

Overview of South Jordan Water Conservation Program & DPR Demonstration Project



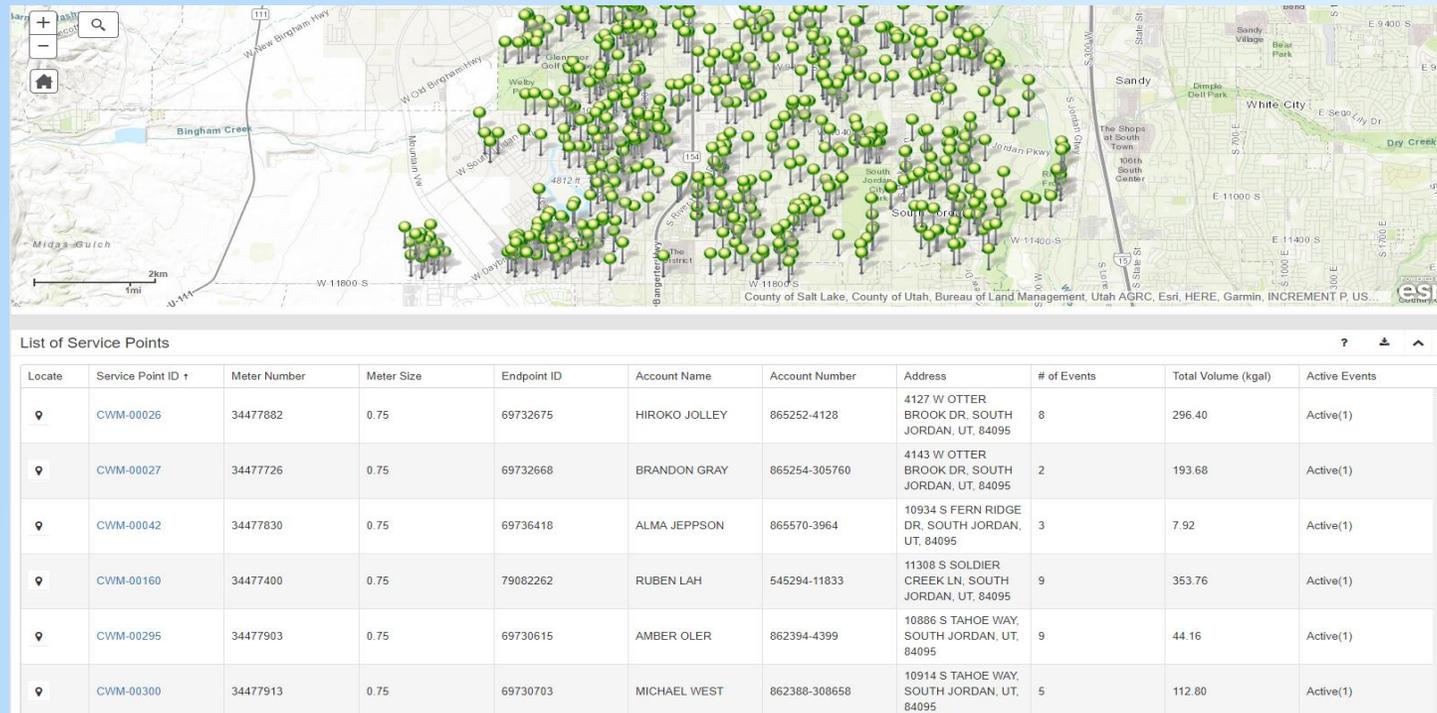
What is the City Doing to Save Water?

- Rebate Programs
- Education
- Website
- Workshops
- City Ordinances
- Water Rates
- Utility Bill
- Leak Detection



Leak Detection from Advanced Metering System

- In 2018:
 - Made direct contact with over 200 residents where system identified leak
 - 130 of the leaks were fixed.
 - An estimated 13,439,000 gallons of water has been saved.
 - A loss of over 71,000,000 gallons over the next year has been prevented.



Reuse Feasibility History – South Jordan City

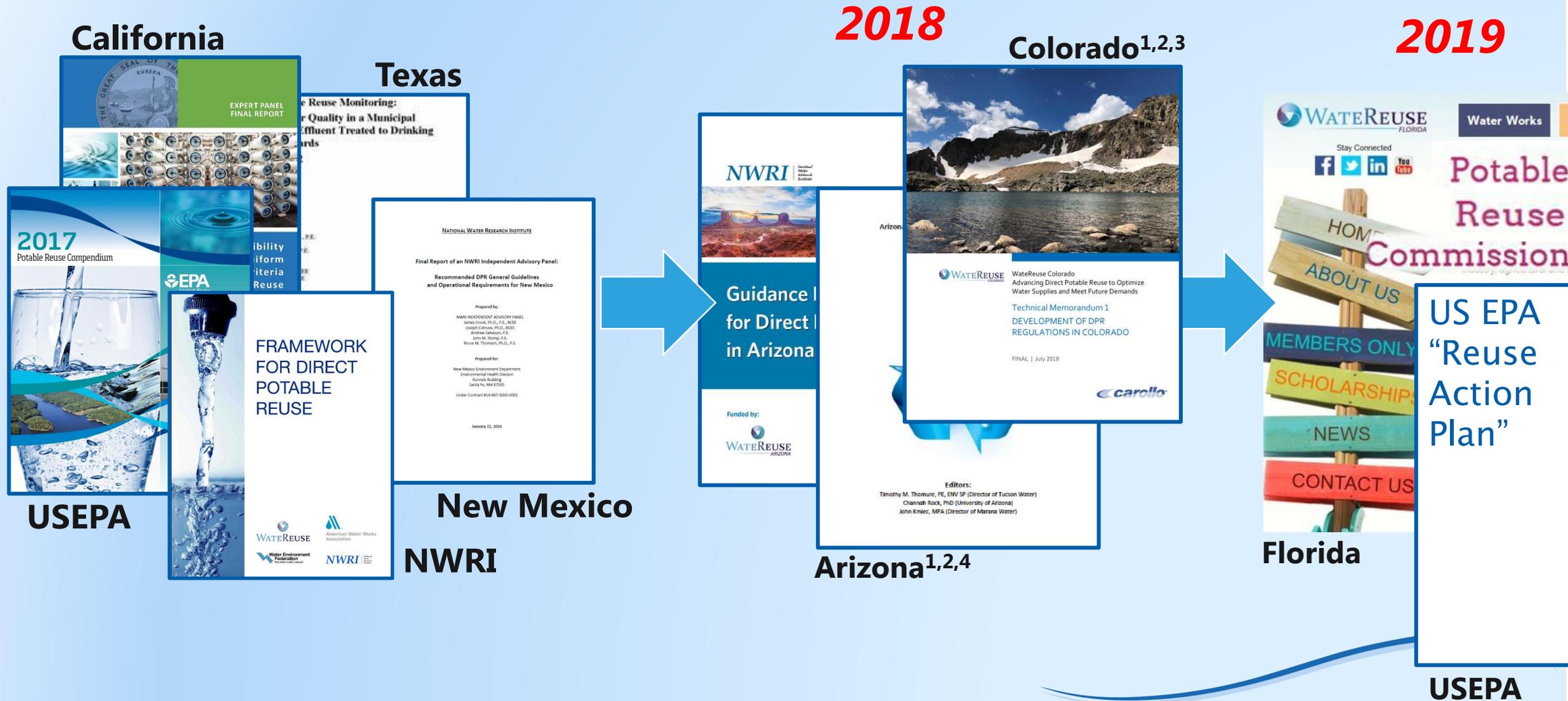


Microfiltration (MF)



- MF is the first major step in the purification process for seawater barrier water
- MF removes bacteria, protozoa and suspended solids
- Water is pulled through holes (1/300th size of human hair) in the sides of "straw-like" MF membranes
- MF is a proven technology that has been used since the 1940's to purify baby food, fruit juices and other beverages, and to sterilize medicines that cannot be heated

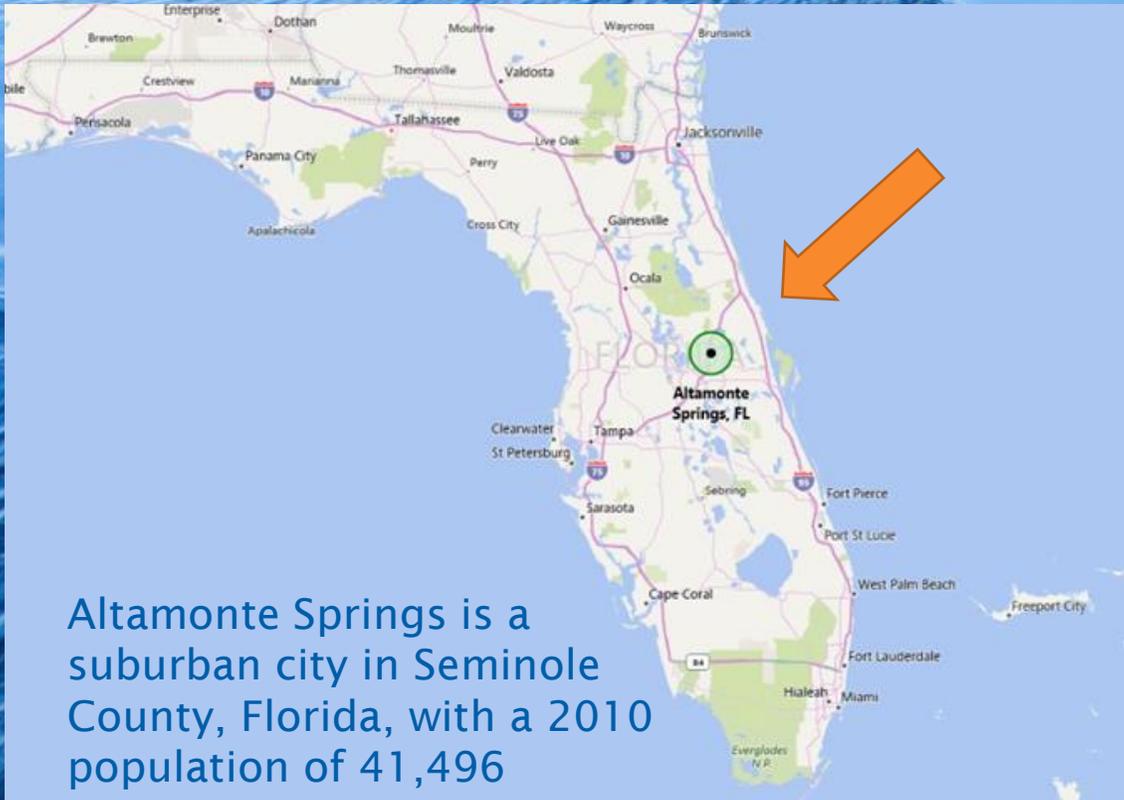
States around the country are working to provide the necessary regulatory framework for potable reuse



POTABLE REUSE DEMONSTRATION



WaterReuse
INNOVATIVE PROJECT
OF THE YEAR



Altamonte Springs is a
suburban city in Seminole
County, Florida, with a 2010
population of 41,496

Sampling plan covers all health-critical constituents & more

1. Pathogens

1. Direct measurements of virus, *Cryptosporidium* & *Giardia*
2. Measurements of surrogates (MS2 phage)

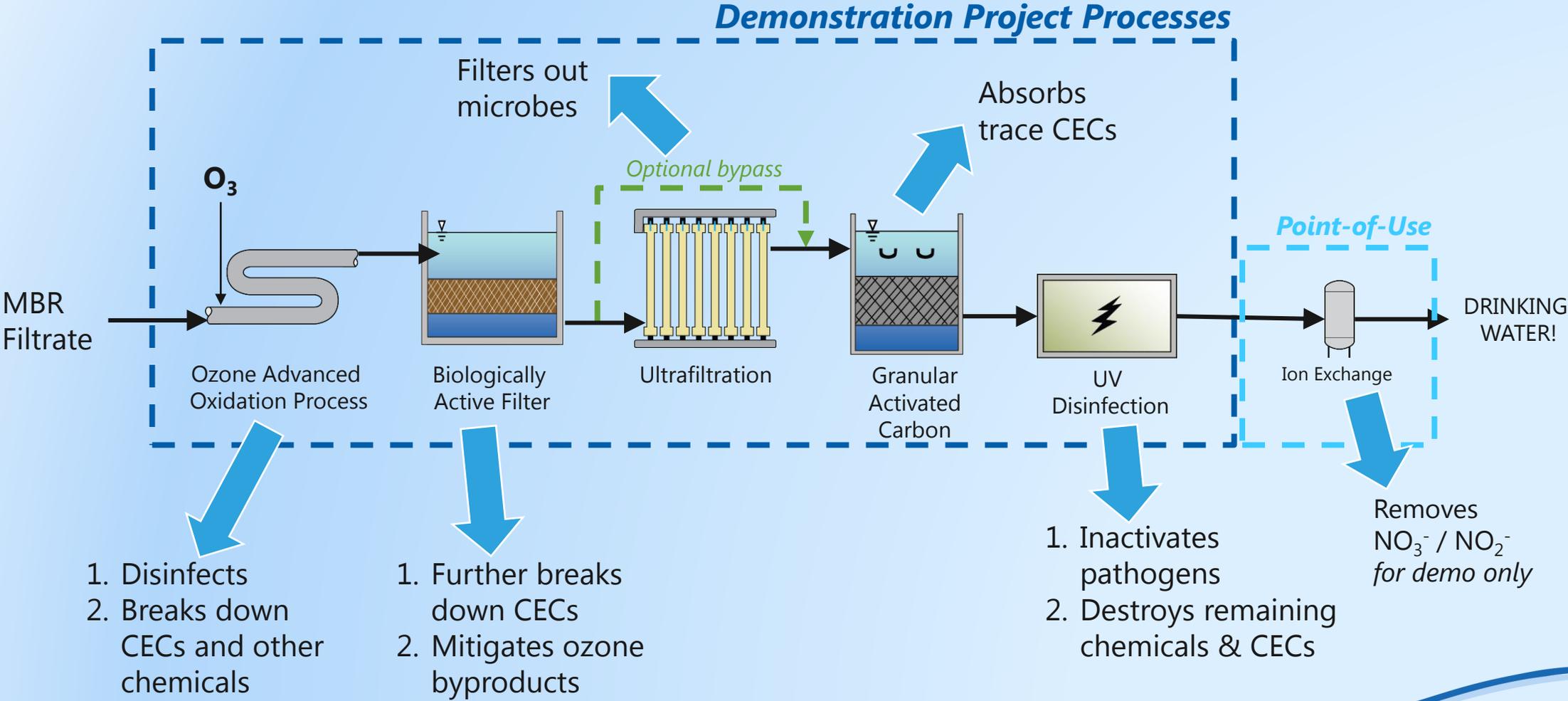
2. Regulated chemicals, with significant focus on:

- Nitrate and nitrite
- TOC and disinfection byproducts

3. CECs, with focus on regulatory pipeline and performance indicators

- NDMA (10 ng/L CA Notification Level)
- PFAS (USEPA HA for PFOS+PFOA at 70 ng/L)
- Sucralose & other performance indicators

Advanced treatment at South Jordan DPR demo designed for water quality and outreach success



- 1. Disinfects
- 2. Breaks down CECs and other chemicals

- 1. Further breaks down CECs
- 2. Mitigates ozone byproducts

- 1. Inactivates pathogens
- 2. Destroys remaining chemicals & CECs

Removes NO₃⁻ / NO₂⁻ for demo only

Benefits, Opportunities & Challenges of a Water Reuse Demonstration Project in Utah

- **Benefits:**

- Evaluate an alternative water supply for different purposes
- Evaluate a new treatment options for drinking water



Benefits, Opportunities & Challenges of a Water Reuse Demonstration Project in Utah

- **Opportunities:**

- Educate state officials, water managers, kids and the general public on the **topic of water reuse** and the **technology behind water purification**
- Collect and share water quality data with state officials
- Long-term planning for water supply

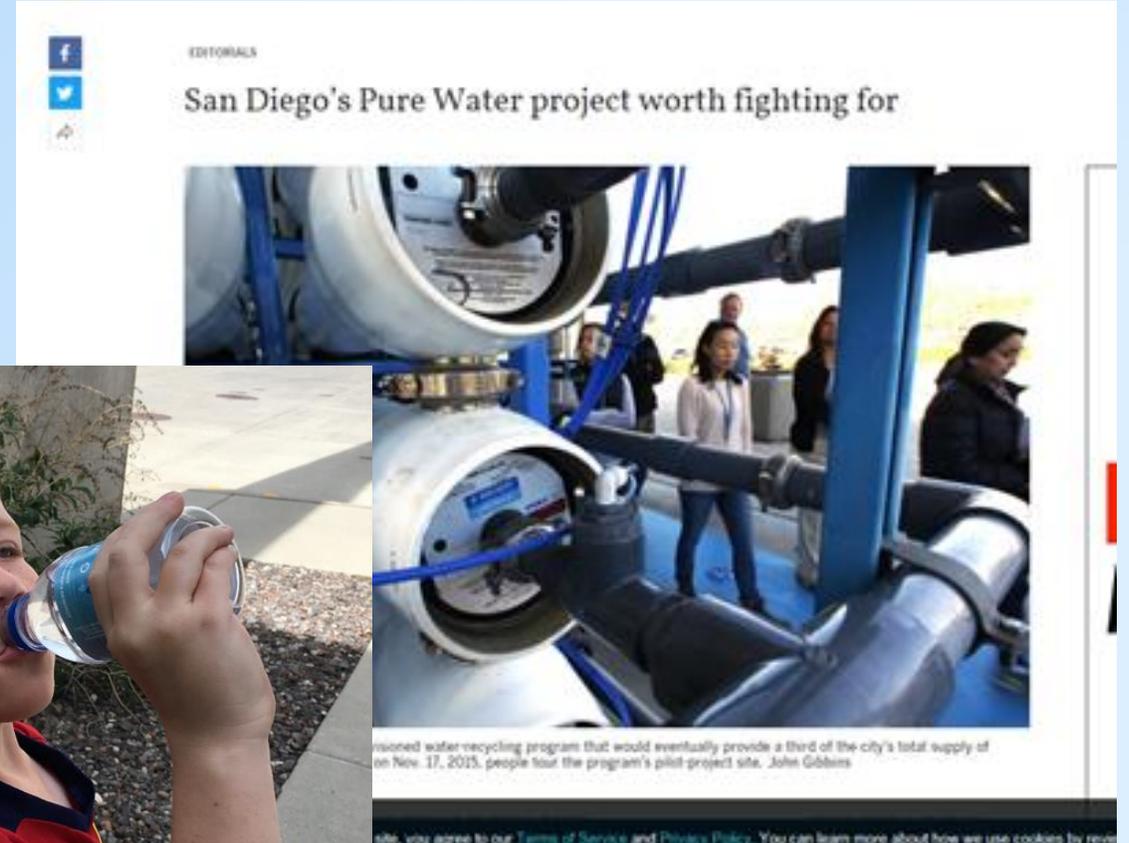


Benefits, Opportunities & Challenges of a Water Reuse Demonstration Project in Utah

- **Challenges:**

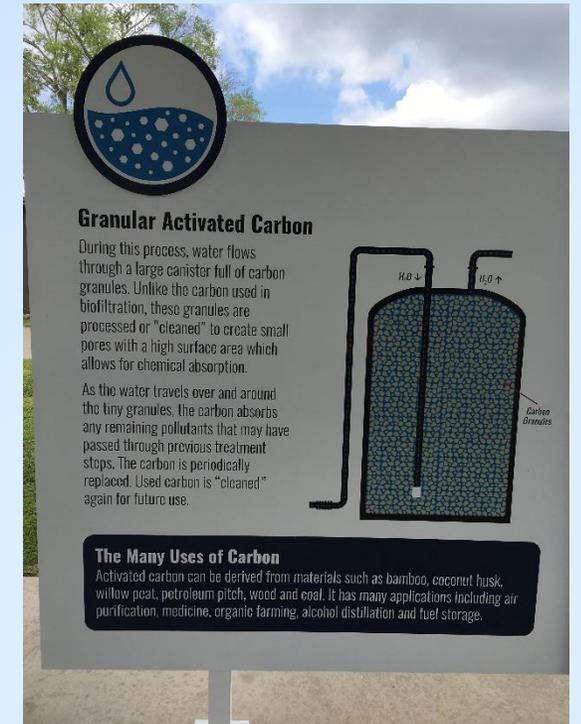
- **Public Perception**
- Long-term: Interests from different parties in flows affecting the Great Salt Lake

Would you let you kids drink it?



Demonstration Project Costs

- **Total project cost = \$1.7M**
 - Building
 - Pipe work from wastewater treatment plant
 - Water treatment equipment
- **Annual operating cost = \$45,000**
 - Equipment Maintenance
 - Staff labor for maintenance



Altamonte Springs is Finding Lower Cost Methods to Produce High Quality New Water

O ₃ /BAF Based Treatment	High level pathogen removal	High level chemical removal	No brine, no waste	\$2.4/Kgal for 0.5 mgd facility
RO Based Treatment	High level pathogen removal	High level chemical removal	Creates RO brine, requires disposal	\$5.1/Kgal for 0.5 mgd facility

SJC Water Purchase Cost = \$1.71 Kgal

South Valley Sewer Property



Jordan Basin Water Reclamation Facility – Riverton, UT



Demonstration Project Timing

- RFP sent out for final facility design – Summer 2019
- RFP sent out for facility construction – Fall/Winter 2019
- Facility completed and operating – Spring/Summer 2020



City of South Jordan, Utah
Direct Potable Reuse Demonstration Facility

PRE-DESIGN REPORT

DRAFT | February 2019



Questions?