Scottsdale Water, Sustainable Water Management and Salinity



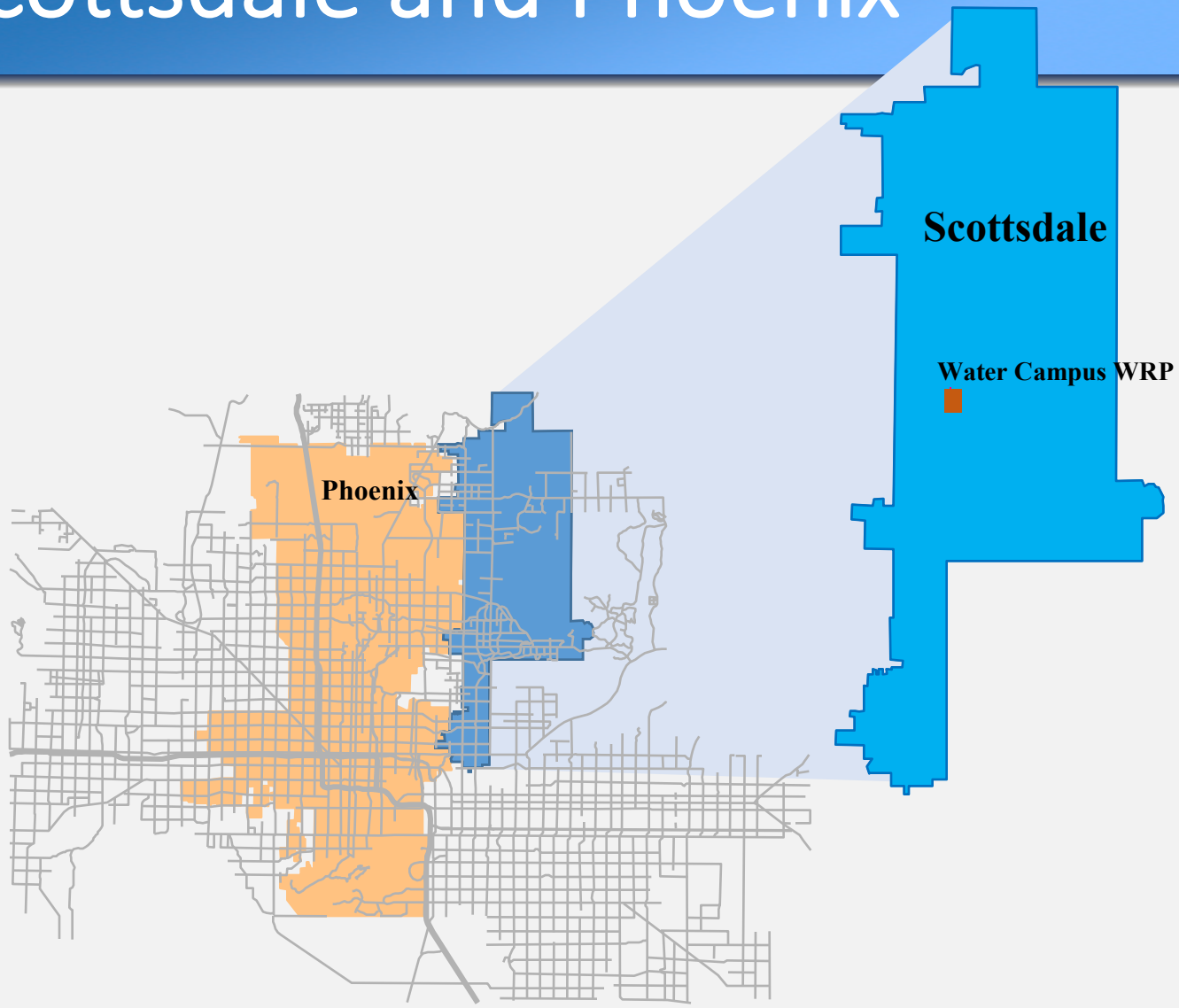


SCOTTSDALE WATER

Brian K. Biesemeyer, P.E.
Executive Director

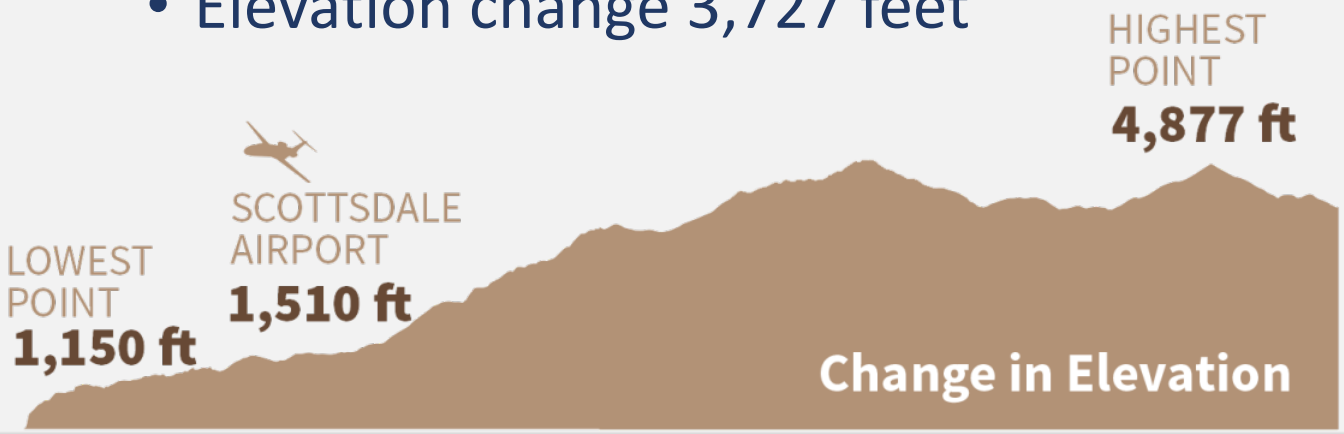
CITY OF SCOTTSDALE

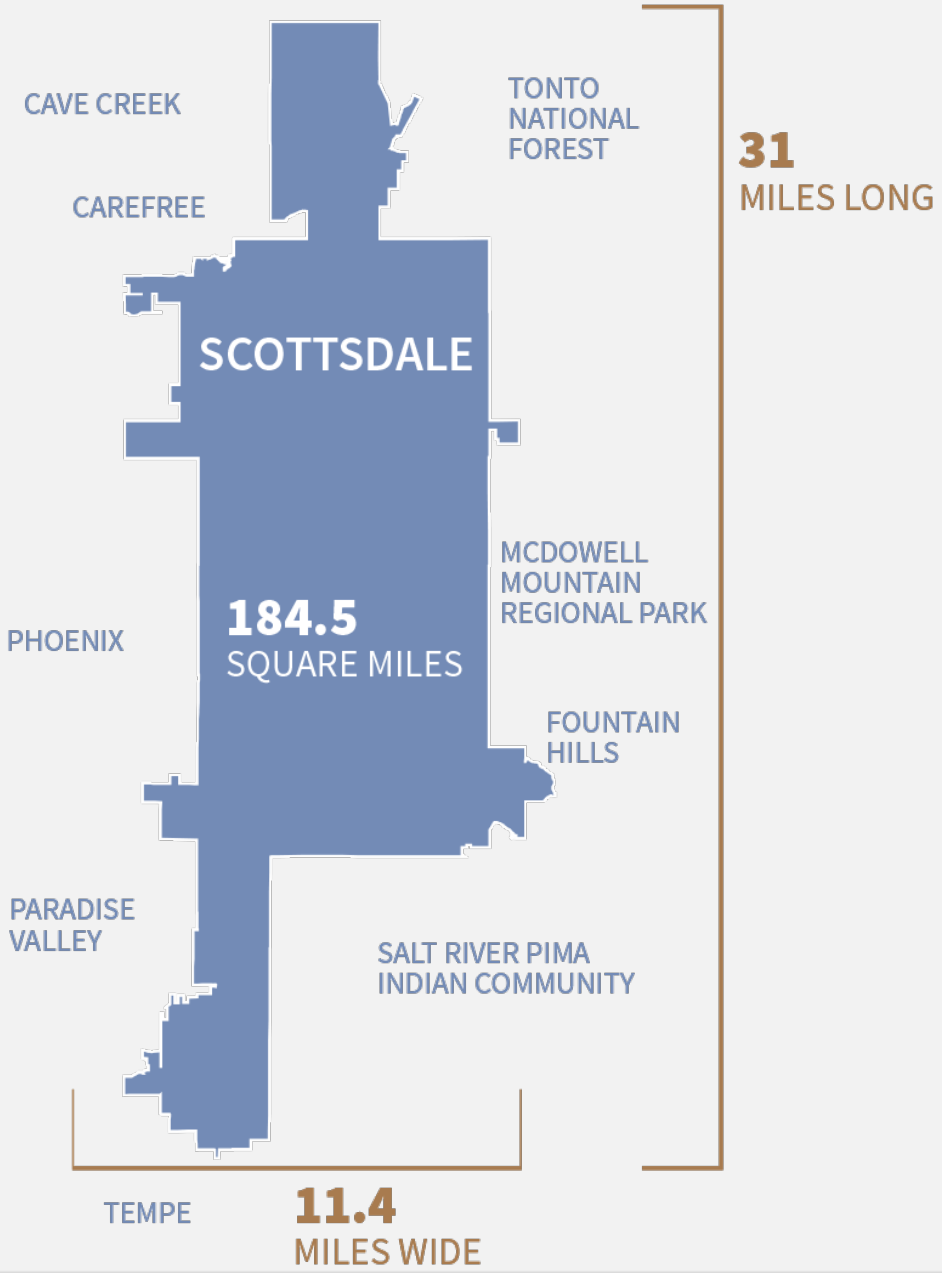
Scottsdale and Phoenix



About Scottsdale

- Population: 241,361
- Build Out: ~300,000
- New Growth: North
- Redevelopment: South
- 184.5 square miles
- 31 miles long
- Elevation change 3,727 feet





About Scottsdale Water

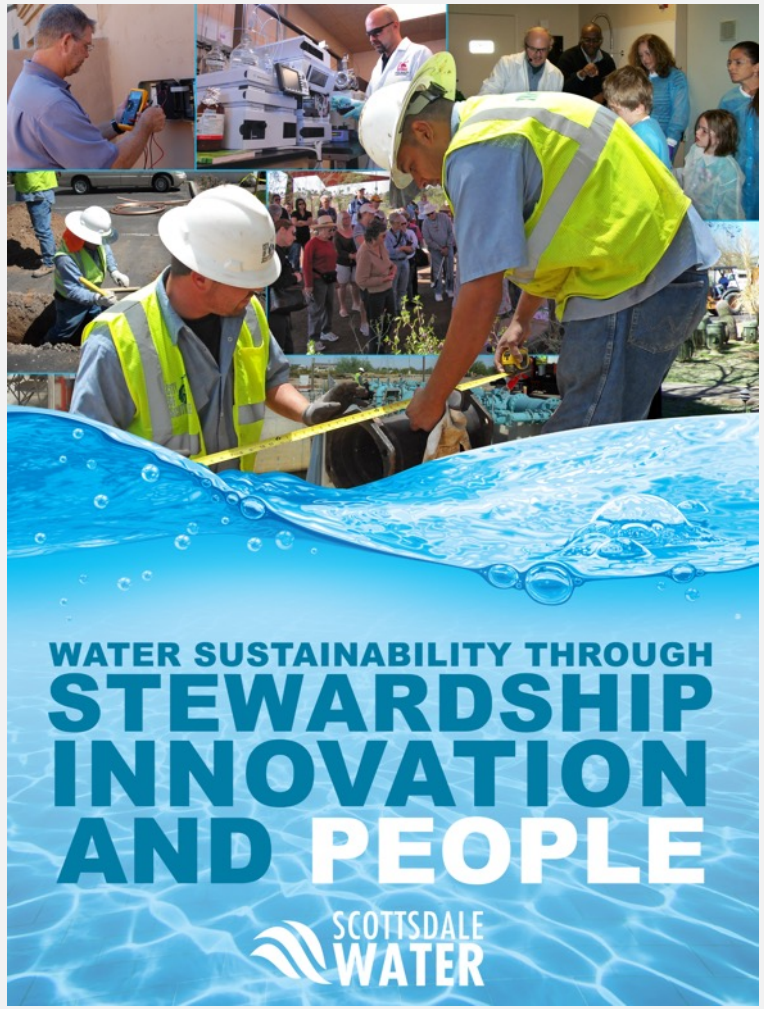
<u>MISSION</u>: Provide simply better sustainable water services for a world class community

<u>VISION</u>: Water Sustainability through Stewardship, Innovation and People

Award-winning utility

- 2021/2016: Utility of the Future Today; EPA, DOE, and national consortium of water organization
- 2019: Sustainability Champion, Arizona Forward Environmental Excellence Crescordia Award
- 2018: Sustainable Utility Management Award; American Association of Metropolitan Water Agencies
- 2017: Public Education Program of the Year (Scottsdale Water Citizen Academy); WateReuse Association

Key to Success



- Stewardship
- Innovation
- People

Assisted with good leadership and an emphasis on continual learning

- ➢ Effective Utility Management
- ➢ After Action Reviews

Effective Utility Management

Operating Systems

- Drinking Water:
  - CAP WTP (Water Campus)– 70 MGD
  - Chaparral WTP – 30 mgd
  - 2 superfund treatment facilities
  - 3 groundwater treatment facilities/ 16 (soon to be 20) wells/21 booster station/43 reservoirs
  - Over 2100 miles of water mains

Water Reclamation:

- Water Campus
  - Reclamation Facility (20 mgd)
  - Advance Water Treatment Facility (20 mgd)
- 5 pump back stations
- SROG connection (20 mgd)
- Gainey Ranch WWTP (1.8 mgd)
- 33 lift stations
- Over 1400 miles of sewer mains

History of Sustainable Water Practices

- Gainey Ranch Water Reclamation Facility - 1981
- Water Campus – October 1998
  - CAP Water Treatment Facility
  - Water Reclamation Plant
  - Advanced Water Treatment Facility
    - Ozone/Ultrafiltration/Reverse Osmosis/Ultraviolet Photolysis
    - Two end uses: recharge, turf irrigation
- Safe Yield 2006

History of Sustainable Water Practices (continued)

- Chaparral Water Treatment Facility 2007 (SRP)
- One Water Optimization Control 2012
- Bolder Dam Hydropower 2014
- Investment in Watershed Management/Forest Health 2016
- Citizens Academy 2017
- First facility to receive DPR Permit - September 2019

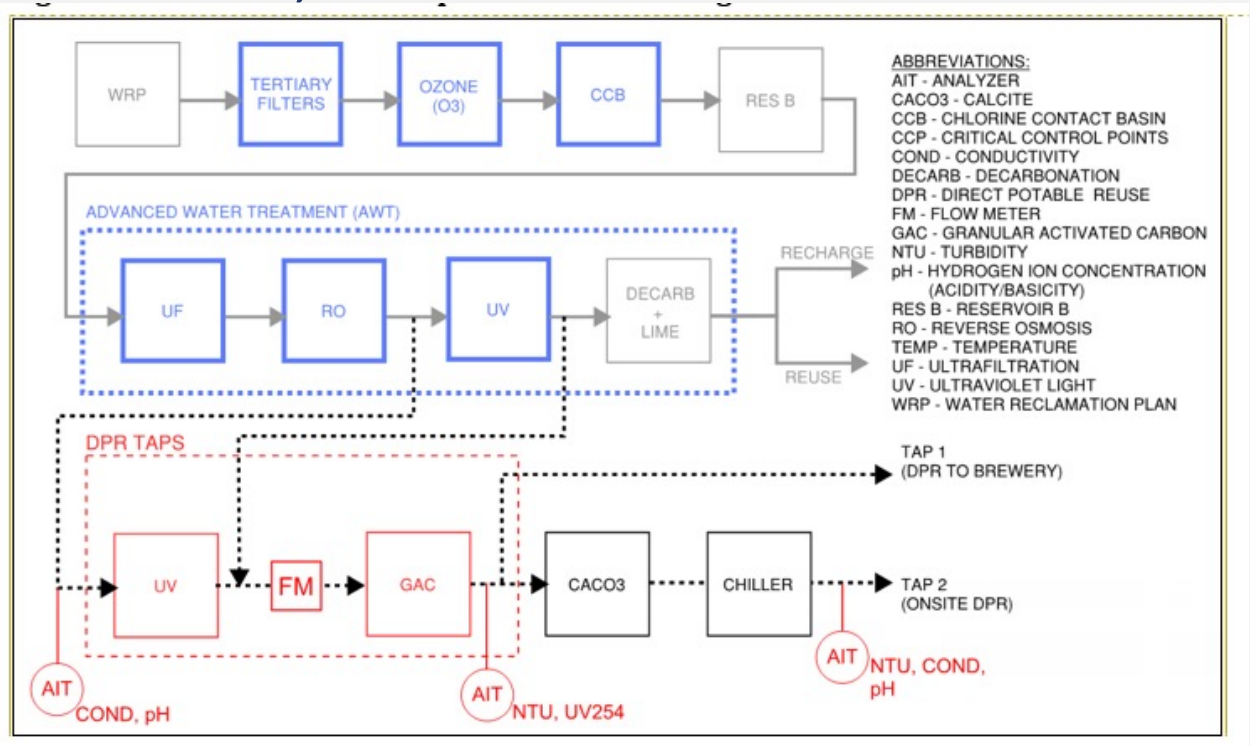
Why DPR for Scottsdale?

The goal of the project/permit was to:

- Assist ADEQ with developing the DPR permit process
- Normalize public perception about the safety of recycled water and explain the need of DPR for other communities in Arizona and around the country
- Demonstrate Scottsdale Water's technology to the public

Additional Treatment for DPR

- Though the Water Campus has all treatment necessary to meet quality standards, an additional treatment skid is being added
  - Redundant UV
  - GAC for polishing
  - Remineralization
  - Chiller



Design, construction and permit support provided by

WATERWORKS ENGINEERS


PURIFIED RECYCLED WATER
SCOTTSDALE WATER


PURIFIED RECYCLED WATER
SCOTTSDALE WATER

One Water Brewing Showcase

Scottsdale partnered with Canal Convergence, the city's premier arts and education event, to host the world's first beer festival featuring only beer brewed with recycled water.

- 2019 Theme: The History of Water
- Attendance estimates were over 60,000 for November 8th and 9th
- Sustainability commitment: Certified Zero-Waste event in 2019

CANAL CONVERGENCE WATER + ART + LIGHT

Drought

Arizona's Response

- Arizona Drought Contingency Plan (DCP) - 2019
  - Scottsdale Water was a participant (one of four municipal providers)
- 500 Plus Plan – December 2021

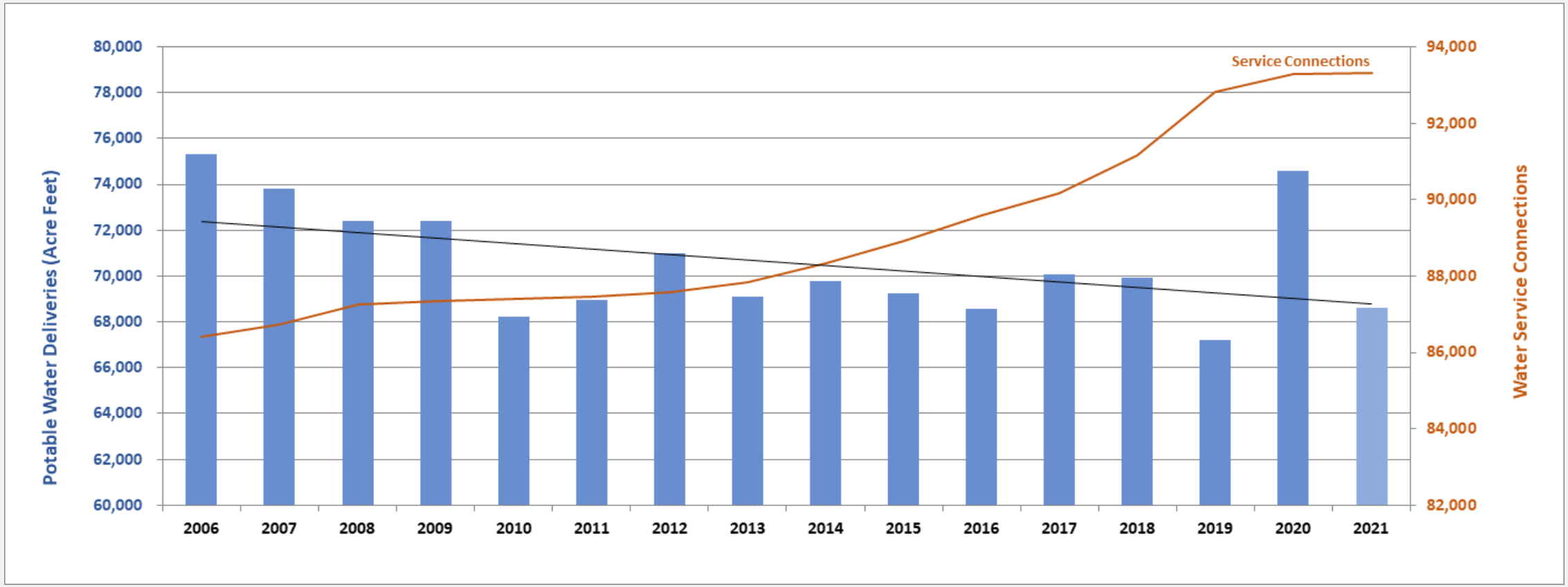
Scottsdale's Response

- ASR Well Program
- Automated Meters and Web Portal
- Expanded Pump Back and Recycled Water Systems
- Activated Drought Management Plan – August 2021

Drought

A 5% decrease in consumption by Scottsdale Water customers would mean a total savings of almost 4,000 acre-ft per year

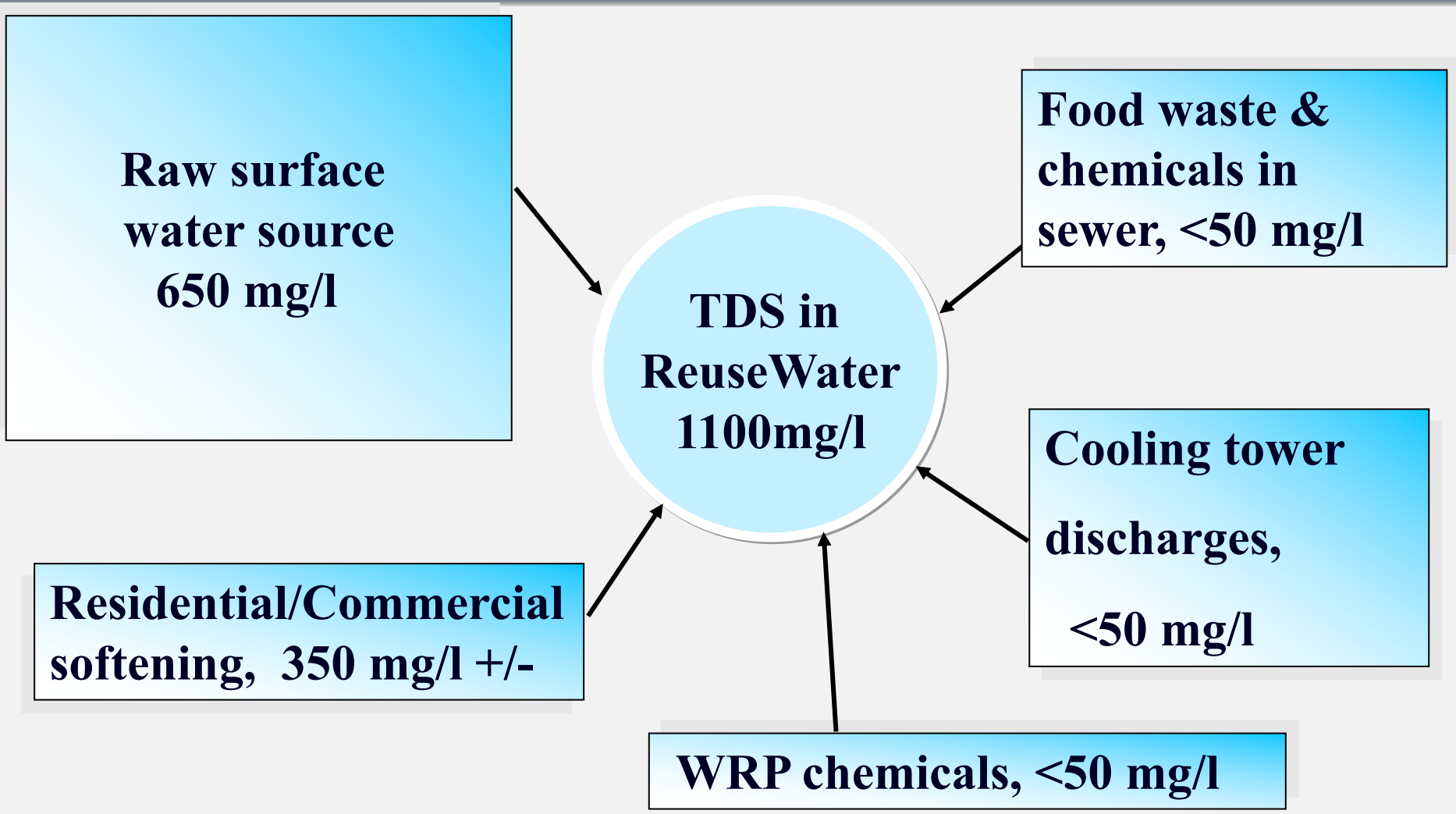
Scottsdale Water Trends



Salinity

- 12 - 15% of our water supply comes from recycled water
- Many homes in Scottsdale have salt-based water softeners, adding salt into the wastewater stream
- This salt content is reduced with our Advanced Water Treatment facility but:
    - Cost of treatment has increased
    - Current disposal of treatment solids is through our SROG partnership

Sources of Salinity in Reclaimed Water



Scottsdale Water Efforts

- Participation in various study and pilot projects:
  - Central AZ Salinity Study (CASS)
  - Study of Water Softener Alternatives with ASU
  - Sub-Regional Operating Group (SROG) Concentrate Management Study
- Expansion of the Advanced Water Treatment (AWT) Facility at the Water Campus
- Evaluation of salinity loading & effects as part of Wastewater Master Planning effort
- Participation in the Technical Advisory Committee to the Joint Legislative Study Committee on Water Salinity Issues

Salinity Rebate Pilot

1. Replace existing softener with new high efficiency softener (standards outlined by City of Scottsdale). $50 one-time rebate limited to first 300 customers/year
2. Subscribe to Portable Exchange Service to eliminate sewer discharge. $100 one-time rebate limited to first 100 customers/year
3. Remove water softener. Limit to first 200 customers ($125 up front and $125 after one year)

Pilot Results

1. High Efficiency Softeners – Most new softeners meet the standard however facts on new softeners are not always easy to verify. Limited participation
2. Portable Exchange Service – market for service didn't develop
3. *Remove Water Softener. Was used and could clearly demonstrate results*

Current Program

Water Softener Removal Rebate

$250

What's next with salinity?

Expand from protecting the aquifer and recycled water to looking at salinity removal systems as water savings/water source systems

Questions?

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