

# DWSRF and Capacity Building in Action: Workforce

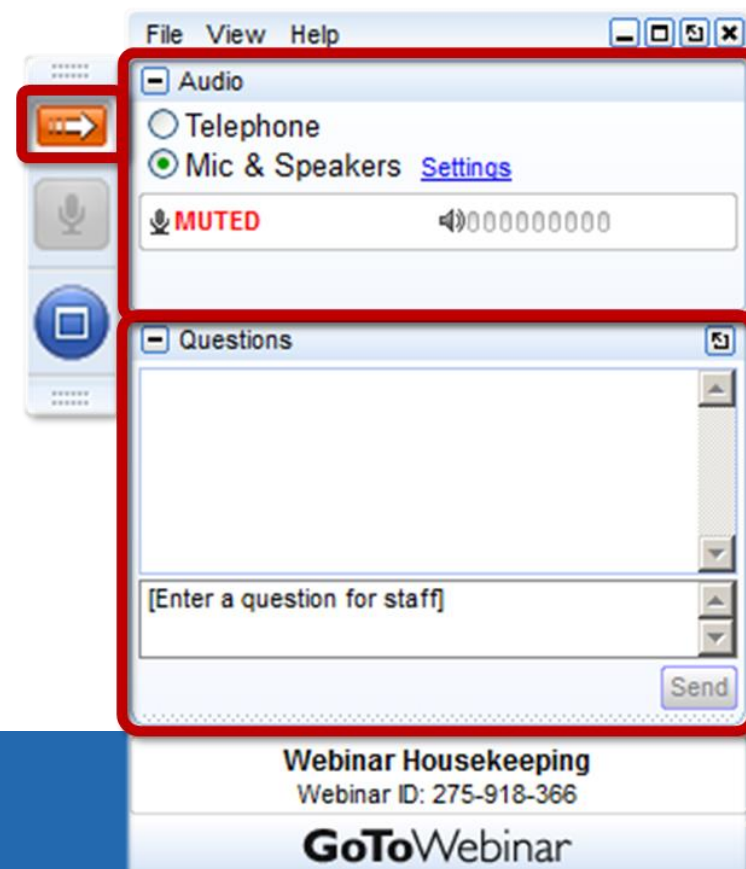
January 27<sup>th</sup>, 2021



# Learning Objectives

- Overview on the *America's Water Sector Workforce Initiative*  
*Deborah Vacs Renwick, EPA HQ*
- Workforce & Operator Certification Eligibilities Through the Drinking Water State Revolving Fund  
*Kiri Anderer, EPA HQ*
- State Examples:
  - New Jersey's Licensed Operator Focused Contracts  
*Angela Cappetti, NJ Department of Environmental Protection*
  - Tennessee's Fleming Training Center  
*Patrick Dwyer, TN Department of Environment and Conservation*

Q&A at the end of the presentation. Type in questions in the box at the top right of your screen.



A photograph of two workers in a water treatment facility. A man in a blue hard hat and a woman in a yellow hard hat are both wearing safety glasses and looking at a tablet held by the man. They are in an industrial setting with pipes and equipment visible in the background.

# America's Water Sector Workforce Initiative: A Call to Action

The Initiative is a collaborative approach to address the challenges facing the water sector workforce – bringing together stakeholders from the federal government, industry groups, water and wastewater utilities, and state and local governments.

**Overarching goal: a trained, motivated, resilient, and diverse water workforce that is ready, able, and valued for providing clean and safe water to our communities.**

<https://www.epa.gov/sustainable-water-infrastructure/americas-water-sector-workforce-initiative>

Jobs in the water sector provide stable employment, meaningful careers, useful technical skills, and a chance to make a real difference in our communities. However, the workforce faces challenges as well, including:

- Aging workforce – many workers eligible to retire in the next decade.
- Training to keep workforce up to date as technology rapidly advances across the sector.
- Industry lacking gender and racial diversity, especially in skilled trade positions.
- Difficulties recruiting, training, and retaining trained operators in rural and tribal areas.

# Challenges for the Water Sector Workforce

- Three interrelated action areas – each with planned collaborative activities:
  - *Action Area 1: Provide federal leadership to create national momentum and coordinate efforts*
  - *Action Area 2: Partner to build the water workforce of the future*
  - *Action Area 3: Bolster education and outreach to make water a career of choice*
- Case studies of innovative workforce programs and individual success stories.
- Summary table of actions with key partners and milestones.

# What is in the Initiative?



# Action Area 1: Provide federal leadership to create national momentum and coordinate efforts

Examples of planned and ongoing activities under four themes:

## Public Outreach efforts

All Federal Partner Agencies: Develop and implement a public outreach strategy and campaign that will increase public awareness of the need and opportunities for work in the water sector.

## Recruiting a Diverse, Dedicated Workforce

EPA & DOL Women's Bureau: Highlight success stories of women entering non-traditional occupations through case studies showcasing the Women in Apprenticeship and Nontraditional Occupations (WANTO) Grant Program Best Practices.

## Collaborating to Assess, Understand, and Fulfill Workforce Needs

EPA & USDA: Encourage apprentice participation in the NRWA Apprenticeship Program funded by FY2018 and 2020 USDA Technical Assistance and Training Grants.

## Training for Skills of Tomorrow

EPA & ED: Analyze water education and technical training needs by identifying gaps in education opportunities.

# Action Area 2: Partner to build the water workforce of the future

## Examples of activities with partners:

### Collaboration with Associations and Utilities

Continue the *Creating the Water Workforce of the Future Webinar* series to share successful models and practices focusing on recruitment, retention, training, and working with community organizations. Future topics under consideration include building water workforce capacity in Opportunity Zones, and the use of innovative technologies.

### Collaboration with Tribes

EPA will participate in a technical assessment with the Inter Tribal Council of Arizona on a tribal wastewater operator certification project. The assessment aims to refine a test to measure a tribal wastewater operator's knowledge of the federal rules and regulations that pertain to the operation and maintenance of wastewater collection systems and wastewater treatment facilities.

### Collaboration with States

Continue to collaborate and facilitate discussions on water workforce and operator certification issues, and also participate on committees and workgroups focused on workforce development. EPA will work with states and others to help build awareness by utilities of the roles and opportunities available through other federal agencies and other organizations like State and Local Workforce Boards.

## Action Area 3: Bolster education and outreach to make water a career of choice

Examples of activities in three categories:

### **Administer New Workforce Grant Program**

Using funds authorized under the 2018 America's Water Infrastructure Act (AWIA), EPA will shortly issue a Request of Applications for grants targeted to non-profit entities to advance water education, training, and other efforts to attract new and diverse talent into the water workforce.

### **Engage Schools and Educational Organizations to Bolster Student Awareness**

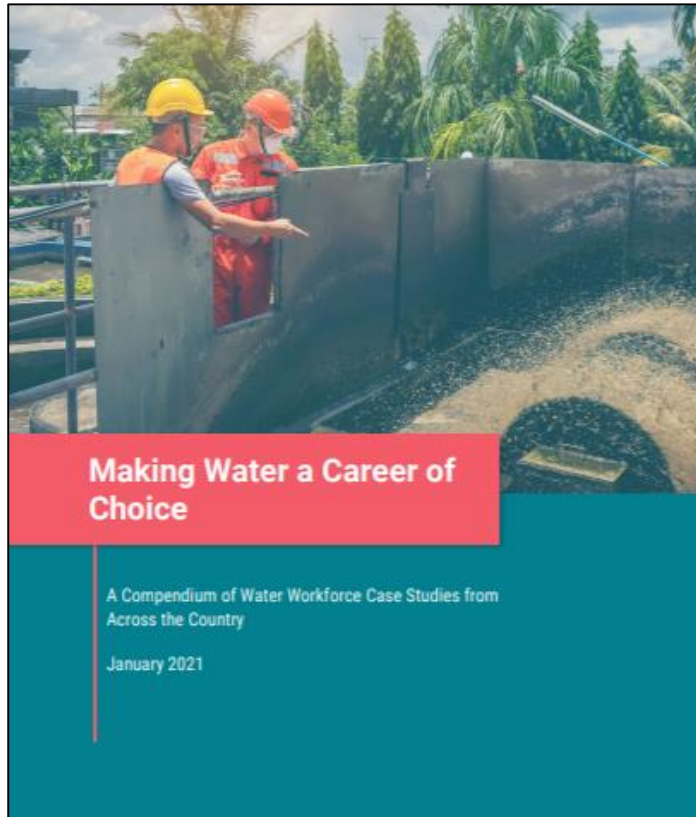
EPA will partner with the Interagency Working Group for Youth Programs. This program, which includes 20 federal departments and agencies, promotes youth engagement with federal agencies through social media, newsletters, and other outreach campaigns.

### **Focus on Underserved Communities and Water Workforce Diversity**

EPA will identify opportunities to collaborate with post-secondary institutions, such as Historically Black Colleges and Universities and the Hispanic Association of Colleges and Universities, to reach broader audiences and increase diversity in the water sector workforce.



# Water Utility Workforce Case Studies



EPA developed a compendium of Case Studies describing how nine utilities across the country are taking innovative steps to implement workforce programs. These case studies document a number of different experiences around recruiting and retaining a dedicated and trained workforce, as well as efforts to work with community organizations to attract individuals from disadvantaged communities to a career in water.

The case studies are organized around 4 key concepts:

Recruitment

Retention

Competency

Community Partnerships

Find the compendium here: <https://www.epa.gov/sustainable-water-infrastructure/water-utility-workforce-case-studies>

- Beginning in 2021, EPA will host a biannual convening to bring together existing and new partners to assess our progress, identify new opportunities, and strengthen collaboration.
- Suggestions, proposals, comments – please reach out at [WaterSectorWorkforce@epa.gov](mailto:WaterSectorWorkforce@epa.gov)
- Drinking Water Workforce Documents and links: <https://www.epa.gov/dwcapacity/learn-about-workforce-issues>

# Looking Ahead



# Workforce & Operator Certification Eligibilities Drinking Water State Revolving Fund

Kiri Anderer  
January 27, 2021

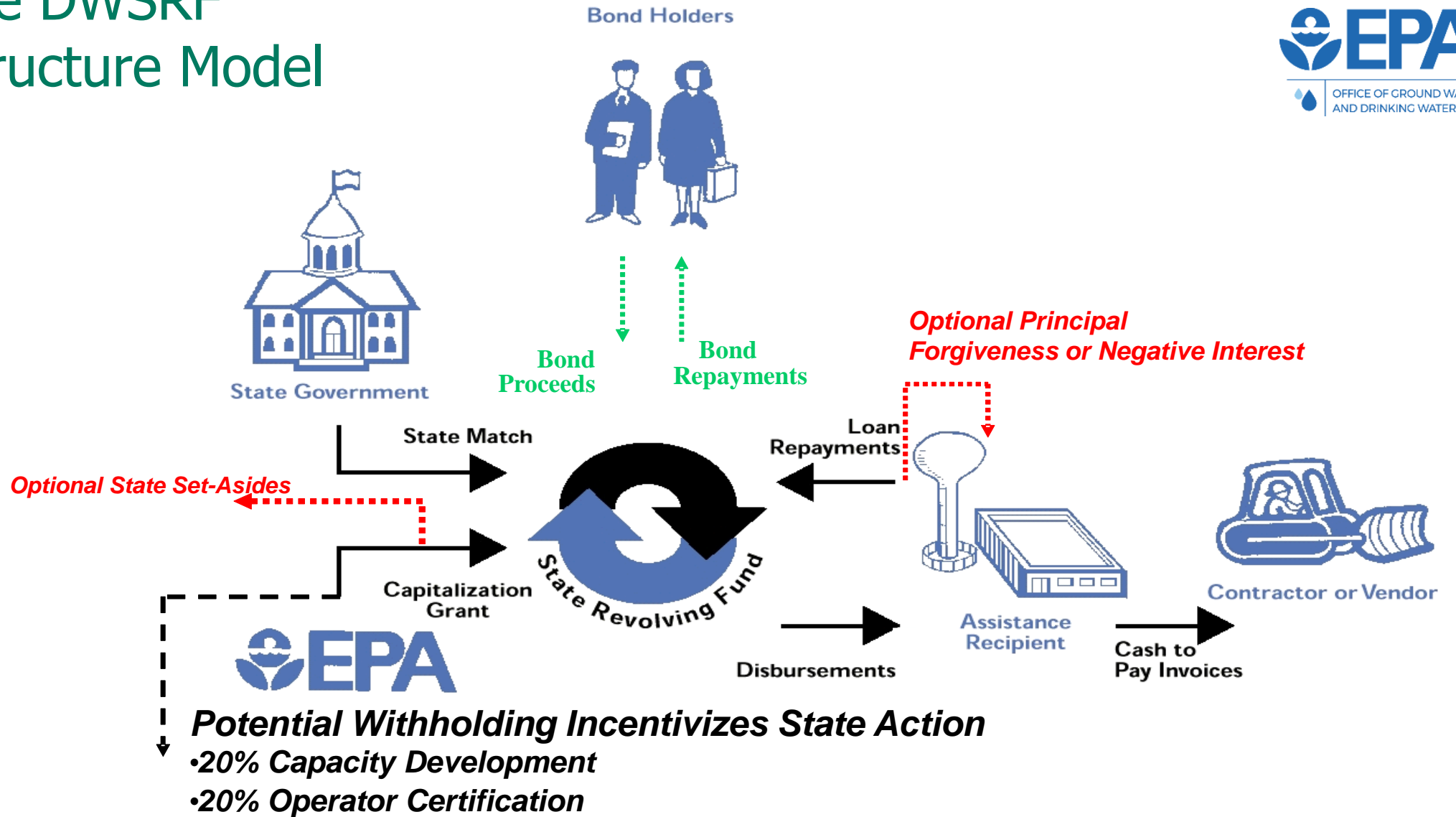


# What is the DWSRF?



- **Public health protection program**
  - Federal/state partnership designed to create a perpetual source of financing
  - 51 state-level “infrastructure banks” make loans with water systems for drinking water infrastructure projects
- **Has both infrastructure and non-infrastructure components**
  - Provide non-infrastructure support to states and communities (set-asides)
    - Administration and Technical Assistance (4%)
    - Small Systems Technical Assistance (2%)
    - State Program Management (10%)
    - Local Assistance and Other State Programs (15%)

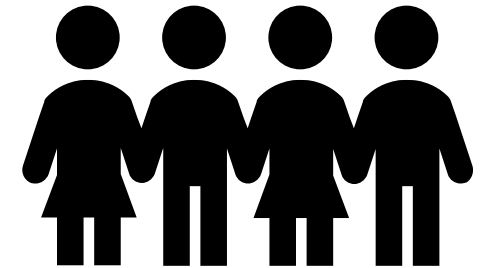
# The DWSRF Infrastructure Model



# State Program Management (10% Set-Aside)



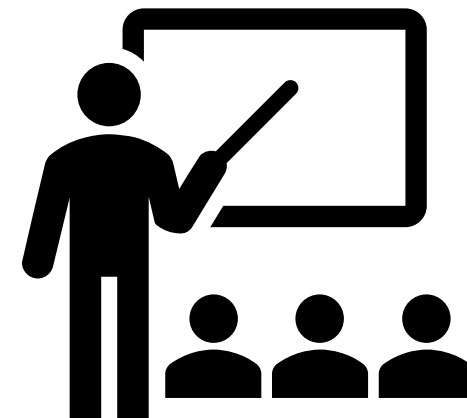
- **Develop and implement Capacity Development and Operator Certification Programs**
- **Fund Operator Certification Coordinator position(s)**
- **Assist state with:**
  - Ensuring water systems have properly trained operators
  - Developing operator certification databases and data management programs to track operator certification status and public water systems without operators
  - Implementing public outreach programs to increase awareness of need/opportunities to work in water sector





## Local Assistance and Other State Programs (15% Set-Aside)

- Operator certification training for water systems
- Contract with technical assistance providers to provide on-site technical assistance and training for operators
- Provide technical assistance to water systems that do not have their own operator or one with appropriate certification level
- Operator recruitment and scholarships
- Voucher program for operators for training classes and certification fees



The background of the slide is a close-up photograph of water. At the top, there is a wavy surface of water with several large, clear bubbles. Below this surface, the water is a light blue color, and numerous smaller, translucent bubbles are scattered throughout, some rising and some falling, creating a sense of movement and depth.

**Questions?**

**Anderer.Kirsten@epa.gov**

**DWSRF Webpage: <https://www.epa.gov/dwsrf>**

**DWSRF Eligibility Handbook: <https://www.epa.gov/dwsrf/drinking-water-state-revolving-fund-eligibility-handbook>**



**Angela Cappetti**

NJDEP Division of Water Supply and Geoscience

Bureau of Water System Engineering

January 27, 2021

# New Jersey DWSRF Set Asides & Operator Certification



# Water System Operators

Required for all Community Water Systems and Non-Transient Non-Community Water Systems

## NJ Drinking Water Licenses

- Very Small Water System (VSWS operator)
- Treatment operator (T operator)
  - T-1, T-2, T-3, T-4
- Distribution operation (W operator)
  - W-1, W-2, W-3, W-4

## NJ PWSs Requiring a Licensed Operator

Type of PWS	Total for NJ	Small Systems under 10k
Community	651	485
Non-Transient Non-Community (NTNC)	1004	1003



# NJ Systems Requiring an LO and Active Licenses by Classification

Type of PWS	Total for NJ	Small Systems under 10k
Community	651	485
Non-Transient Non-Community (NTNC)	1004	1003

ACTIVE LICENSES	
VSWS = 130	
T-1 = 519	W-1 = 519
T-2 = 616	W-2 = 601
T-3 = 239	W-3 = 221
T-4 = 172	W-4 = 169
<b>Total = 1,546</b>	<b>Total = 1,510</b>

2,029 licensed individuals



# DWSRF Set Asides

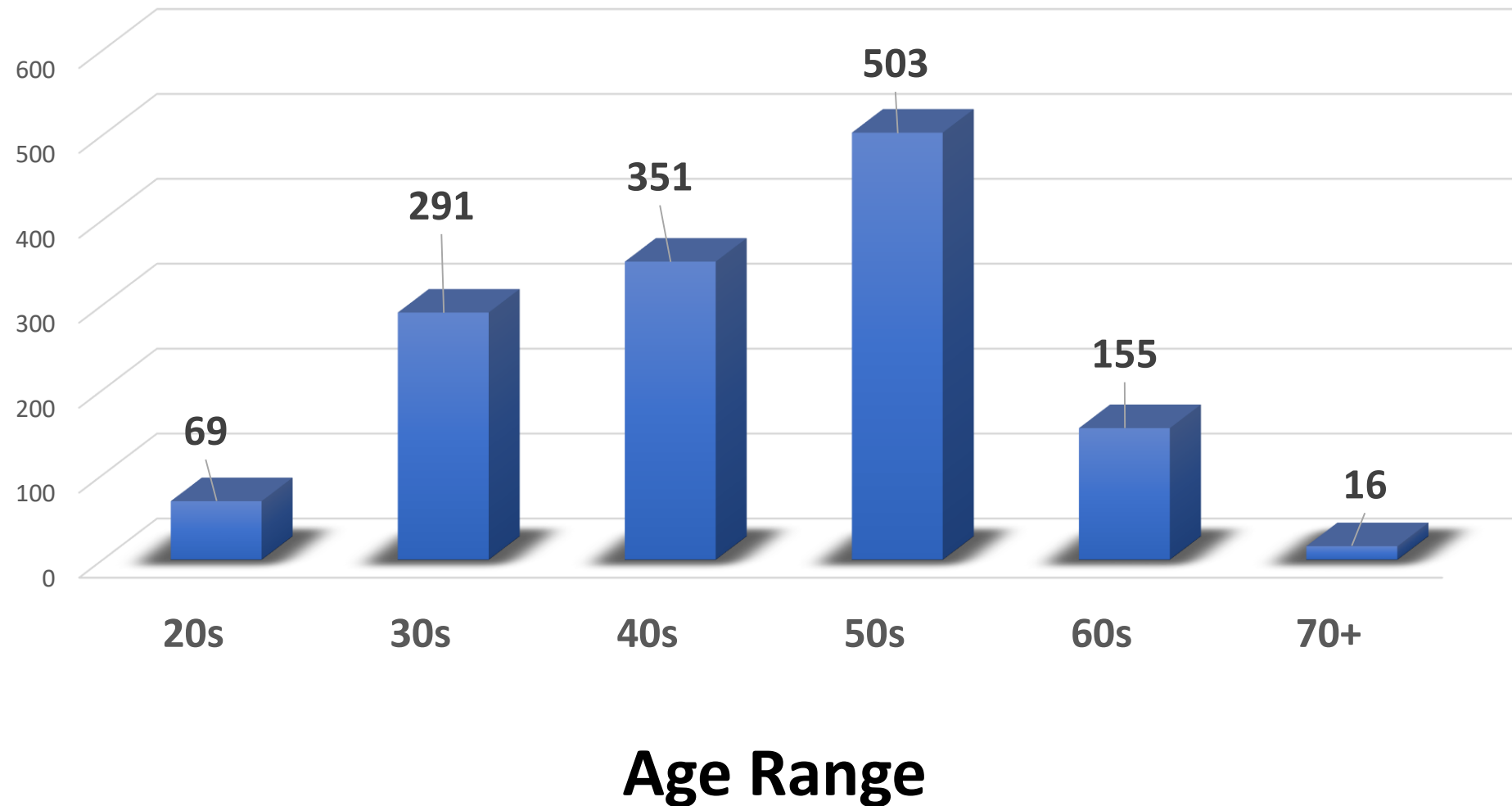
- New Jersey FFY2020 (SFY2021) Capitalization Grant \$18,792,000
- Small System Focused Contracts Funded through DWSRF Set Asides

New Jersey FFY2020 Capitalization Grant Set Asides		
Administrative and Technical	5%	\$1,017,182
Small System Technical Assistance	2%	\$375,840
State Program Management	6%	\$1,203,440
Source Water Assessment	1%	\$187,920
Capacity Development	1%	\$187,920
Operator Certification	1%	\$187,920
Total	16%	\$3,160,222





# Licensees by age range.....





# Certification

- Introductory and advanced courses required to be licensed
- Apply and pass the licensed operator exam
- Continuing education requirements to renew their license yearly
- Continuing education courses (TCHs) required per license classification during a 3 year cycle
  - The current fixed three-year training period is from October 1, 2018 to September 30, 2021.
  - The next three-year cycle will run from October 1, 2021 to September 30, 2024.

LICENSE CLASSIFICATION	TRAINING CONTACT HOURS (TCHS)
T-3, T-4, W-3, W-4	36
T-1, T-2, W-1, W-2	18
VSWS	12



# DWSRF Set Asides Funding Licensed Operator Focused Contracts



# Small System Focused Contracts Funded

- Provide group training sessions for owners and operators of small water systems through contract with the New Jersey Water Association (NJWA)
- Current contract is January 1, 2020 to December 31, 2021
- Seventy (70) half day training sessions for a total of \$161,000
- Requires sessions held equally in Northern, Central, and Southern regions of the state
- Currently modifying contract to include a rate for online trainings to allow operators to have access to free online trainings during COVID



# Small System Focused Training Topics

- Topics of past trainings have included:
  - Lead and Copper Rule Compliance,
  - RTCR Implementation and compliance
  - State Regulatory Updates (PFOA, PFOS, PFNA regulations)
  - Operation and maintenance of pumps
  - Distribution System Water Quality
  - Cybersecurity
- Operators are required to fill out a course evaluation at the end of each session



# Engineering Services Contract

- Applies to small drinking water systems 3,300 population or less
- Engineers are assigned to systems
- Up to \$60,000/system for engineering design, etc. to eventually lead up to DWSRF loan to execute engineering designs
- Contract is being renewed with modifications
  - to provide flexibility to adjust the compensation rates depending on the complexity of treatment
  - to adjust contract milestones to provide training and technical assistance to systems who's permits are typically reviewed by county health act certified agencies





# Rutgers Tuition Reimbursement Contract

- Provides 50% tuition reimbursement to Licensed Operators for training through the State University
- Not specifically focused for small systems; therefore, reaches a larger audience including larger systems
- Yearly the NJDEP holds a Safe Drinking Water Act Regulatory Update training through this contract to promote any upcoming regulatory changes



# NJAWWA Training Contract

- Previous contract with NJ American Water Works Association to provide trainings both in person and online webinars for TCHs
- Geared towards larger water systems and engineers
- Previously required 10 webinars over the course of 1-2 years



# Operator Certification Program Goals

- Improve and adopt internal Standard Operating Procedures to ensure compliance with licensed operator requirements
- Data management of licensed operator of record and back-up operators
- Promote use of the DWSRF program
- Finalize and adopt revised forms to better emphasize licensed operator and system owner certification
- Monitor exam pass rates and identify opportunities to improve course review.

# Contact Info



# Questions?

Angela Cappetti

[Angela.cappetti@dep.nj.gov](mailto:Angela.cappetti@dep.nj.gov)

NJDEP Division of Water Supply  
and Geoscience Website

<https://www.state.nj.us/dep/watersupply/index.html>





Department of  
**Environment &  
Conservation**

# Fleming Training Center

Tennessee Operator Certification and Training

# Fleming Training Center- Background

- **Vision for the Fleming Training Center**
  - Qualified operators
    - Treatment methods exceeded available training
    - Complexity of plants exceeded operational personnel

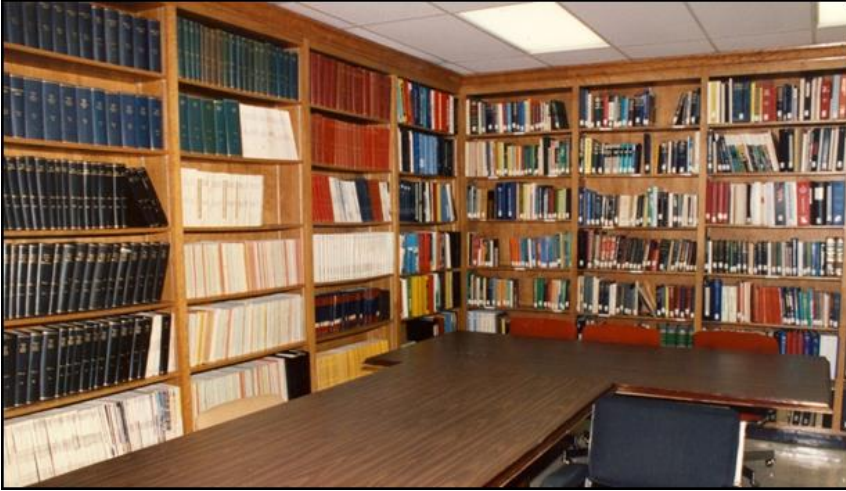




# Fleming Training Center- Background



# Layout of the Original Facility





# Fleming Training Center- Today

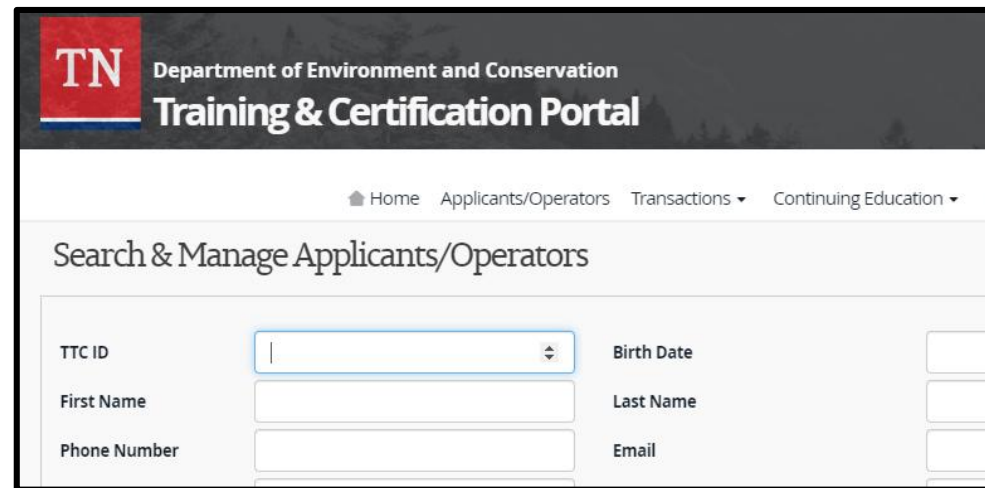


# Fleming Training Center

- 1) Administer the Water and Wastewater Operator Certification Program
- 2) Conduct training classes & continuing education seminars for water/wastewater treatment operators
- 3) Administer the Cross-Connection Control Program
- 4) Provide technical assistance to water & wastewater treatment operators and facilities

# Operator Certification Program- Overview

- 4,112 Tennessee Operators
- 6,120 Certifications
- The average age of the TN certified operator is 48.1 years old
- The average age of the operator passing the certification exam is 36.6 years old



The screenshot displays the 'Training & Certification Portal' for the Tennessee Department of Environment and Conservation. The header includes the TN logo and navigation links: Home, Applicants/Operators, Transactions, and Continuing Education. The main section is titled 'Search & Manage Applicants/Operators' and contains a form with the following fields:

Field	Input Type
TTC ID	Dropdown menu
First Name	Text input
Phone Number	Text input
Birth Date	Text input
Last Name	Text input
Email	Text input

# Operator Certification Exam

- Certification exams are held twice a year
- Applicants can take paper exam on-site or CBT





# Operator Certification

- Partnerships with local universities and community colleges

## Start Your Career in Water Quality Technology



### What is Water Quality Technology?

Water Quality Technology professionals ensure that clean, safe water is provided to the public through the operation and maintenance of water and wastewater treatment plants. Their jobs are vital to protecting public health.

The Water Quality Technology program at Mississippi State is designed to train individuals for careers in water and wastewater treatment operations. It is the first program of its kind in the state and has been designed with a robust team of industry representatives to ensure that our curriculum prepares you for state-level certifications after graduation.



### What can I do with this degree?

The Water Quality Technology program leads to an Associate of Applied Science degree in 60 credit hours. The program provides both operational theory and a strong practical background in mathematics, chemistry and aquatic sciences through coursework, site visits and a capstone project conducted at a local water or wastewater treatment facility.



Students will graduate prepared for entry-level positions at public or private water and wastewater treatment plants, while general science classes completed during the program provide a foundation for positions in environmental conservation or natural resources.

Water Quality Technology course content includes

- Orientation to Water Operation
- Regulations and Compliance
- Water Facilities and Maintenance
- Water Distribution
- Water Treatment
- Small Water Systems
- Wastewater Treatment
- Solids and Hazardous Waste
- Capstone Project

The program will follow a cohort structure, in that students will move through their classes as a group. A cohort offers students support and collaboration as they embark on their education.

Water Quality Technology classes are held on Mississippi State's Hardin Valley Campus, but general education requirements may be completed on any of the College's five campuses in Knox and Blount counties or online.



## FINISH FASTER USING PRIOR LEARNING

**Bachelor of Science in Professional Studies**  
Online degree\* with a Professional Core and concentrations in:

- Healthcare Administration
- Information Technology
- Organizational Leadership
- International Organizational Leadership

**Bachelor of Science in Integrated Studies**  
Online degree\* that allows YOU to design your studies to satisfy your career and personal goals

**Bachelor of Science in Integrated Studies: Applied Leadership Concentration**  
Combines online courses with four intensive face-to-face courses to prepare you for leadership positions (Students must be accepted to participate in this program)

Other MTSU degrees may accept PLA Credit with departmental approval

\*Degrees can be completed online or with a combination of online and in the classroom.

Find out more: 615-494-7714  
[mtsu.edu/pla](http://mtsu.edu/pla)

MIDDLE TENNESSEE STATE UNIVERSITY **I AM true BLUE**



# Operator Training Overview

- Conduct training classes in Water Treatment, Distribution System, Wastewater Treatment, Collection System, and Cross Connection Control.
- Three full-time instructors and one administrative secretary
- 155 scheduled courses a year
- Over 1,000 students enrolled

# Operator Training Overview



## Fleming Training Center

The Fleming Training Center offers advanced classes in a variety of water and wastewater areas. The center also offers assistance to over 4,000 certified operators with their certification and continuing education requirements. The purpose of water and wastewater treatment operator certification is to protect public health by preventing pollution in all water and wastewater treatment plants, water distribution systems, and wastewater collection systems, by establishing a program for certification of competency for operators to operate such plants and systems.

[Schedule of Classes & Seminars](#)

[Operator Certification and  
Renewal](#)

[Cross-Connection Control](#)

# Operator Training cont.

## Schedule of Classes & Seminars

### > Backflow Training

### ✓ Water Treatment & Distribution Systems Classes

Course Date	Course Number	Course Title	Location
Jan. 11-15 & Jan. 25-29, 2021	3101	Introduction to Water Treatment for All Grades	Fleming Training Center
February 1-5, 2021	2010	Introduction to Laboratory Methods	Fleming Training Center
February 2-4, 2021	2001-V	Small Water Systems	Online
February 8-12, 2021	3110	Advanced Water Treatment	Fleming Training Center
February 17-19, 2021	1009	Math Fundamentals for Operators-in-Training	Fleming Training Center
February 17-19, 2021	1009-V	Math Fundamentals for Operators-in-Training	Online
February 22-26, 2021	2112	Water Treatment Lab - Week 1	Fleming Training Center
March 1-5, 2021 - <b>CLASS IS FULL</b>	1103	Distribution Systems Grades 1 & 2	Fleming Training Center
March 8-12, 2021	2122	Water Treatment Lab - Week 2	Fleming Training Center
March 16-19, 2021	1014	Basic Math for All Certifications	Fleming Training Center
March 16-19, 2021	1014-V	Basic Math for All Certifications	Online
March 30 - April 1, 2021	3103	Coagulation / Flocculation Workshop	Fleming Training Center
April 5-9, 2021	1103-V	Distribution Systems Grades 1 & 2	Online
April 13-15, 2021	3120	Water Treatment Review	Fleming Training Center

# Operator Training cont.

- Two types of Operator Training
  - Operator Experience Courses
  - Continuing Education Classes



# Operator Training cont.

- **Operator Experience Classes**
- Designed for individuals who are new to the field
- Classes range from 3 days to two weeks in length
- Technical facility tours are incorporated to reinforce classroom information
- Students are provided an assessment to identify areas of opportunity
- Evaluations provide instructors feedback for improved course content

# Operator Training cont.

- Is Training required prior to sitting for the certification exam?
- Certification board recently voted to require training after two unsuccessful attempts

Previously taken exam	Pass	Fail	Total	Pass Rate (Combined)
0	127	83	210	60.5%
1	32	68	100	32.0%
2	11	37	48	22.9%
3	5	19	24	20.8%
4+	2	28	30	6.7%

# Operator Training cont.



## Tennessee Pledge COVID-19 Guidelines

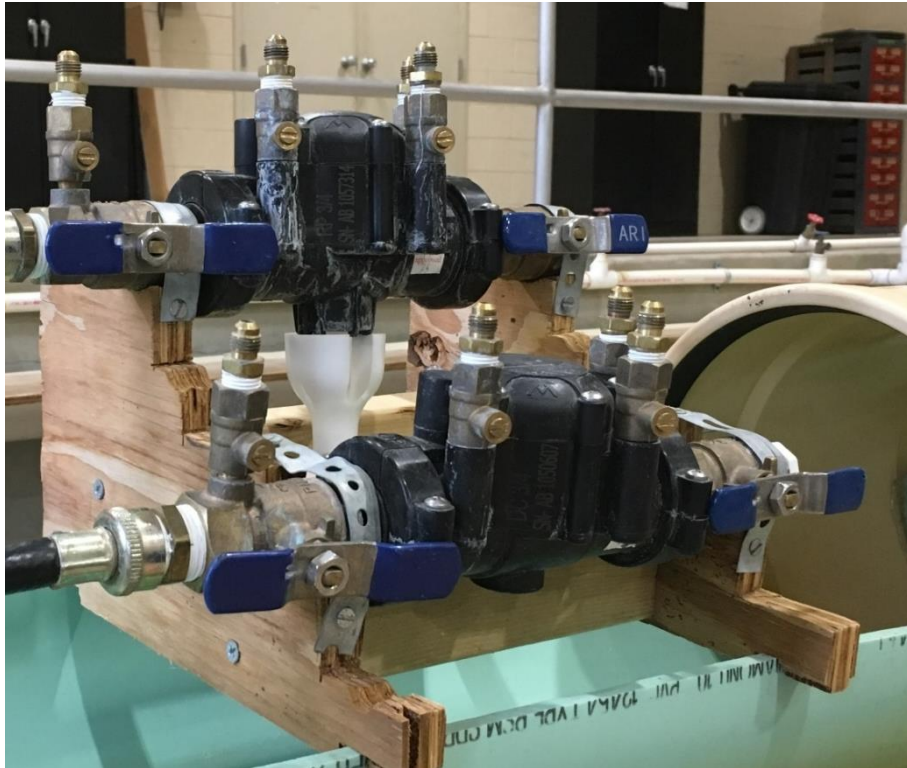
- **2020-21 Challenges**
  - Travel restrictions
  - Capacity limits
  - Social-distancing
  - Safety considerations
- 
- Opportunity to offer virtual training
    - Network and internet issues
    - Attendance verification





# Operator Training- cont.

- Other training- Cross-Connection Control
- 3,000 certified backflow prevention assembly testers



# Questions / Comments?

