


Water Reuse:
A National Perspective

4th ANNUAL NEVADA
WATEREUSE SYMPOSIUM

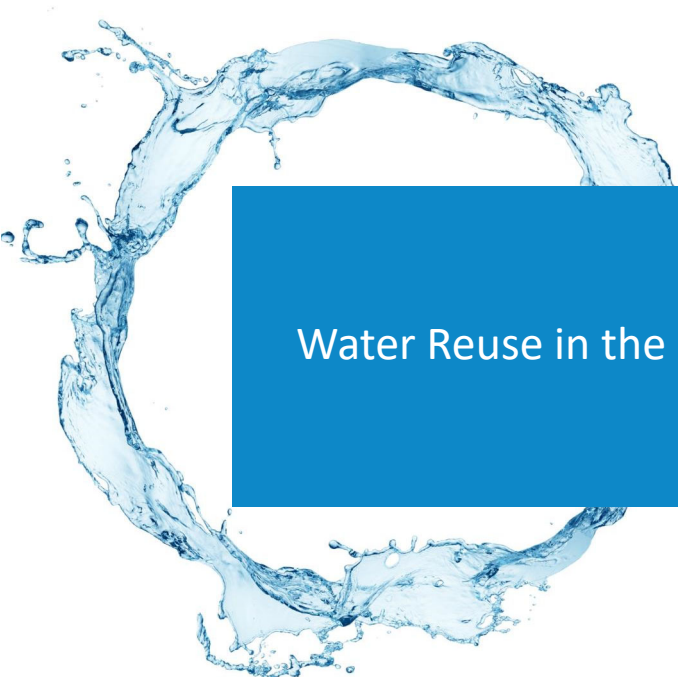
Ben Glickstein
Director of Communications
WaterReuse Association

January 29, 2024


ENGAGE.
EDUCATE.
ADVOCATE.



1



Water Reuse in the US



2

U.S. Water Reuse Drivers



Surface Water Scarcity

- By 2071, 45% of freshwater basins may be unable to meet demand.[†]
- Western US at highest risk

Surface Water Quality

- Impaired waterways requiring more treatment
- CECs
- Water reuse systems can treat a wide variety of source water



Groundwater Depletion

- USGS: 17,000 sq mi, 45 States experience subsidence[‡]
- Saltwater intrusion: threatens municipal wells and agriculture

Regulatory & Policy

- Direct Potable Reuse rules: CO, CA, FL, AZ, beyond
- Discharge limits (FL SB 64)
- Corporate ESG goals



[†] Earth's Future, 2019. *Adaptation to Future Water Shortages in the United States Caused by Population Growth and Climate Change*

[‡] USGS Water Science School webpage, 2018. *Land Subsidence*

WATERUSE 3

3

Water Reuse Potential in the United States



- Predicted 2031 US water market:
 - Municipal: \$3.89 B
 - Industrial: \$771 M[†]
- EPA: < 7% of municipal wastewater is recycled[‡]
- EPA: Over 325 BGD processed by cities, farms & industry, or falls as stormwater.[‡]

US Water Reuse Funding

- State Drinking Water and Clean Water Revolving Funds
- Water Infrastructure Finance and Innovation Act (WIFIA)
- BOR: Title XVI, Desal Grants
- EPA Alternative Water Source Grants Pilot Program

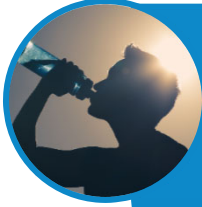


[†] Bluefield Research, 2021. *Growth Markets for Water Reuse in the U.S.* [‡] U.S. EPA Estimate, 2021
[‡] U.S. EPA, 2020. *National Water Reuse Action Plan*

WATERUSE 4

4

Water Reuse Trends

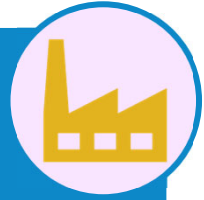


Potable Reuse

- Direct Potable Reuse regulations (CO, CA, AZ)
- Large Indirect Potable Reuse projects coming online

Industrial Reuse

- Companies seek water security, cost savings, ESG compliance
- New Industrial Water Reuse Champion Award



New Treatment Trains

- Different trains serve different needs & communities
- Ozone-BAC
- UV-AOP
- Granular Activated Carbon

Onsite Reuse

- Serve a wider range of communities efficiently
- Reduce strain on legacy wastewater systems



5

WaterReuse Association:
Engage, Educate, Advocate

6

DPR: El Paso, Texas

- El Paso Water's Advanced Water Purification Facility
- Largest U.S. Direct Potable Reuse project in development (10 MGD)
- Construction Beginning in 2024
- Sept 2022: \$20M grant from Infrastructure Investment & Jobs Act



Industrial Water Reuse

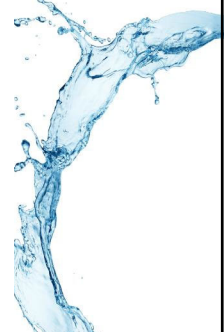


- Increased interest from industrial & commercial sectors
- Congressional Briefing: January 2024
- Global Industrial Water Reuse Champions Award
 - Kimberly-Clark and Carlsberg recognized: October 2023
- Industrial & Commercial Water Reuse Conference
Indian Wells, CA
Nov. 19-21, 2024

WaterReuse Federal Advocacy



- **Infrastructure Investment and Jobs Act**
 - **\$1 Billion** for water reuse
 - Including SNWA Planning & Feasibility study via USBR
 - Authorized: **Alt Water Source Grants**
- Federal Regulatory Issues: PFAS
- Annual State Regulator Summit
- Water Week Fly-In: April 9, 2024



11

WaterReuse: Education & Outreach

- Policy Briefs: *Climate Change and Affordability*
- *Profiles in Reuse*
- Market Analysis
- Webcasts
- Educational Videos
- And much more!

PROFILES IN REUSE: Agricultural Reuse

The amount of water on Earth does not change—all water has been recycled naturally since the beginning of time.

While nearly 70% of the planet is covered by water, only 2.5% is freshwater, and only 1% is accessible to humans. Water reuse, also known as water recycling, is the process of intentionally capturing wastewater, graywater, stormwater, or saltwater and cleaning it for designated beneficial freshwater purposes. Common uses for recycled water include drinking, irrigation, industrial processes, groundwater replenishment, and environmental restoration.

WHAT IS A How Reuse Works

Agricultural reuse involves reusing water from food crops in food. Common uses include municipal facilities, processing runoff from fields. Recycled water is a fit for food use and traditionally avoids which are common.

FOOD SAFETY

Years of testing and analysis have established that the safety of recycled water for use on food crops is comparable to other sources of water. Recycled water in food production is treated to meet applicable state and federal regulations, delivering water that is safe for human and the environment.

BENEFITS

According to the 1 more than 100 critical demand in the world.

Reverse Osmosis

UV Disinfection and Advanced Oxidation

Pre-Ozonation

Ozonation

Microfiltration

Dual Media Filtration

RESH

LOC

ENV

MSB

Dissolved Air Rotation

Coagulation and Flocculation

Clarifiers

Mountain West

Free

WATERREUSE

ACCESS TO SAFE & AFFORDABLE WATER: THE CASE FOR INVESTMENT IN WATER REUSE: THE ONCE AND FUTURE SOLUTION

Free

WATER REUSE IS A PRINCIPAL SOLUTION TO THE CHALLENGES OF WATER ACCESS, AFFORDABILITY, AND RESILIENCY.

Policy makers in Washington, D.C., are debating a generational opportunity to invest in water, upgrading infrastructure at a time when extreme weather across the nation is generating more frequent floods and drought. We can learn from hard-earned experience on how we can secure water supplies for the future, investing today in water reuse to maintain access to water, and ensure its resiliency and affordability for decades to come. Water recycling programs throughout the nation successfully help mitigate the water supply consequences of climate change, ensure broader water accessibility and affordability, particularly in disadvantaged communities, and support economic stability and growth.

California's experience with climate change provides important lessons. In 1986, the then-modest drought of record in California began and did not end until 1992. Water resources were depleted, including drastic reductions in reservoir levels, depletion of ground water, private wells going dry and agricultural land dried. Only reason was the California DWR that was the first large-scale loss in US history, along with the tragic loss of 25 lives.

Due to changing weather patterns associated with climate change, drought conditions that struck California in 1990 have become both more commonplace and more severe in the three decades since. This pattern is consistent with the "new normal" of climate change, extreme weather measured by more flooding from storms, devastating mountain snowpack, persistent snowmelt, and severe droughts which have led to larger periods and affected larger geographic regions.

In contrast to this context on water supply, the population of Southern California has increased by nearly 20% since 1990. Economics tells us that increasing demand while decreasing supply will drive up prices—creating hardship particularly for low-income and underserved communities with limited means. Yet California pulled off a miracle with the strategy adopted in the early 1990s: the reduced potable water demands and provided new drought proof supplies. Water providers

As climate change creates new challenges for water supply, management, and affordability, investment in recycled water is critical to ensuring water is accessible to all Americans, and the state implemented ambitious policies, public health regulations, and projects to treat wastewater to reuse potable quality to replenish potable water supplies while advancing diverse non-potable uses to sustainably support economic, activity and environmental priorities.

As the impacts of climate change across the country create more challenges for water supply, management, and affordability, investment in recycled water at the federal level is a critical element in ensuring national water strategy is affordable and accessible to all Americans.

12

WaterReuse Monthly Webcast Series

2024 Water Reuse Policy Outlook

WHEN: January 17, 2024 @ 3:00 pm – 4:00 pm
WEBCASTS



3 pm ET | 12 pm PT (1 hour)
WaterReuse Members: Free; Others: \$49
PDHs: 1

[Register Now!](#)

Join us on January 17 to hear from Washington insiders about the cur WaterReuse New Mexico: CECs in Reuse: Monitoring, Treatability, and Regulations expect for the coming year in Congress and from the Administration, reuse-related legislation and regulations and how election-year politics participate in the 2024 Water Week Policy Fly-in in April or are interest policy, this webcast will help get you up to speed.

WHEN: January 24, 2024 @ 2:00 pm – 3:00 pm
FEATURING: WATERREUSE NEW MEXICO WEBCASTS

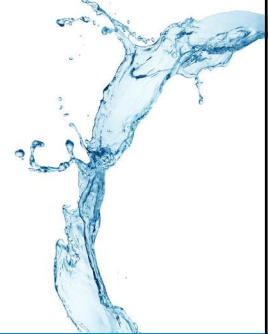


2:00 pm ET | 11 am PT (1 hour)
WaterReuse Members: Free; Others: \$49
PDHs: 1

[Register Now!](#)

Presentation will provide an overview of the different types of advanced treatment systems (e.g., membrane-based, advanced oxidation, etc.) as well as the different types of reuse. Discussion will look at the status of reuse regulations, with a focus on New Mexico, with a high-level look at PFAS and other emerging contaminants. The presentation will conclude with a look at desktop Treatability Screening Analysis and the importance of monitoring. Topics presented will be relevant to anyone looking to design an advanced treatment systems within the context of CECL, specifically PFAS. Beneficial to all WaterReuse members but additional benefit to NM members looking to develop a feasibility study for reuse systems.

- Monthly webcasts available to members and the public
- Hundreds of webcast recordings available to WaterReuse members



Upcoming Webcasts

- **February:** WaterReuse Florida: Funding Opportunities in Reuse

 WATERREUSE 13

13

WATERREUSE[®] 2024 SYMPOSIUM REMOVING BARRIERS, ELEVATING OPPORTUNITIES

MARCH 11-14, 2024 | HILTON DENVER CITY CENTER



Keynote

Peter McBride
Sony Artisan of Imagery and a National Geographic Adventurer of the Year

Join us in Denver!



Registration

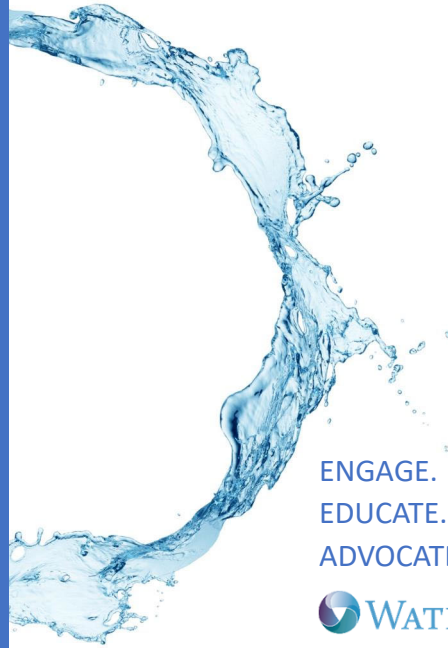
February 19: Hotel Deadline
February 27: Advance Registration
watereuse.org/symposium



14

Thank You

Ben Glickstein
Director of Communications
WaterReuse Association
bglickstein@watereuse.org



ENGAGE.
EDUCATE.
ADVOCATE.

