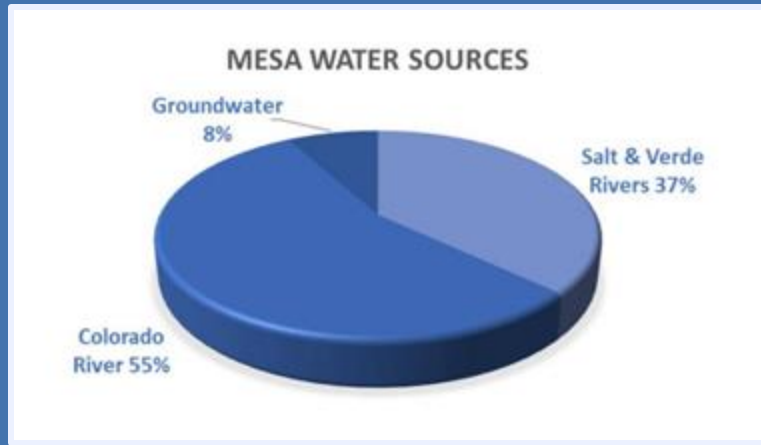


RMHS LET'S H2GO!

By Yasmine Phaklides, Madison Killion, Alexis Kelley, Dustin Harris, and Addison Anaya



There is no resource more valuable than water in the west



In 2023, the energy required for drinking water treatment and distribution was on average **2,690,496 kWh per month**

Conservation Concerns

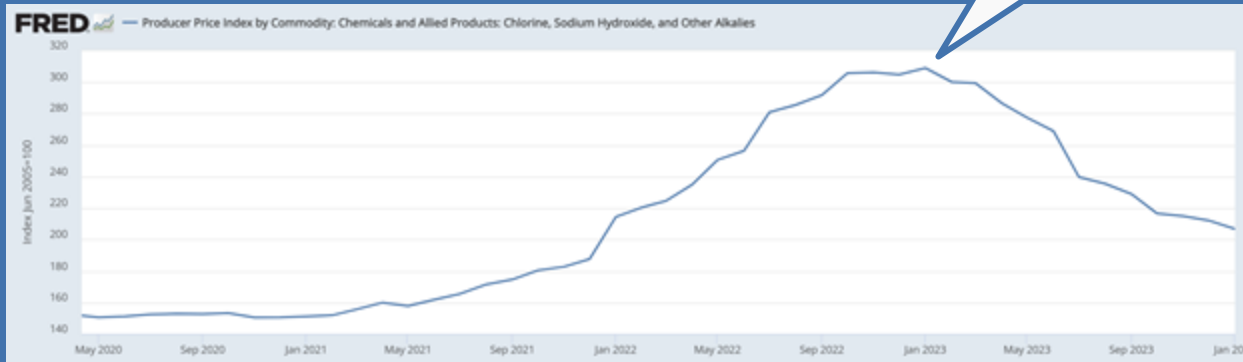
- Between a Tier 1 and Tier 2 drought in 2024
- More than 20% of Colorado River allocations cut
- Projected that farmers will struggle in 2024 **without water conservation methods**



Inflation

- Water transportation is essential in AZ
- Cost of water steadily increasing
- Treatment materials inflating as well

Chlorine Shortage



Co-benefits of Conserving Water



Total Water Consumption in TGALs per Year (2002-2023)

TGALs
stands for
“thousand
gallons”.

Total Consumption in TGALs per Year (2002-2023)

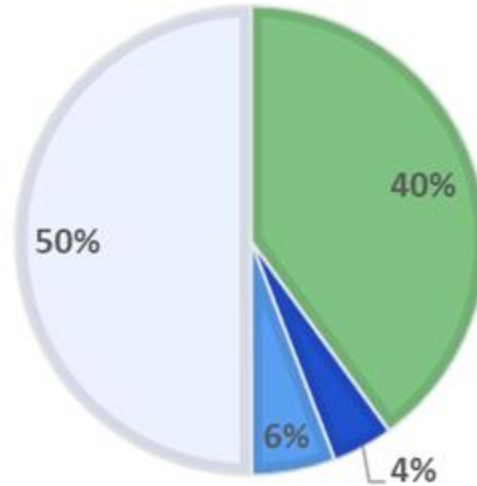


- Compared to 2002, the total gallons used in 2023 decreased by 2,127,977 TGALs
- Why was water consumption so high in the early 2000s?

Where is the water going?

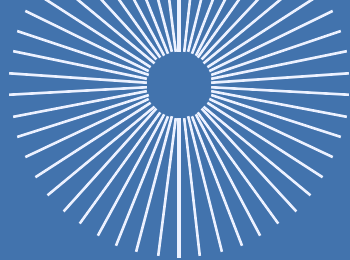
WATER CONSUMPTION IN MESA (2001-2024) BY CLASS

Commercial Interdepartmental Other Residential

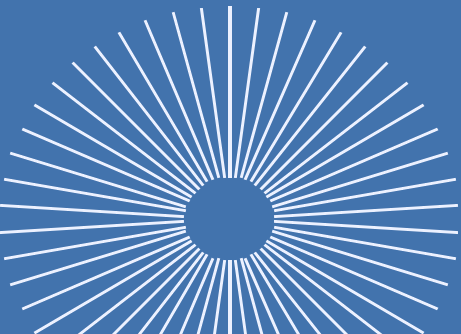


What do those classes mean?

Interdepartmental refers to the City of Mesa's usage as a water customer



Because of the different challenges and current initiatives associated with each consumer class, a water conservation solution should be multifaceted



Residentially

What's being done right now?

- Green Infrastructure
- Outreach Programs

Limitations

- Little awareness
- How can you change attitudes?



Xeriscaping

- **landscaping (an area) in a style which requires little or no irrigation.**
 - Exchange high consumers with plants native to the desert.
 - Lower costs, water usage
 - Arizona culture



Residential Solution



Push Xeriscaping

- Highlight benefits
- Local incentives
- Educate and advertise



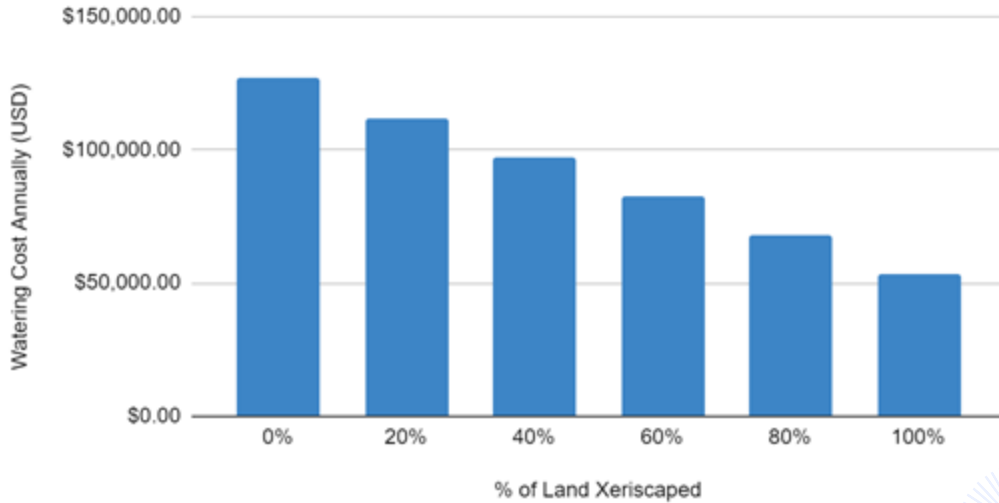
Arizona Culture

- Embrace Arizona's roots as a desert
- Creates a sense of pride and uniqueness among residents



Xeriscape Effects on Watering Costs

Using the Square Footage of Red Mountain Park's Soccer Field Extension (~69,6134 sq ft)



1 acre = \$4,966

58% decrease







Commercially

Most Recent WIFA proposal

- Water Infrastructure Finance Authority
- Grass to xeriscape incentives

Limitations

- Has not been approved yet
- Grant money is limited

Commercial Solution



WIFA Grant

- Increasing incentive for a 2nd grant



Sustainability

- Create a long term plan that sustains what the 2nd WIFA grant hopes to accomplish

Interdepartmentally

What's being done right now?

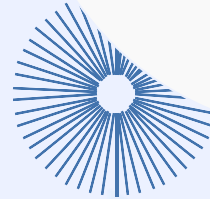
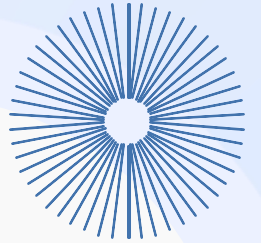
- **Parks Turf WIFA Grant**
 - Replaces non-functional turf
 - 859.1 acres of parks, 83.7% is grass

Limitations

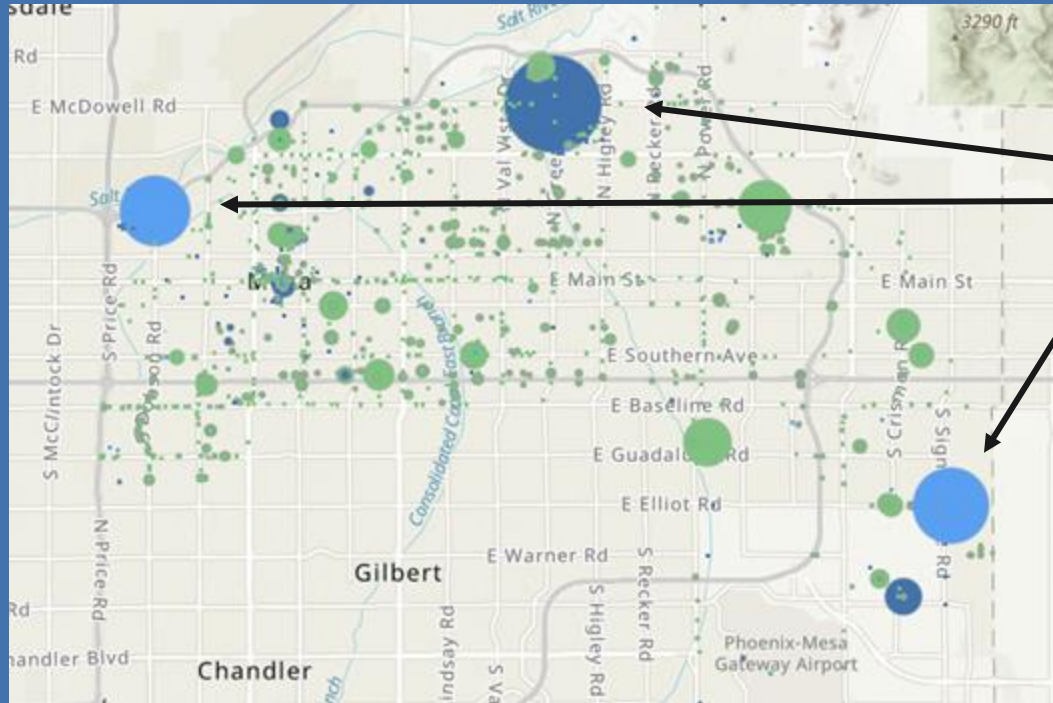
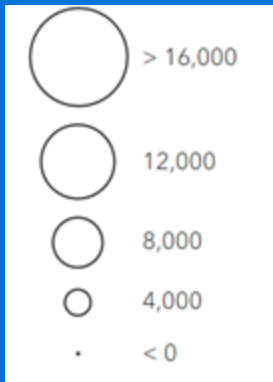
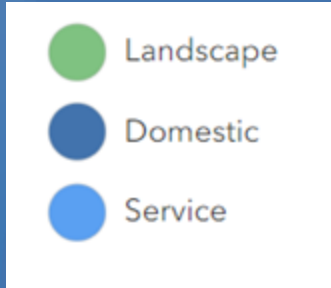
- **Not a long-term solution**
 - Funding must be used by December 31, 2026



**WATER
INFRASTRUCTURE**
FINANCE AUTHORITY
OF ARIZONA



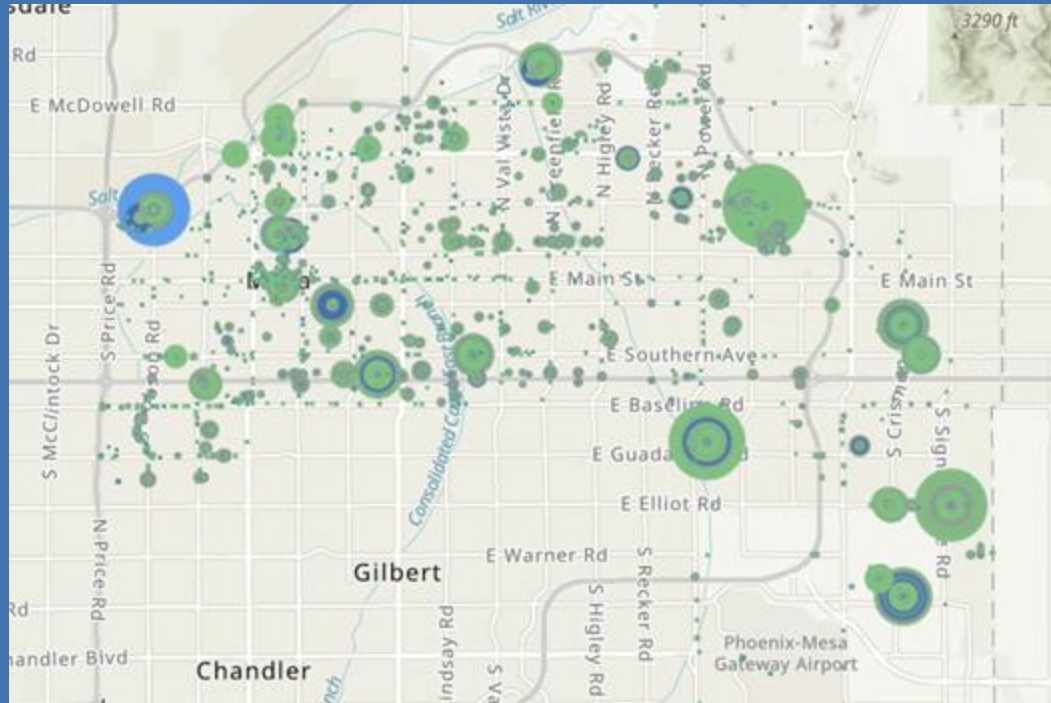
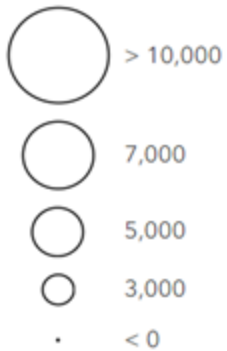
How is the city of Mesa using its water?



Outliers

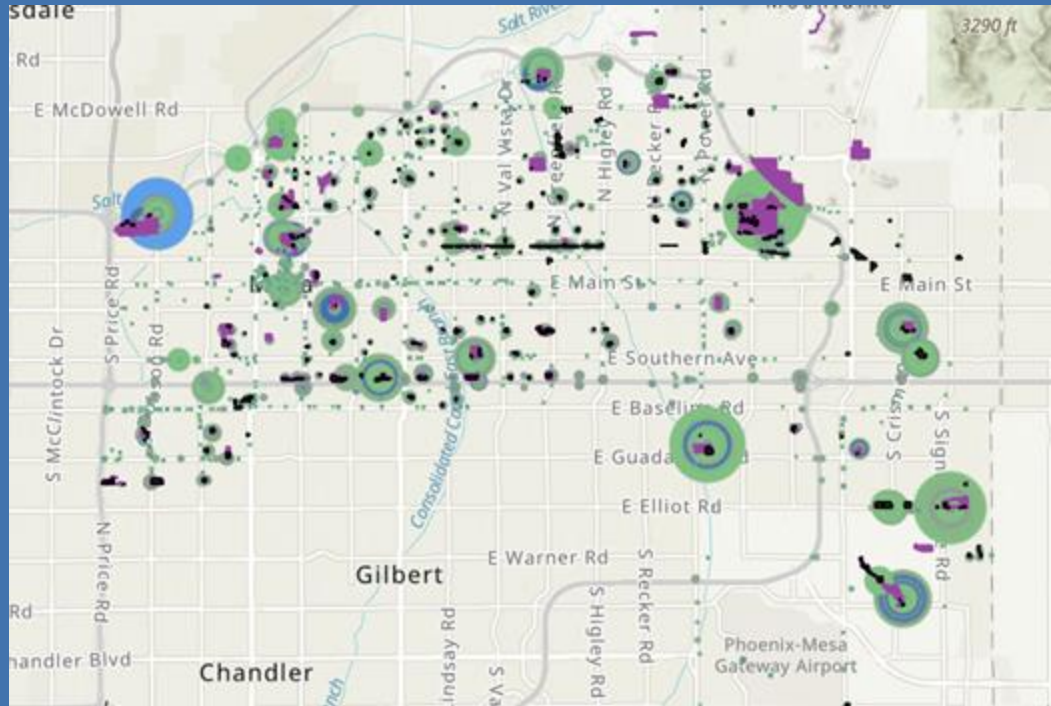
**City of Mesa
Smart Meter
initiative**

Without outliers, where are our hotspots?



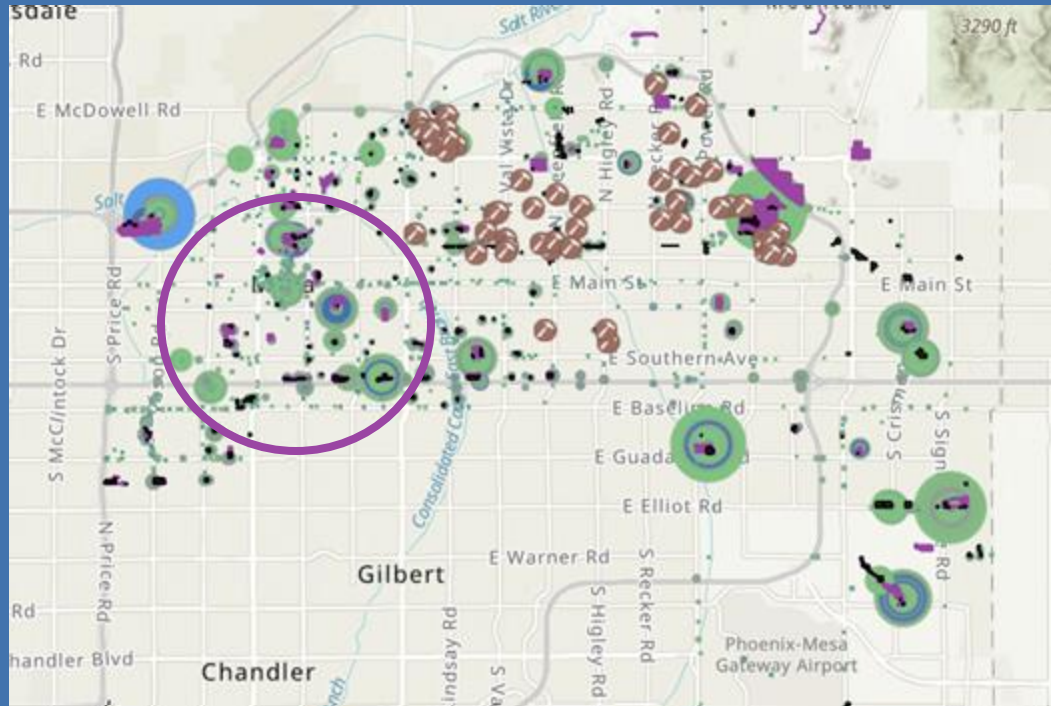
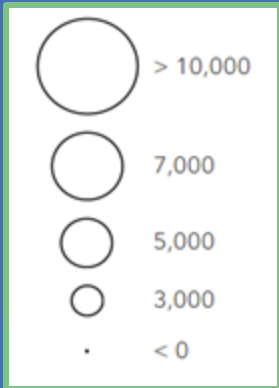
Landscape represents the primary use of municipal water

What is situated at these locations?



**City of Mesa
parks align
with water
consumption
hot spots**

How are current initiatives addressing this?



**Chosen sites
for WIFA non-
functional
turf removal**

**Where should
our solution
focus?**

Interdepartmental Solution



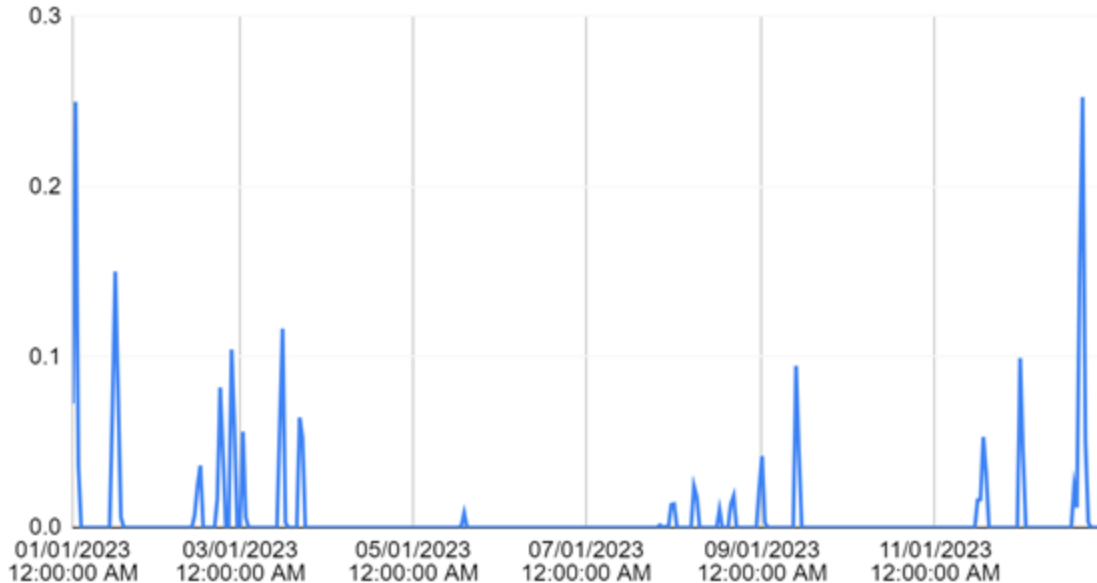
Rainwater Collection

- Capturing and storing rainwater from rooftops or other surfaces for watering



Average Rainfall 2023

2023 Annual Rainfall

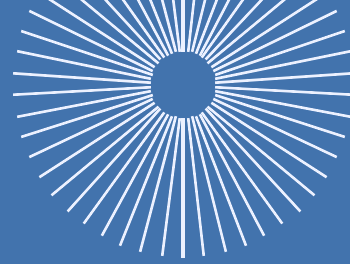


14.58in of total precipitation

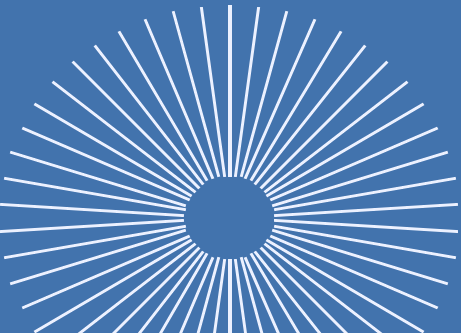
1500 sq/ft home collects 13,625.01 gallons of water

conversion:

Total gallons=Total inches×Roof area in square feet×0.623



Involving the community, finding new ways to sustain existing programs, and emulating different solutions from other Arizona cities is the best approach to water conservation in Arizona



Thank You!



APPENDIX & RESOURCES

- <https://www.drought.gov/states/arizona/county/Maricopa>
- <https://www.cap-az.com/water/cap-system/planning-and-processes/shortage-impacts/>
- https://apps.mesaaz.gov/watercalculator/?_gl=1*1buwk6q*_ga*MTU4MTc5MjUzNi4wNzA1MTA0MDI1*_ga_22L3TR0546*MTcwODUzNT15Nj4zLjEUMTcwODUzNTI3NC41MC4wLjA.
- <https://maps.mcaassessor.maricopa.gov/>
- <https://www.fox10phoenix.com/news/arizonas-water-crisis-colorado-river-restrictions-easing-in-2024-but-negotiations-over-future-continues>
- https://citydata.mesaaz.gov/Water-Resources/Water-Consumption-By-Premise/x78d-vqk4/about_data
- <https://www.oed.com/search/dictionary/?scope=Entries&q=xeriscaping>
- [Landscaping affects identity](#)
- <https://www.businessinsider.com/anti-lawn-movement-in-phoenix-helping-residents-define-american-yard-2023-3#from-dry-grass-to-ideal-desert-ecosystem-5>
- <https://www.mesaaz.gov/residents/water/water-conservation/residential-grass-to-xeriscape-rebate/xeriscape-faq>
- <https://www.mesaaz.gov/residents/water/water-conservation/residential-grass-to-xeriscape-rebate>
- <https://www.mesaaz.gov/home/showdocument?id=7458>
- <https://fred.stlouisfed.org/series/WPU061303>
- <https://fred.stlouisfed.org/series/CUSR0000SEHG#0>
- https://docs.com/spreadsheets/d/1rA3p8nr2ZNb6UfEozaQ2_Tgoogle5icxd5h8qwuxRfxLHms3k/edit#gid=1026236287
- <https://www.thecooldown.com/green-home/phoenix-arizona-anti-lawn-movement-native-plants/>
- <https://www.gutterfix.com/rainwater-harvesting-laws-arizona/>
- <https://www.waterworld.com/home/article/16202174/smart-water-metering-networks-an-intelligent-investment>
- <https://issuu.com/mesawaterresources/docs/watershortagemanagementplan?fr=sOTdmMTQxMjc2NTc>
- <https://www.census.gov/quickfacts/fact/table/mesacityarizona/POP010210>
- https://issuu.com/cityofmesa/docs/mesa_climate_action_plan-compressed?fr=sNGQ00TlxODlx0TA