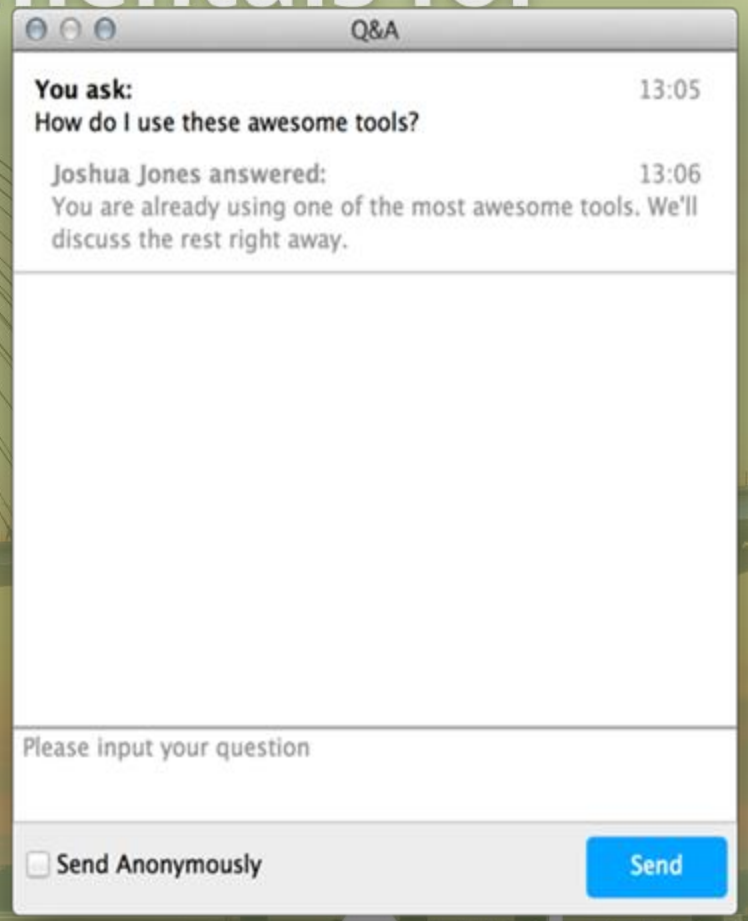
Water 101: Exploring Wastewater Management & Financing Fundamentals for South Carolina Elected Officials

Part 1: July 24, 1 pm ET

Part 2: July 30, 1pm ET

waternow alliance

Water 101: Exploring Wastewater Management & Financing Fundamentals for South Carolina Elected Officials



Part 1: July 24, 1 pm ET

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Mute Chat Raise Hand Q&A

Certificate of Completion

This session has **NOT** been submitted for pre-approval of Continuing Education Credits, but eligible attendees will receive a certificate of attendance for their personal record.

To receive a certificate:

- You must attend the entire session
- You must register and attend using your real name and unique email address - group viewing credit will not be acceptable
- You must participate in polls
- Certificates will be sent via email within 30 days

If you have questions or need assistance, please contact smallsystems@syr.edu.

About EFCN

The **Environmental Finance Center Network (EFCN)** is a university- and non-profit-based organization creating innovative solutions to the difficult how-to-pay issues of environmental protection and water infrastructure.

The EFCN works collectively and as individual centers to address these issues across the entire U.S, including the 5 territories and the Navajo Nation. The EFCN aims to assist public and private sectors through training, direct professional assistance, production of durable resources, and innovative policy ideas.

waternow alliance

WaterNow works to advance transformation in the urban water sector to accelerate the widespread adoption of resilient and environmentally sustainable strategies.

We do this as a national network for local water leaders and decision makers, empowering them with the technical assistance, resources, and tools they need to implement innovative One Water drinking water, stormwater, and wastewater solutions in their communities.

Agenda

- Meet Today's Speakers
- Wastewater Management Basics
- From Nuisance to Resource
- Introduction to How to Pay for Wastewater and Stormwater Investments

Today's Speakers

Brett Butz
Rural Assistance Coordinator
SCDES - Office of Rural Water

Amy Weinfurter
Director of Strategic Projects
WaterNow Alliance

Caroline Koch
Water Policy Director
WaterNow Alliance

Time for a poll!

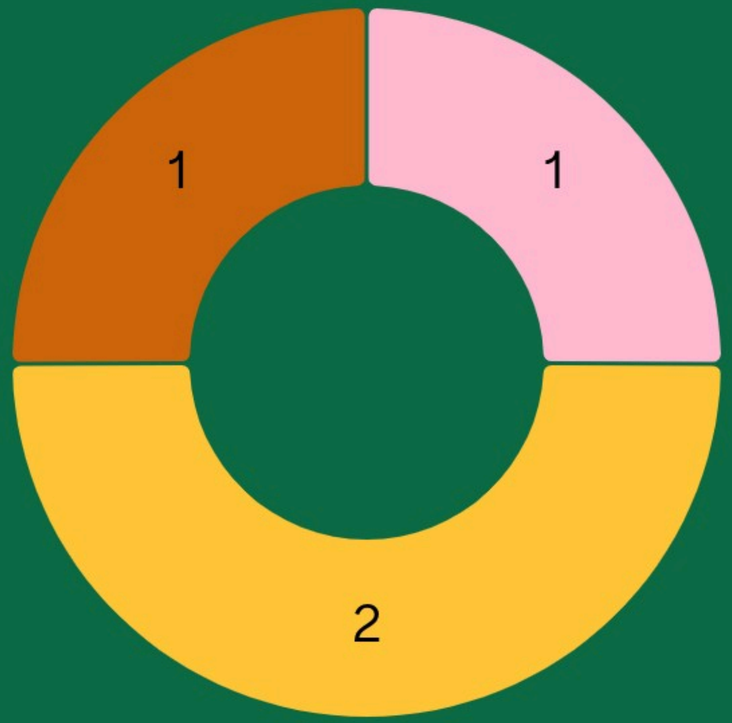
Participate with Mentimeter

Go to: menti.com

Enter Code: 7803 3955

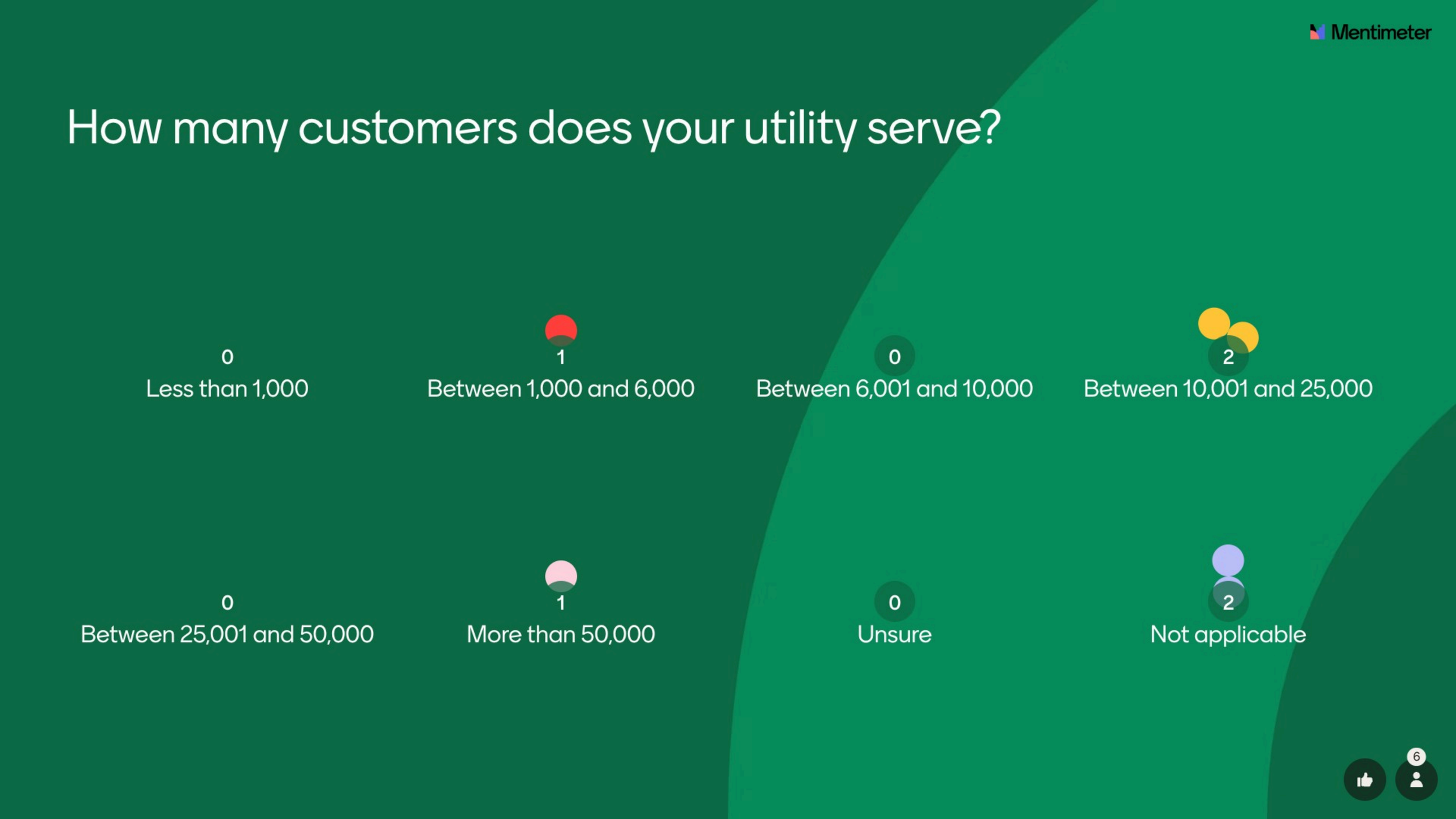
Or scan the QR code

Who's in the room?

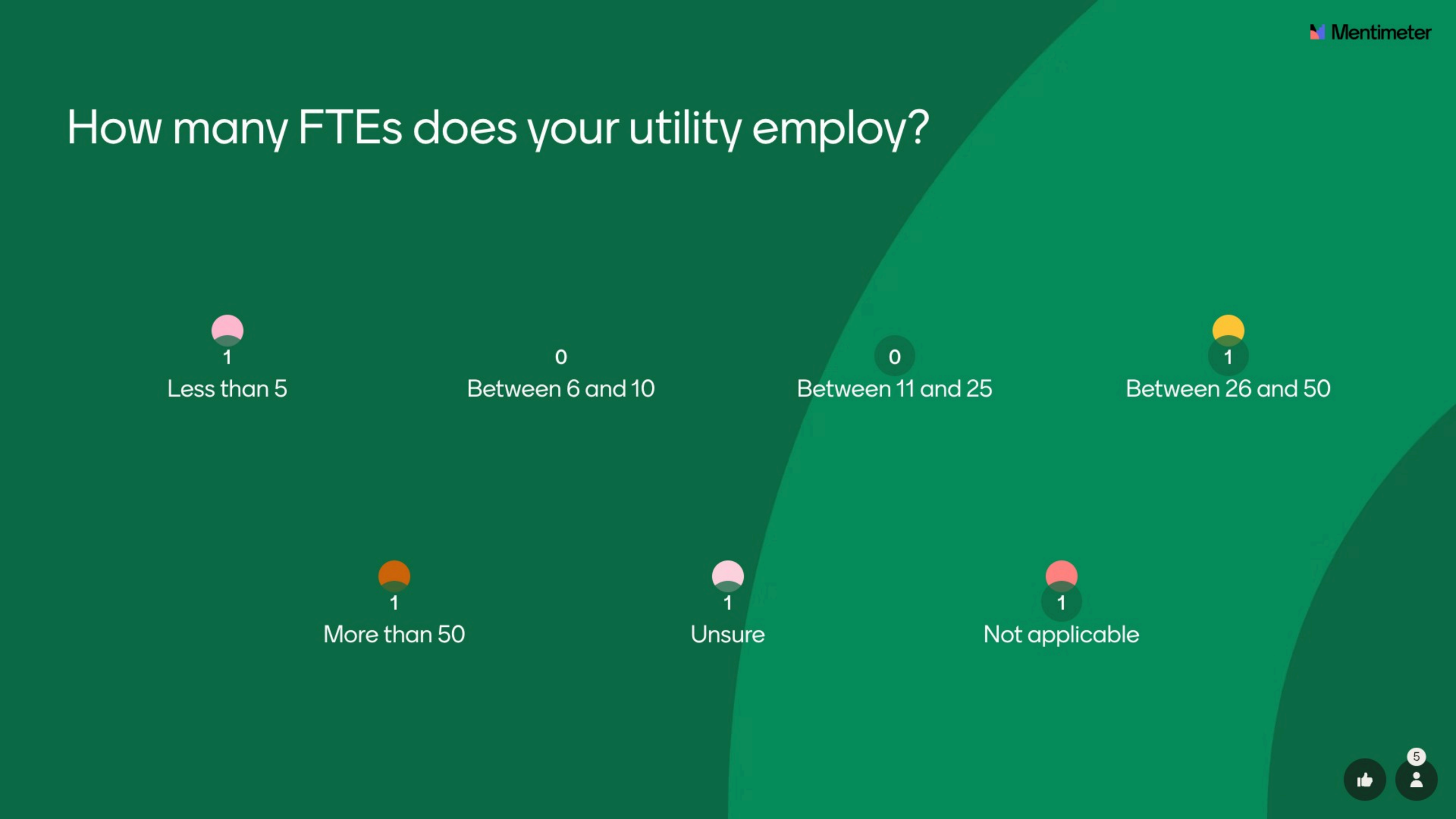


1	City council member
0	Tribal government officer
0	Special district board member
2	Utility staff
1	State agency staff
0	Federal agency staff
0	NGO staff
0	Academic
0	Private sector

How many customers does your utility serve?



How many FTEs does your utility employ?



SC DEPARTMENT *of*
ENVIRONMENTAL
SERVICES

Office of Rural Water

24 July 2025

SC DEPARTMENT *of*
ENVIRONMENTAL SERVICES

Wastewater Management Basics

An Overview of Wastewater Systems

Agenda

- About the Office of Rural Water
- Objectives of this Training
- What is Wastewater and a Sewershed?
- Types of Systems in South Carolina
- Wastewater System Components
- Interactions with Stormwater
- Regulatory Framework
- Q&A

About the Office

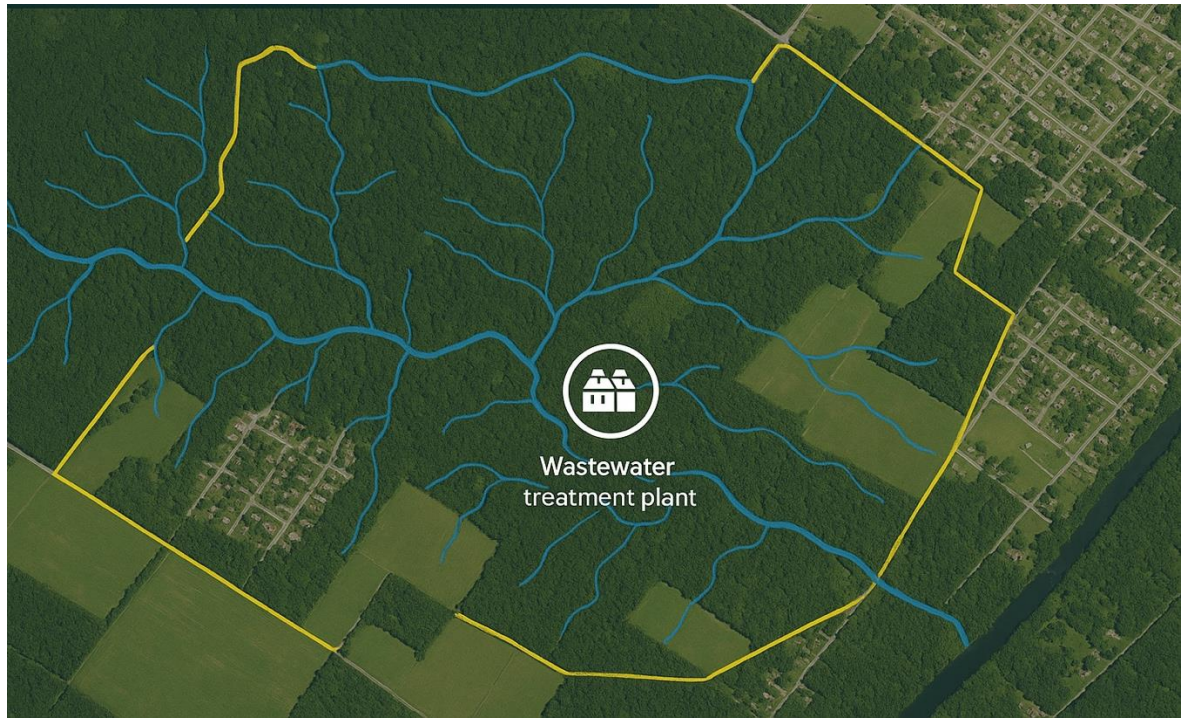
The Office of Rural Water (ORW) collaborates with local and national partners in adapting to changing infrastructures and providing technical assistance to small rural water systems. ORW works to support new, long-term solutions to aging systems.

- We are non-regulatory
- If we cannot help, we know someone who can
- Key Partners: USDA RD, EPA, SC Rural Water Association, SCADA Integrators, SERCAP, Moonshot Missions, COGs, MASC, RIA, WaterNow
- Work directly with water and wastewater enforcement teams
- Success Stories: Drinking water and wastewater improvements, system cooperations, fine reduction, AI integration pilots

Objectives of this Training

- Understand the fundamentals of wastewater and stormwater management.
- Recognize the role of local officials in infrastructure decisions.
- Discover how wastewater and stormwater can offer community benefits.

What is Wastewater and a Sewershed?



- Wastewater: water that has been used in homes, industries, or businesses.
- Sewershed: area where all wastewater flows to a single point or system.
- Important for public health, maintenance, and system planning.

Types of Wastewater Systems in SC

- Publicly Owned Treatment Works (POTWs).
- Decentralized systems, including septic tanks.
- Combined vs. separate sewer systems.*
  - Only separate systems in South Carolina
- Considerations differ between rural and urban areas.

Wastewater System components

- *Collection systems*: pipes, manholes, pump stations.
- *Treatment*: primary, secondary, tertiary processes.
- *Effluent*: disposal or reuse systems.
- Sludge and biosolids management practices.

Interactions with Stormwater

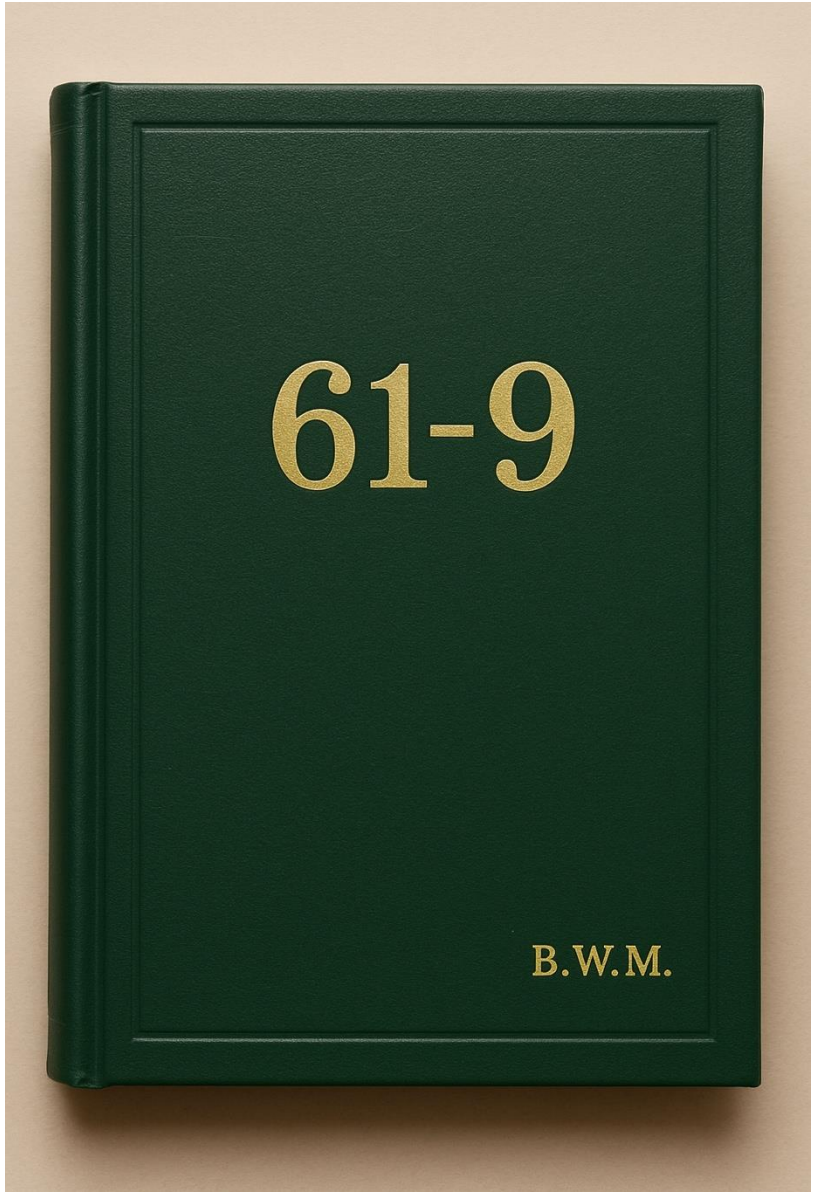
- Stormwater can infiltrate sewer systems, increasing treatment needs.
- Combined systems handle both wastewater and stormwater.*

  *Note: No combined systems in SC

- Green infrastructure helps manage runoff and protect water quality.

Regulatory Framework

- DES regulates wastewater and stormwater systems.
- Key rules: R.61-9, R.61-67, and R.72-300+.
- NPDES and MS4 permits govern discharges and stormwater management.



Q&A

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Get in touch

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des.sc.gov

@SouthCarolinaDES

From Nuisance to Resource: One Water Approaches

Amy Weinfurter

Director of Strategic Projects

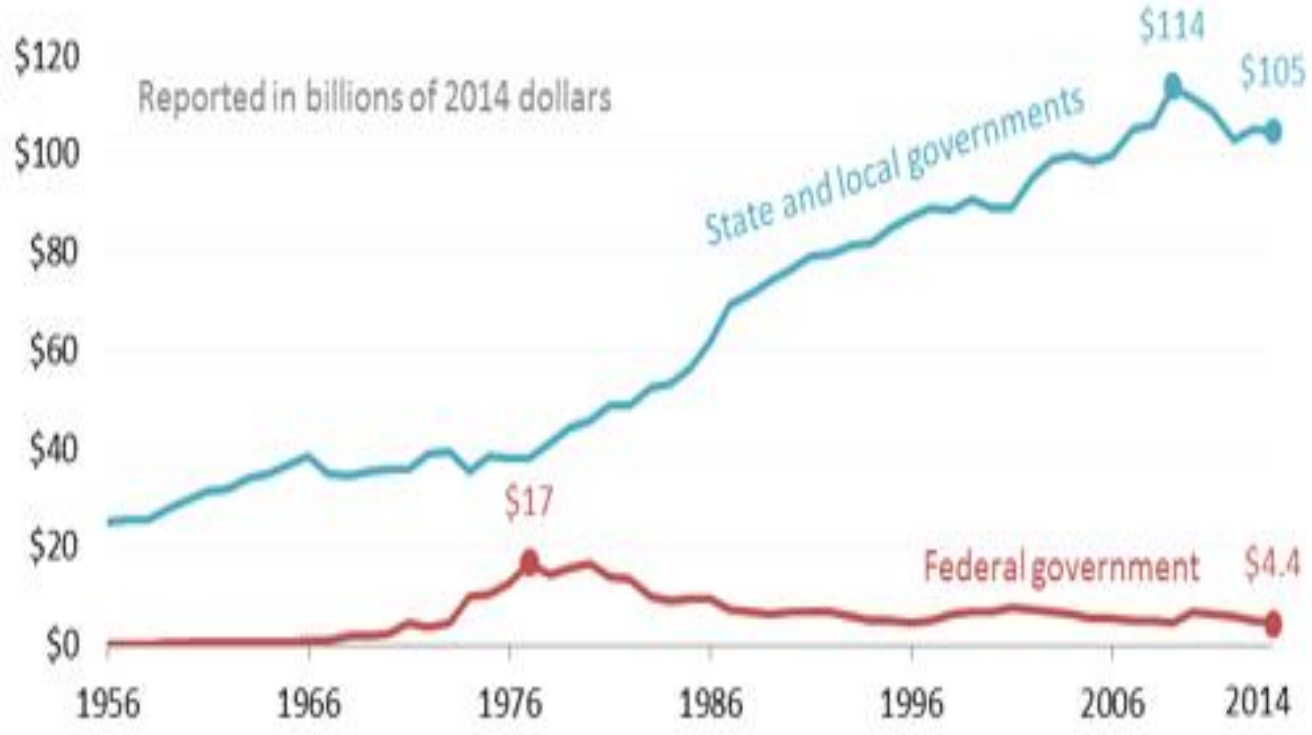
WaterNow Alliance

Who are water leaders?

- Mayors
- City Councilmembers and Tribal Leaders
- Special District Board Members
- County Supervisors
- Public Utility Commissions

The decision makers who vote on all things water, from policy to programs to rates, and who are ultimately accountable to the public

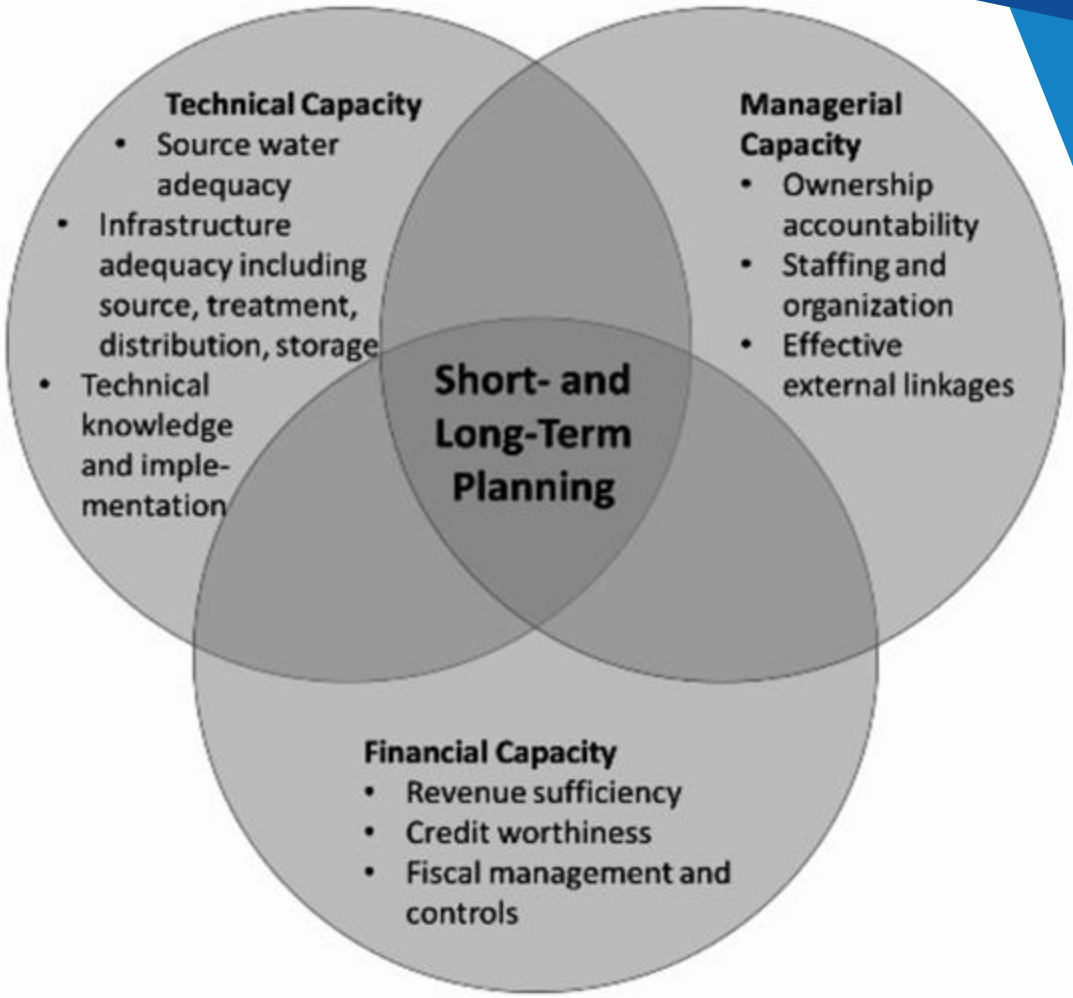
Why local decision makers?



- 95% of water infrastructure investments made by local ratepayers
- 85+% U.S. water infrastructure is publicly owned

Role of elected officials

- Prioritization and Decision-Making
- Setting Policy
- Oversight Responsibility
- Public Engagement and Communication
- Collaboration and Partnerships
- Financing and Funding



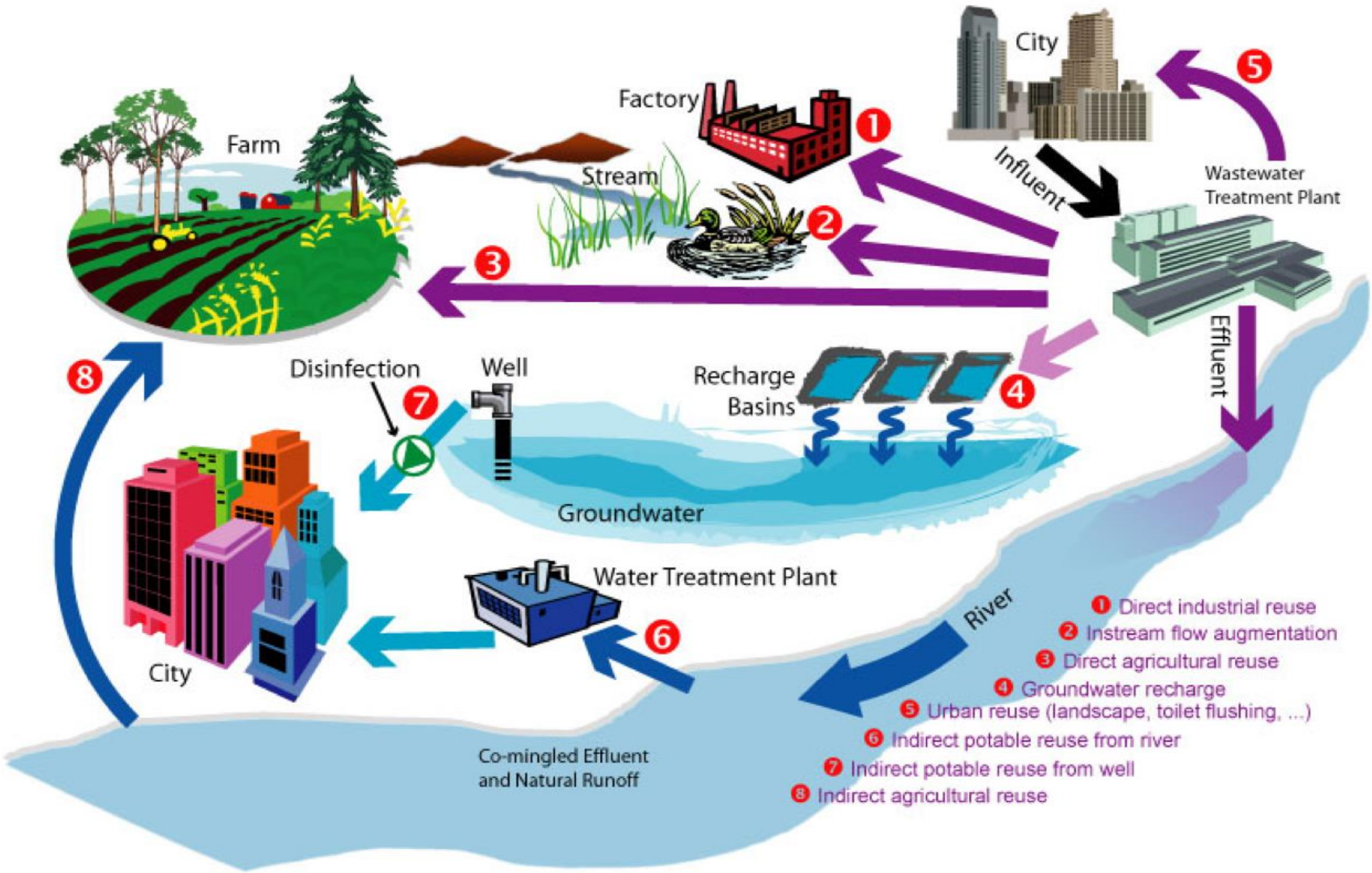
Source: EPA

Learn about your community's wastewater and stormwater systems

- **Who is responsible** for wastewater and stormwater for my community? As a local leader, do I have **oversight responsibility**?
- How is our **wastewater treated** and **where does it go** when it is discharged?
- Is our **stormwater** well managed? Do we have **flooding** problems?
- Are wastewater and stormwater services **affordable** and **accessible** across my community?

You can find more questions to help you "Know Your Water Sector Systems" here

From nuisance to resource



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21st century solutions for 21st century problems

- All water has value
- Water is integrated
- Water facilities can be decentralized

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The water systems

Drinking Water

Wastewater

Stormwater

Onsite technologies and strategies can perform many or most of these functions

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Expanding the concept of infrastructure: Onsite water solutions

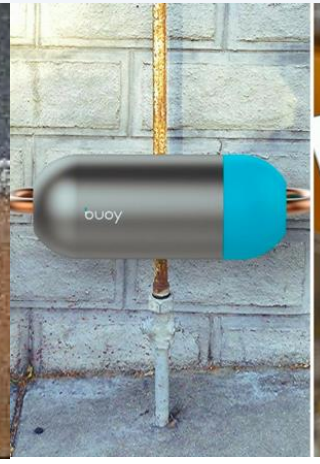
Big picture benefits of localized strategies

More affordable than rebuilding or repairing centralized infrastructure

Less time-intensive to install than centralized infrastructure

Work with the natural environment to enhance water supply resilience and health

Provide visibility, access, and direct economic benefits to ratepayers



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Potable wastewater reuse

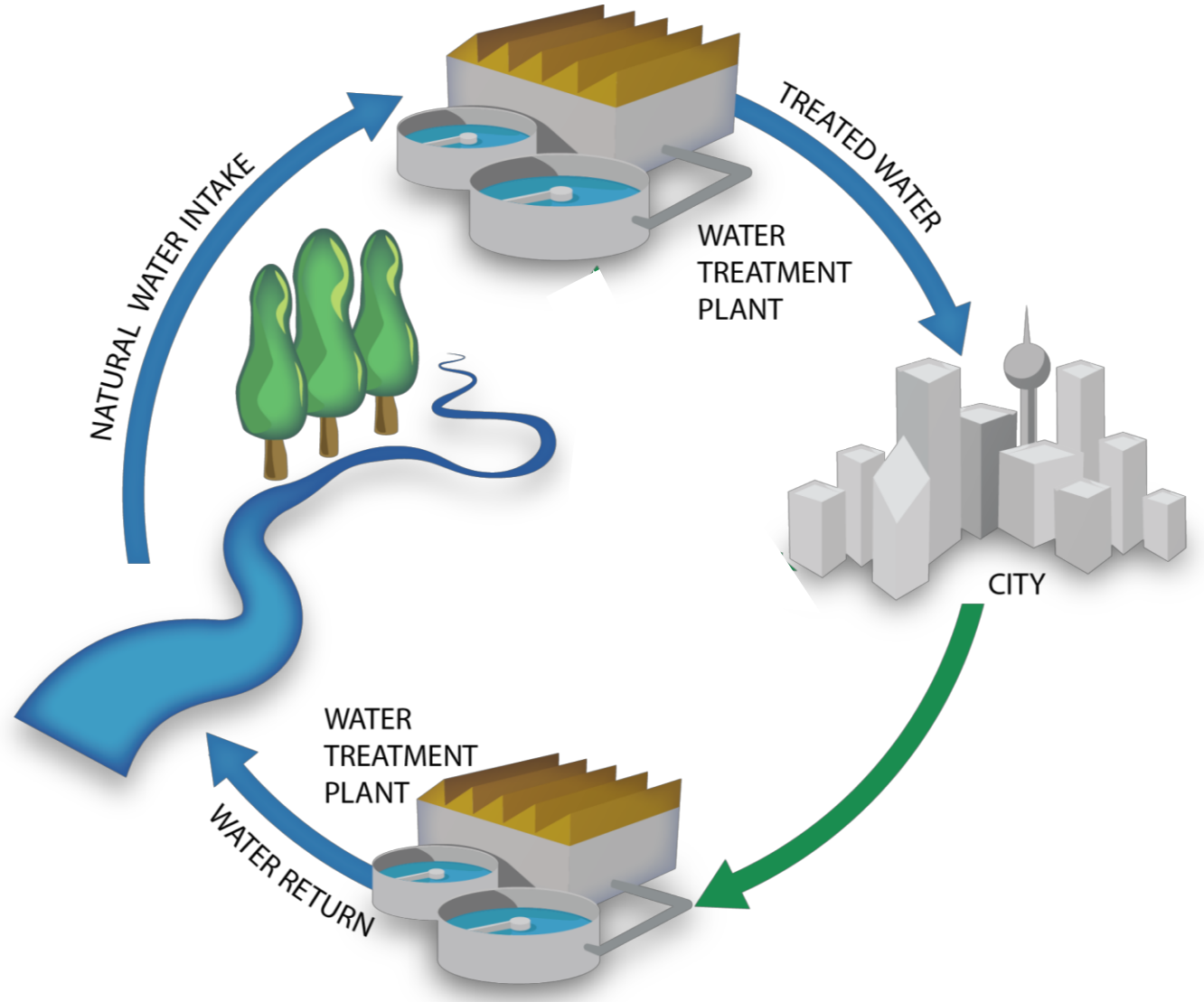

Photo: Texas Living Waters - https://texaslivingwaters.org/bestbets/reuse.html

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Non-potable wastewater reuse

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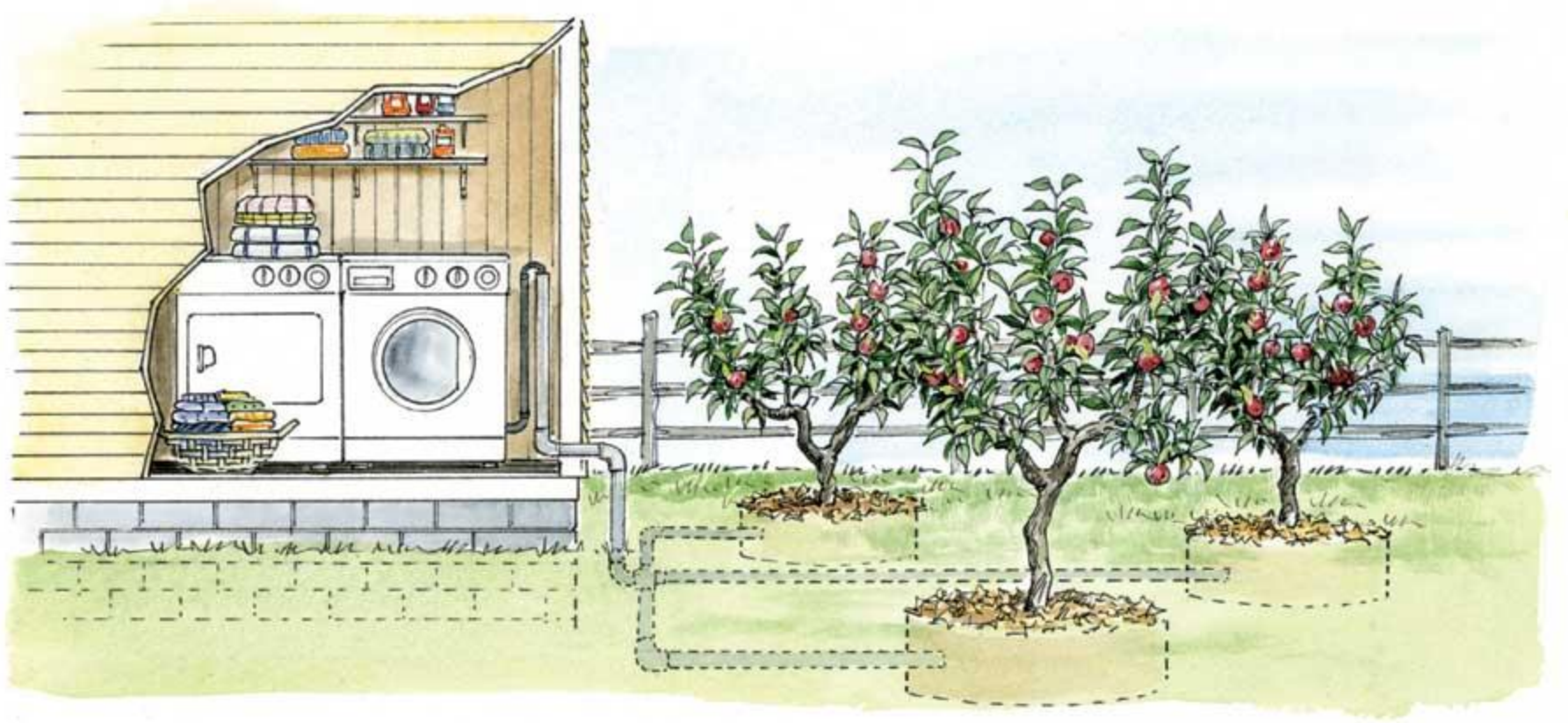
Onsite reuse

Onsite reuse



Bioswales

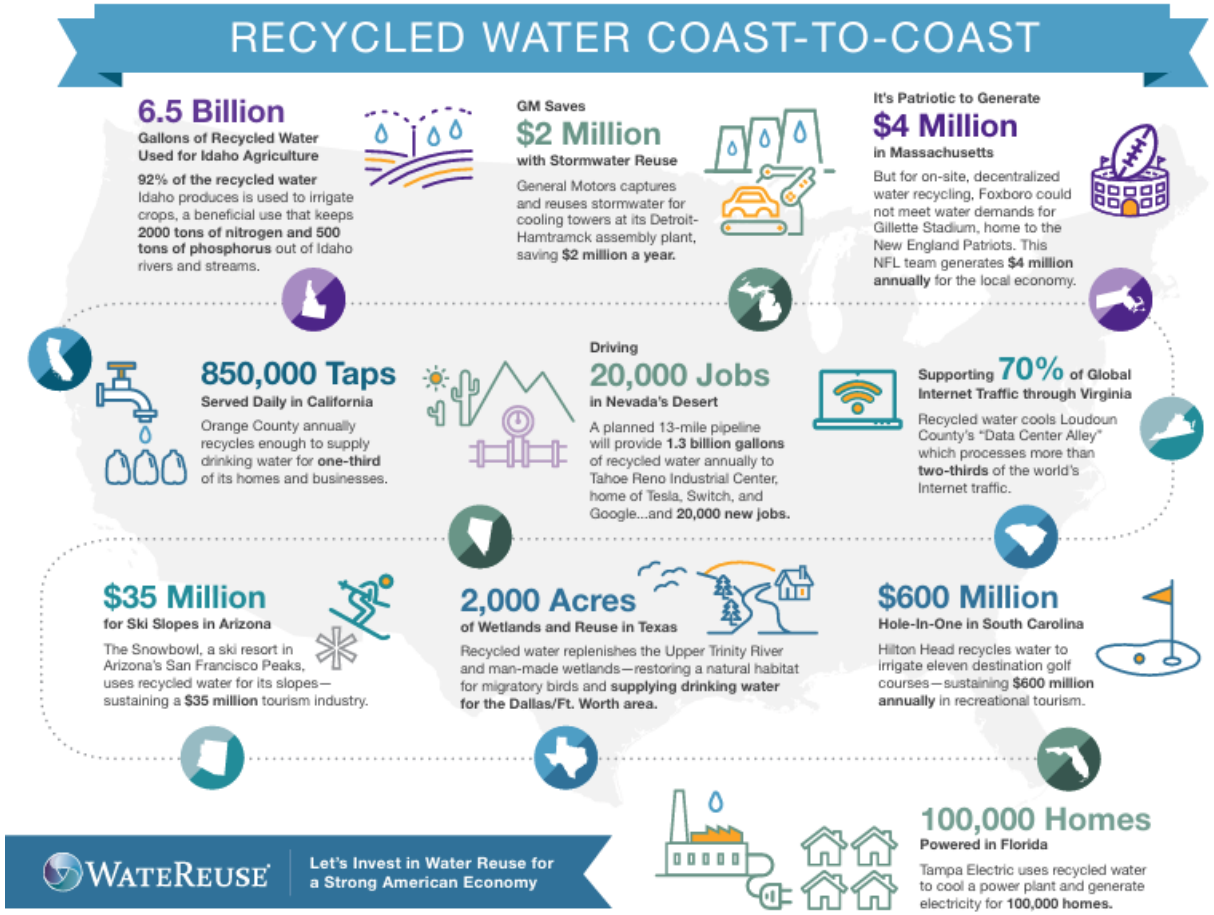
Permeable Pavement

Green Roofs and Rain Gardens

Constructed wetlands

Co-Benefits

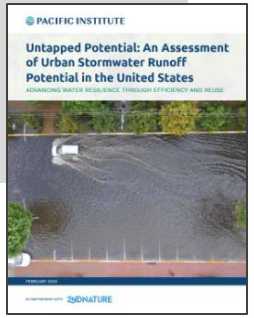
Distributed water management strategies can address water challenges while generating **economic, environmental, and community co-benefits**.



Sources: Pacific Institute, WateReuse

Co-Benefits

The average annual volumetric potential for **urban stormwater runoff** is **59.5 million AFY,** equivalent to **93%** of the water withdrawals for municipal and industrial uses in 2015.



Pacific Institute, 2024

- Reduced urban heat island
- Green & recreational space
- Habitat creation
- Community aesthetics
- Meet water quality targets
- Reduced flooding & CSOs
- Recharge groundwater aquifers

Stormwater solutions

MMSD

PARTNERS FOR A CLEANER ENVIRONMENT

Benefits

- Expected to save MMSD in traditional infrastructure upgrades
- Reduces sewer overflow incidences by 96%, from 50 to 60 per year to only 2.3 per year
- Creates 500 green maintenance jobs at full implementation
- Produces 160 construction jobs on average per year
- Increases property values by an estimated $667 million
- Educates the public about water resources and sustainable solutions
- Improves environmental health by reducing carbon emissions, conserving energy, and improving air and water quality
- Improves quality of life and aesthetics by providing additional green spaces and recreational opportunities

Stormwater solutions

Raleigh

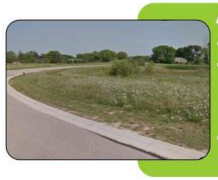
Here's how we are taking action with GSI.

- CITY GSI INITIATIVES →
- 1. LEAD BY EXAMPLE →
- 2. SUPPORT AND INCENTIVIZE PRIVATE DEVELOPERS →
- 3. INCLUDE GSI IN REZONING DECISIONS →
- 4. INCLUDE GSI IN CITY'S PLANNING REPORTS →
- 5. PROPOSE REGULATION CHANGES TO SUPPORT GSI →
- 6. BUILD A PROGRAM FOR MAINTAINING CITY-OWNED GSI →

Cost Savings for Low-Density Residential Green Stormwater Management

Boulder Hills Development
- Pelham, NH
- Porous asphalt instead of conventional pavement
- Saved $50,000 (6%) by avoiding curbing, outlet control structures, large stormwater detention ponds

2nd Avenue Neighborhood
- Seattle, WA
- Bioswales, added vegetation, wetlands, reduced impervious area
- Saved $217,255 (25%) compared to conventional retrofits



Auburn Hills Subdivision
- Racine, WI
- 40% of site preserved as open space with wetlands, green space, added open swales, bioretention
- Saved $761,396 compared to conventional development

Village Homes Development
- Davis, CA
- Vegetated swales, rain gardens, open space, narrow streets, clustered lots
- Saved $800 per lot, $192,000 for entire neighborhood compared to conventional development

Gap Creek Subdivision
- Sherwood, AR
- Preserved natural drainage areas, traffic-calming circles, reduced street width
- Saved $4,800 per lot, $678,500 (15%) total compared to conventional development

Downspout Disconnection Program
- Portland, OR
- City offers financial incentives for disconnections ($13-$53 per downspout)
- Estimated reduction = 1 billion gallons of stormwater annually, $250 million reduction in construction for underground pipes citywide (based on 44,000 homeowners participating)

Source: City of Raleigh

Stormwater solutions

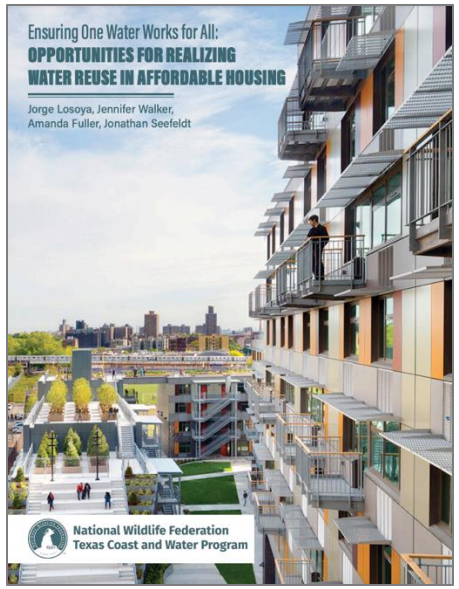
Winnsboro, SC: Fortune Springs Park Restoration

Hanahan, SC: Downtown Stormwater Improvement Project

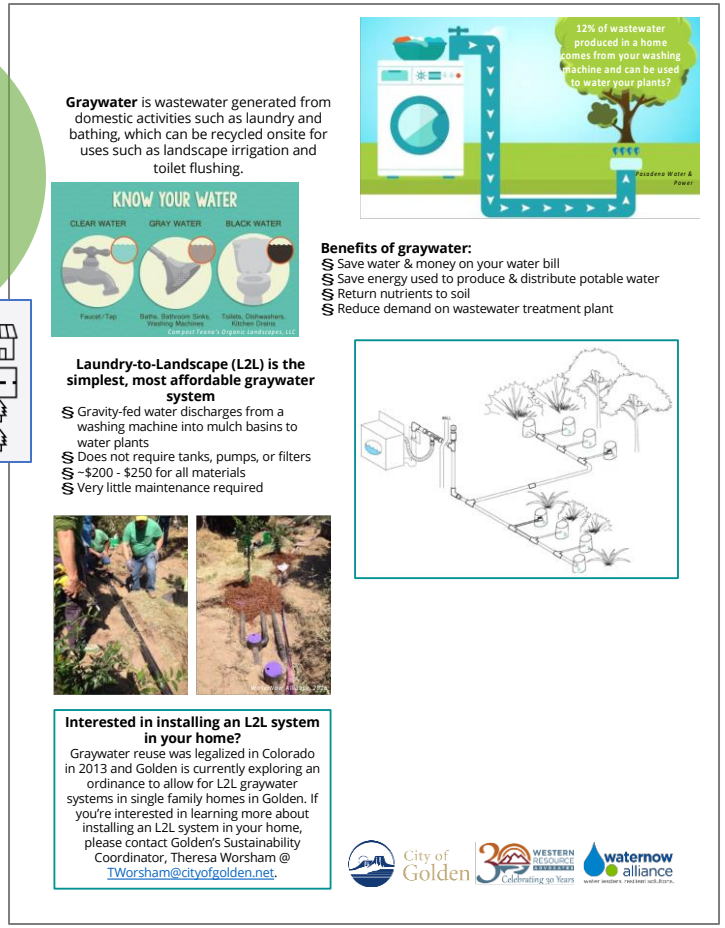
*"Projects like this one are great examples of improving an area's resilience because, in addition to **reducing flood risks**, critical services such as **fire and transportation** are less likely to be obstructed during storm events."*

- Ben Duncan, South Carolina Chief Resilience Officer (SCOR)

Wastewater solutions



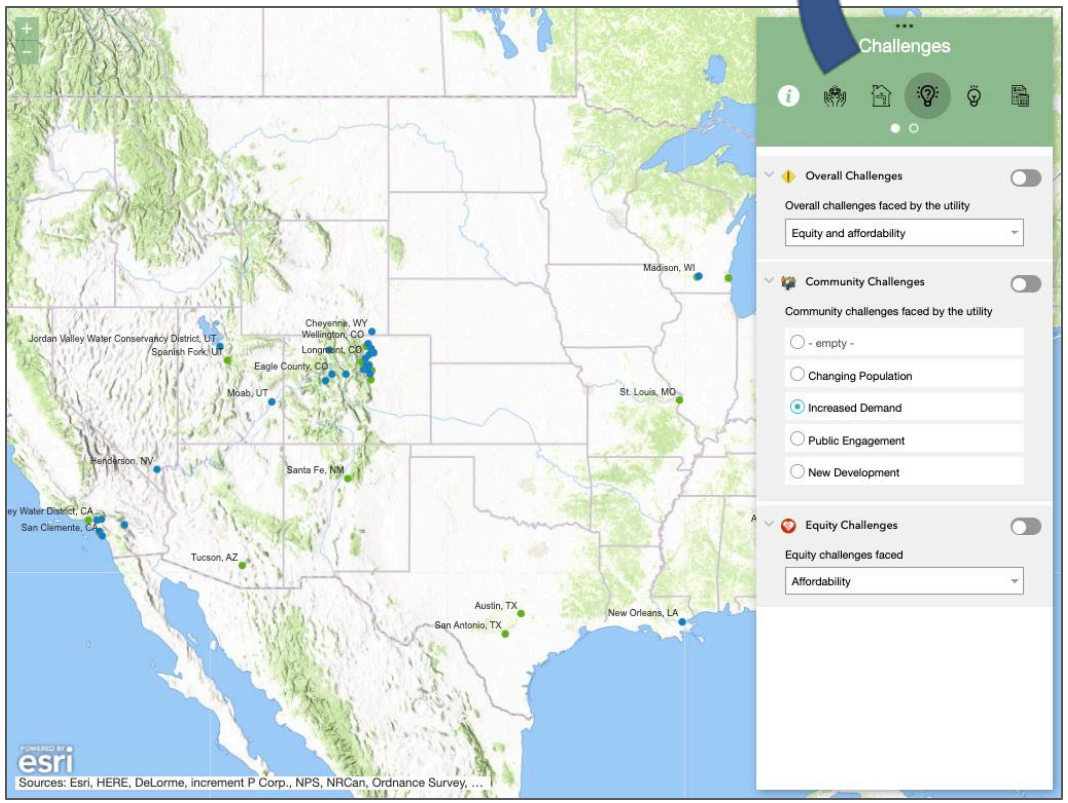
Golden, CO: **"Laundry-to-Landscape"** graywater ordinance

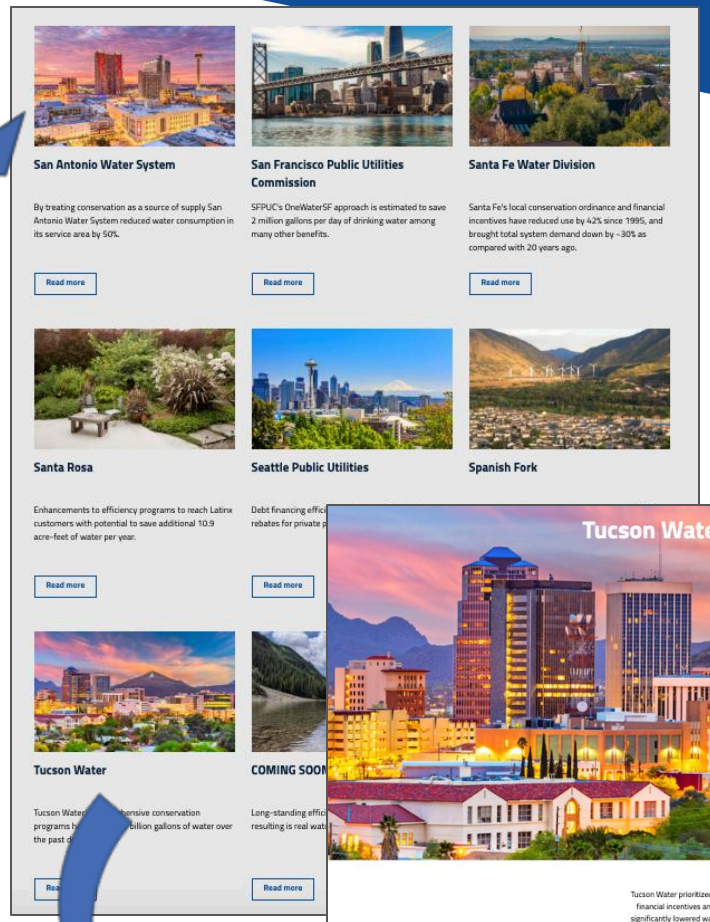


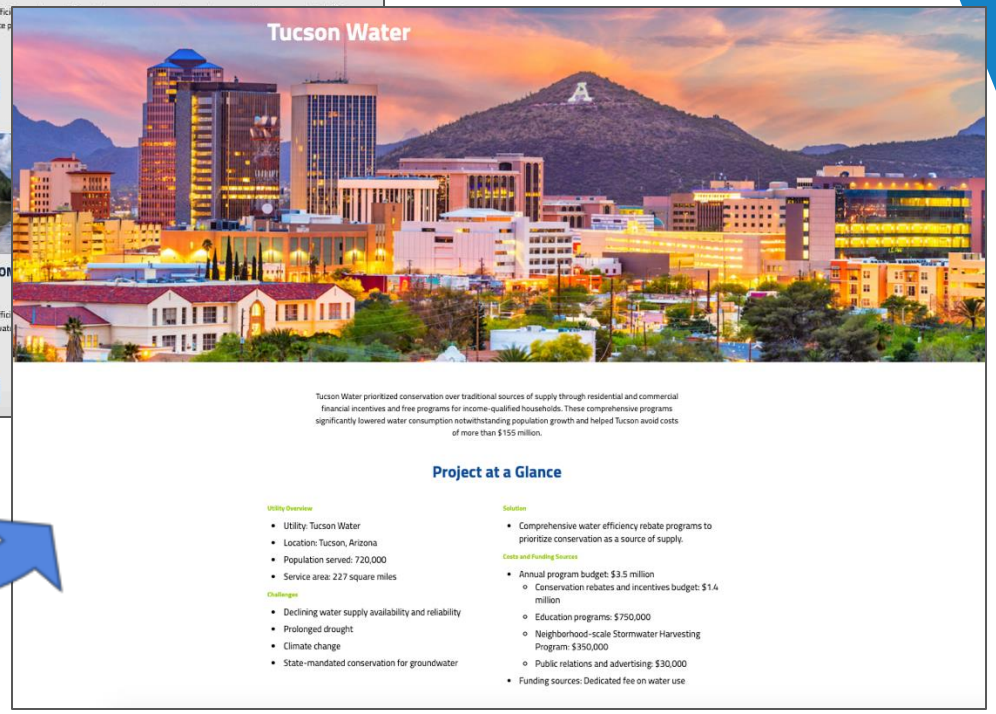
Homer, LA: **Reclaimed wastewater** irrigates municipal golf course

Los Angeles, CA: onsite water reuse can reduce MFR potable water demand **38%**

Case studies







https://tapin.waternow.org/meet-communities/#casestudies

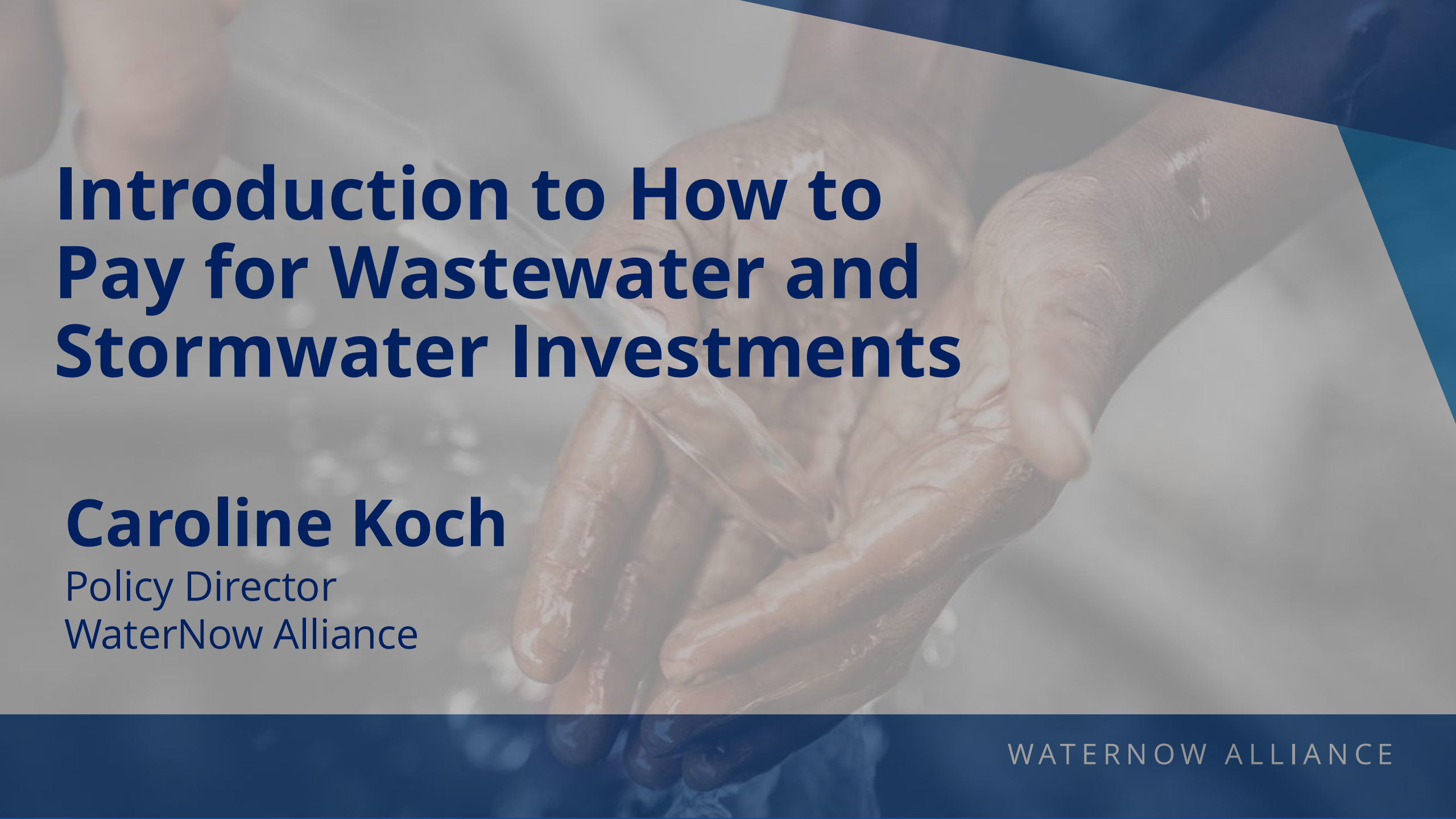
Resources for elected officials

- Board Members: Find Out if your Water or Wastewater Utility is Financially Viable in the Long-Term
- Effective Water Utility Management Practices
- EPA Local Water Infrastructure Investment Stories
- Know your Water Sector Systems
- Learn about Capacity Development and Capacity Development Resources for States and Small Systems
- One Water Toolkit
- Things Local Officials Should Know about Effective Water Infrastructure
- Wastewater Management Handbook for Local Representatives
- WaterNow Alliance TiR Toolkit

The Ten Attributes to an Effectively Managed Utility and Five Keys to Management Success


Q&A

Introduction to How to Pay for Wastewater and Stormwater Investments



Caroline Koch

Policy Director
WaterNow Alliance

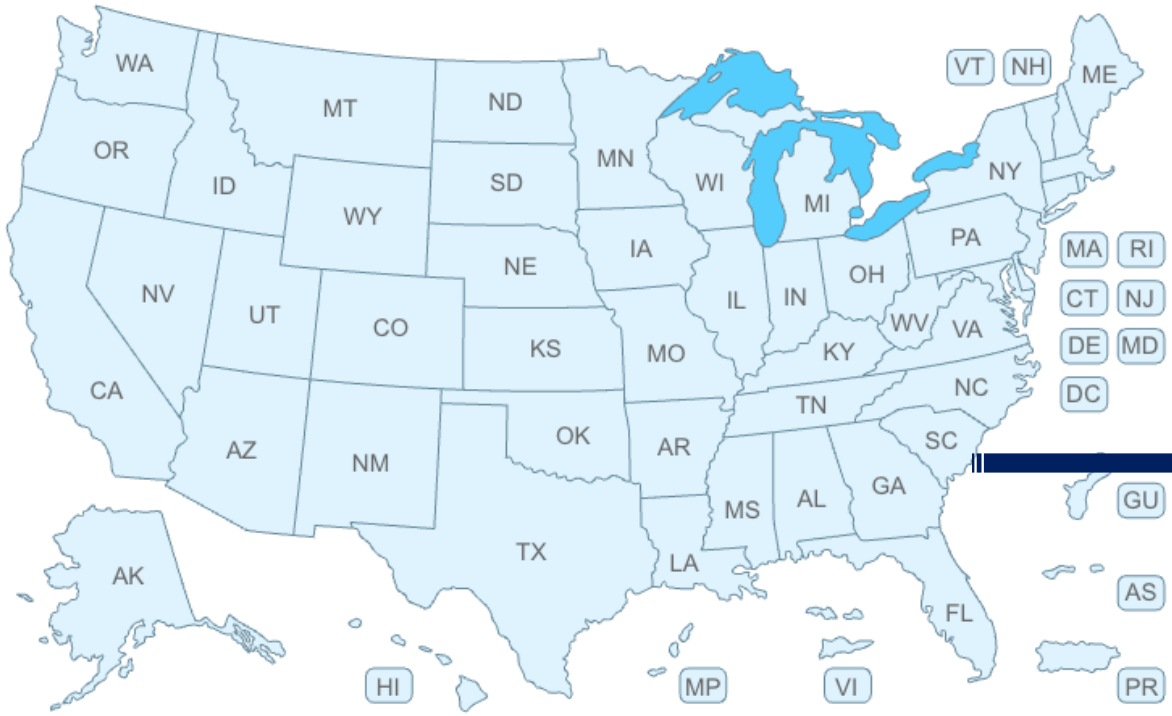
Create a Funding & Financing Portfolio

Combining grants and debt financing helps communities make investments in wastewater and stormwater infrastructure while keeping rates down

Funding Sources By State Or Territory

We work with state and federal agencies to make sure that current funding opportunities are consolidated in one place. Click the map below to find water and wastev
funding sources for your state or territory.

Funding Portfolio



South Carolina Funding Table

bitly

EFCN
environmental finance center network

Economic Development Administration Public Works Grants

Grants

Federal

Objective

- Help distressed communities revitalize, expand, and upgrade their physical infrastructure and attract new industry, encourage business expansion, generate local investment, and create or retain long-term jobs

Eligible Applicants

- County governments
- City governments
- Native American tribal governments (Federally recognized)
- Special district governments

Eligible Projects

- Water and sewer system improvements
- Design and engineering, construction, rehabilitation, alteration, expansion, or improvement of public works

Available Funding & How to Apply

- Avg. grant, $1.4M (50% match required)
- FY24, $100M
- Applications accepted on a rolling basis
- Grants.gov

SC Department of Commerce Community Development Block Grants

Grants

State

Objective

- Improve the well-being of all South Carolinians in a manner that supports and enhances a high quality of life and strengthen communities through revitalization and improvement of neighborhoods, public infrastructure, and the local economy

Eligible Applicants

- All units of general local government
- Except 11 large cities and 7 urban counties

Eligible Projects

- Construction of public facilities and improvements
- Assistance to neighborhood-based non-profit organizations, local development corporations or for-profit entities to carry out economic development activities

Available Funding & How to Apply

- Max grant, $1M
- FY25, $9M (Community Infrastructure)
- 2 funding rounds / year
- Request application from SC Dept. of Commerce

South Carolina Clean Water State Revolving Fund

Debt

State Revolving Fund

Objective

- Provide low-interest rate loans for building or repairing wastewater plants, collection systems, and stormwater quality improvement projects

Eligible Applicants

- Municipalities
- Counties
- Special purpose districts

Eligible Projects

- Wastewater Treatment Plant upgrade and expansion
- Sewer Line rehab and replacement
- Collection systems for areas on septic tanks
- Non-point source projects
- Environmentally innovative "green" practices

Available Funding & How to Apply

- SFY26, $177M
- Contact Department of Environmental Services
- Submit a project questionnaire

HUD Section 108 Loan Guarantee Program

Debt

Loan Guarantees

Objective

- Leverage portions of CDBG funds into federally guaranteed loans large enough to pursue physical and economic revitalization projects capable of redeveloping entire neighborhoods

Eligible Applicants

- CDBG entitlement cities
- Urban counties
- Non-entitlement cities

Eligible Projects

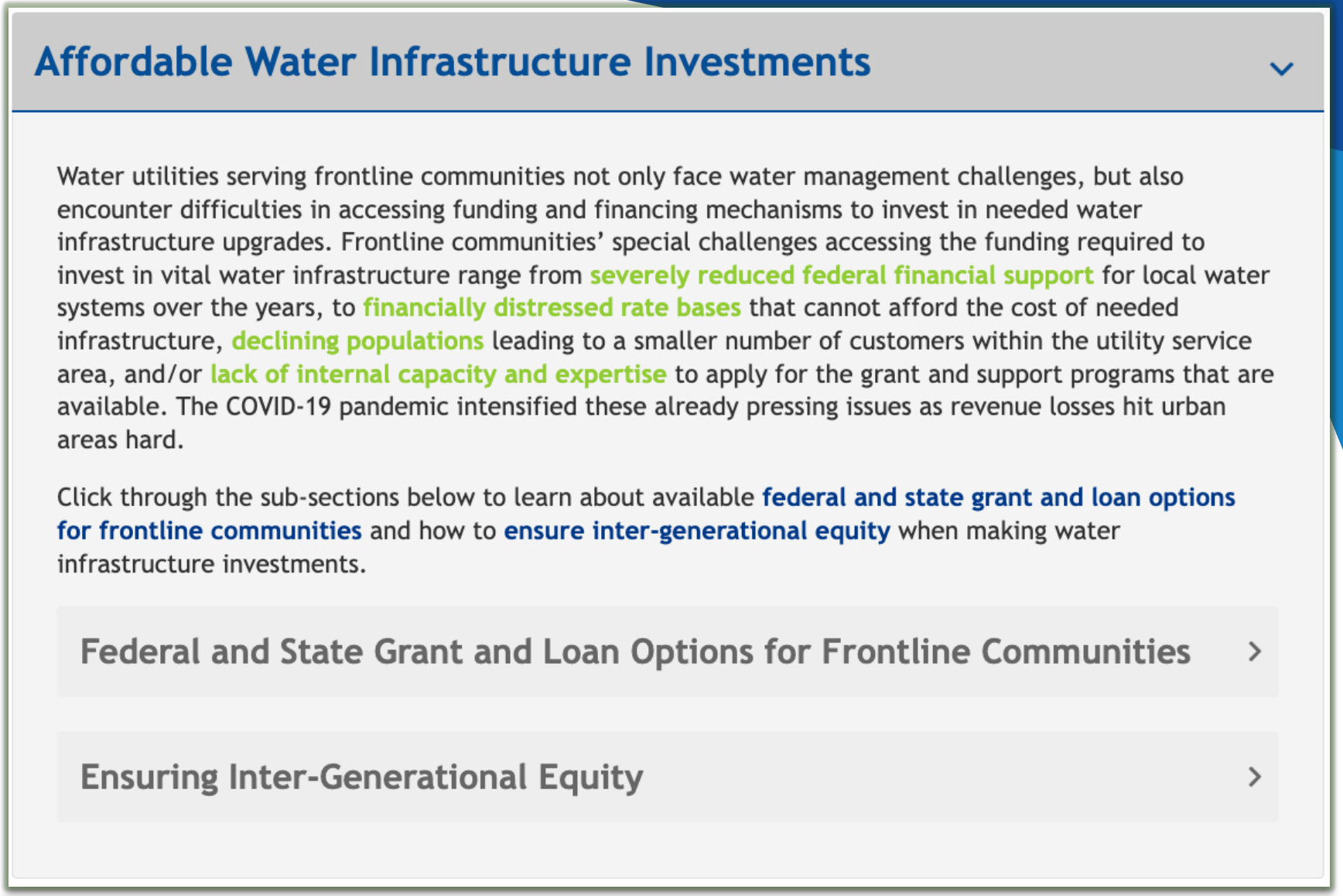
- Rehabilitation of publicly owned real property
- Construction, reconstruction, or installation of public facilities
- Green infrastructure improvements

Available Funding & How to Apply

- FY25, $101M (SC non-entitlement allocation)
- Contact HUD for pre-submission meeting

Tap into Resilience Toolkit

Resource for finding additional federal and state funding and financing options & information about how debt financing can create inter-generational equity



https://tapin.waternow.org/toolkit/?item=frontline-invest

Tap into Resilience Toolkit

Resource with ideas on how partnering with community groups and local non-profits can add capacity for water utilities experiencing resource constraints

Identifying Partners Who Can Add Value

Utilities no longer need to go it alone. Partnerships with community groups, NGOs, and other cities and utilities can effectively engage the public, extend and supplement limited utility resources, and advance the goal of an equitable water future for everyone.

> "Building partnerships can be a little messy. ... However, when partnerships are done right, starting with creating an environment of trust, there are multiple benefits to be had by all—particularly as we think about effectively addressing water inequity. So, if done right, powerful partnerships can help everyone get access to clean and affordable water, manage wastewater, and build more resilient systems that can withstand the impacts of climate change."
>
> ~Dr. Jalonne L. White-Newsome, Founder, Empowering a Green Environment and Economy

There are multiple avenues for utilities to establish trust-based partnerships, including:

- ✓ Getting out into the community and building personal relationships with trusted community leaders that can grow into collaborative, mutually beneficial partnerships
- ✓ Participating in community events to put a personal face to the utility which can sometimes be seen as an institutional black box
- ✓ Creating citizen advisory groups to actively involve the community in utility decision-making
- ✓ Engaging in workforce development programs that **train utility leaders of the future** and can provide **well-paying jobs** including for **at-risk youth**
- ✓ Establishing the utility as an **Anchor Institution**—an organization rooted in a specific location that has a long-term interest in the economic and social vitality of the surrounding community

https://tapin.waternow.org/toolkit/?item=partners-add-value

Environmental Finance Center Network Resources

Tools & Publications

Read or view a report, assess your financial or managerial performance with a tool or checklist, or take your analysis to the next level with an interactive rates dashboard.

Browse Tools & Publications

Multimedia Library

Seeking inspiration? Our podcasts, blogs, and video content offer fresh new perspectives on environmental infrastructure.

View Multimedia Library

Funding Tables

We work with state and federal agencies to make sure that current funding opportunities are consolidated in one place.

View Funding Tables

https://efcnetwork.org/resources/

Specialized Technical Assistance: Rural, Small, & Tribal Systems

https://efcnetwork.org/get-help/


Q&A

JOIN WATERNOW

LEARN MORE AND SIGN UP

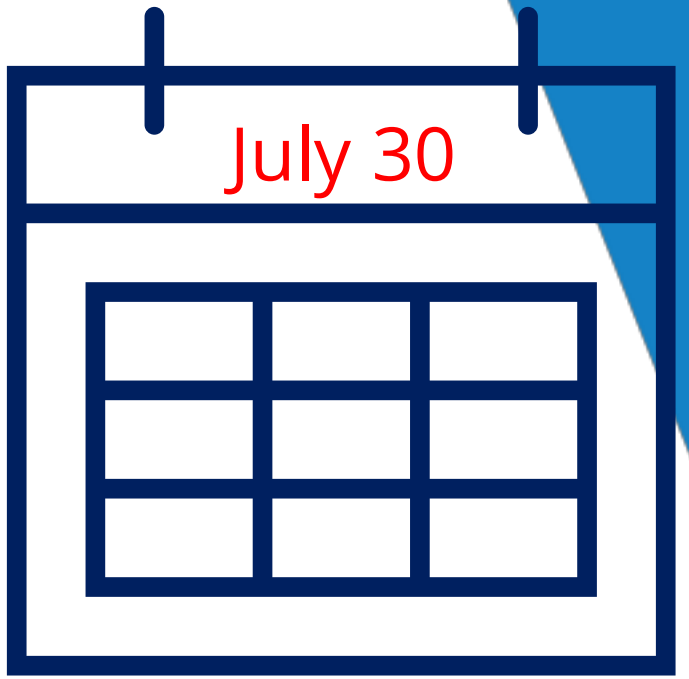
www.waternow.org/join-the-leaders

waternow alliance
water leaders. resilient solutions.

Please Complete the Post-Training Survey!

Preview: Part 2

- Federal Wastewater Infrastructure Funding Landscape
  - Carolyn Berndt, National League of Cities
- Deep Dive: State Grants
  - Robin Cooley, Rural Infrastructure Authority
- Deep Dive: CWSRF
  - Brett Butz, South Carolina Department of Environmental Services
- Accessing Technical Assistance



THANK YOU!

For more information email:

Brett Butz, brett.Butz@des.sc.gov

Amy Weinfurter, aw@waternow.org

Caroline Koch, cak@waternow.org

Resources:

waternow.org

tapin.waternow.org/toolkit

efcnetwork.org/get-help/