

# WATER WORKFORCE WEBINAR SERIES

Leading the Way Through Innovation and Collaboration

## Office of Wastewater Management

Office of Water

U.S. Environmental Protection Agency

April 30, 2025

This webinar is sponsored by EPA's Office of Wastewater Management. The opinions expressed in this webinar are those of the guest speaker(s). They do not reflect EPA policy, endorsement, or action, and EPA does not verify the accuracy or science of the contents of the presentation.

April 30, 2025

# Leading the Way Through Innovation and Collaboration

**Jim Horne**, Sustainable Utilities Program  
Manager, U.S. EPA Office of Wastewater  
Management

# CREATING THE WATER WORKFORCE OF THE FUTURE

## WEBINAR SERIES

### Leading the Way Through Innovation and Collaboration

In today's water sector, it is essential for utilities and industry professionals to collaborate, access vital training, and explore innovative technologies that address the challenges of 21st-century water services. An example of this collaboration is The Water Tower (TWT) in Gwinnett County, Georgia.

TWT is a first-of-its-kind nonprofit global water innovation hub for water and wastewater utilities, researchers, private companies, and water-related organizations to collaboratively solve critical, real-world water and environmental challenges.

Through applied research, technology innovation, workforce development, and industry engagement, TWT provides innovative solutions tailored to the water sector. A key focus is integrating and expanding skilled-trades programming to attract and develop the next-generation of water workforce professionals.

This webinar is part of an ongoing webinar series hosted by EPA, in partnership with leading water sector organizations around the country. More information on this webinar series can be found at <https://www.epa.gov/sustainable-water-infrastructure/water-sector-workforce-webinars>

**ATTENDANCE IS FREE**

Register now at:

APRIL 30, 2025  
12:00 – 1:30 PM ET

#### Moderators:

- **Jim Horne**, U.S. EPA

#### Speakers:

- **Melissa Meeker**, CEO, The Water Tower
- **Courtney Lee**, Director of Workforce Development and Training, The Water Tower
- **Angelita Cortez**, Training Grad and new Gwinnett County Lab Technician

This webinar series is supported by:



April 30, 2025

## Speakers:



**Melissa Meeker**, CEO, The Water Tower



**Courtney Lee**, Director of Workforce Development and Training, The Water Tower



**Angelita Cortez**, Training Grad and new Gwinnett County Lab Technician, The Water Tower

**Webinar slides and recording will be sent to registrants within a week after the webinar.**



THE WATER TOWER

# CREATING THE WATER WORKFORCE OF THE FUTURE

Through Innovation and Collaboration

---

Melissa Meeker  
Chief Executive Officer

Courtney Lee  
Director of Training Development



# PROGRAMMING



## WORKFORCE DEVELOPMENT

Nextgen STEAM outreach, engagement, recruitment, training, upskilling, and CE credits for water and wastewater operators, lab analysts, and maintenance technicians



## RESEARCH & DEVELOPMENT

Advancing water science by conducting collaborative research and R&D to solve practical problems locally and globally in TWT's laboratories and demonstration area



## NETWORKING & INDUSTRY EVENTS

Enabling water career growth through professional events focused on leading-edge water topics to enhance technical skillsets and build relationships



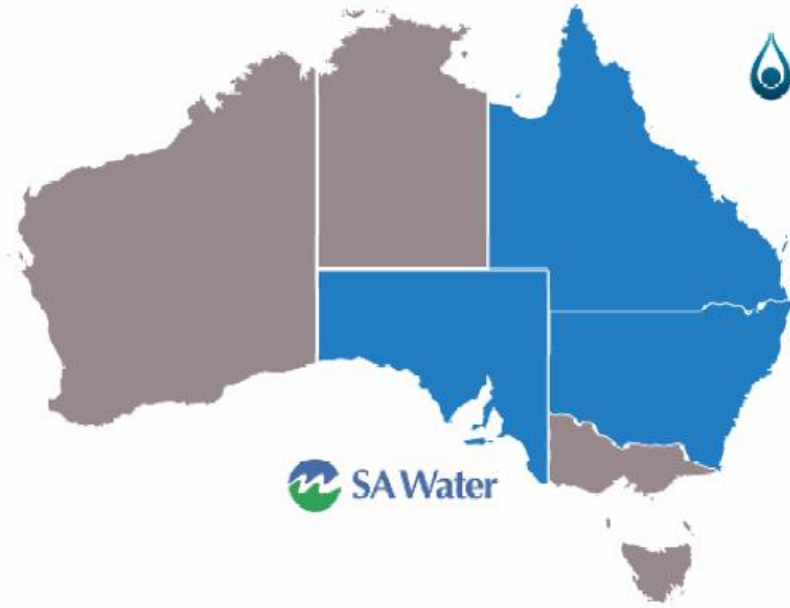
## ECOSYSTEM & FACILITIES

A resource for our community by providing event space rentals for the community to utilize TWT for meetings and gatherings



# WATER WORKFORCE CHALLENGES

Workforce Design Sprint – Hearing from the Utilities



Over 30 water professionals from 13 different organizations participated in the design sprints. These diverse perspectives contributed to the creative solutions developed. We would like to extend our sincere appreciation to the participants who provided valuable insights.



Utility Executives  
Strategy and O&M Managers  
Facilities Technicians  
Workforce Managers  
Research Managers

# Global Workforce Challenges

As a declining labor market, the water labor market is experiencing several challenges – increasing wage expectations, shrinking number of qualified candidates, chronic vacancies, and loss of institutional knowledge while demand grows. The data points below provide evidence supporting the challenges the water sector is facing for each of the roles.



## University

- With approximately 850 daily water main breaks in the United States, recent focus on the replacement of lead service lines, and the establishment of historic federal funding, the water **workforce is in great demand**.<sup>1</sup>
- Only 14.9 % of US water workers **hold a bachelor's degree** or higher.<sup>2</sup>
- In the past decade, the share of Americans expressing high **confidence in the value** of higher education fell sharply from 57% to 36%.<sup>3</sup>
- Based on a global survey, companies in the early stage of digital development, 50% of employees say they are **planning to leave** their organization in less than three years compared to 25% in digital mature organizations.<sup>4</sup>
- The **replacement rate for technology** occupations in the US in the next ten years is expected to increase 6% annually, or approximately 350,000 workers each year.<sup>5</sup>



## Skilled Trades

- According to a 2023 Associated General Contractors of America survey, 70% of respondents are concerned about an **insufficient supply of workers** or subcontractors, and 80 percent are having a hard time filling some or all positions.<sup>6</sup>
- The US Bipartisan Infrastructure Law's (BIL's) spending levels and subsequent workforce needs are slated to peak around 2027–28, when new BIL construction expenditure could **expand job market** supply by 345,000 jobs.<sup>7</sup>
- According to the US National Electrical Contractors Association, 70 percent of supervisors in the electrical industry are **baby boomers**, implying that experienced frontline leaders could become partially scarce.<sup>6</sup>
- US Bureau of Labor Statistics considers the utility sector a **declining labor category** with a 6% decline in employment of water and wastewater treatment plant and system operators from 2022 - 2032.<sup>8</sup>
- Enrollment has **surged at US community colleges** with a high vocational program focus, growing 17.6% and surpassing pre-pandemic enrollment by 6.1%.<sup>9</sup>



## Leadership

- Industry challenges require **broader expertise** and agility from leadership while a highly competitive market shrinks candidate pools and jeopardizes succession plans.<sup>10</sup>
- Across various industries, the average age for a US C-Suite member is 56 and the average tenure is just under 5 years.<sup>11</sup>
- Most US utility executives were recruited from outside the organization with over 30% from outside the water sector.<sup>10</sup>

# Skilled Trade Pain Points to Signature Moments

Participants identified and prioritized almost forty pain points experienced by a skilled trade staff member. The top pain points (black text) were transformed into signature moments (blue text), or ideal moments within the employee experience that are particularly impactful or memorable. After engaging in a series of idea generation and refinement exercises, participants developed the solutions described on the next page.

## Weak Succession Planning

Tamara always feels like she is learning new things from the experienced employees and is prepared to take on more responsibility when the time comes. She feels like a valuable part of the team.

## Role Understanding

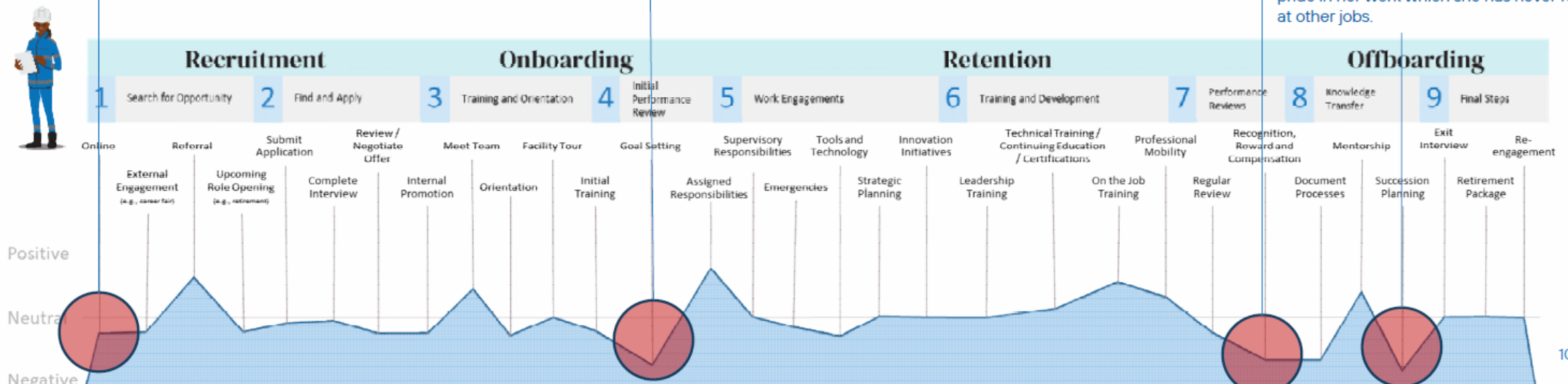
Even when she was younger, Tamara knew about jobs at the water/wastewater utility. It always seemed like a great and coveted career in her community.

## Unclear Goals

From the start Tamara views her job at the utility as a career. She understands her options professionally and what she needs to do to get there. She feels like she has a say in her next steps and likes the flexibility.

## Competition

Tamara's role at the utility is very fulfilling. She understands how she is making a difference in her community. She takes pride in her work which she has never felt at other jobs.



# Skilled Trades Potential Solutions

## Operators in the Community

Showcase and focus on skilled trades in community events including plant tours and field trips to raise awareness of the services offered, mission and vision of the organizations, and the types of careers available at the organization. By highlighting the skilled trades, the tools they use, and the opportunities they have allows the public to better understand these roles firsthand.

## Operations Expedition

The internal job-shadowing program facilitates staff understanding of the utility's entire system, enhancing their role comprehension within the organization. This initiative can extend beyond onboarding to include experienced employees, offering in-depth insights into different facilities and operations over the course of several days or weeks. As a virtual option, live streams of departments and facilities can engage the younger generation in executing internal social media, providing an innovative way to showcase the utility's operations.

## Empowering Growth and Performance







Incentivize skilled trade staff by rewarding them for acquiring licenses/certifications with salary raises, offering bonuses for job-specific training, and linking job performance to merit increases. The professional development aspect involves supervisors conducting quarterly check-ins with staff to discuss long-term goals, career progression, and growth opportunities, with support from the Training/HR Department providing necessary resources and guidelines for these sessions.

## Industry-wide Training Program

The training program provides comprehensive classes blending computer-based and in-person instruction for skilled trades in water and wastewater treatment allowing utilities to tailor their programs based on their career paths and requirements. It covers technical and interpersonal skills essential for plant operation, maintenance, and enhancement, progressing individuals from entry level to senior technician or managerial roles. Regular assessments are conducted throughout to validate understanding.



# Critical Success Factor Themes

Theme	Utility Implementation Challenges
 <b>Community Engagement &amp; Public Outreach</b> Raise awareness of the services, opportunities, and significance of water and wastewater utilities to the community and the environment to increase the pipeline of potential candidates.	<ul style="list-style-type: none"> <li>• Limited resources</li> <li>• Measuring impact</li> <li>• Transitioning from engagements to candidates</li> <li>• Reaching the right audience</li> </ul>
 <b>Job Shadowing Program</b> Allows employees to observe and learn different roles within the organization providing greater understanding of the mission and interconnection of operations.	<ul style="list-style-type: none"> <li>• Limited staff time / resources (e.g., smaller org.)</li> <li>• Staff engagement / buy-in</li> <li>• Maintaining accountability</li> <li>• Establishing objectives and measuring impact</li> <li>• Maintaining intentional structure and governance</li> </ul>
 <b>Industry-wide Training Program</b> Provide a menu of training courses to support utility's in providing growth opportunities to their career development pathways.	<ul style="list-style-type: none"> <li>• Staff engagement / buy-in</li> <li>• Focus on training vs. assessments</li> <li>• Value proposition for university engagement</li> <li>• Keeping pace with technology / standards</li> <li>• Commitment and collaboration across organizations</li> <li>• Limited reward or mobility opportunities once upskilled</li> </ul>
 <b>Performance Development Program / Succession Planning</b> Build career pathways that communicates opportunities, incorporates incentives for professional development, includes management support, and intentionally develops the next generation of leaders.	<ul style="list-style-type: none"> <li>• Leadership support and investment</li> <li>• Staff engagement / buy-in</li> <li>• Complexity of pay structure</li> <li>• Resources (time, budget)</li> <li>• Maintaining awareness</li> <li>• Retention of staff who do not receive promotions</li> </ul>
 <b>Mentoring &amp; Coaching</b> Create and maintain a robust mentoring program to share experiences and a coaching program that creates a confidential space for employees to learn about tools for growth and development.	<ul style="list-style-type: none"> <li>• Limited staff time, mentors / coaches</li> <li>• Staff engagement / buy-in</li> <li>• Perception of favoritism</li> <li>• Building relationship virtually</li> </ul>
 <b>AI-Powered Efficiency</b> Leverage automation and AI technology to streamline processes and achieve greater efficiency.	<ul style="list-style-type: none"> <li>• Leadership support and investment</li> <li>• Staff adoption</li> <li>• Continued awareness of capabilities</li> <li>• Transparency / security</li> </ul>



# **WATER WORKFORCE FOR RESILIENT COMMUNITIES PILOT PROGRAM**

American Rescue Plan Act Funding

# WATER WORKFORCE FOR RESILIENT COMMUNITIES PILOT PROGRAM

Funded through American Rescue Plan Act (ARPA)  
funds coordinated by Gwinnett County

Grant period: May 2022 – October 2024

Covered 30 students

- Reimbursement available for childcare and transportation costs
- Exam fees, all course materials, PPE provided to trainees

Placement Assistance

- Connect qualified graduates with utilities in north Georgia who need talented operators



# TWT TRAINING PROGRAM IN PRACTICE



Operator training, life skills support, and job placement at no cost to trainees

Partnered with local social nonprofits for recruitment and soft skill coaching

Combines traditional classroom instruction with hands-on and online learning to set candidates up for success not only to pass the certification exam, but to establish a career in the industry

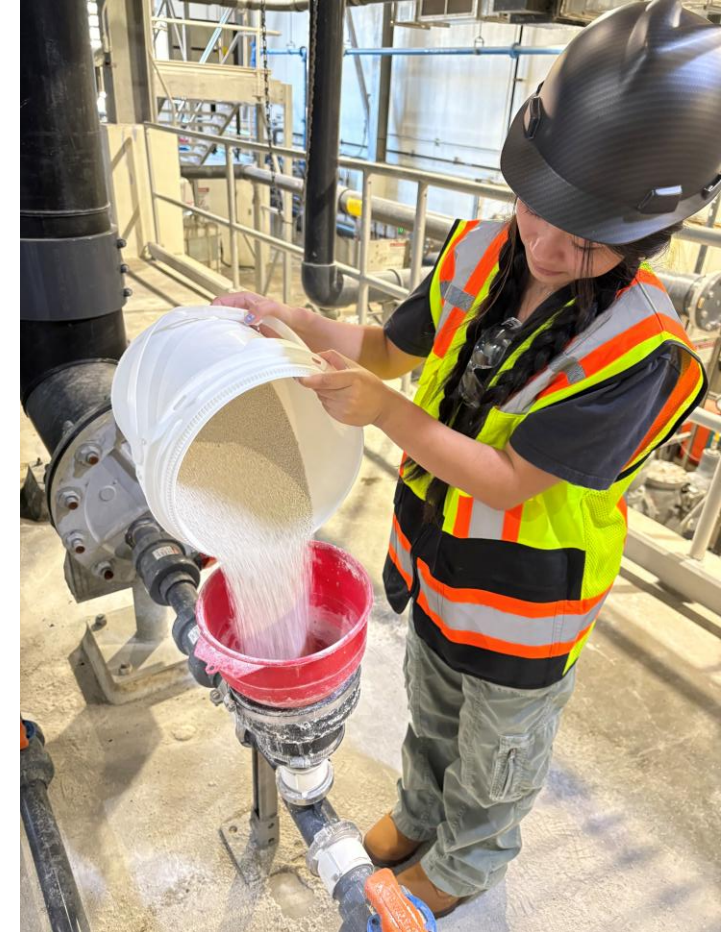
## Target Trainees

- High school seniors
- Young adults searching for careers
- Career change interest 18-25

# TWT TRAINING PROGRAM IN PRACTICE

## Not your dad's 40-hour course!

- High School Career and Technical Academy – Work Study
  - 8-month senior year
  - Part time
  - Blended learning: class, online, and hands on at plant
- Other recruits through nonprofit partners
  - 4-month
  - Full time
  - Blended learning – class, online, and hands on at plant



# BY THE NUMBERS

- 46 Gwinnett County individuals submitted the application to enroll
- 23 people have completed, or are actively completing, the program
- 5 high school students have participated, or are participating, in the program
- Graduates are working as laboratory technicians, operators for the City of Atlanta, working toward engineering degrees, and others
- Exam pass rate: 80–89%



# LESSONS LEARNED

## During:

- Broader age range for advertising (from 18-25 to 49, to include caregivers)
- “Cohorts” not rolling admission
- Added Meta Campaign (Facebook/Instagram)
- Increased information prior to “enrollment”
- Nonprofit Champions needed

## Future:

- Increased interest in evening and night classes
- Plan out integrated learning (lecture, hands-on, job-shadowing, online, simulation, etc.)
- Retention needs



# WORDS FROM GRADUATES



**Courtney Lee**  
The Water Tower

**Angelita Cortez** | Training Graduate  
Gwinnett County Laboratory Technician

[https://drive.google.com/file/d/1VBVGNqI\\_NfTijf3vMO2iaqPcl04Vzw7m/view?usp=sharing](https://drive.google.com/file/d/1VBVGNqI_NfTijf3vMO2iaqPcl04Vzw7m/view?usp=sharing)



# WTR HUB

EPA's Innovative Water Infrastructure  
Workforce Development Grant Program



# WTR HUB

Water Workforce Training and  
Recruitment Hub

## Goal:

To create the WTR Hub utilizing a unique national utility, academic, and nonprofit network focused on expanding internships and post-secondary bridge programs that will result in an increase in number of certified water operators in the drinking water, wastewater, water recycling, and stormwater fields.

## Grant Period:

October 1, 2024 – March 31, 2027

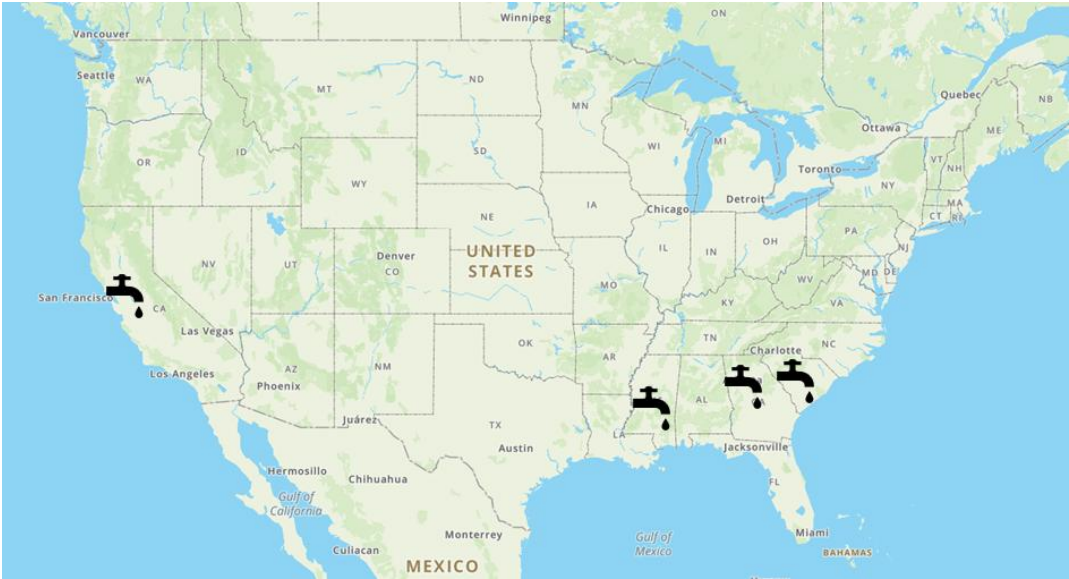


# WTR HUB PROPOSED OUTPUTS

- A water workforce recruitment toolbox with sociology-based guidance for recruitment
- Hands-on and virtual training tools in English and Spanish
- Trainer Certificate and Train-the-Trainer program
- 60 newly certified operators
- 30 certified trainers
- Career Navigation Solutions



# WTR HUB UTILITY TEAM MEMBERS



# WTR HUB EVALUATION & SUPPORT TEAM

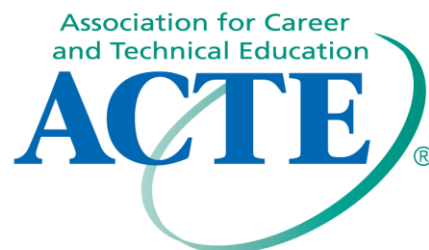


Human Services and  
Cultural Studies



School of Science  
and Technology

Institute of Environmental  
Science and Sustainability





# TRADITIONAL RECRUITMENT

- Municipality/County website, Indeed, LinkedIn, career fairs
  - Limits visibility and reach
- Utility community partners who have grassroots networks
  - Unique challenges
  - Seeking opportunities but don't know where to turn

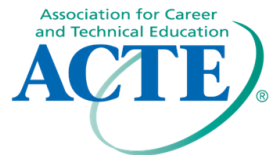
# NONPROFIT PARTNER FOCUS AREAS



Partners with county District Attorney offices to assist Justice Impacted citizens. These first time, nonviolent offenders, ages 17-28, go through an intensive one-year program of soft and hard skills. Graduates have their records restricted and their case files sealed.



Through their Love Your City and mentoring programs, they help Latino communities in multiple US cities overcome obstacles and launch into healthy futures.



Supports county school district Career and Technical Education (CTE) programs, including Work-Study programs.



Focused on enabling a gender-inclusive water workforce.



A Safe Place Agency instrumental in helping homeless and unaccompanied youth who are in unsafe or crisis situations by providing shelter, reunification support, and wraparound services.



# UNTAPPED WORKFORCE - WHITEPAPERS

## Value in Population Segments

- Benefit to utilities
- Benefit to the population segments and the community

## Cultural Sensitivities

- Support systems and wraparound services
- Trauma informed approaches

## Social Media and Marketing Verbiage

- Gender and culture reflective advertisement
- Respectful language and engaging “hooks”

## Cultural Values

- Drivers and values that guide decision making
- Actions to expect by employers and employees

# NARRATIVE 01

# WATER NEEDS YOU.

“Water Needs You” makes the audience the hero. This message speaks directly to people who want work. Whether they’re just starting out or looking for a second chance, this tells them they’re already qualified to apply.

## Supporting Messaging Pillars:

### To Build Security

- Offers stable pay
- Creates jobs in every community
- Builds family security for generations

### To Keep it Running

- Strengthens water systems
- Be essential worker
- Climate-resilient work

### To Guard What Matters

- Safeguards water, health
- Prevents environmental disasters
- Powers public good

### To Thrive and Grow

- Growth starts day one
- No degree required
- Training is built-in

### To Belong and Be Seen

- Values lived experience
- Welcomes all backgrounds
- Opens flexible career paths

# TRAINING CERTIFICATE TEAM



Formerly ABC, develops testing and certifications to support water and wastewater treatment professionals. Will be focused on developing a Certificate program for Trainers, with emphasis on cultural sensitivity and climate awareness.



Focused on “Future Proofing America” – will support Training certificate with curriculum on climate resiliency.



Focused on promoting sustainable communities – will support Training certificate with curriculum on green infrastructure.



# HANDS-ON TRAINING

*"If you do what you've always done, you'll always get what you've always got."* – Henry Ford

Moving away from:

- Death by PowerPoint
- Only teaching to the test
- Lectures

The states have guidance about what need-to-know criteria to teach, but training providers choose how to teach it!

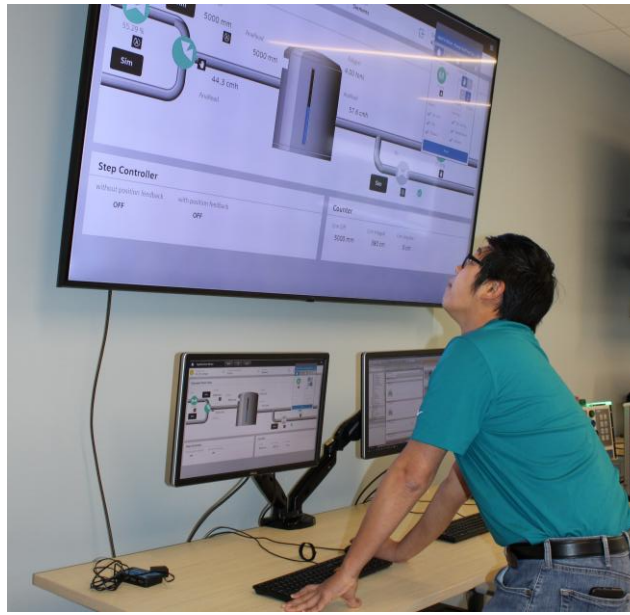
Moving toward:

- Discussion-based and experiential learning
- Adding to the NTK Content (what else do trainees need to know or be able to do)
- Table-top, hands-on tools

# WORKFORCE TRAINING



Host and conduct robust hands-on training curriculum across skilled trades  
Facilitate recruitment opportunities



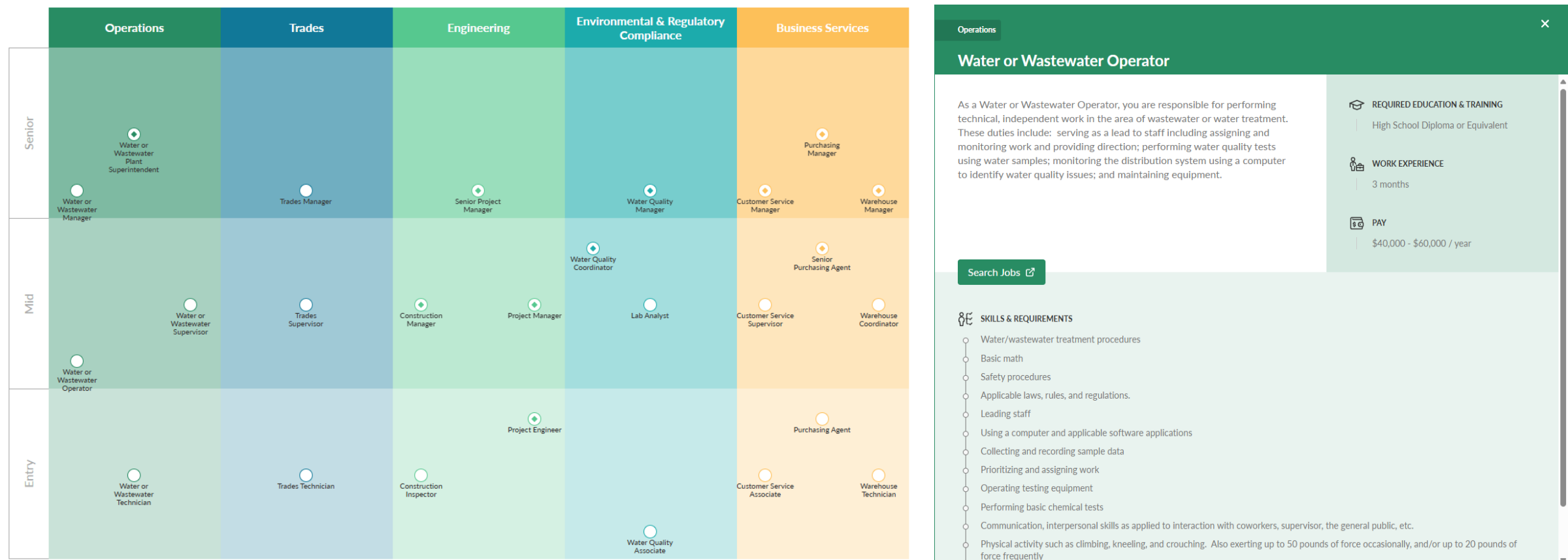
# HANDS-ON LEARNING

# IN THE FIELD TRAINING



# CAREER NAVIATION SOLUTIONS

Career Map: <https://twc.careerpathplatform.com/map/>



# CAREER NAVIATION SOLUTIONS

Wage Calculator: <https://twt.careerpathplatform.com/wage/>

## Wage Calculator

Share to

Current job ?

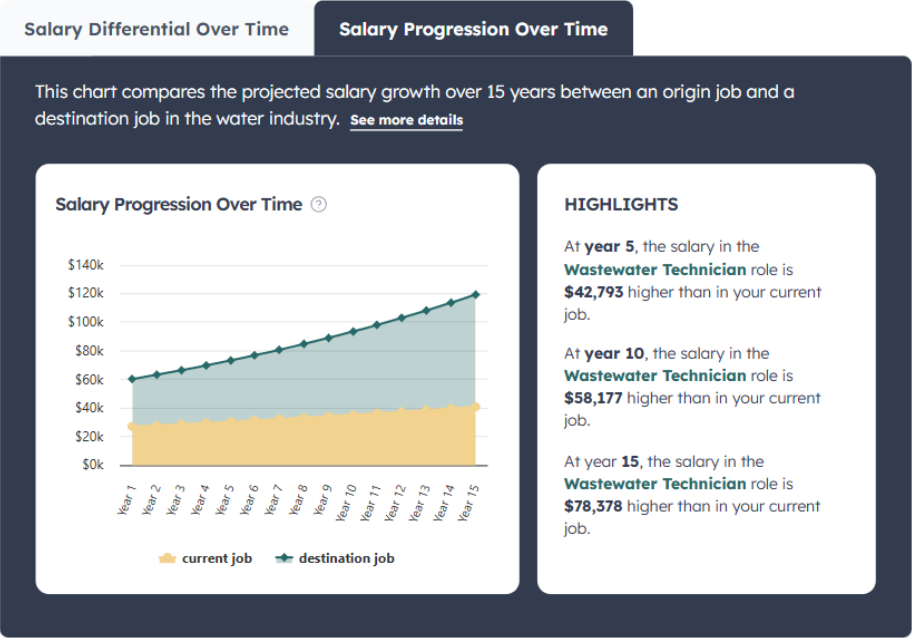
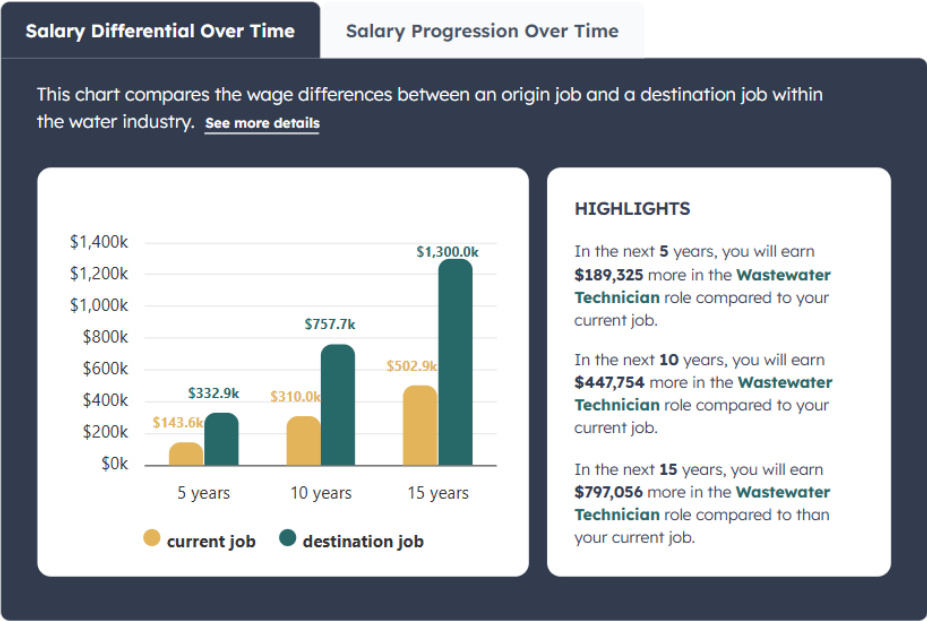
Food Service Worker

Destination job ?

Wastewater Technician

Include benefits in total compensation? ?

on



# LOOKING AHEAD



## RECRUITMENT & TRAINING

**Community Outreach & Workforce Development**  
Nextgen STEAM outreach, engagement, recruitment, training, upskilling, and CE credits for professionals



## RETENTION & ENGAGEMENT

**Research & Development**  
Advancing water science by conducting collaborative research and R&D to solve practical problems locally and globally in TWT's laboratories and demonstration area

**Networking & Industry Events**  
Enabling water career growth through professional events focused on leading-edge water topics to enhance technical skillsets and build relationships



## UTILIZING SPACE

**Ecosystems & Facilities**  
A resource for our community by providing event space rentals for the community to utilize TWT for meetings and gatherings



Planning for  
Phase II: Best  
in Class  
Training  
Facility



Pump station  
Pipe Farm  
Live Tapping  
Screening Station  
Fluid Dynamics  
Pump/Valve Mock-Up Station  
Electrical Panel – wire circuit training  
VFD/Starter Training Panel  
Mechanical seals vs Packing  
Potable Reuse Plant



# The BIG Dream:

Regional hubs launched through strategic partnerships between The Water Tower, utilities, training providers, and nonprofit organizations to recruit, train, and place qualified candidates in water utility jobs.





# QUESTIONS?

# Thank you!



Melissa L. Meeker | CEO, The Water Tower  
[melissa@theh2otower.org](mailto:melissa@theh2otower.org)  
[@MLMeekerWater](https://www.linkedin.com/company/the-water-tower)



Courtney Lee | Director of Training Development  
[courtney@theh2otower.org](mailto:courtney@theh2otower.org)

# Thank you!



United States  
Environmental Protection  
Agency



ASSOCIATION OF  
METROPOLITAN  
WATER AGENCIES



American Water Works  
Association

NACWA



Water Environment  
Federation  
the water quality people®



THE  
Water  
Research  
FOUNDATION



WATERUSE