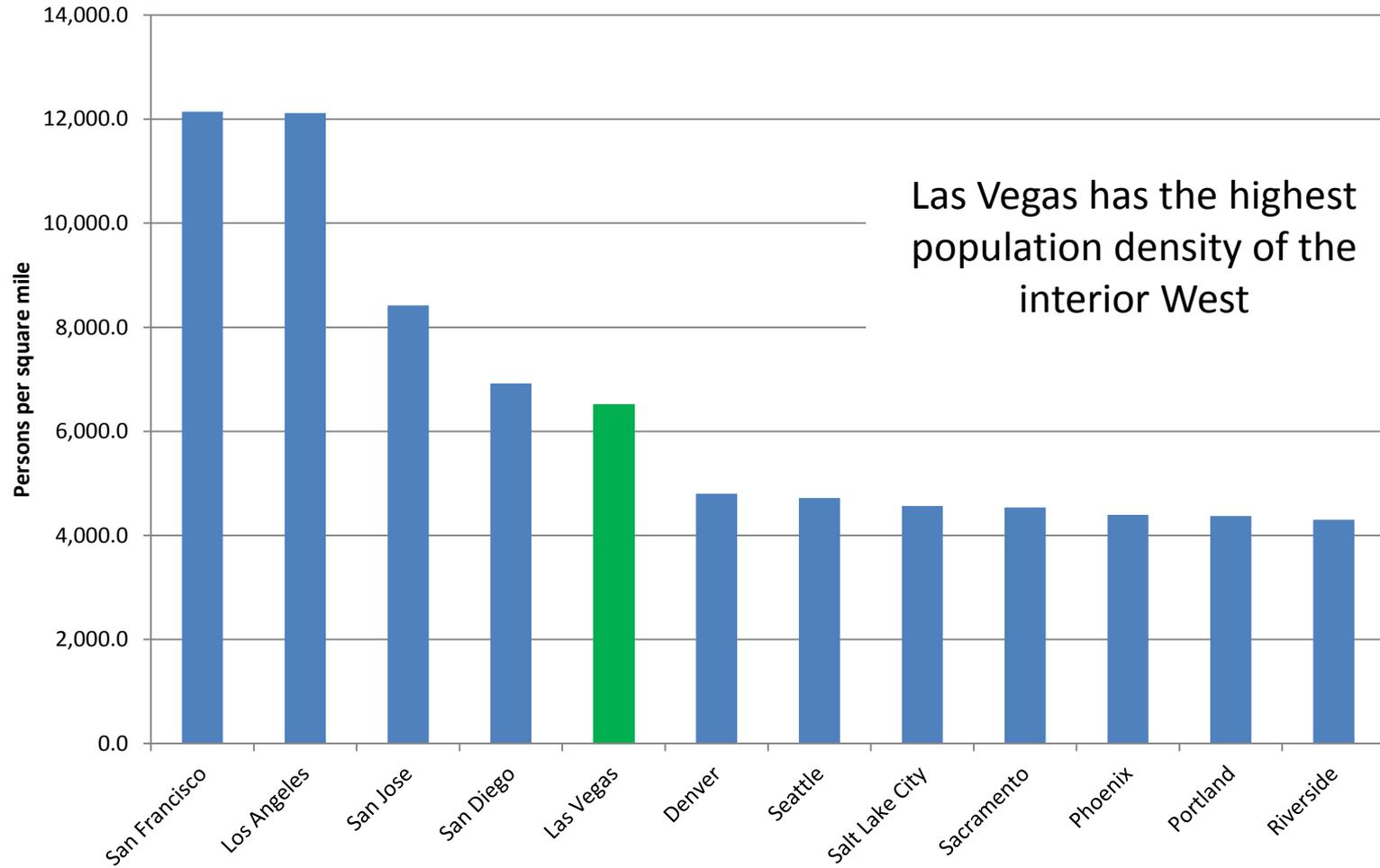


## Land Development Codes

- **No turf in residential front yards**
- **Turf limited to 50% in back yard**
- **Multi-family properties' turf limited**
- **No turf installations in new commercial properties**
- **Fountain restrictions**

# Population Density

## Major Western MSA's over 1 Million Population





# CONSERVATION



## 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

Rolling an 18" wide strip of sod nearly



OR



**3,000**  
FOOTBALL FIELDS

**90%**  
AROUND THE EARTH

# 88 BILLION

Gallons of water saved to date.

That's enough water to fill the Luxor Hotel Pyramid

**244**  
TIMES





**SIENA**  
GOLF CLUB

© 2012 Google

Google earth

Date: 6/21/2012

36°06'18.82" N 115°19'21.20" W elev. 2784 ft

Eye alt 5686 ft

Stop Chasing your Tail...



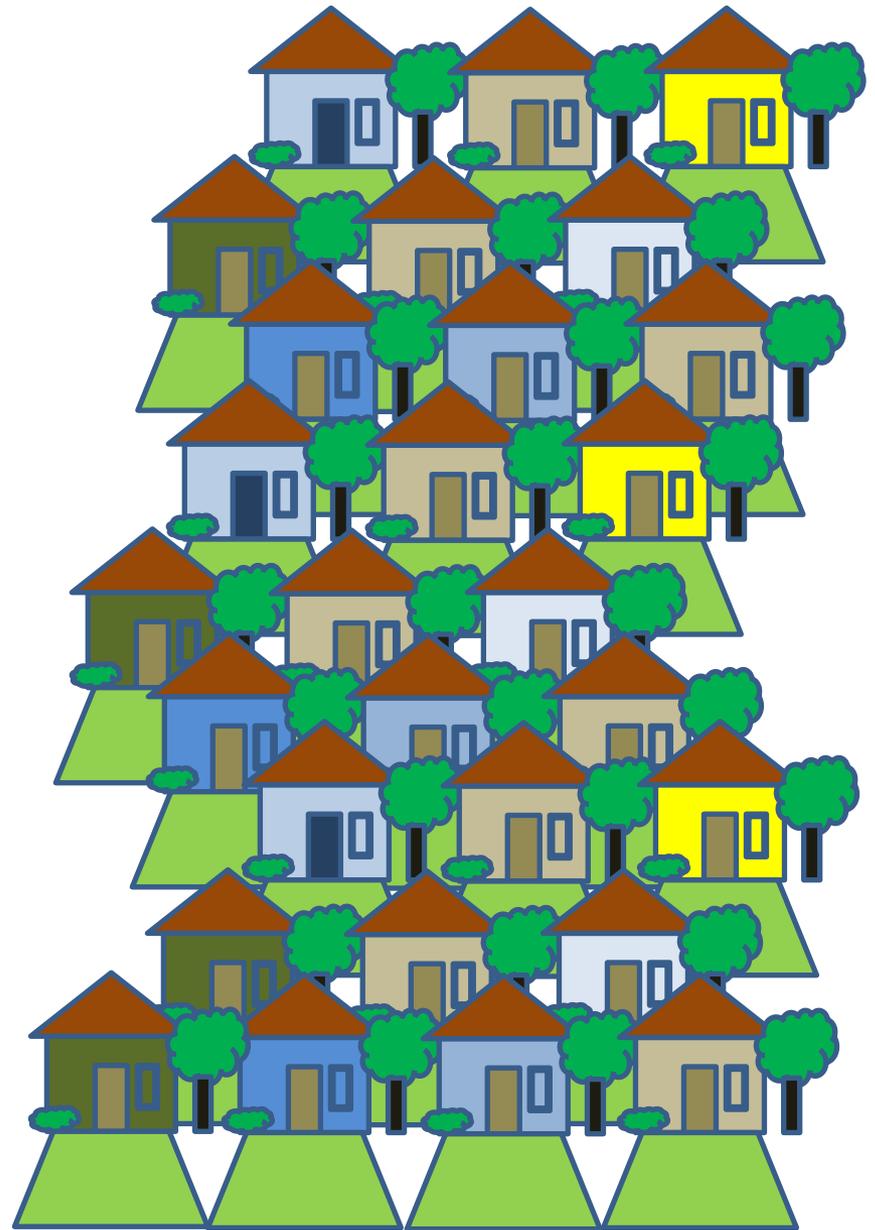


CONSERVATION

**2000 through 2003: For  
Every Home Voluntarily  
Converted ...**



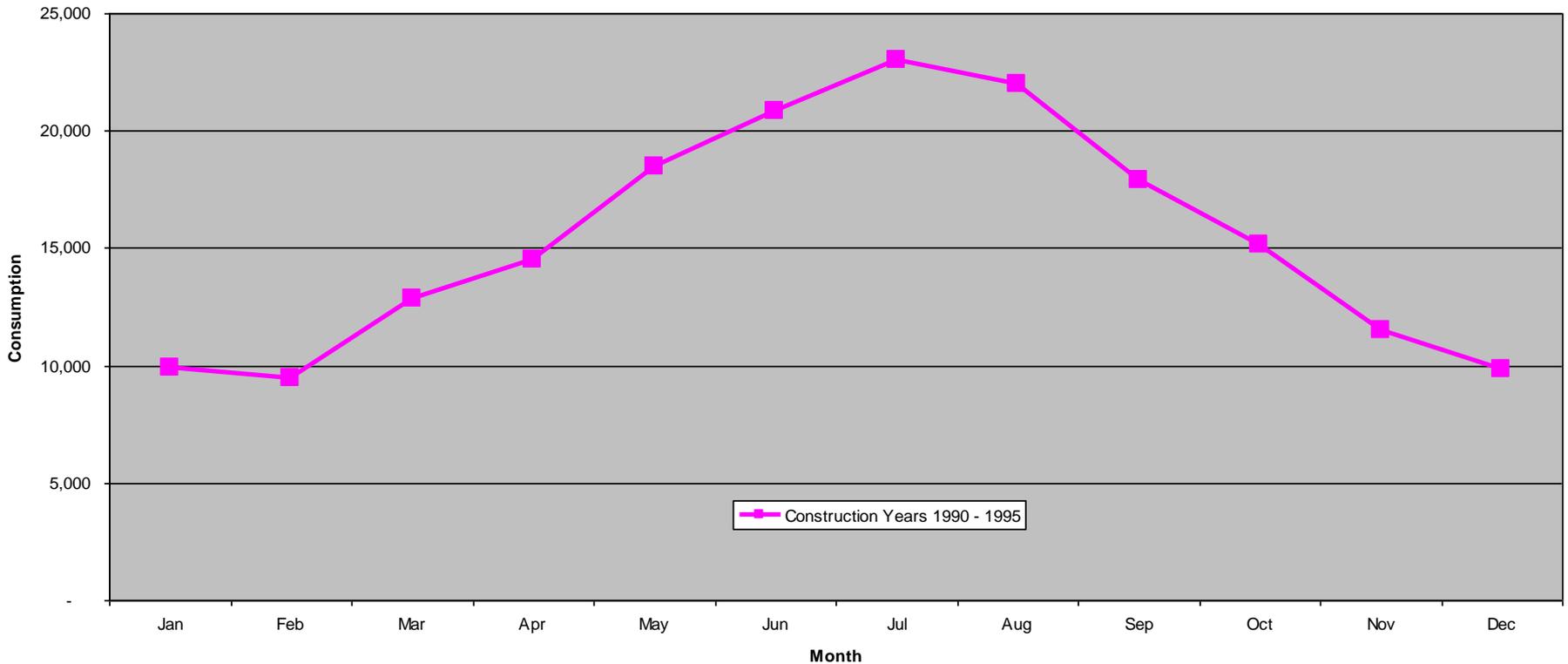
**Twenty-eight New  
Homes were built,  
most with front  
lawns**



# Monthly Consumption

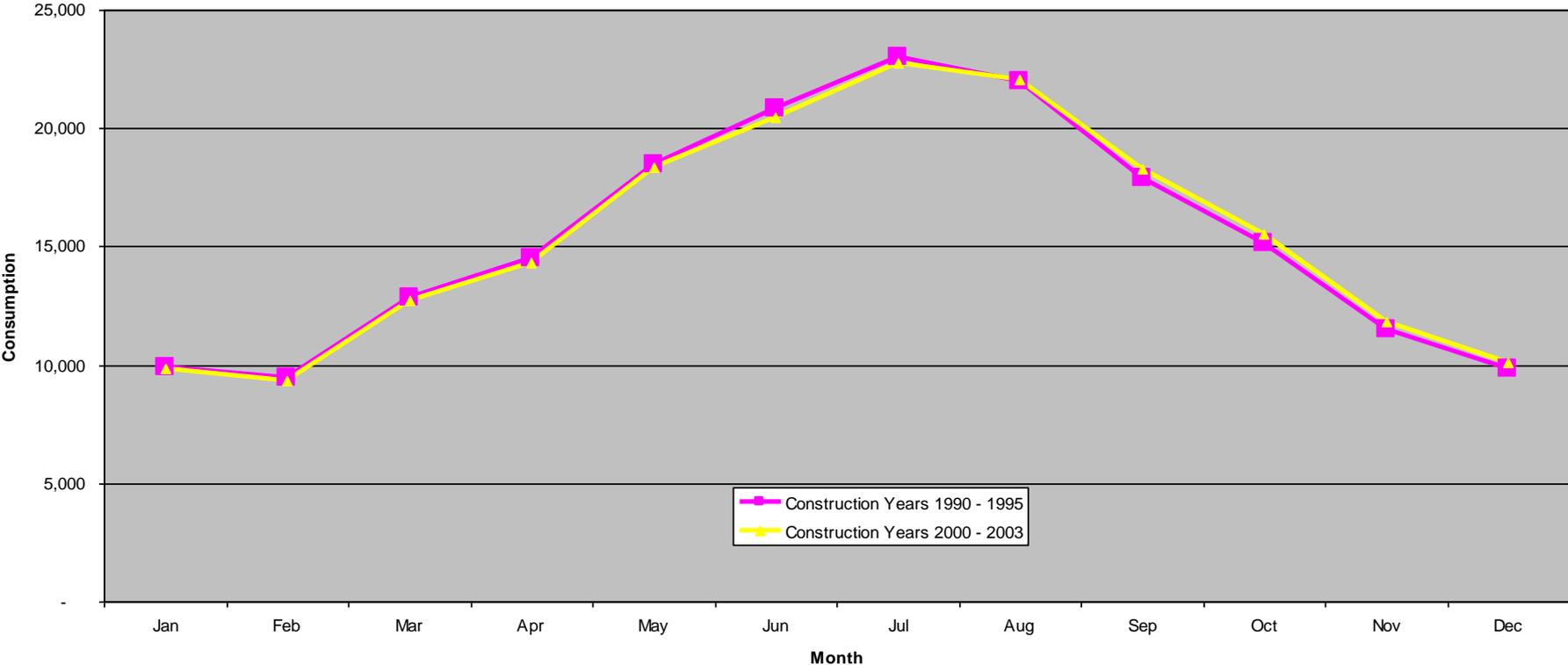
## Standing Homes Built 1990-1995

Average Monthly Consumption  
Two calendar years of 2007-2008



# Monthly Consumption 1990-1995 v. 2000-2003

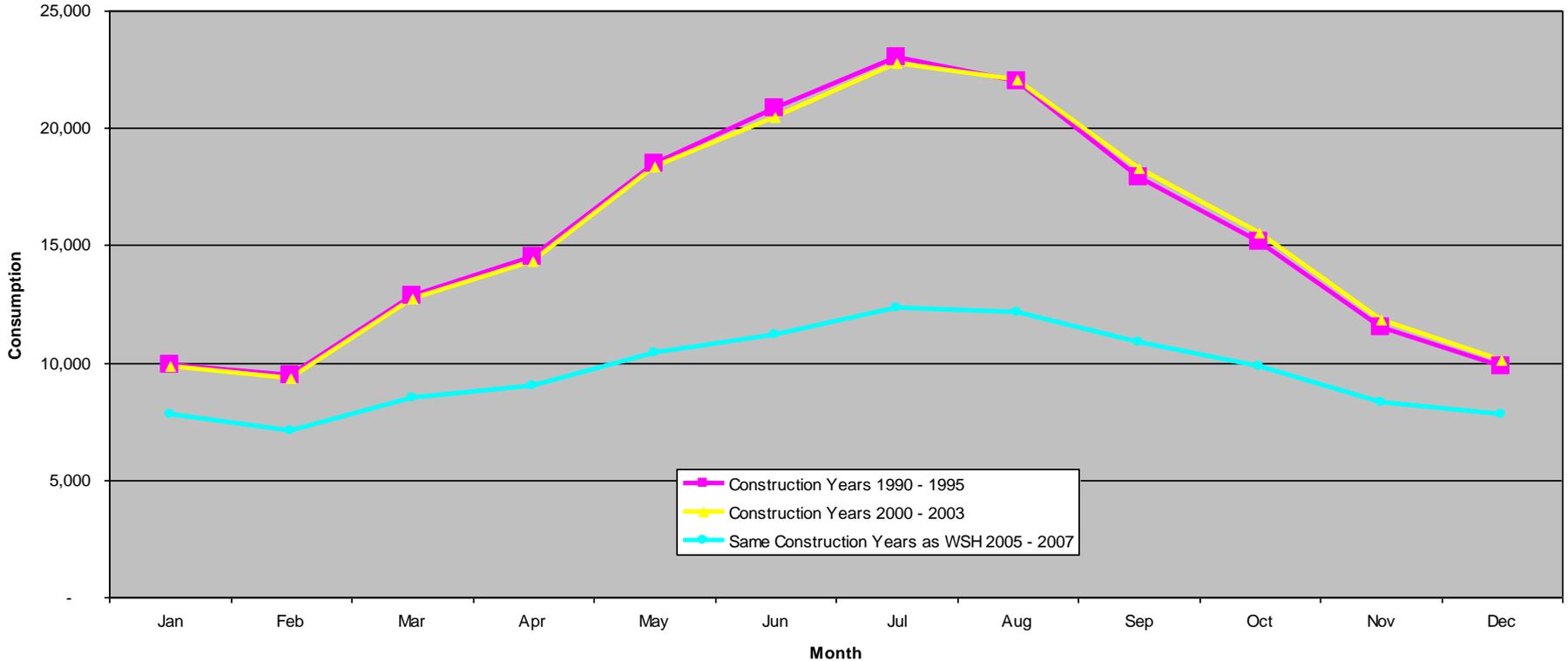
Average Monthly Consumption  
Two calendar years of 2007-2008



# Monthly Consumption

## Post 2003 Homes Comparison

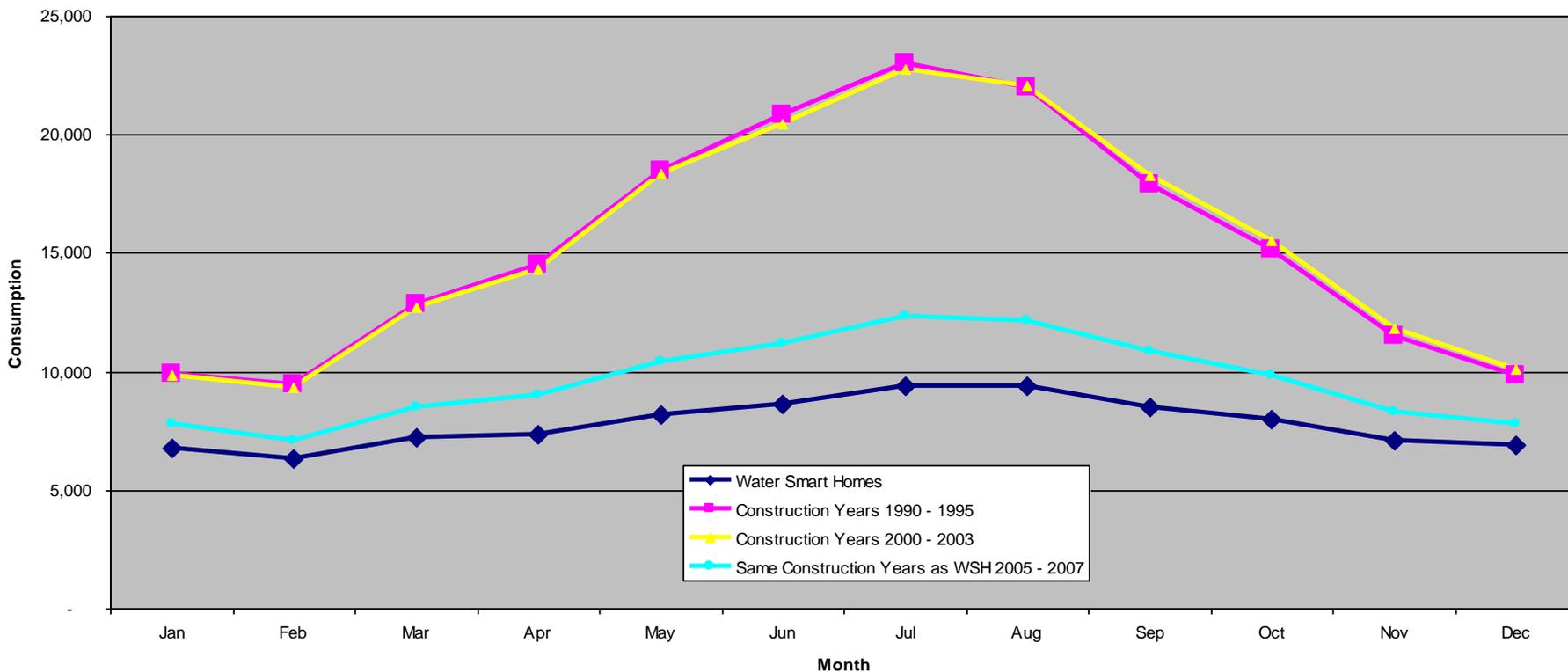
Average Monthly Consumption  
Two calendar years of 2007-2008



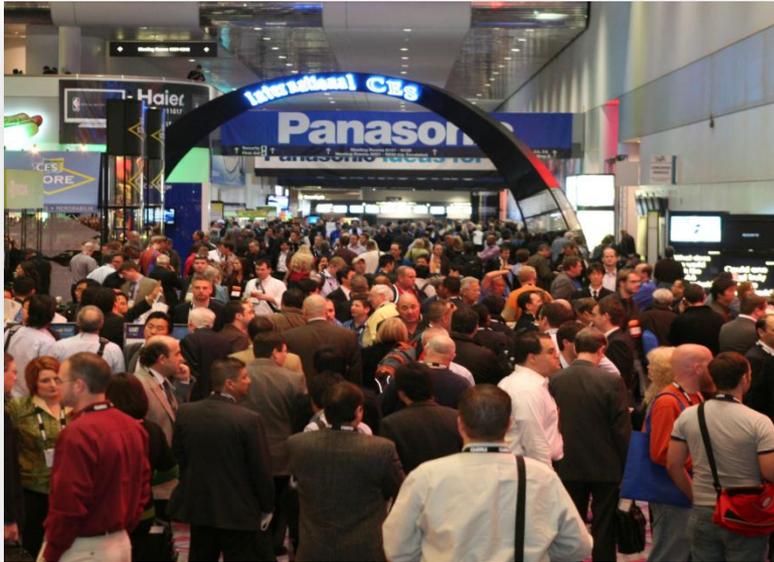
# Monthly Consumption

## Water Smart Homes Comparison

Average Monthly Consumption  
Two calendar years of 2007-2008



# Tourism: A City Within a City



- 41 Million visitors
- Average stay 4.2 days
- Equivalent to 473,000 visitors per day\*
- Vegas tourism produces \$50B annually, more than half of Nevada's GDP

\* Equivalent to hosting the population of Long Beach, Sacramento, Atlanta or Kansas City



CONSERVATION

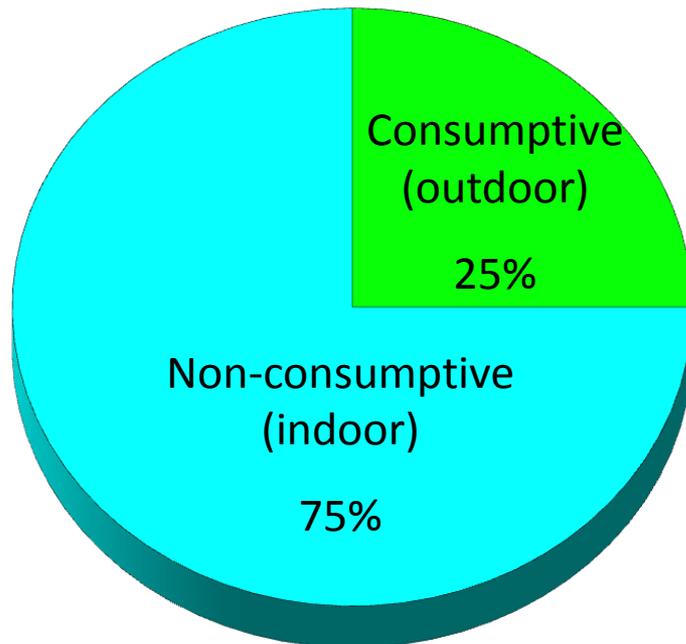


Most resort water is used indoors and intercepted for treatment and reuse.

As a result, Southern Nevada's Resorts consume less than 3% of the region's water resources.



# Mega-Resort Water Use



Surprise! Evaporation from cooling systems exceeds the combined use of landscape, water features and pools.





## CONSERVATION

On average, Las Vegas resort hotels host less than 10 square feet of pool area per guest room.

Residential pools average 160 square feet per person.

Pools comprise 0.5% of the average resort's land use.





# Caesar's Palace to the Visitor's Eye



The gaming and entertainment industry thrives on a perception of abundance...



# Caesar's Palace to the Bird's Eye

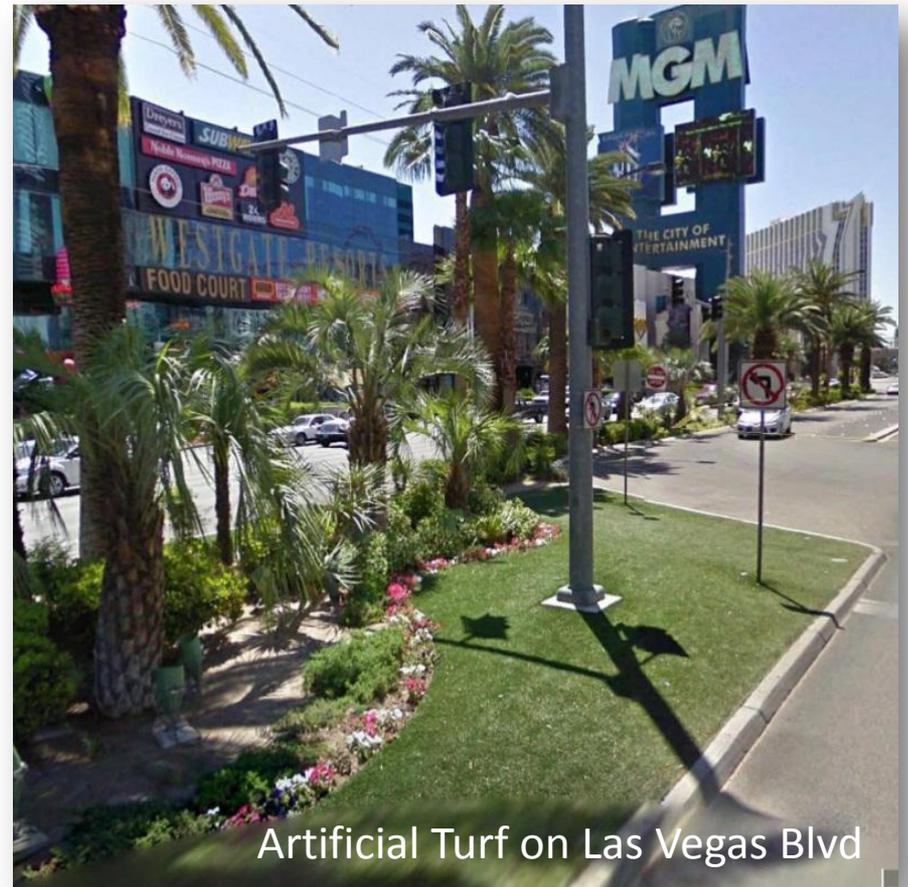


Water Features account for 1.5 percent of average resort land use.

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

# Reinventing The Strip

Las Vegas Resorts converted nearly 1.4 million square feet of ornamental lawns, saving 75 million gallons per year



Artificial Turf on Las Vegas Blvd

# Leading With Technology

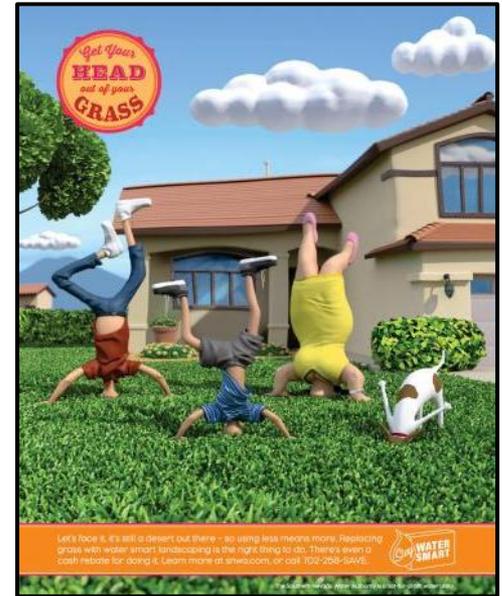
SNWA has helped resorts complete 88 technology projects that save the region 700 million gallons each year

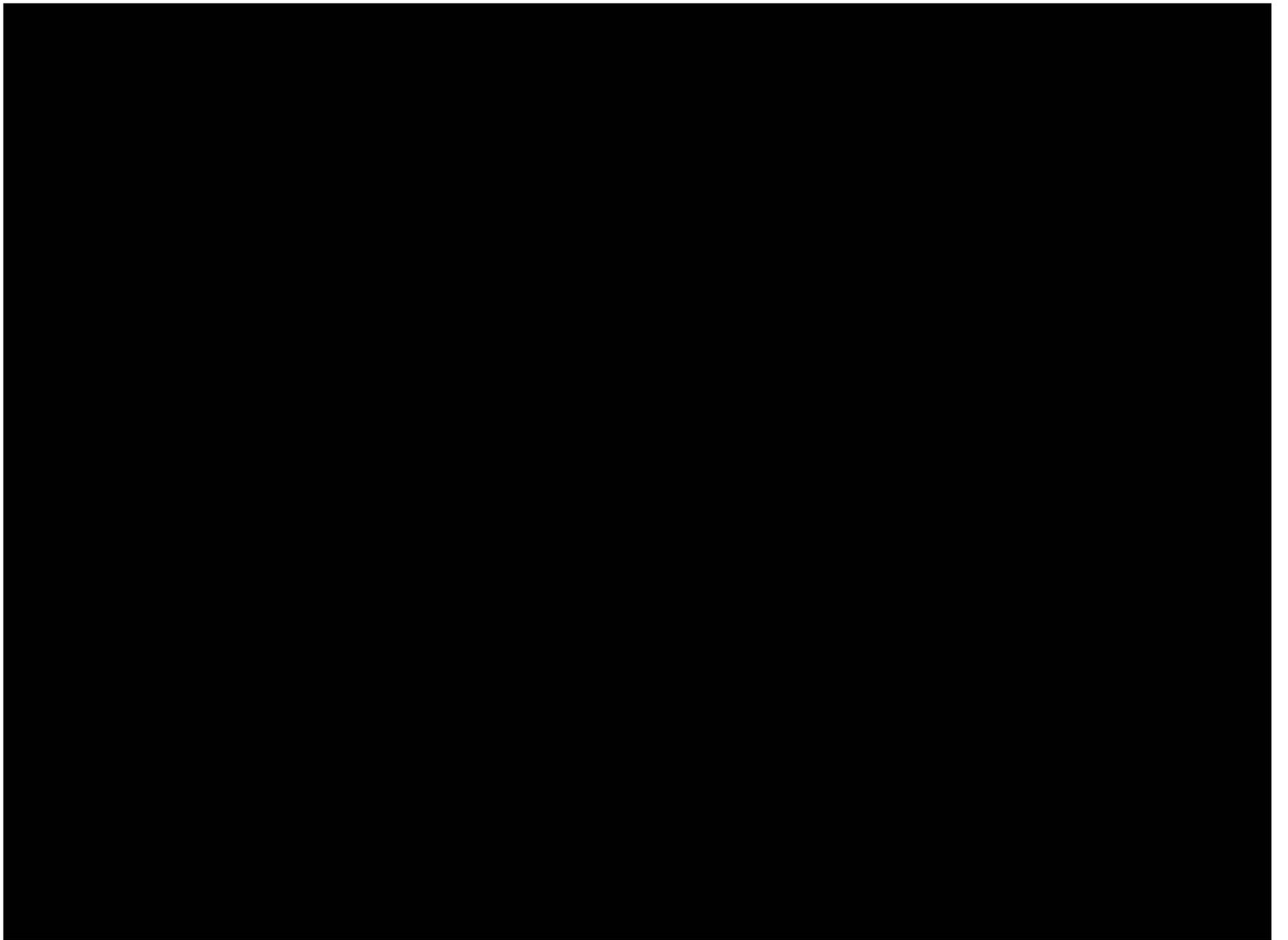


Worker updating a cooling tower



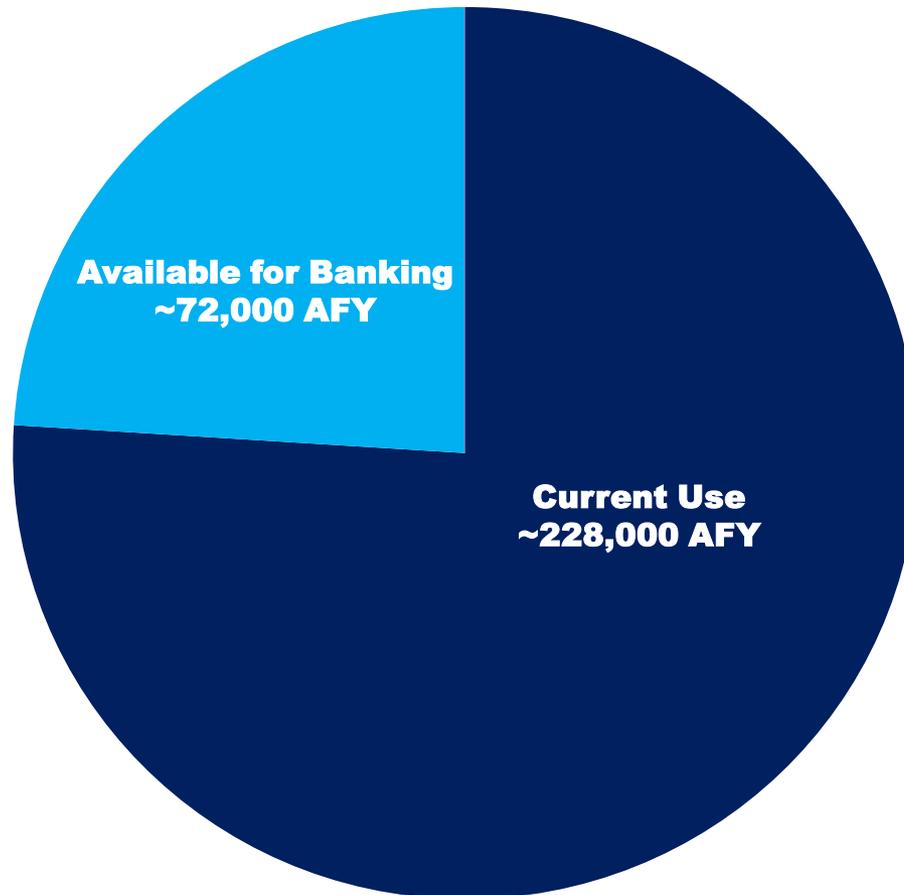
The community has adopted a “culture of conservation” through programs, rebates, policies and education.





# Conservation is Strengthening Future Supplies

## Southern Nevada Colorado River Water Use & Availability

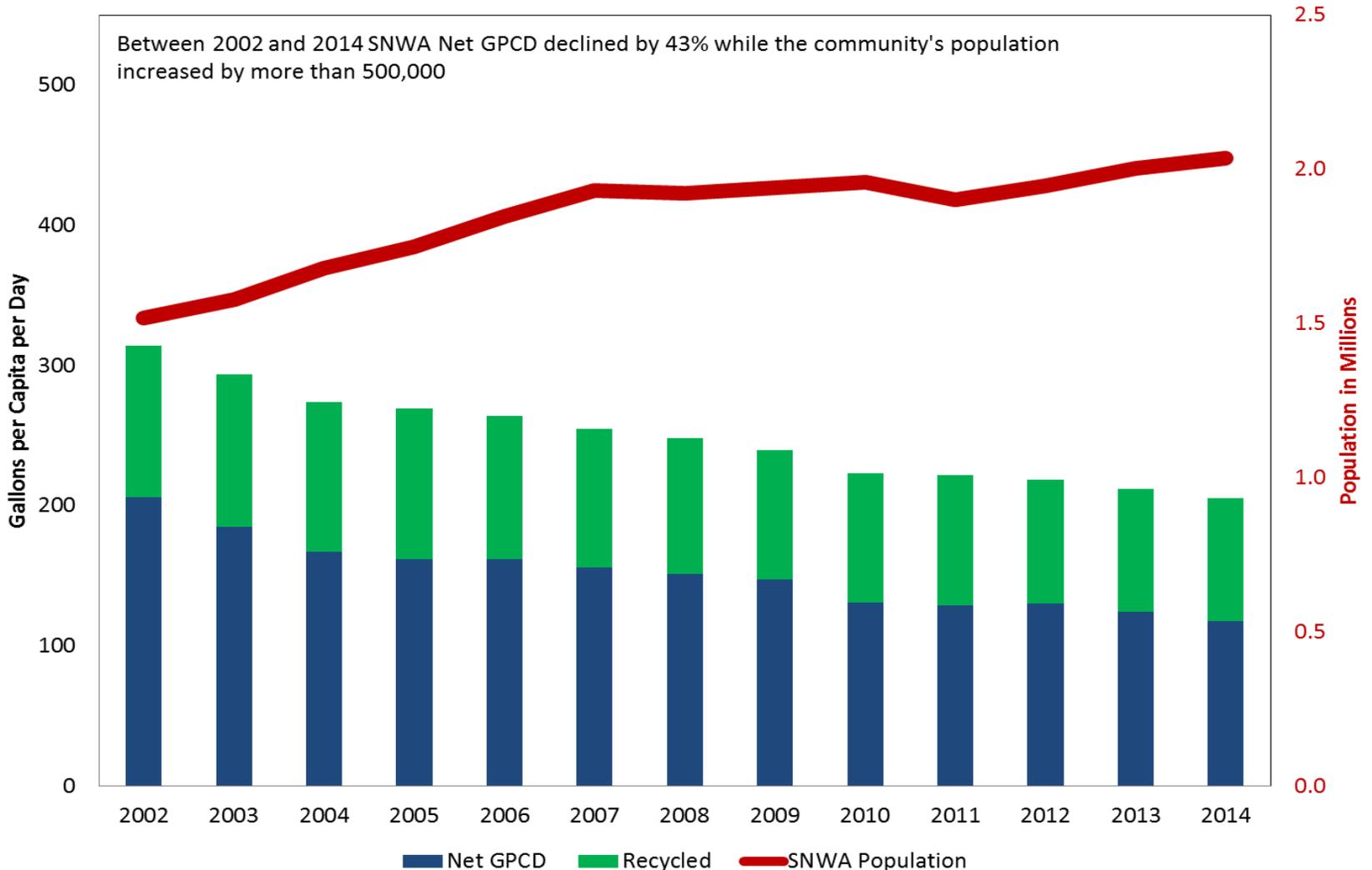




# CONSERVATION

### SNWA GPCD and Population

Between 2002 and 2014 SNWA Net GPCD declined by 43% while the community's population increased by more than 500,000





# SOUTHERN NEVADA WATER AUTHORITY®



Doug Bennett  
Conservation Manager  
[Doug.bennett@snwa.com](mailto:Doug.bennett@snwa.com)