Reflections on on 2 Years (almost) in a Water Policy Think Tank

WestCAS Fall Conference
October 27, 2016

Kyl Center for Water Policy at Morrison Institute

ARIZONA STATE UNIVERSITY

Water people are “special”.

ARIZONA TOWN HALL

Creating Solutions

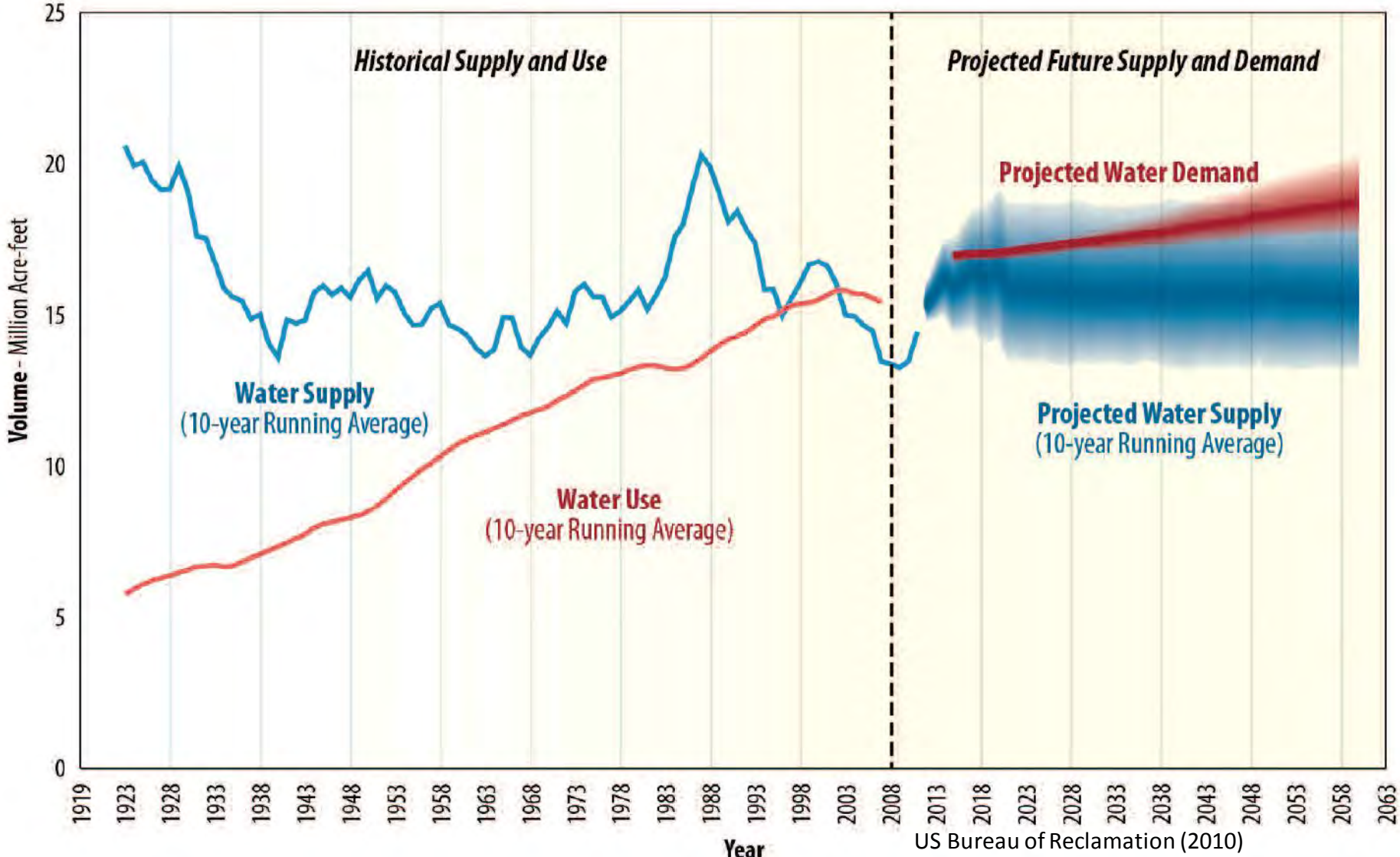
NOVEMBER 2015

Keeping Arizona's Water Glass Full

Everyone's talking about the supply gap

Colorado River Basin Water Supply & Demand Study

3.2 MAF by 2060



US Bureau of Reclamation (2010)

"[W]e have identified a **long-term imbalance** between available supplies and projected water demands over the **next 100 years** of up to **3 million acre-feet**."

Arizona Department of Water Resources, *Arizona's Next Century: A Strategic Vision for Water Supply Sustainability (2014)*

Projected Sun Corridor Demand

Sector	2010	2035	2060
Agriculture	2,029,432	1,716,697	1,373,909
Dairy	18,590	18,480	8,000
Feedlot	3,091	3,091	3,091
Municipal	1,381,251	2,319,897	2,959,583
Other Industrial	16,132	40,922	40,922
Mining	34,905		
High		117,500	117,500
Low		58,300	58,300
Power Plants	72,337		
High		184,026	230,952
Low		133,838	160,330
Rock Production	15,603		
High		103,244	132,069
Low		43,019	55,029
Turf	76,649		
High		102,524	116,389
Low		89,536	116,569
Total (High)	**3,647,990**	**4,606,381**	**4,982,415**
Total (Low)	**3,647,990**	**4,423,780**	**4,775,733**

Sun Corridor municipalities & industry – 115% increase in water demand by 2060

30 - 40% total demand increase by 2060

Source: ADWR Strategic Vision (2014)

"Colorado will need more than between 538,000 and 812,000 AF of additional water by 2050 to meet M&I needs with passive conservation included."

Statewide Water Supply Inititiative, Final 2050 M&I Water Use Projections

Texas Water Development Board

"[W]ater users face a potential water shortage of 4.8 million acre-feet per year in 2020 and 8.9 million acre-feet per year in 2070 in the event of a repeat of the drought of record."

Texas Water Control Board, 2017 State Water Plan

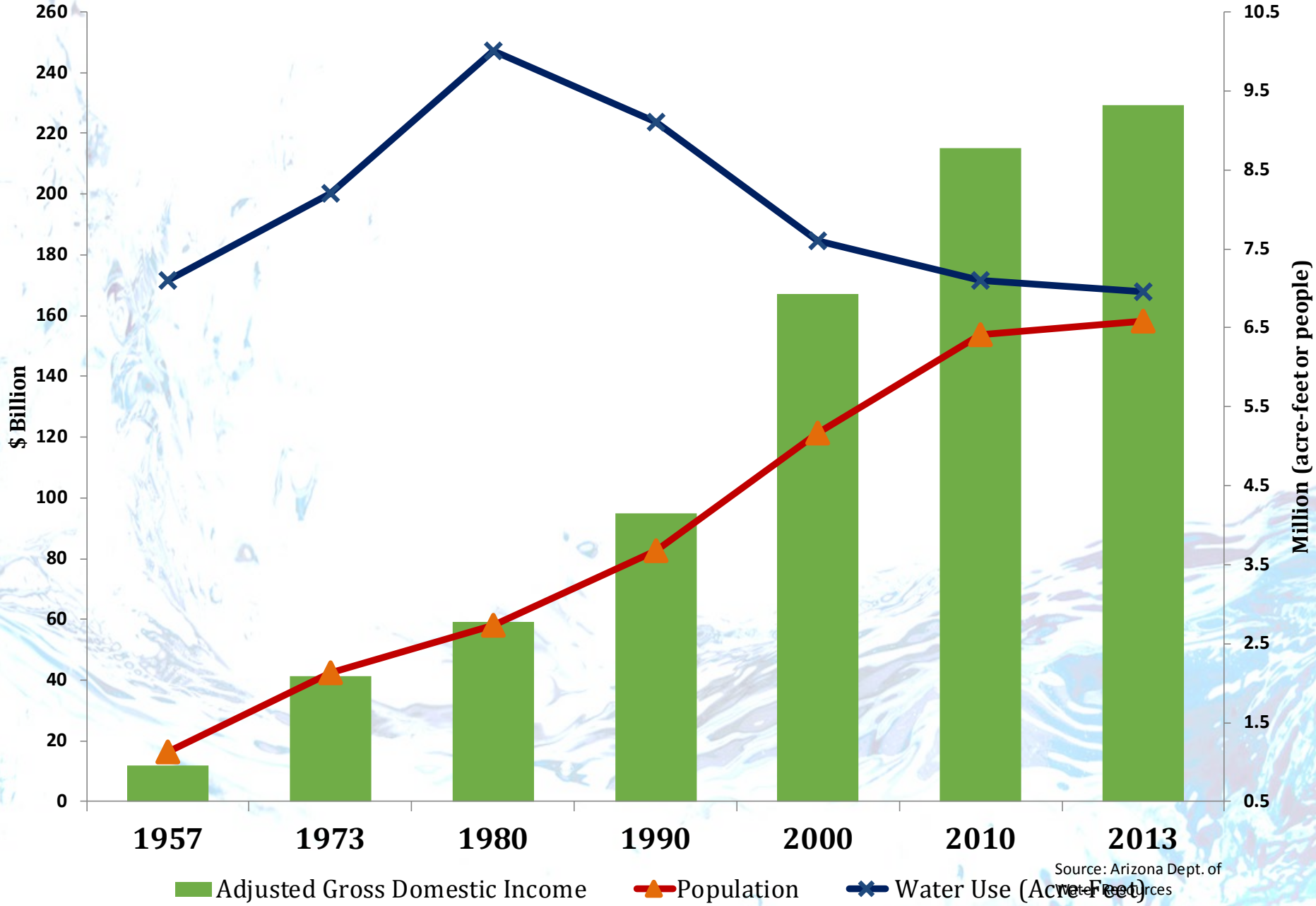
The Central Premise

more people
&
economic
activity

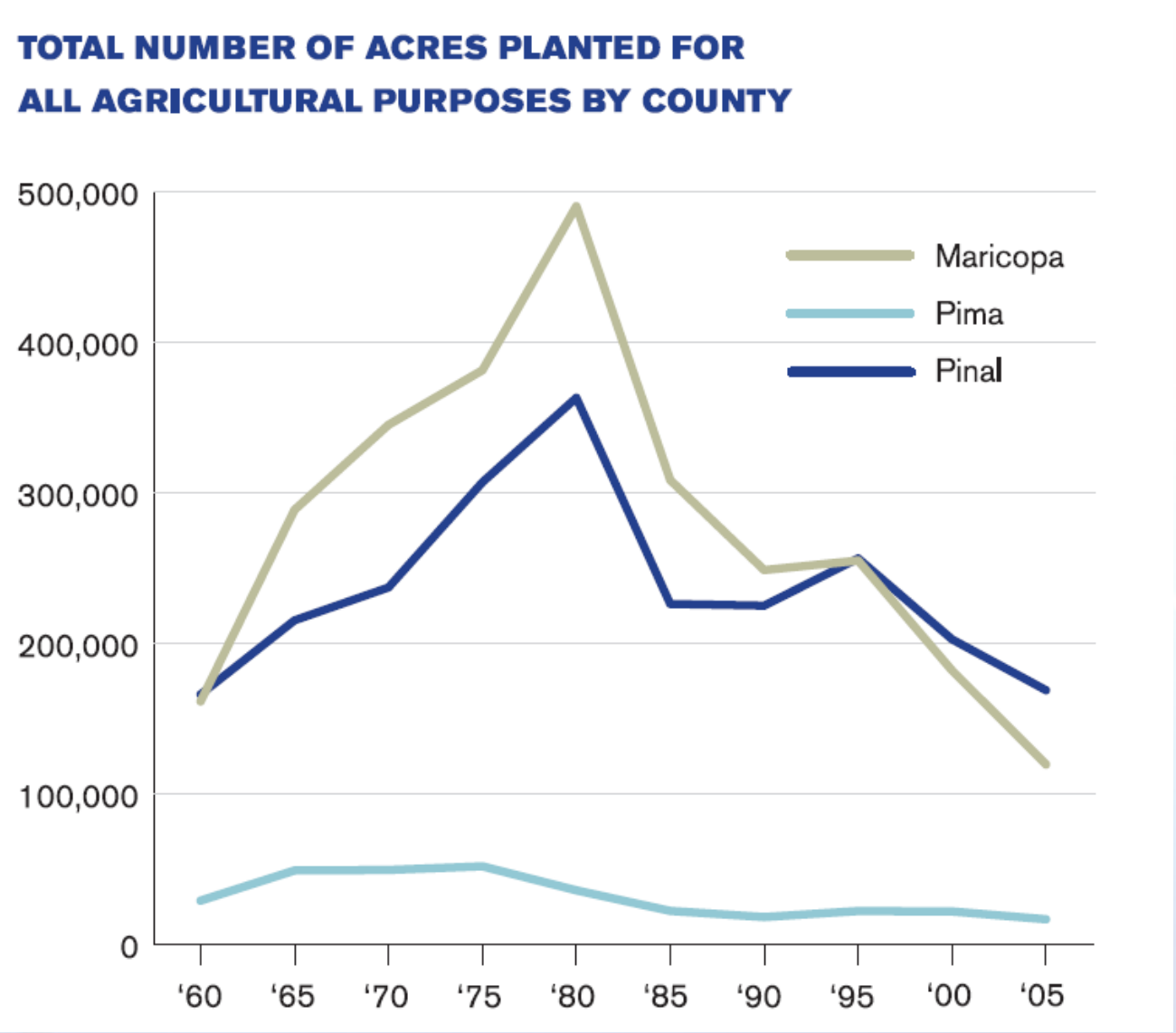
greater water
demand

. . . yet . . .

AZ Water Demand & Growth (1957 – 2013)

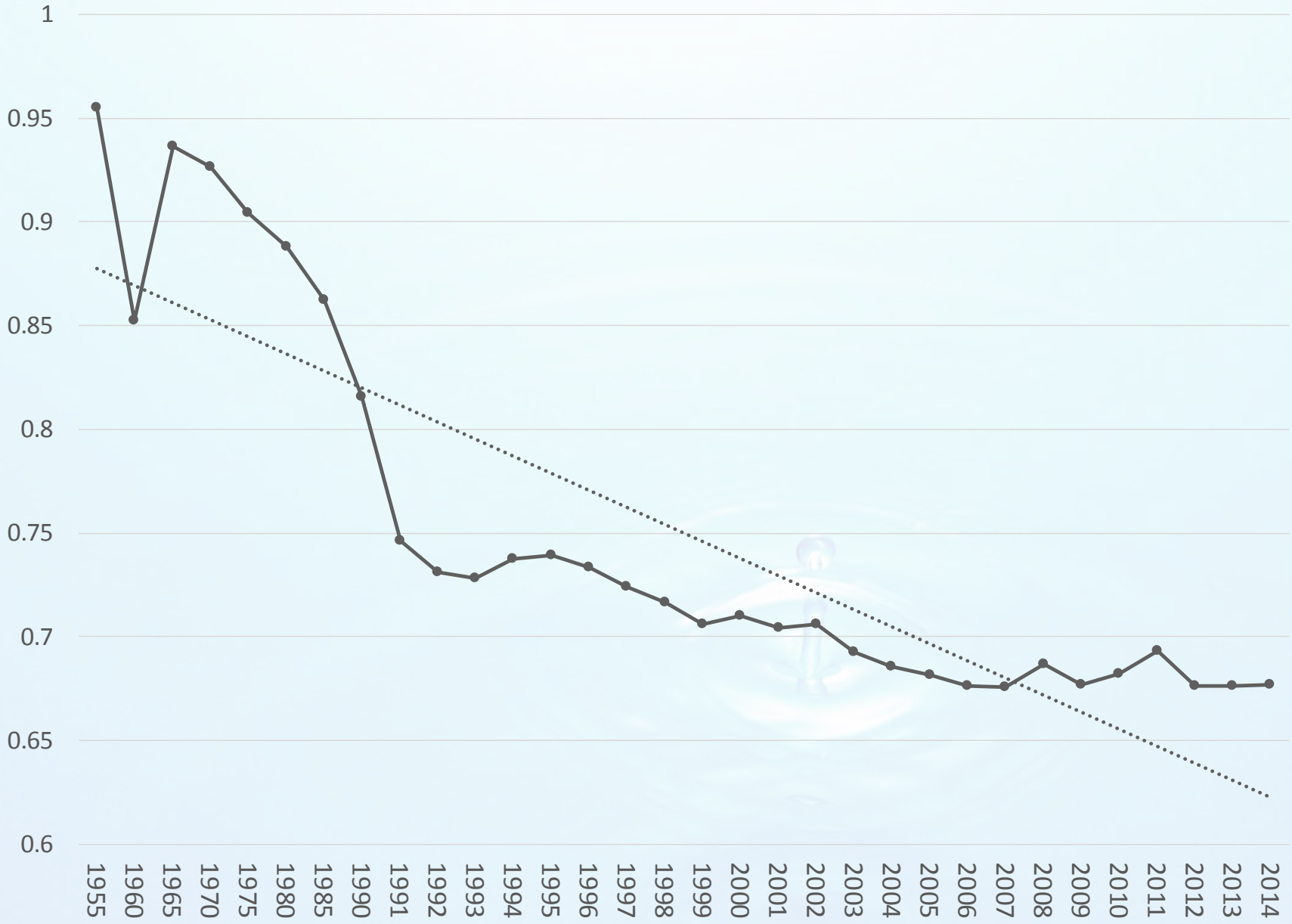


Demand Is Changing



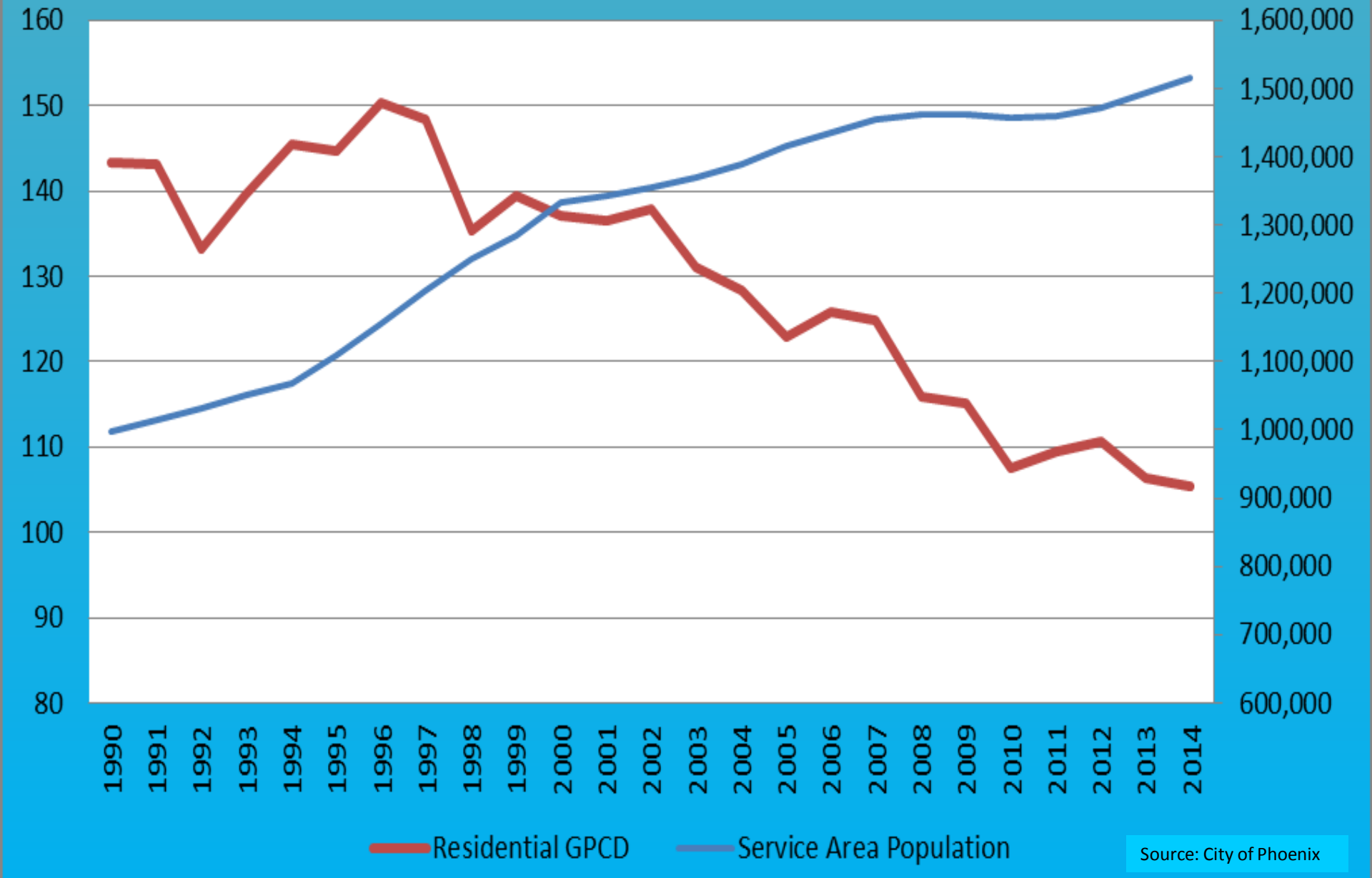
Source: Morrison Institute for Public Policy, ASU; data from USDA, National Agriculture Statistics Service, 2007

Agricultural Demand as %-age AZ Statewide



Source: ADWR

Phoenix Population and Water Usage



Source: City of Phoenix

Should we think more about demand?

Water is soooo misunderstood

"Build a pipeline."

"Get rid of the golf courses."

If it's yellow . . .

"Get rid of the environmentalists."

"Seed the Clouds"

"Too much goes to agriculture."

"Desalinate."

"Get rid of the feds."

"No more new homes."

"Kill the grass."

. . .let it mellow.

Schadenfreude:

a feeling of enjoyment that comes from seeing or hearing about the troubles of others

Slate

YES, THE DROUGHT IS BAD IN CALIFORNIA. IT'S GOING TO BE MUCH, MUCH WORSE IN ARIZONA.

Last week, Lake Mead, which sits on the border of Nevada and Arizona, set a new record low—**the first time** since the construction of the Hoover Dam in the 1930s that the lake's surface has dipped below 1,080 feet above sea level. The West's drought is so bad that official plans for water rationing have now begun—with Arizona's farmers first on the chopping block. Yes, despite the drought's epicenter in California, it's Arizona that will bear the brunt of the West's epic dry spell.

The **huge** Lake Mead—**which used to be the nation's largest** reservoir—serves as the main water storage facility on the Colorado River. Amid **one of the worst droughts in millennia**, record lows at Lake Mead are becoming an annual event—**last year's low** was 7 feet higher than this year's expected June nadir, 1,073 feet.

May 8, 2015

Holthaus, Eric. "Dry Heat: As Lake Mead hits record lows and water shortages loom, Arizona Prepares for the worst." *Slate* (May 8, 2015).

The New York Times

Still, Arizona is in dire straits. Its Colorado River water deliveries could be curtailed starting next year by the Bureau of Reclamation, which dispenses the river's water from Lake Mead. Earlier this month, the lake dropped to its lowest point since it was created by the construction of the Hoover Dam. **And calculations based on Arizona's own water accounting suggest that demand could outpace its existing water supply in less than a decade.**

Lustgarten, Abrahm. "How the West Overcounts Its Water Supplies," *The New York Times* (July 17, 2015)

July 17, 2015

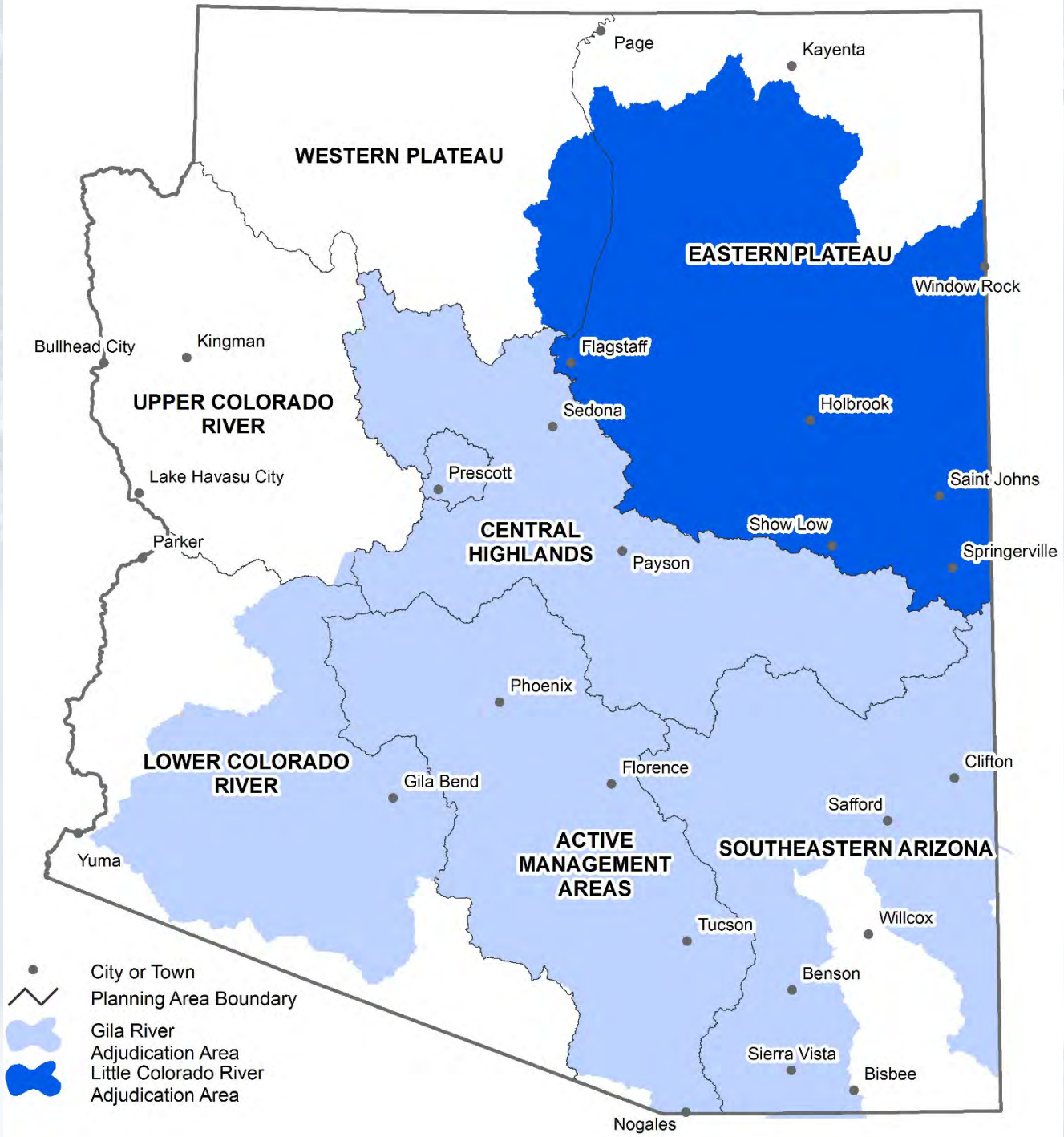
Los Angeles Times

Farmers who grow cattle feed and cotton in central Arizona could be forced to let fields lie fallow, maybe for good, and **cities like Phoenix might have to begin reusing wastewater** and even capping urban growth, the region's economic engine.

Yardley, William. "Shrinking Colorado River is a growing concern for Yuma farmers and millions of water users," *Los Angeles Times* (July 18, 2015).

July 18, 2015

What the Kyl Center is doing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Kayenta
WESTERN PLATEAU
EASTERN PLATEAU
Window Rock
Bullhead City
Kingman
Flagstaff
UPPER COLORADO RIVER
Sedona
Holbrook
Lake Havasu City
Prescott
Saint Johns
Parker
CENTRAL HIGHLANDS
Show Low
Springerville
Payson
Phoenix
LOWER COLORADO RIVER
Florence
Clifton
Gila Bend
Safford
ACTIVE MANAGEMENT AREAS
SOUTHEASTERN ARIZONA
Yuma
Tucson
Willcox
Benson
Sierra Vista
Bisbee
Nogales
City or Town
Planning Area Boundary
Gila River Adjudication Area
Little Colorado River Adjudication Area

Strategic Priority No. 1

Resolution of Water Rights Claims

"Until that process is complete, **uncertainty** regarding the nature, extent and priority of water rights will make it **difficult** to identify **all the strategies necessary** for meeting projected water demands."

Arizona Department of Water Resources, *Arizona's Next Century: A Strategic Vision for Water Supply Sustainability (2014)*

What is "resilience"?

resilience - the ability to absorb, adapt to, respond to and/or rapidly recover from a potentially disruptive event so as to reduce the magnitude and/or duration of such event.

WATER INDEX

SAN DIEGO

SCORECARD:

SLIGHTLY RESILIENT

Three years before last spring's California drought declaration, San Diego came to terms with the fact that it lacks water supply resilience. The city depends almost entirely on water imported from two vulnerable systems, the California Water Project and the Colorado River, and does not have sufficient reserve supplies for times of shortage. Moreover, San Diego expects demand to increase by 35% in the next ten years and 50% in the next 25 years. To address its supply gap, San Diego is focusing on maximizing opportunities for re-use of treated effluent. It will take years and hundreds of millions of dollars to build out this system.

CURRENT SUPPLIES

Until San Diego develops new water supplies, it will likely experience additional--and likely more severe--shortages due to climate variability and over-allocation.

CAPACITY TO MEET FUTURE DEMAND

San Diego has a long way to go to maximize water re-use. If the city accomplishes this ambitious goal, it will be positioned as a national leader in water recycling.

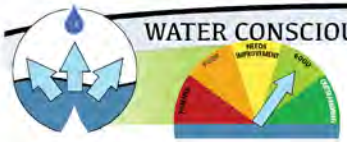
INFRASTRUCTURE

San Diego's system loss (treated water that is unaccounted for because of breaks or other system failures) is around 8%, but the city is conducting an analysis to pinpoint the cause of those losses. San Diego is proactive about system maintenance, with 80% of maintenance crew tasks going to preventative work.

CONTINGENCY PLANNING

For the most part, San Diego relies on its water wholesalers to manage supplies for drought or other contingencies and the water rationing in place since California's drought declaration has highlighted the lack of reserves to weather a prolonged shortage. However, San Diego has implemented an emergency response program to ensure that the city has six months of water available in the event of an emergency.

WATER CONSCIOUSNESS



In an effort to achieve mandatory conservation goals, the city has launched an outreach campaign--"San Diegans Waste No Water." The city also offers rebates for outdoor water conservation projects. And since 2010, San Diego has required that new multi-unit dwellings have sub-meters so that residents are billed based on their water consumption rather than paying a fixed amount.

FACT • *San Diego dumps 93% of its treated effluent into the Pacific Ocean.*

https://waterindex.asu.edu/

ASU Kyl Center for Water Policy at Morrison Institute

ARIZONA STATE UNIVERSITY

consensus will require understanding

Water Leaders Roundtable

Water Talks

Water Leaders Roundtable Poll
Issue No. 1

"How much water does Arizona really need?"

Coming soon . . .

The Price of Uncertainty

"Sometimes I wonder what terrible thing I did wrong in a previous lifetime that I must now spend so much of my time in windowless hotel ballrooms, listening to people read slides to me."

"I must have been Vlad the Impaler."

https://onthepublicrecord.org/

a really good blog about California water policy

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