



**US Water
Alliance**

Water Workforce and Leadership Library

Introduction

Water management in the United States stands at a critical crossroads, reflected in the anticipated wave of retirements among the 300,000 employees that make up our nation's water utility workforce. In the next decade, one-third of US water utility operators will be eligible to retire.¹ Smaller and rural utilities, which comprise most of the sector, face unique challenges. Eighty-five percent of water utilities have three or fewer employees, and over 80 percent of drinking water utilities serve fewer than 500 people, making it difficult to attract and retain skilled workers.² Additionally, about 37 percent of water jobs are concentrated in just 25 metropolitan areas, leaving smaller communities struggling with capacity gaps.³

To replace those retiring or transitioning to other careers, the water sector will require approximately 10,300 new workers annually.⁴ This urgent need to hire and train the next generation of water workers is aligned with an opportunity to widen the talent pool considering water careers. As of 2017, the national water workforce is 85 percent male and 66 percent white, revealing a need to reach underrepresented groups to develop a water utility workforce that reflects the racial and gender composition of the communities these utilities serve.⁵

Re-thinking how we build the water utility workforce holds transformative potential for communities across the country. Water sector jobs offer higher-than-average wages in addition to requiring less formal training and providing more on-the-job training than other sectors, creating opportunities for workers to achieve economic stability and grow professionally. To help realize the individual and community benefits of working in the sector, water utilities can implement effective training, recruitment, and retention programs to foster the development of a diverse and skilled next generation of water workers.

The Water Workforce and Leadership Library supports those who seek to sustainably cultivate a skilled workforce within the water utility sector by highlighting inspiring, forward-looking examples of training, recruitment, and retention programs that are shifting business-as-usual practices. By collecting and sharing these models, we hope to connect organizations to others working on similar challenges, creating opportunities for workforce programs nationwide to be replicated, refined, and/or scaled.

These programs were submitted following a national call for examples of water workforce **apprenticeship, internship, leadership development, and regional collaborative programs** that could serve as replicable models. The following entries provide a diverse snapshot of programs and strategies from utilities and their partners, initiating a nationwide workforce programming repository of resources.

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Apprenticeships



As the water sector faces increasing workforce demands and a shifting labor market, apprenticeship programs have become a successful and measurable tool for developing and sustaining a skilled talent pipeline. These structured, long-term programs bridge the gaps between education and employment while equipping participants with technical expertise and hands-on experience.

Apprenticeships are an investment in both individuals and organizations. For participating individuals, apprenticeships provide paid, on-the-job training and industry-recognized credentials. For organizations, apprenticeships serve as a strategic solution to workforce challenges, helping address talent shortages and strengthen succession planning.



The programs highlighted in this section showcase innovative approaches to apprenticeships within the water sector. This section of the Water Workforce and Leadership Library serves as a resource for those seeking to develop, refine, and/or expand apprenticeship programs within their organizations.

Organization:

AlexRenew, Virginia

Program Name: AlexRenew Wastewater Apprenticeship Program

Utility Size: Large

Utility Type: Wastewater

Program Type: Apprenticeship

Program Description

Recognized by the Virginia Department of Labor, AlexRenew's registered apprenticeship program provides a paid, hands-on training experience combined with tuition-free education and mentorship. Designed to develop a skilled workforce for the water sector, the program equips apprentices with industry-recognized credentials and real-world expertise.

Apprentices train in one of three specialized tracks: Wastewater Systems Technician (Operator), Wastewater Mechanic, or Control Systems Technician (Electrician)—progressing through a structured wage scale as they gain skills. Since its launch in 2012, the program has created pathways to stable, high-demand careers with many graduates advancing into leadership roles.

To date, 63 employees have been hired into the apprenticeship program, with a graduation rate of 52 percent and a retention rate of 44 percent. In the winter of 2024, the latest graduating class included five apprentices, further contributing to the skilled workforce essential for maintaining and improving local water systems.

Through this initiative, AlexRenew continues to invest in workforce development while supporting its mission to protect and restore local waterways.

Key Program Features

- Tuition-free education and certification
- Community-driven partnerships
- Career-focused learning pathways
- Targeted outreach
- Economic and social impact
- Increasing wages

AlexRenew's Apprenticeship Program is a premier earn-and-learn initiative that bridges workforce needs with career-building opportunities, equipping individuals with the skills and experience needed for long-term success in the water sector.

Program Information

Program Creation Year:	2012
Yearly Program Cost:	\$50,000–\$100,000
Funding Sources:	Internal funding from AlexRenew
Number of Dedicated Staff:	1–5 full-time
Yearly Participation Rate:	1–50 participants
Post-Program Completion Employment Types:	52 percent graduation rate and 44 percent retention rate into full-time employment in wastewater operations, maintenance, and electrical systems
Paid vs. Unpaid Opportunity:	Paid
Academic Credit Offered:	Industry-recognized credentialing (potential for credit transfer based on approval)
Transportation Support:	In development with external contractors
External Partners and Collaborators:	Virginia Department of Labor, Fairfax ACE, College of Southern Maryland

Organization:

Atlantic County Utilities Authority, New Jersey

Program Name: ACUA Instrumentation Apprenticeship Program

Utility Size: Medium

Utility Type: Wastewater

Program Type: Apprenticeship

Program Description

The Atlantic County Utilities Authority (ACUA) Instrumentation Apprenticeship Program is designed to address the critical need for skilled instrumentation professionals while supporting both workforce development and ACUA's long-term business goals. The program is a collaborative partnership between Camden County College and the Atlantic County Department of Workforce Development.

This four-year apprenticeship combines classroom instruction with immersive, hands-on training. Participants gain technical expertise while working directly on ACUA's systems and infrastructure, honing skills that prepare them to tackle real-world challenges. This dual-learning model ensures apprentices deepen their knowledge while acquiring practical experience that empowers them to advance into pivotal roles within ACUA.

By aligning education, training, and career progression, the program cultivates a pipeline of skilled talent while strengthening ACUA's operational resilience and future-readiness.

Key Program Features

- Comprehensive curriculum
- Personalized growth plans
- Succession planning
- Partnership and collaboration
- Flexible learning and support
- Industry engagement

By aligning education, training, and career progression, the program not only cultivates a pipeline of skilled talent but also strengthens ACUA's operational resilience and future-readiness.

Program Information

Program Creation Year:	2021
Yearly Program Cost:	Less than \$50,000
Funding Sources:	Government grants
Number of Dedicated Staff:	1–5 full-time
Yearly Participation Rate:	1–50 participants
Post-Program Completion Employment Types:	Matriculation into further training and advanced engagement
Paid vs. Unpaid Opportunity:	Paid
Academic Credit Offered:	Yes
Transportation Support:	Employees reimbursed for travel to class
External Partners and Collaborators:	Atlantic County Department of Workforce Development, Camden County College

Organization:

City of Minneapolis, Minnesota

Program Name: Water Distribution Operator Trainee Program

Utility Size: Large

Utility Type: Drinking water

Program Type: Apprenticeship

Program Description

The Minneapolis Water Distribution Operator Trainee Program exemplifies a proactive, community-focused approach to workforce development. This initiative not only prepares individuals for vital roles in water infrastructure but also addresses pressing workforce shortages in a meaningful, human-centered way. Combining rigorous training with robust support systems, the program offers a pathway to rewarding careers while ensuring the city's water services are managed by a skilled, diverse team. Upon certification, trainees fill full-time vacant positions.

Minneapolis prioritizes inclusivity and accessibility in finding program applicants. Recruitment efforts target underrepresented communities and those facing employment barriers, leveraging partnerships with local organizations, high schools, and community colleges. Outreach includes engaging presentations at schools, informational booths at community events, and direct collaboration with career counseling centers.

Key Program Features

- Work readiness training and professional development
- On-the-job experiences paired with formal education
- Flexible work schedules
- Support for certification

Working with graduates not only fills critical workforce gaps but also secures full-time, stable employment with the City of Minneapolis. By rooting recruitment in community engagement and delivering comprehensive support, this initiative embodies the city's commitment to equity, innovation, and public service.

Program Information

Program Creation Year:	2019
Yearly Program Cost:	Less than \$50,000
Funding Sources:	Personnel budget
Number of Dedicated Staff:	Integrated into employee recruitment and training programs
Yearly Participation Rate:	1–50 participants
Job Placement/Retention Rate After Completion:	81–100 percent
Post-Program Completion Employment Types:	Full-time opportunities
Paid vs. Unpaid Opportunity:	Paid
Academic Credit Offered:	Not offered
Transportation Support:	Not offered
External Partners and Collaborators:	Additional city departments (public works administration and human resources), which work with community organizations and educational institutions to promote trainee opportunities

Organization:

Hampton Roads Sanitation District, Virginia

Program Name: **HRSD Apprenticeship Program**

Utility Size: **Large**

Utility Type: **Wastewater**

Program Type: **Apprenticeship**

Program Description

The Hampton Roads Sanitation District (HRSD) Apprenticeship Program stands as a trailblazer in workforce development, being one of the first of its kind in the nation's wastewater sector. This program equips individuals with the training and experience required for thriving careers at HRSD. Over three to four years, participants engage in a dynamic combination of hands-on, on-the-job training and classroom-based instruction, fostering both technical expertise and practical skills.

One of the program's standout features is its flexibility, offering multiple career pathways that allow participants to align their learning with their unique skills and interests. This personalized approach not only prepares apprentices for specific roles within HRSD but also helps them build meaningful and fulfilling careers in the water sector more broadly.

Key Program Features

- Tuition-free education and training
- Career advancement and higher wages
- Structured support system
- Promotional opportunities
- Diverse skill development

By addressing industry-wide talent gaps and prioritizing partnerships with educational institutions, the HRSD Apprenticeship Program serves as a benchmark for workforce development in the water industry. Its success highlights how thoughtful program design and collaboration can build a skilled, motivated workforce while advancing the organization's mission.

Program Information

Program Creation Year:	1979
Yearly Program Cost:	\$100,000–\$250,000
Funding Sources:	Self-funded
Number of Dedicated Staff:	1–5 full-time
Yearly Participation Rate:	51–100 participants
Job Placement/Retention Rate After Completion:	81–100 percent
Post-Program Completion Employment Types:	Full-time opportunities
Paid vs. Unpaid Opportunity:	Paid
Academic Credit Offered:	Not offered
Transportation Support:	Yes
External Partners and Collaborators:	Tidewater Community College, ECPI University, and other educational institutions

Organization:

The Water Tower, Georgia

Program Name: Water Workforce for Resilient Communities Program

Program Type: Apprenticeship

Program Description

The Water Tower's Water Workforce for Resilient Communities Program is shaping the future of the water sector by attracting and training the next generation of its professionals. With a core focus on water and wastewater operator career pathways, this initiative combines classroom instruction, hands-on experience, and job shadowing to prepare trainees for meaningful careers.

The program's success lies in its community-centered approach. The Water Tower collaborates with social nonprofits, local school systems, county utilities, and job placement organizations to create a well-rounded and accessible training ecosystem. Targeting high school seniors and career-changers between the ages of 18 and 30, outreach efforts are designed to inspire and connect individuals with stable, high-demand opportunities in water-related trades.

Looking ahead, the upcoming Water Workforce Training and Recruitment Hub aims to elevate this impact even further. By uniting utility, academic, and nonprofit partners, the hub will expand internships and bridge programs, fostering growth across drinking water, wastewater, recycling, and stormwater fields. The initiative will increase the number of certified operators, ensuring a resilient and skilled workforce for years to come.

Key Program Features

- Tuition-free education and certification
- Community-driven partnerships
- Career-focused learning pathways
- Targeted outreach
- Economic and social impact

The Water Tower's Workforce for Resilient Communities program is a model of how strategic partnerships and inclusive training models can address industry needs while empowering individuals to build sustainable careers in critical public services.

Program Information

Program Creation Year:	2022
Yearly Program Cost:	\$50,000–\$100,000
Funding Sources:	Government grants and fundraising
Number of Dedicated Staff:	1–5 full-time
Yearly Participation Rate:	1–50 participants
Post-Program Completion Employment Types:	Full-time opportunities
Paid vs. Unpaid Opportunity:	Unpaid
Academic Credit Offered:	Yes; professional credentialing
Transportation Support:	Yes
External Partners and Collaborators:	Gwinnett County Department of Water Resources, Boy with a Ball, Rehabilitation Enables Dreams, Georgia Center for Opportunity, Georgia Gwinnett College, Renewable Water Resources, JXN Water, West County Wastewater District, Water Professionals International, Association of Career and Technical Education, Water Rising Institute, Southface, Resilience Innovation Hub

Notes

- 1 US Environmental Protection Agency, “America’s Water Sector Workforce Initiative: A Call to Action,” https://www.epa.gov/sites/default/files/2020-11/documents/americas_water_sector_workforce_initiative_final.pdf.
- 2 Brookings Institution, “Renewing the Water Workforce,” 2018, 32, <https://www.brookings.edu/wp-content/uploads/2018/06/Brookings-Metro-Renewing-the-Water-Workforce-June-2018.pdf>.
- 3 Brookings Institution, “Renewing the Water Workforce,” 18.
- 4 US Bureau of Labor Statistics, “Water and Wastewater Treatment Plant and System Operators,” 2024, <https://www.bls.gov/ooh/production/water-and-wastewater-treatment-plant-and-system-operators.htm#tab-1>.
- 5 Brookings Institution, “Renewing the Water Workforce,” 25–26.



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