Arizona Water Essentials

NH&RA Spring Developers Forum 2024

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Arizona State University

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What are the demand trends?

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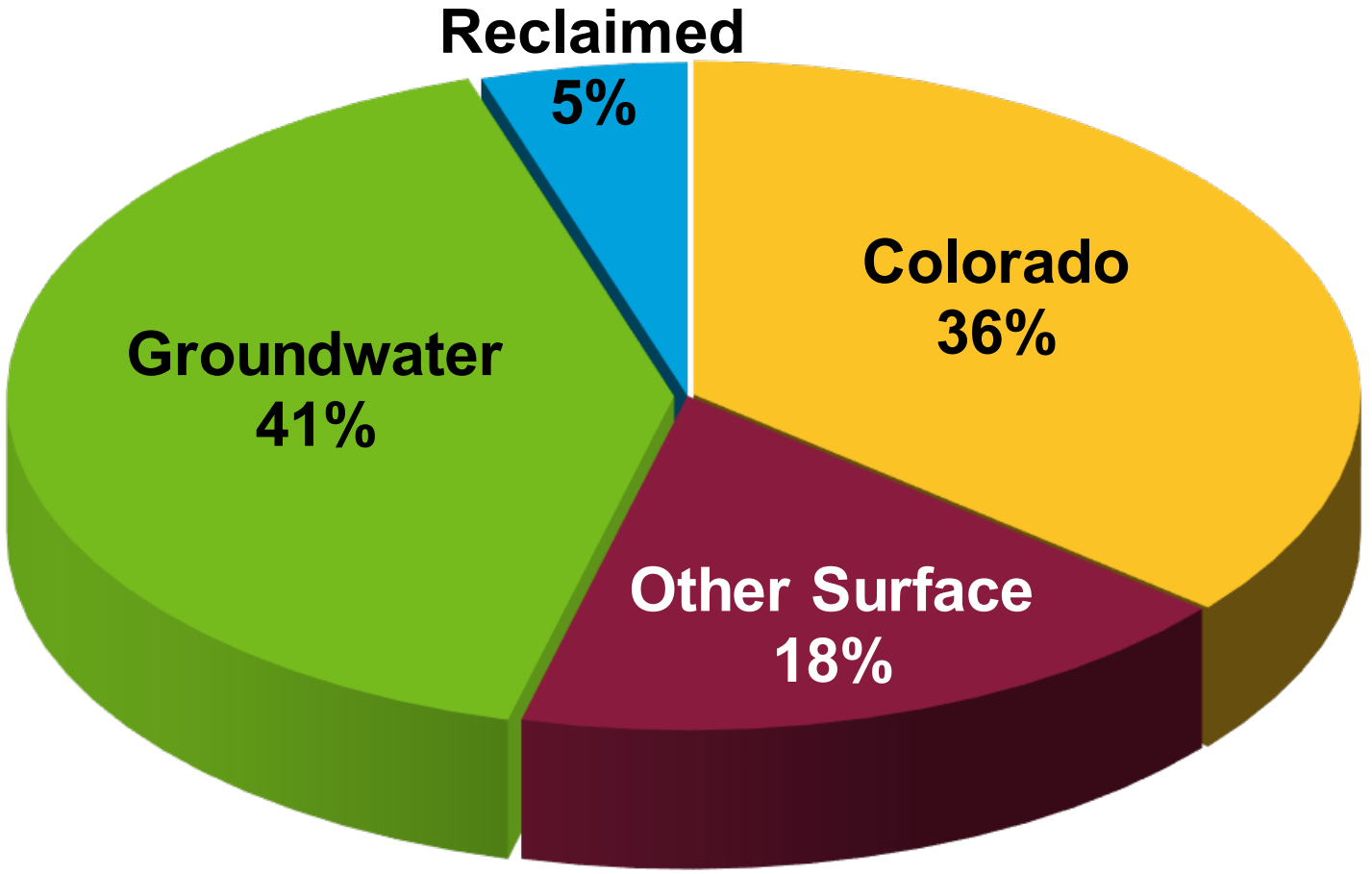
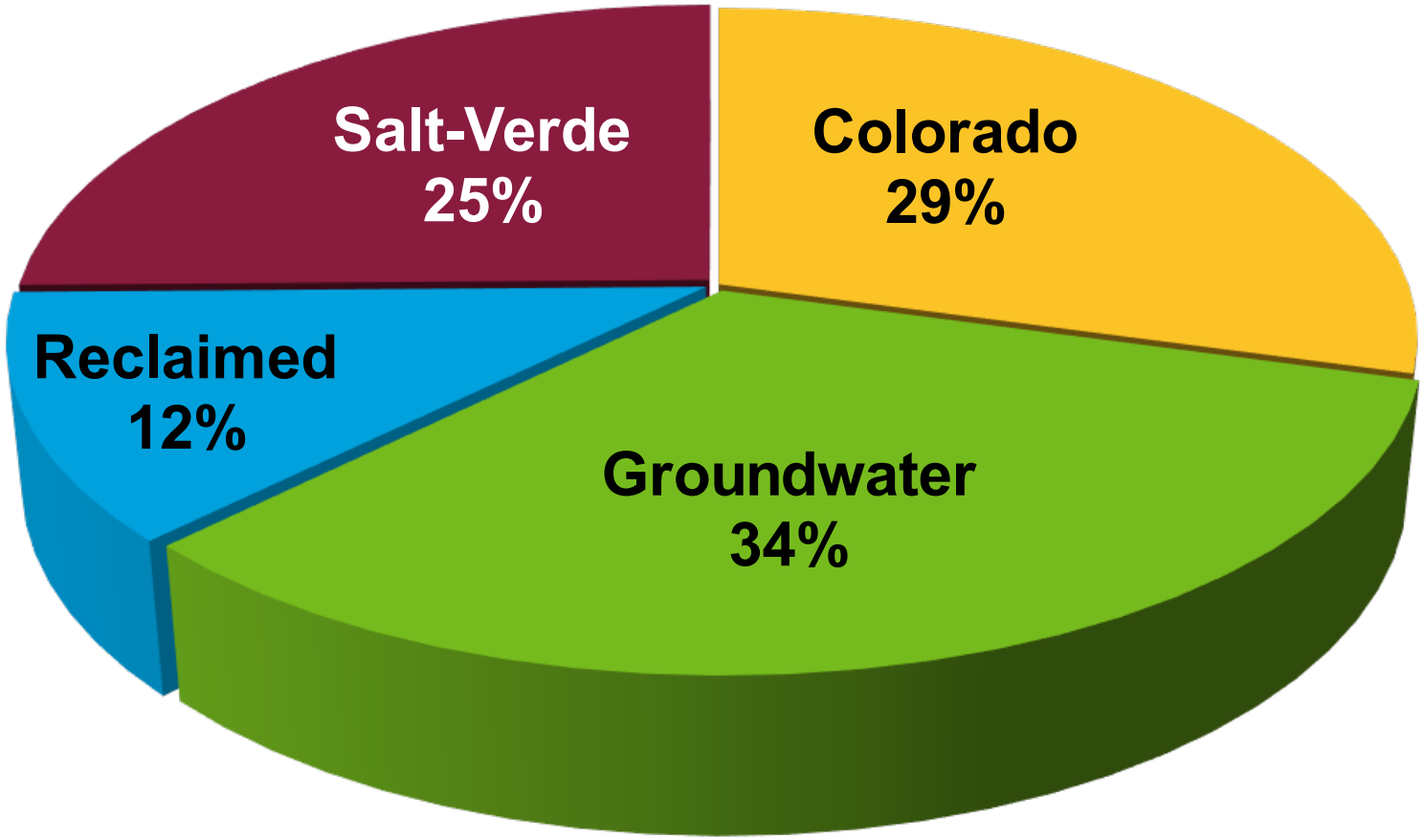
Where does AZ water come from?

Arizona's Water Sources



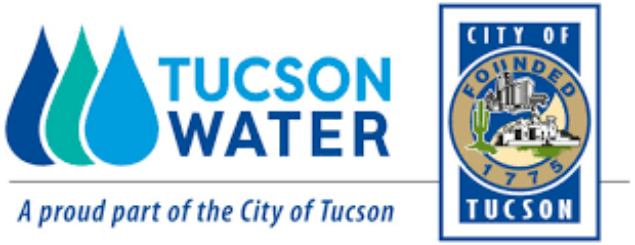
Source: Arizona Dept. of Water Resources (2022)

Greater Phoenix Water Sources



Source: Arizona Dept. of Water Resources, AMA Data (2022)

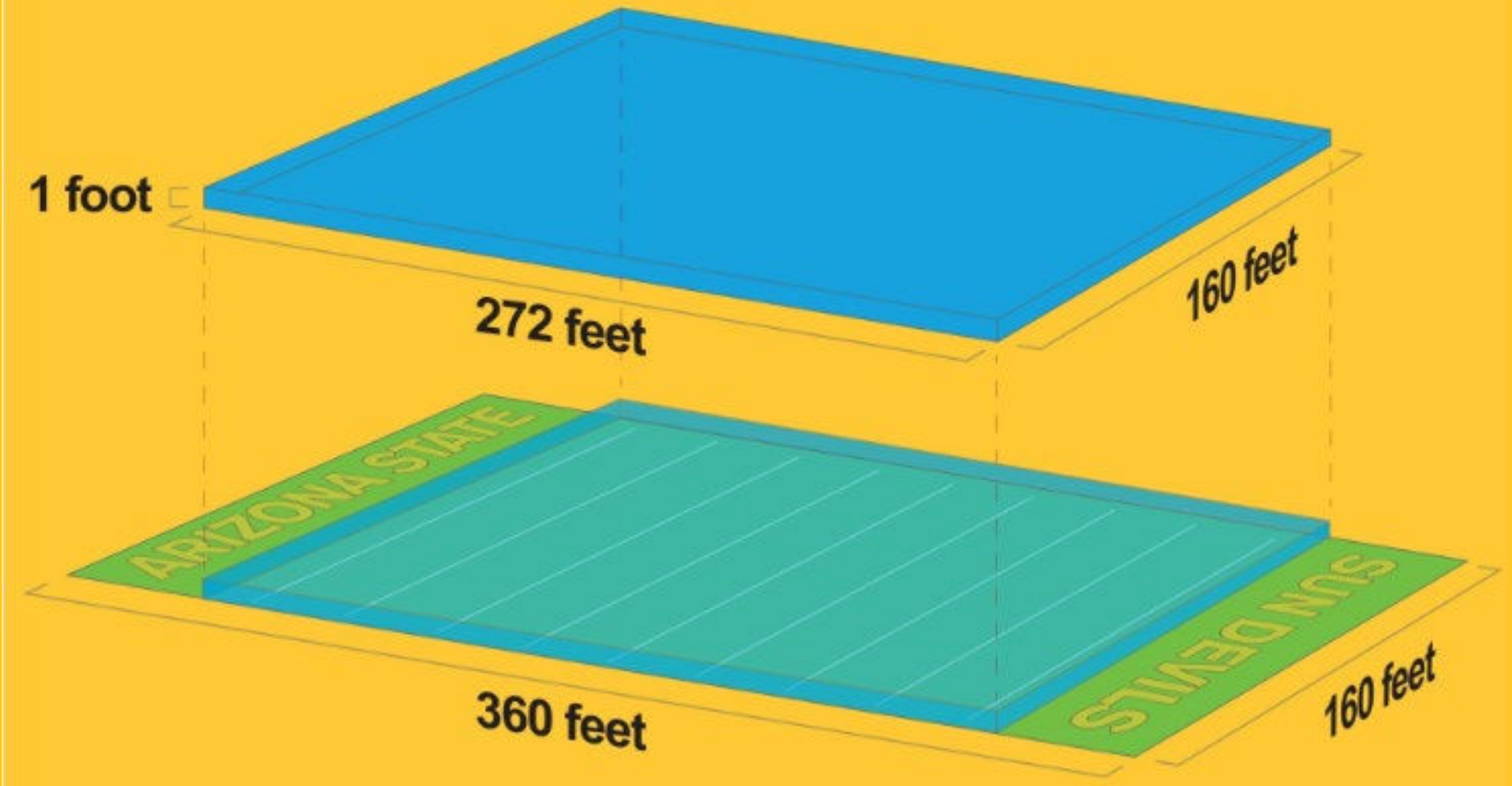
Water is a local matter.



What is an acre-foot?

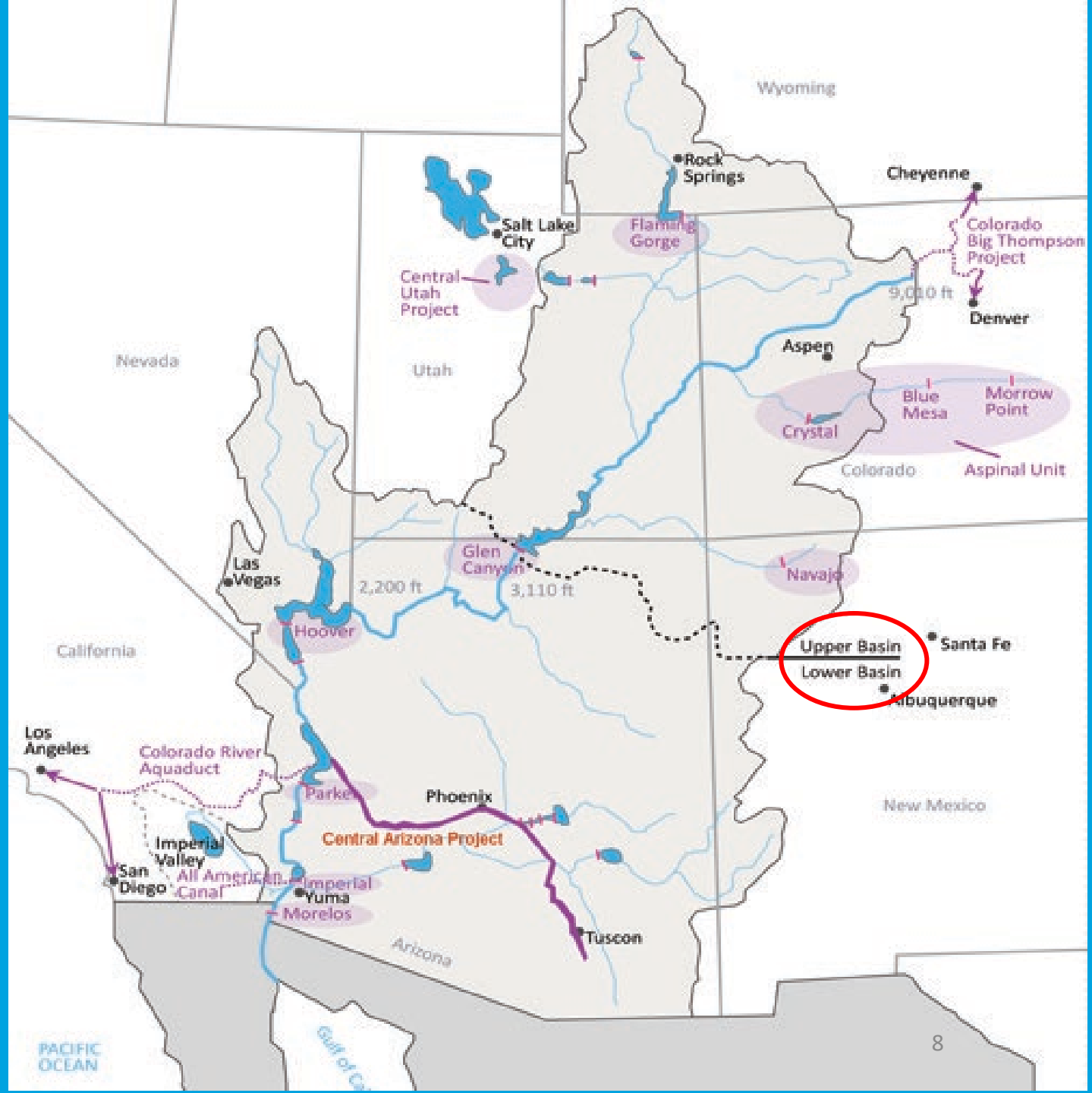
1 acre-foot volume = **325,851 gallons of water**

One acre-foot is the amount of water it would take to flood **one acre** to a depth of **one foot**.

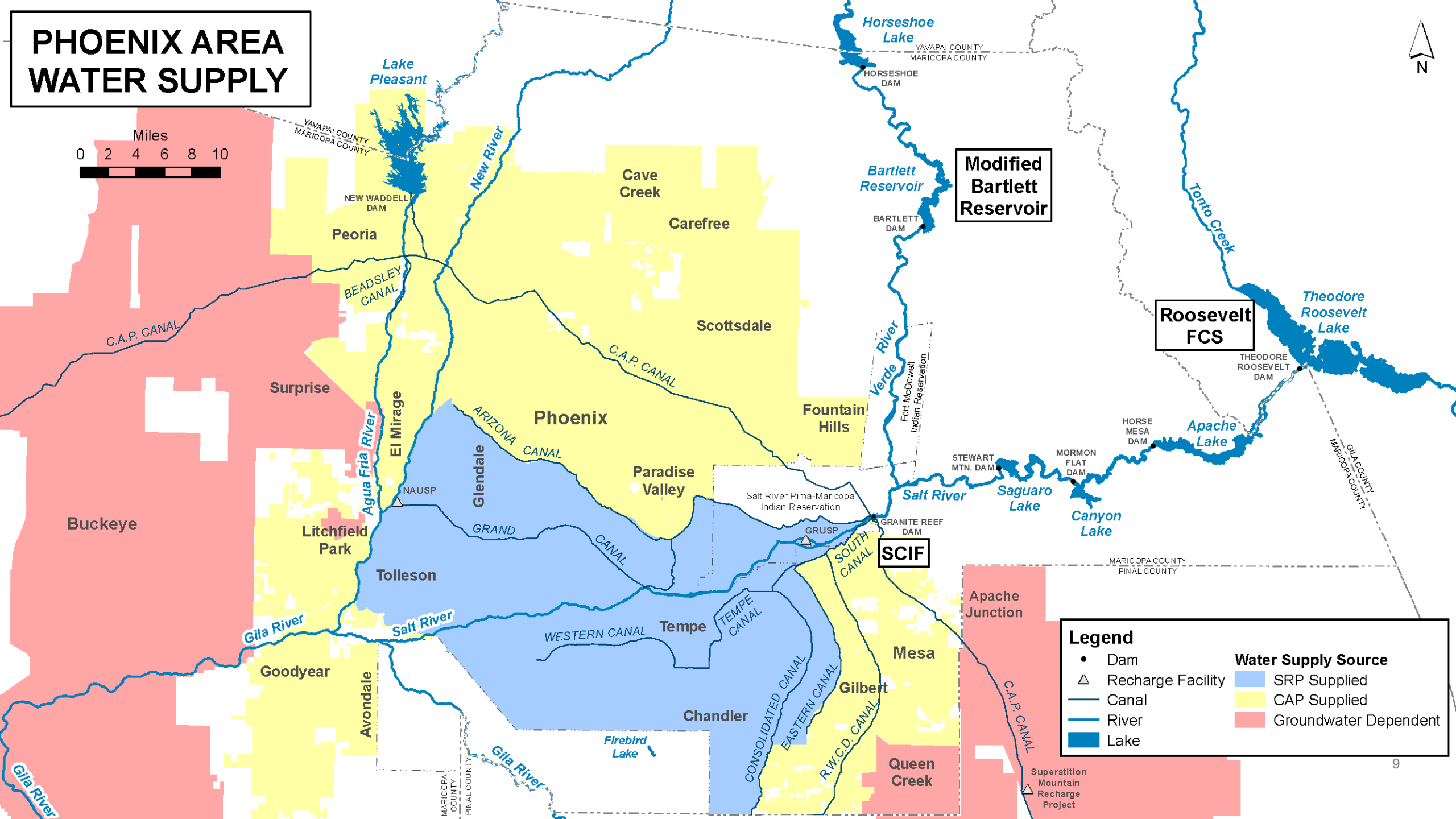


Colorado River

- 40 million people
- 7 states, 29 tribes & Mexico
- 5 million acres of agriculture
- Significant biodiversity
- Grand Canyon, other national parks & monuments

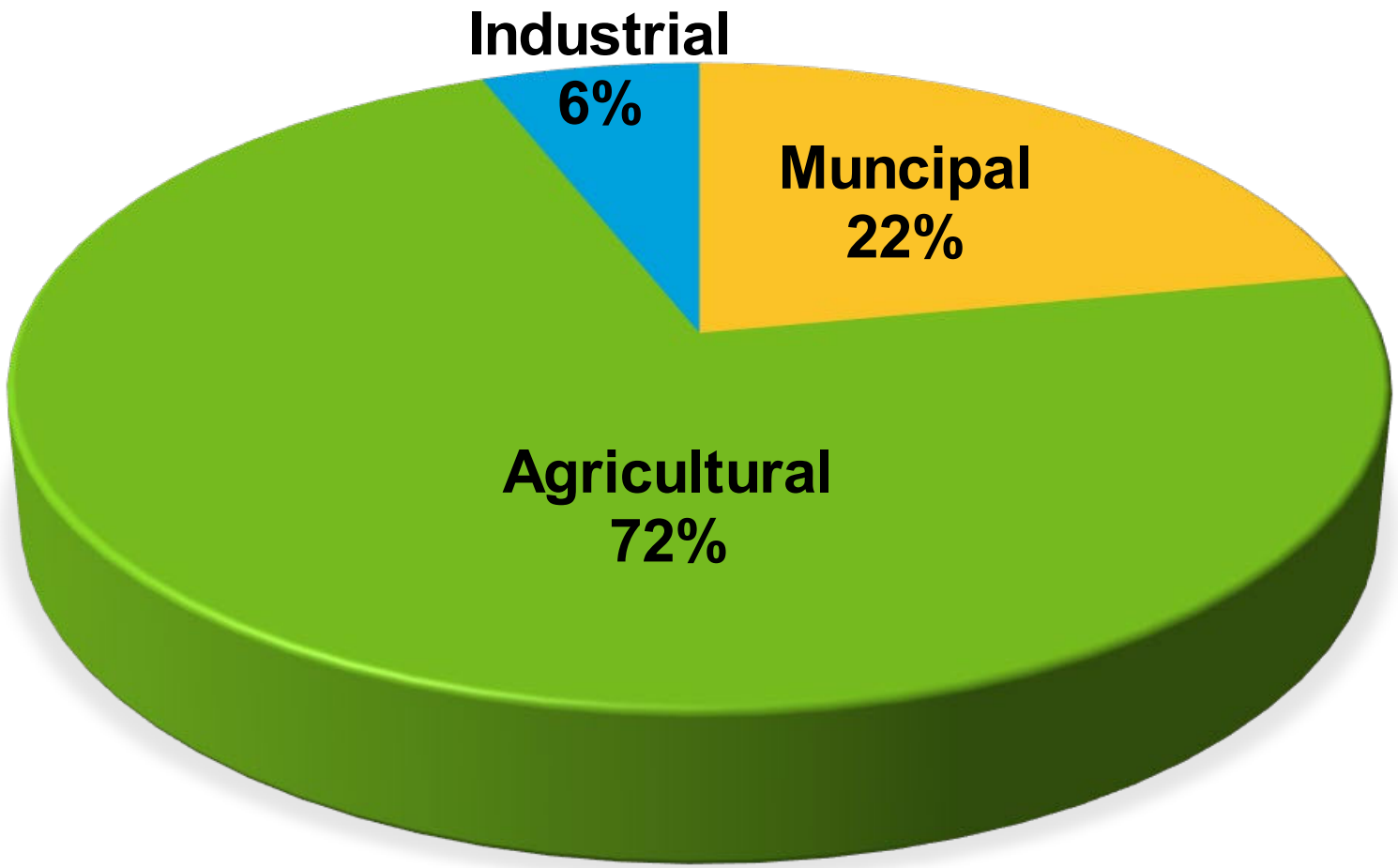


Source: US Bureau of Reclamation


PHOENIX AREA WATER SUPPLY
Miles
0 2 4 6 8 10
N
Lake Pleasant
NEW WADDELL DAM
YAVAPAI COUNTY
MARICOPA COUNTY
New River
Peoria
Cave Creek
Carefree
Scottsdale
Surprise
Buckeye
BEADSLEY CANAL
C.A.P. CANAL
El Mirage
Agua Fria River
Litchfield Park
Goodyear
Avondale
Phoenix
ARIZONA CANAL
Glendale
NAUSP
Paradise Valley
Fountain Hills
Tolleson
GRAND CANAL
Salt River Pima-Maricopa Indian Reservation
GRUSP
GRANITE REEF DAM
SCIF
SOUTH CANAL
Gila River
Salt River
WESTERN CANAL
Tempe
TEMPE CANAL
Chandler
Gilbert
Mesa
CONSOLIDATED CANAL
EASTERN CANAL
R.W.C.D. CANAL
Queen Creek
Firebird Lake
Apache Junction
Superstition Mountain Recharge Project
PINAL COUNTY
Horseshoe Lake
HORSESHOE DAM
Bartlett Reservoir
BARTLETT DAM
Modified Bartlett Reservoir
Verde River
Fort McDowell Indian Reservation
Tonto Creek
Roosevelt FCS
Theodore Roosevelt Lake
THEODORE ROOSEVELT DAM
HORSE MESA DAM
Apache Lake
STEWART MTN. DAM
MORMON FLAT DAM
Saguaro Lake
Canyon Lake
GILA COUNTY
Legend
Dam
Recharge Facility
Canal
River
Lake
Water Supply Source
SRP Supplied
CAP Supplied
Groundwater Dependent

Where is the water demand?

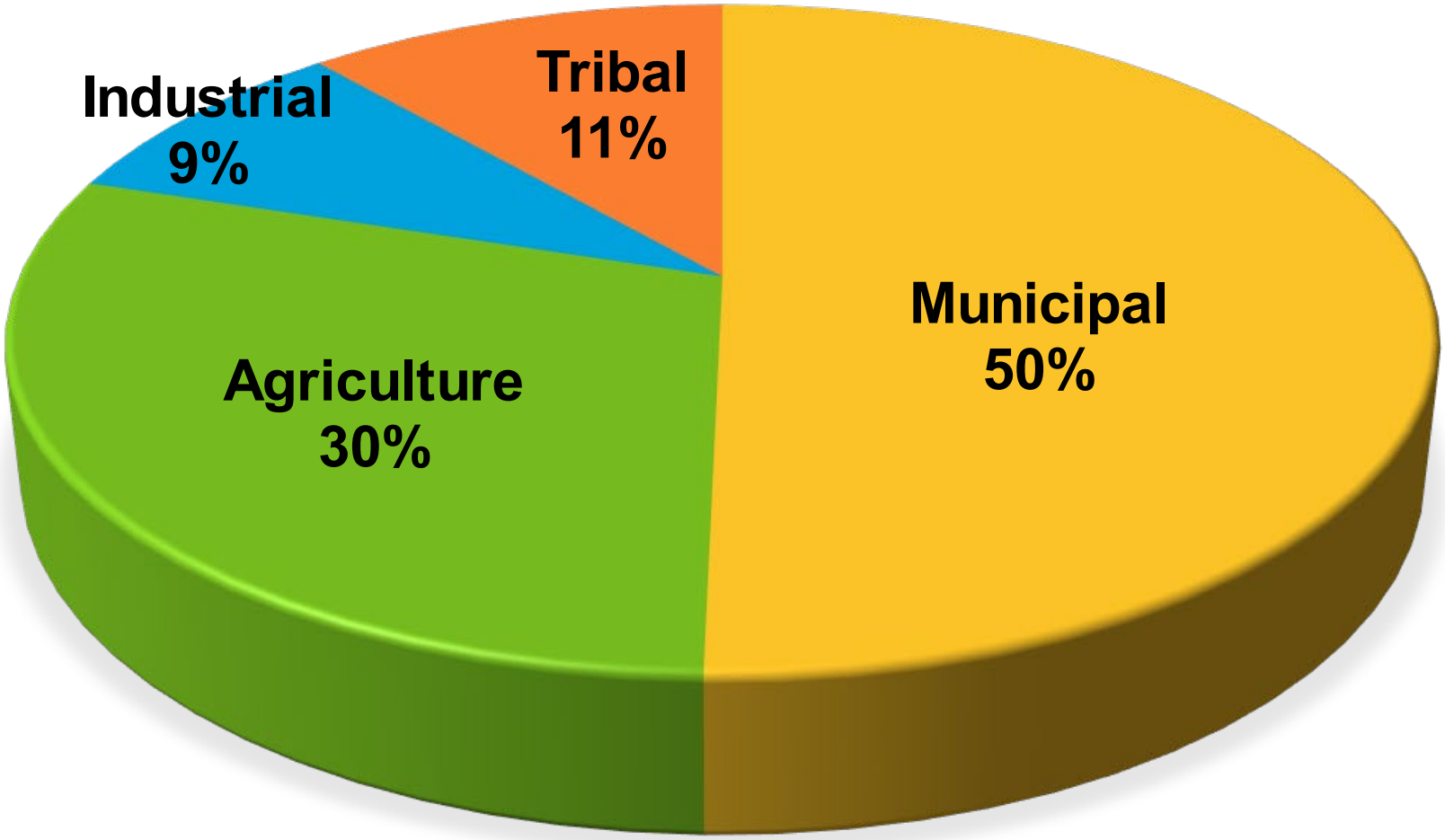
Arizona Water Demand by Sector



Annual Demand ≈ 7 MAF

Source: Arizona Department of Water Resources (2022)

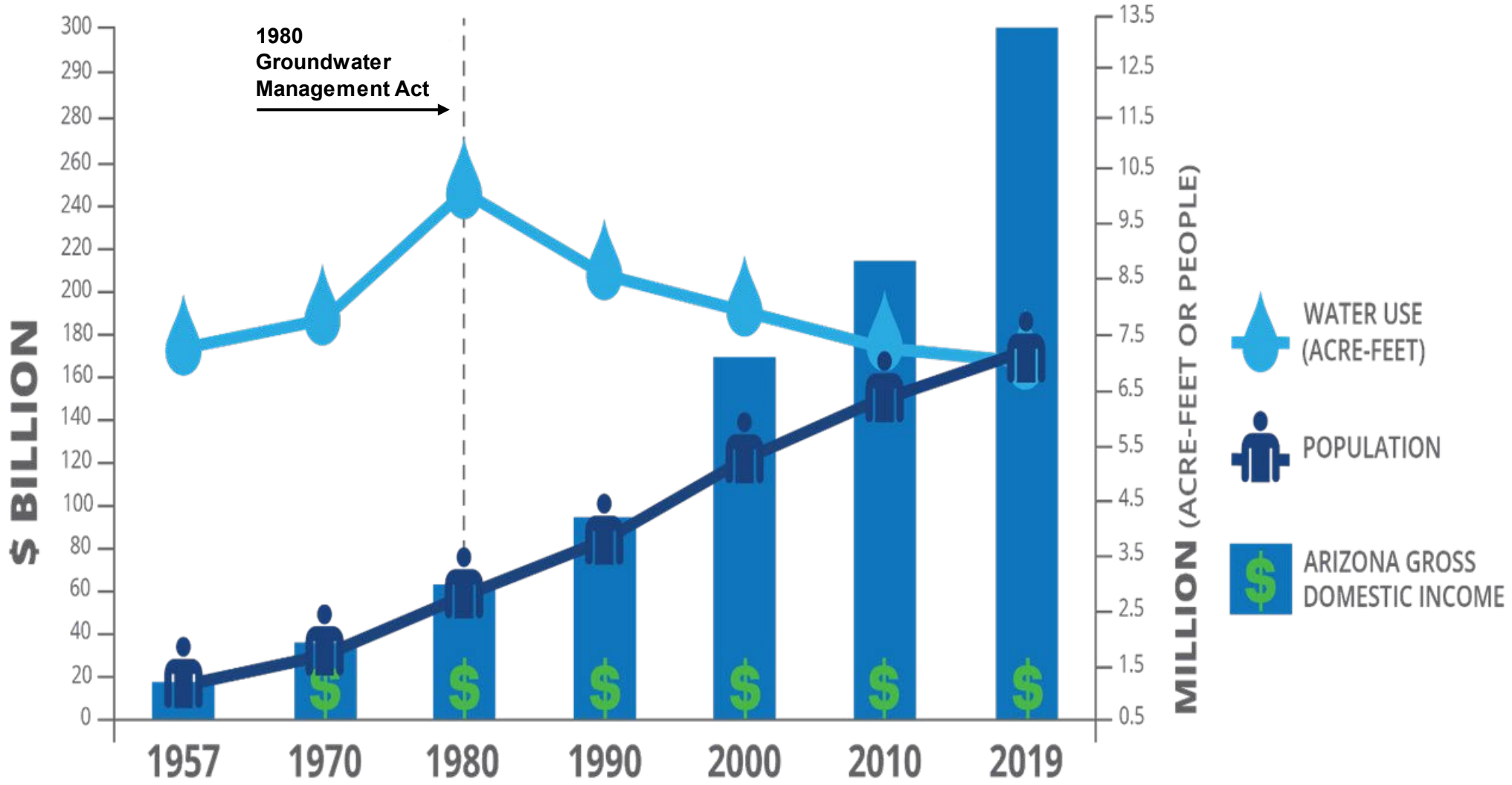
Phoenix AMA Demand



Annual Demand ≈ 2.29 MAF

Source: Arizona Department of Water Resources (2022)

Arizona Water Use, Population & Economic Growth (1957-2019)

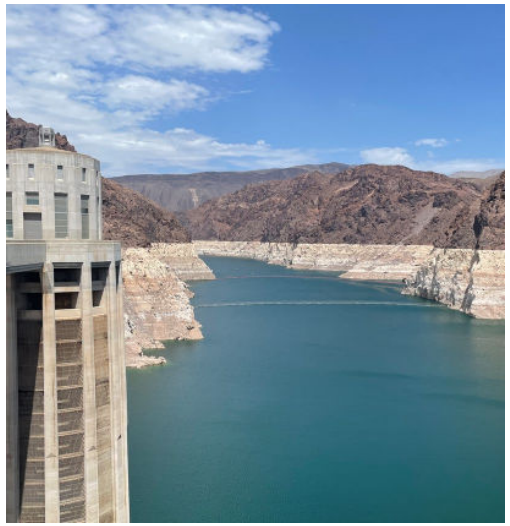


Source: Arizona Department of Water Resources (2022)

Arizona's Water Supply Challenges

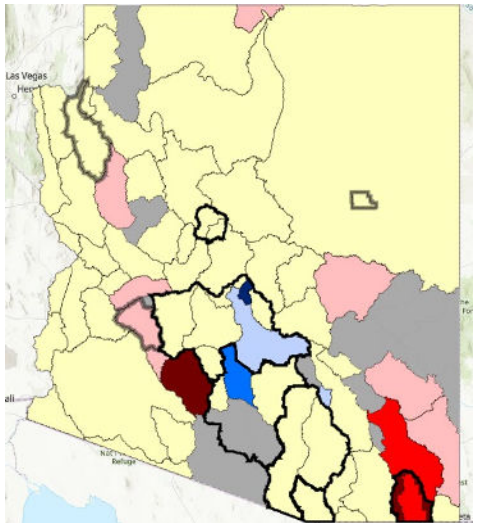
Diminishing Colorado River Supplies

Historic over-allocation combined with climate change will likely result in reduced Colorado River supplies in the future. CAP water users are likely to be most impacted.



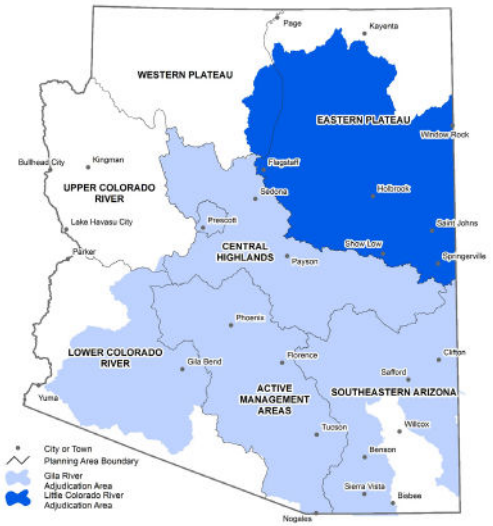
Over-reliance on Groundwater

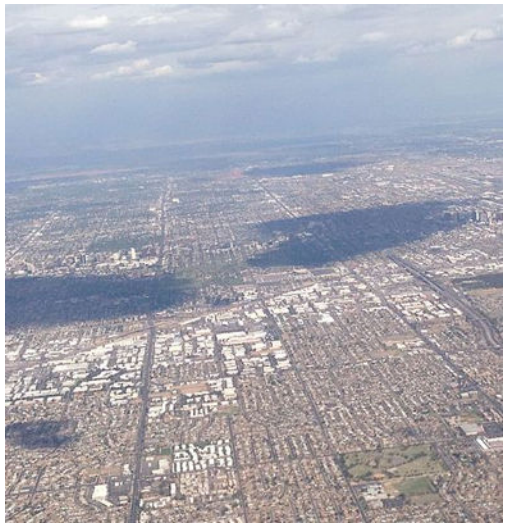
In many parts of Arizona, groundwater is being withdrawn faster than it is replenished, resulting in depleted aquifers, subsidence and wells going dry.



Uncertainty regarding Surface Water Rights

Until the state's two decades-long stream adjudications are completed, the rights to use water from the Little Colorado and Gila Rivers and their tributaries will remain uncertain.



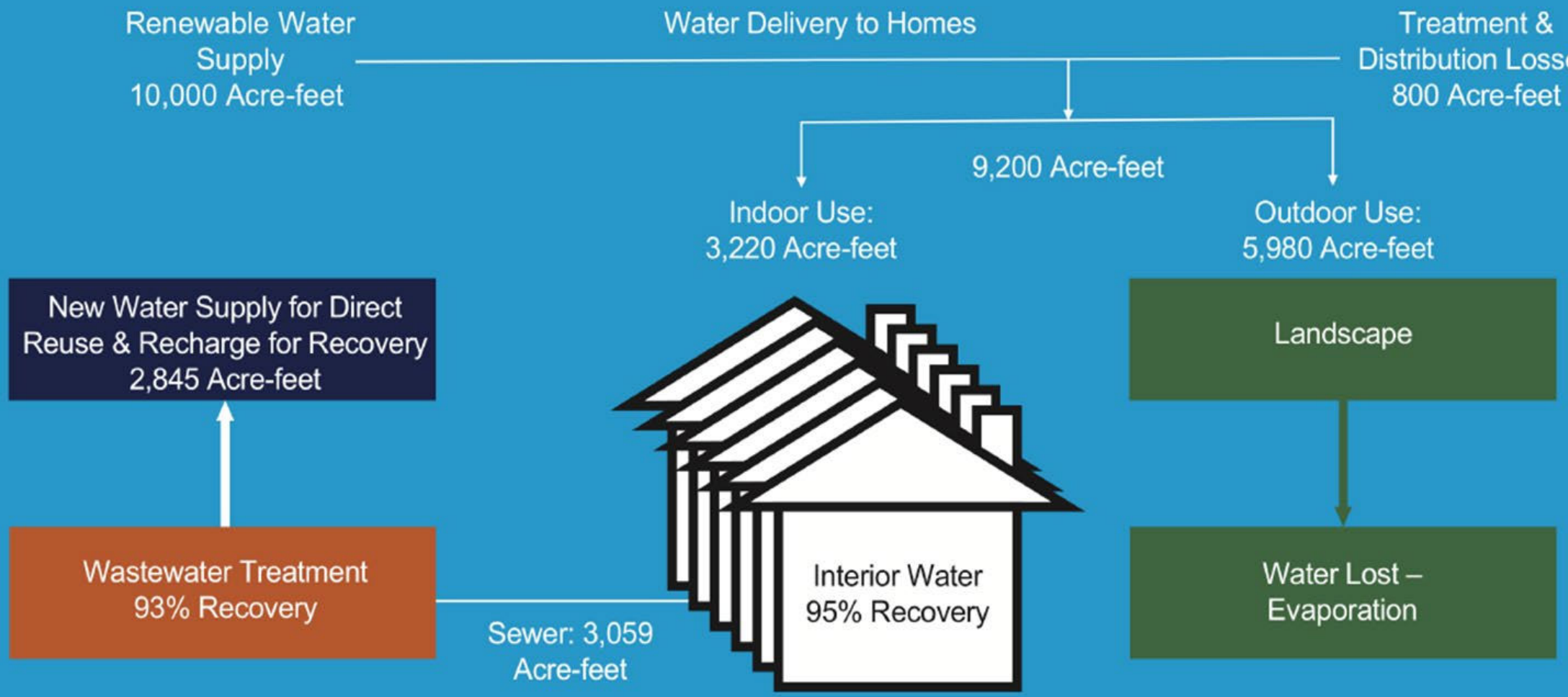


Demand Management

Re-Use

(What happens when 10,000 Acre-feet of renewable water is used to serve homes)

Gain to Overall Supply for the Municipality – 2,845 Acre-feet



Water Development Fund

- **Long-Term Water Augmentation Fund - $ 876 million over 3 years**
  - 75% of initial deposits for projects that import water into the state
  - Acquiring/constructing water-related facilities in the state for importation purposes
  - Financial assistance
- **Water Supply Development Revolving Fund - $200 million**
  - Loans and grants to eligible entities
  - Purchasing/refinancing debt, conducting water supply studies and other purposes
- **Water Conservation Grant Fund - $200 million**
  - Improve water reliability, efficiency
  - Groundwater recharge & aquifer health
  - Education, turf removal, drought-resistant landscape

Big Conclusions

- Arizona cities will continue to adapt.
- Deeper cuts in Colorado River supply are expected, and the impacts of these cuts will vary from city to city.
- Central Arizona cities are prepared to absorb continued growth but land use and density impact water needs.
- Work is underway to develop additional water supplies to support Central Arizona cities.

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Arizona Water Blueprint

Access the Blueprint using the QR code or

azwaterblueprint.asu.edu