



Office of Research and Development

# SAFE AND SUSTAINABLE WATER RESOURCES RESEARCH PROGRAM



**SSWR BoSC Meeting – May 26, 2021**  
**Research Area II: Technical Support**  
**Ben Packard, RA Coordinator**



# Technical Support



Provides timely technical support and outreach to EPA's Office of Water and regions, states, tribes, and communities needing help with challenges in drinking water, wastewater, stormwater, and water reuse areas.

Engineering, scientific, and analytical support enabling ORD to respond to unplanned issues:

- Technical support for lead, PFAS, cyanotoxins, and *Legionella*, amoeba, disinfection byproducts contamination in water systems. (Product POC: Jennifer Tully)
- Maintenance and training support for widely used stormwater, wastewater, and drinking water models. (Product POC: Robert Janke)
- Small systems challenges and solutions. (Product POC: Michelle Latham)



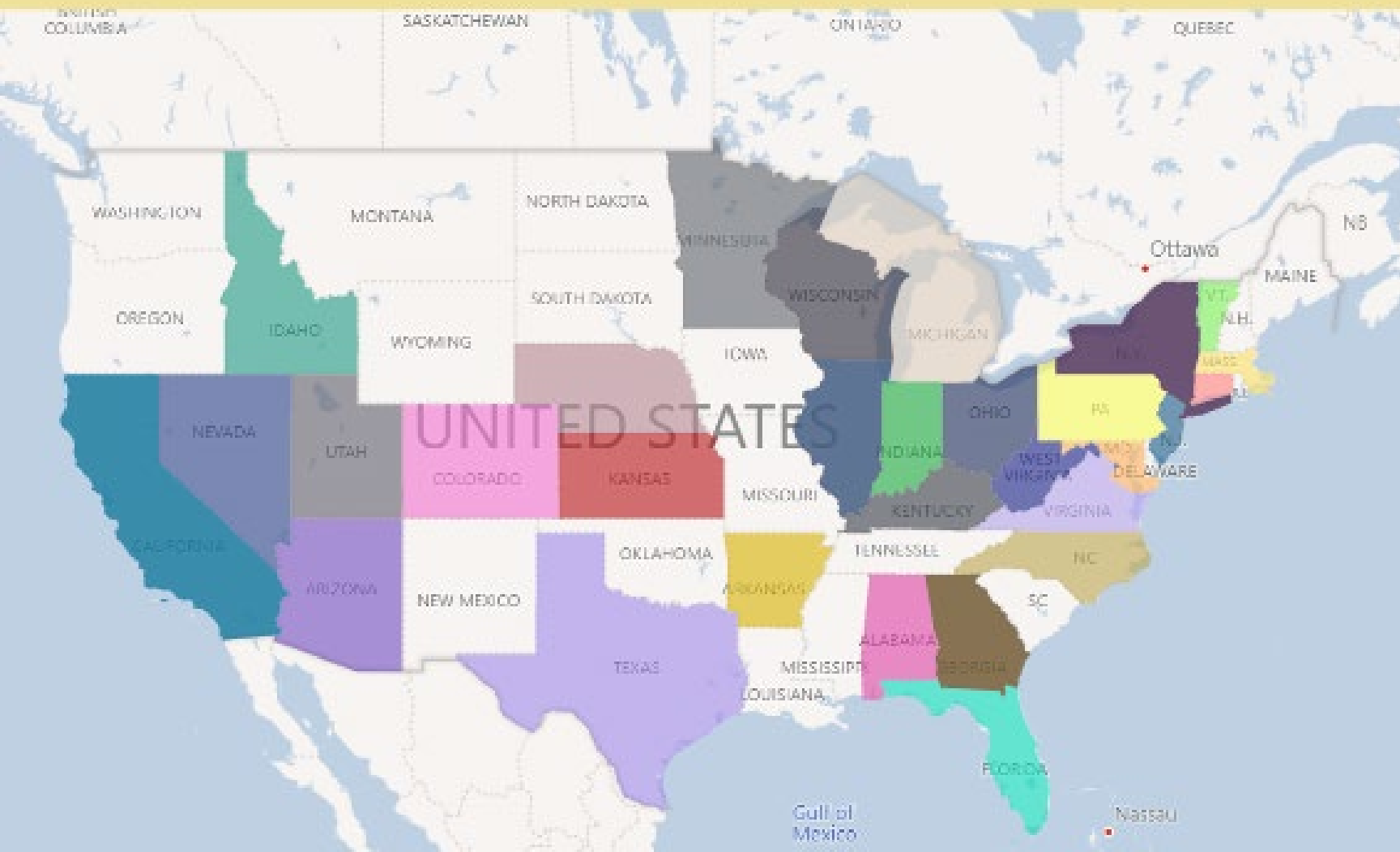
## Technical Support for Water Treatment, Analytical Methods, and Risk Assessments






Lead: Craig Patterson



# Technical Support Examples

## States Assisted



- 
**Corrosion Control for Lead:**  
 Lead particle sampling in University Park, Illinois.
- 
**Harmful Algal Blooms:**  
 Kansas Department of Health and Environment's 10th Annual HABs Workshop.
- 
**Emergency Response:**  
 Ohio Coronavirus Wastewater Monitoring Network collaboration.
- 
**PFAS:**  
 Removal effectiveness of granular activated carbon in Summerville, Georgia
- 
**Microbial Contaminants:**  
 Kentucky permitting approval process for first UV disinfection system.

# Technical Support Examples

- 💧 PFAS stack testing at a pilot-scale incineration facility.
- 💧 PFAS removal study from groundwater with Ridgewood Water.
- 💧 Treatment tech support for Non-PRASA water systems in Puerto Rico.
- 💧 Updating ORD biosolid document: *Control of Pathogens and Vectors in Sewage Sludge*.



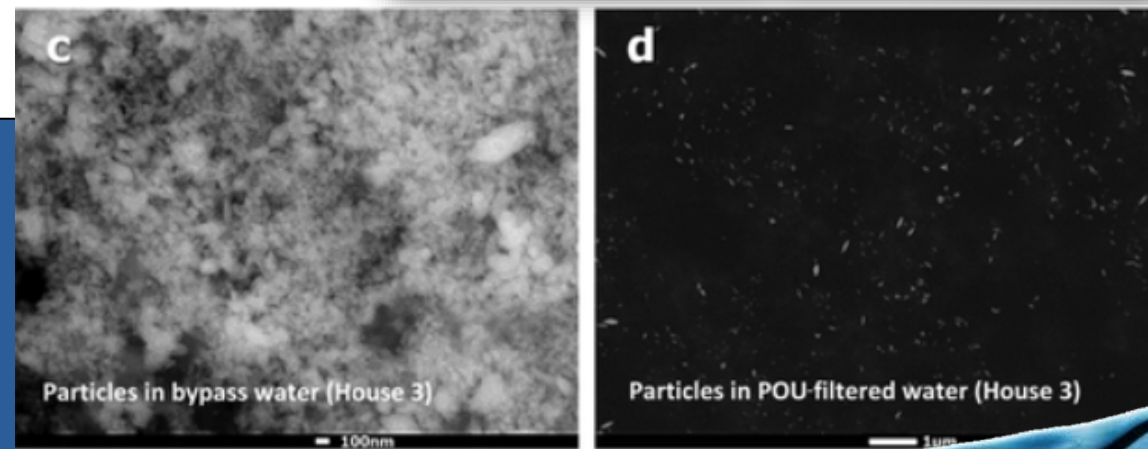
# Technical Support Highlight: Lead

## Lead particle size fractionation and identification in Newark, New Jersey

Efforts required deploying field teams, coordinating logistics of sampling and shipping, organizing analytical support to examine collected samples, data management/organization, communications, and the assembly of various ORD experts to evaluate the situation and resulting data

[Publication in Environmental Science and Technology](#)

Informed decisions made by the city related to long term improvements to corrosion control and point-of-use filters to remove lead.



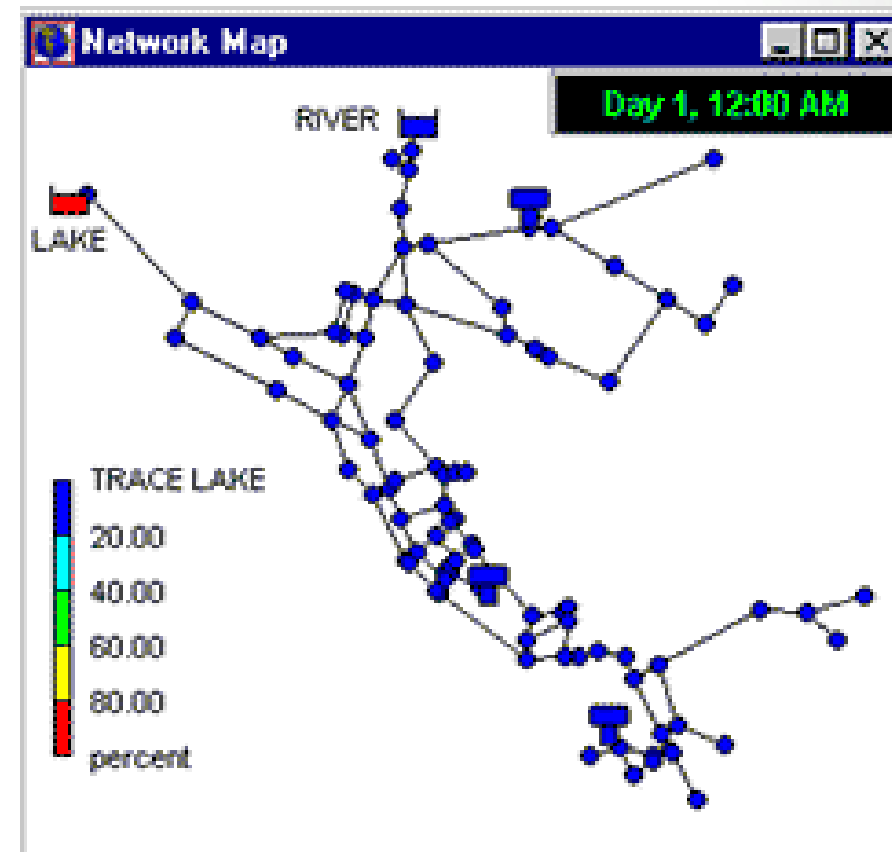
- ◆ Assisting the state of Ohio and the City of Cincinnati with implementing wastewater surveillance methods for the early detection of SARS-CoV-2.
- ◆ Collecting sewage samples, analyzing for the virus and for new variants.
- ◆ Improving analytical detection methods and sharing with communities around the world.

[Results on Ohio COVID-19 Dashboard](#)



# Model Maintenance and Support

- 💧 EPANET and related models
- 💧 Storm Water Management Model (SWMM)
- 💧 National Stormwater Calculator (SWC)
- 💧 Drinking Water Treatability Database (TDB)
- 💧 Water Treatment Plant (WTP) Model
- 💧 Environmental Technologies Design Option Tool (ETDOT)
- 💧 Free Chlorine and Cyanuric Acid System (FCCAS) Simulator Models



# EPANET and EPANET Models

- 💧 Downloaded 50,000 times per year from the [EPA website](#) by engineers, consultants, students, researchers, and water utility staff around the world.
- 💧 Used to support decision making for water infrastructure projects, water quality problems, energy savings, and planning for future scenarios.
- 💧 ORD released EPANET 2.2 (including User Manual) on July 24, 2020, which included major updates to the hydraulic and water quality engines, through an open-source collaborative [software development project](#).
- 💧 Continued to provide technical support and provide training at conferences.
- 💧 Support for the development of an updated graphical user interface (GUI) for EPANET-MSX.



## Storm Water Management Model ([SWMM](#))

- ◆ 47,740 downloads in FY20.
- ◆ 76 technical support requests (51 from the US, 25 non-US): 2 citizens, 34 students, 7 professors, 22 professionals, 6 municipalities, 4 states, and one USAID (since Aug 2020).
- ◆ Two major upgrades resulting in five significant new features.
- ◆ Preparing major update (SWMM 5.2.0) with expected release by Fall, 2021.

## National Stormwater Calculator ([SWC](#))

- ◆ National Fish and Wildlife Foundation has multiple resiliency grant programs, where they highly encourage grant applicants to use the SWC for their application. This is occurring in SE Michigan and Long Island Sound.
- ◆ Future public deployment of updated SWC web application.



# Treatment Models and Tools

## Drinking Water Treatability Database ([TDB](#))

- ◆ Updated with 11 new PFAS chemical in May 2021.
- ◆ 4,000+ hits/month (academics, water utilities, first responders, consulting engineers, and regulators).

## Water Treatment Plant (WTP) Model

Recently updated with EPA Office of Water

## Environmental Technologies Design Option Tool ([ETDOT](#))

- ◆ Made freely available through agreement with Michigan Technological University
- ◆ Evaluate systems for the removal of contaminants, including PFAS, from drinking water and wastewater.

## Free Chlorine and Cyanuric Acid System ([FCCAS](#)) Simulator Models

Four web-based applications used to simulate disinfectant chemistry



- 💧 Workshops and In-Depth Training
- 💧 Monthly Webinars
- 💧 eLearning
- 💧 Technical Communications and Outreach Workgroup





# Annual Drinking Water Workshop

## Small System Challenges and Solutions

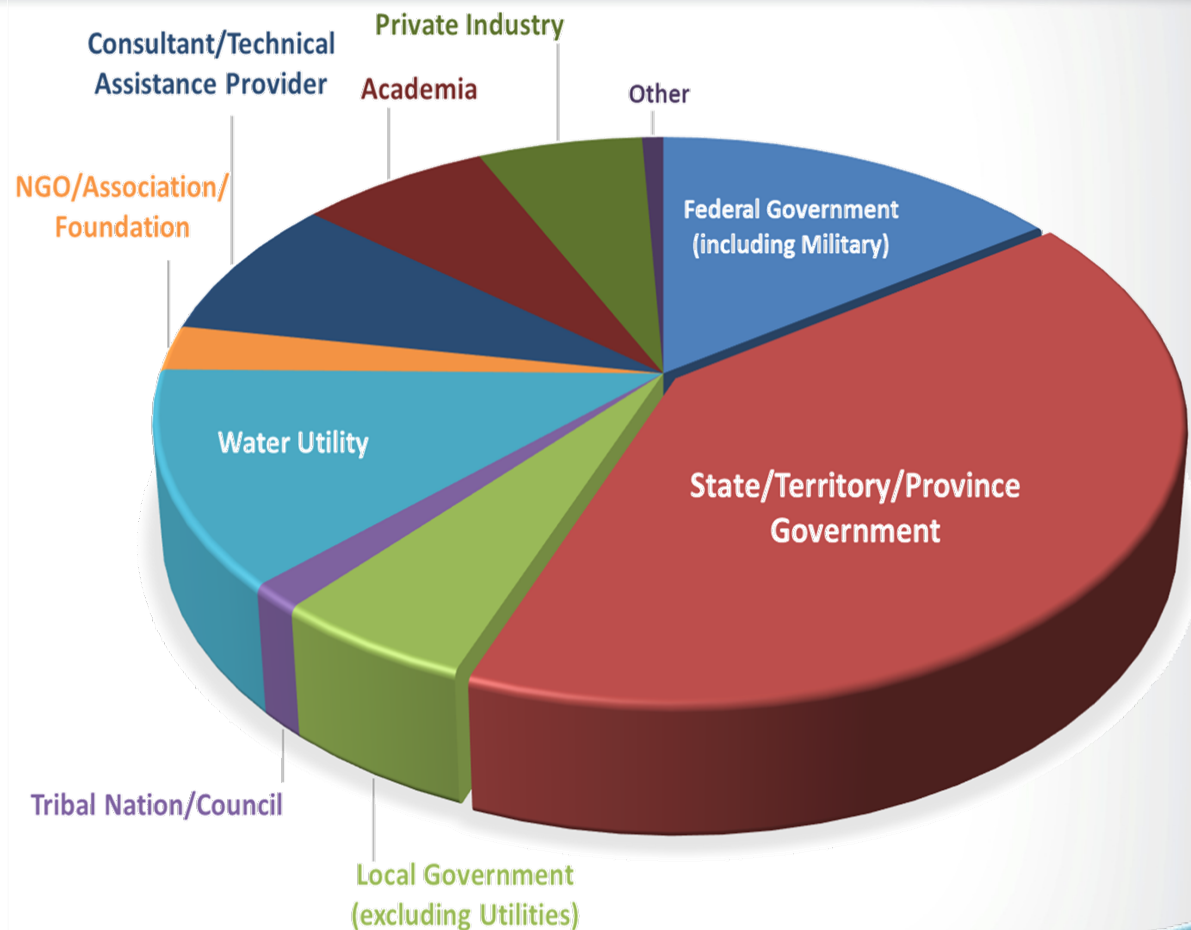
- 💧 In-depth training
- 💧 Technical sessions with Q&A
- 💧 Breakout focus groups
- 💧 Networking
- 💧 Demos and posters
- 💧 Training course credits
- 💧 Virtual sessions and recordings



EPA Office of Research and Development and Office of Water, in partnership with the Association of State Drinking Water administrators (ASDWA,) has held the annual workshop for the past 17 years.  
(typically held in the Greater Cincinnati Area)

## Over 3,300 attendees

- 💧 All 50 states and 5 territories
- 💧 126 environmental and health agencies from all 50 states/DC, 4 territories, and 9 Canadian provinces
- 💧 34 tribal nations/councils from 13 states and 1 Canadian province
- 💧 248 water utilities from 41 states/DC and 4 other countries





# Annual Drinking Water Workshop (Virtual)

## Agenda and Recordings for the 17th Annual EPA Drinking Water Workshop (Virtual)

The 17th Annual EPA Drinking Water Workshop, held in partnership with the Association of State Drinking Water Administrators (ASDWA), took place virtually on August 31-September 3, 2020. The workshop provided in-depth information and training on solutions and strategies for handling small drinking water system challenges with a focus on monitoring, distribution, source, and treatment topics. Technical and communications and outreach breakout focus group discussion sessions were offered.

The 2021 virtual workshop is currently being planned for August 30-September 2, 2021. [Visit the 18th Annual EPA Drinking Water Workshop webpage for details.](#)

Links to the technical and training session recordings are provided in the agenda below. Certificates cannot be provided for viewing recordings.

### 2020 Agenda

- [Monday, August 31](#)
  - [Tuesday, September 1](#)
  - [Wednesday, September 2](#)
  - [Thursday, September 3](#)
- [Downloadable Agenda](#)

The following links exit the site [EXIT](#)

## 2020 workshop recordings

### Monday, August 31

11:00 am - 3:00 pm	Concurrent pre-workshop in-depth training sessions (T1-T3)
11:00 am - 3:00 pm (4 Contact Hours)	<b><a href="#">T1. IN-DEPTH TRAINING: Sanitary Surveys-Filtration and Disinfection</a></b> This training was intended for water professionals, state drinking water program staff, and technical assistance providers that conduct sanitary surveys. This half-day training focused on evaluating filtration and disinfection technologies, including alternative treatment technologies as part of a sanitary survey. Presentations included examples from surveys and exercises. There were opportunities for open discussion among participants and Q&A with the presenters.

## 18th Annual EPA Drinking Water Workshop: Small System Challenges and Solutions

### Date and Time

Monday 08/30/2021 11:00AM EDT to  
Thursday 09/02/2021 5:30PM EDT

[Add to Calendar](#)

### Location

Virtual Workshop (details coming soon)

### Details

EPA's free annual drinking water workshop, held in partnership with the Association of State Drinking Water Administrators (ASDWA), will take place on August 30 - September 2, 2021. The workshop will be virtual again this year and will provide in-depth information and training on solutions and strategies for handling small drinking water system challenges with a focus on monitoring, distribution, source, and treatment topics. Although we will miss the in-person workshop, we look forward to providing networking and training opportunities in a virtual setting for a large audience.

### Agenda and Registration - Coming Soon!

The virtual workshop speakers and group leaders will be experts in their fields from EPA and other federal agencies, state and local agencies, tribes, academia, and NGOs and associations. At a minimum, the workshop agenda will include the following:

- Technical presentation sessions
- In-depth training
- Breakout discussion groups

## [2021 workshop information](#)

### Receive Notification When Registration Opens

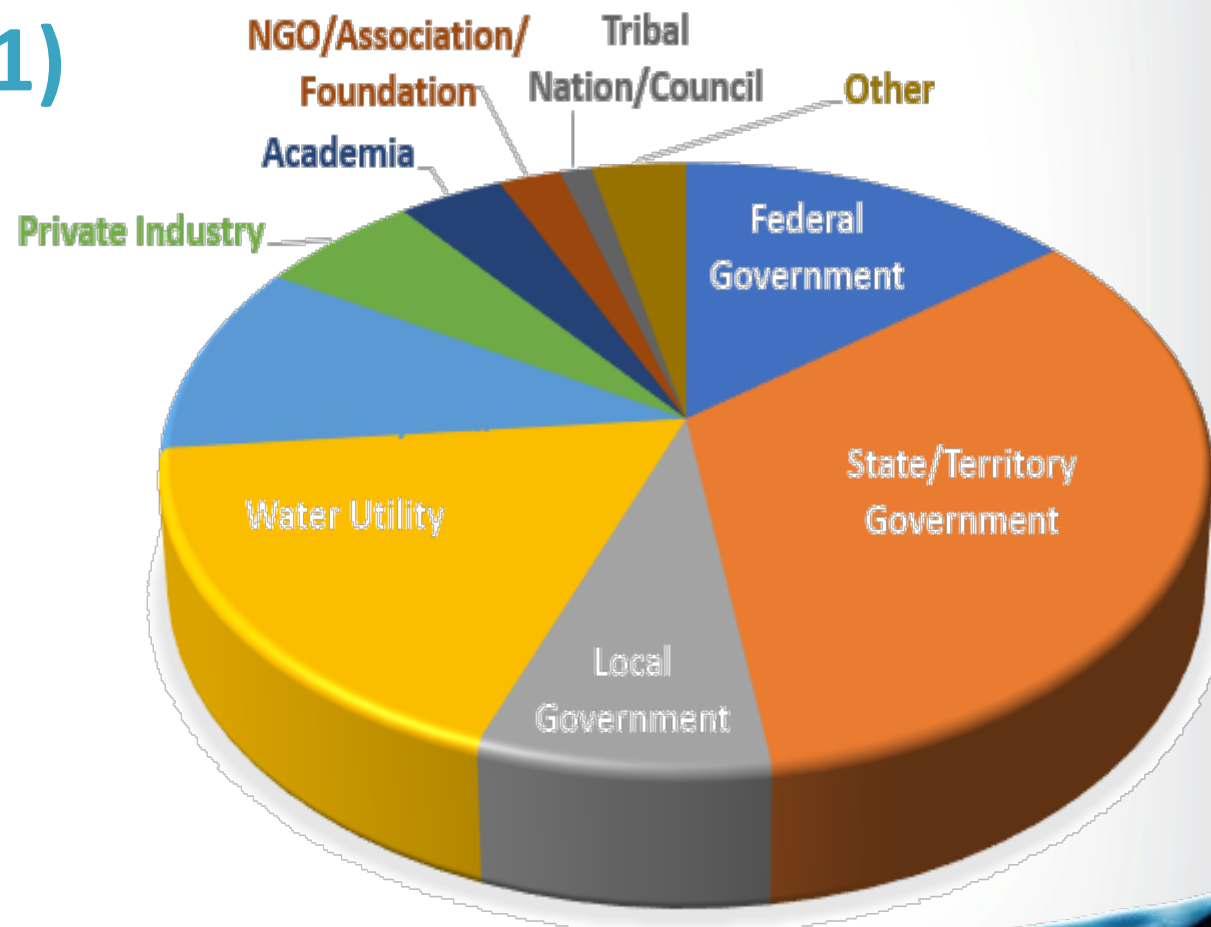
We'll let you know when registration for the workshop opens.

[Submit an email notification form](#)



## Over 19,000 attendees (FY20-21)

- 💧 All 50 states/DC and 5 territories
- 💧 75 other countries
- 💧 65+ tribal nations/councils
- 💧 13,800+ training hour certificates





- Formed after 2011 workshop
- Concept for small systems monthly webinar series in 2015
- Provided topics for webinars
- Developed communication tool that's had over 100,000 downloads and was used to support the Lead Free Rule



# Questions?

