

Toward a Strong and Equitable Water Workforce



Preface

The water utility sector has a transformational, equity-building opportunity: the composition and capability of its future workforce. Water utilities depend on the skills, knowledge, and dedication of the more than 300,000 employees who operate and manage local water systems. This workforce serves our communities around the clock, supports environmental health, and is essential to thriving local economies.

Many utilities face a current workforce quantity and quality crisis. A massive wave of retirements is depleting employee ranks and leaving critical jobs unfilled. Irreplaceable know-how is at risk of being lost rather than transferred to the next generation of utility workers. According to the US Environmental Protection Agency, about a third of water utility operators are eligible to retire during the next decade.¹ Water utilities must fill 9,200 water treatment operator jobs annually, a 2018 Brookings Institution analysis projected, with thousands of additional openings for electricians, operations managers, and other occupations.²

The US Water Alliance sees the effects of these challenges across the nation and is crafting a suite of solutions to support the field while advancing equity. To rise to this challenge, we reviewed over 50 background reports and conducted over 20 cross-sector interviews with water leaders. We found that traditional new worker pipelines and labor markets cannot keep up with the growing demand for water workers. The COVID-19 pandemic's lingering impacts exacerbate the challenge: many workers' expectations shifted and the labor markets that supply utilities with needed talent faltered. Responding to these changes can be especially challenging for smaller and rural utilities with limited capacity to invest in workforce development. Workforce challenges are becoming more widely understood in the sector: water utility leaders and several recent reports have sounded the alarm.

Some utilities have developed programs, partnerships, and policies to address their specific situations, but too often, these efforts are relatively few, scattered, and sometimes address only a portion of the barriers present in utilities' human resource systems. The field lacks robust evaluation of and consensus on best practices. Unfortunately, the current solutions lack scale and coverage and do not amount to a sectoral, systemic, and sustainable approach that can address water's workforce challenges.

Efforts to date also fail to sufficiently address the utility workforce's lack of racial and gender diversity—a systemic condition that continues to prevent talented individuals from entering the water workforce. The entire water sector workforce, of which utilities are about 17 percent, was nearly 85 percent male and 66 percent white in 2016, Brookings reported.³

This report identifies three strategies and nine initiatives to address both the quantity and equity challenges in the nation's water utility workforce. Because we aim for systemic, sector-wide impact, we selected workforce efforts that can scale up or be easily replicated. The efforts are designed to eliminate the need for individual utilities to reinvent the wheel. While the broader water sector has tremendous and analogous workforce needs, the efforts outlined here focus on the water utility workforce with respect to its essential service role and the opportunities provided by its stable, well-paying local jobs. Utilities, Brookings reported, can be “a standard bearer for the entire water sector... They can heighten awareness of the water workforce opportunity.”⁴ These efforts build on what is being tried, learned, and recommended by utilities, water-related associations and organizations, engaged community representatives, and water-sector analysts.

Most importantly, **the strategies and initiatives recommended in this report can transform, not just help to sustain, utilities and their community's quality of life.** They offer ways to intentionally use workforce solutions to build trust and drive equitable economic opportunity with People of Color, women, and others facing high barriers to workforce entry. By initiating large-scale recruitment of a more diverse workforce and adopting practices that support workforce equity, utilities can grow pipelines of committed talent. They can reshape their workforces to reflect the communities they serve. And, by advancing diverse local employment, they can help to close the racial and gender income and wealth gaps.

Water workforce development is a wide ranging problem set and the strategies outlined here do not provide comprehensive solutions. While other strategies, such as contracting and procurement, are not the focus of this report, the Alliance recognizes they can play an important role in increasing equitable outcomes in workforce development.

The US Water Alliance is already working with members and partners towards these ends. With the production of this report, we describe what utilities and their workforce partners can do and how we will support them to meet the moment and build a sustainable, One Water future for all.



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Challenges of Transforming the Water Utility Workforce



The remarkable opportunity to transform the utility workforce while meeting the urgent need for new workers offers the potential to provide many well-paying, stable jobs in communities across the US. Utilities' aging workforce and challenges in hiring qualified staff ranked as the number two concern of the 450 water sector stakeholders who responded to Black & Veatch's 2023 survey.⁵ The majority of water utilities' 300,000 positions will need to be filled during the next decade. Many of these jobs pay more on average compared to all occupations, including more pay for utility workers at the lower end of the income scale. These jobs also require less formal education than jobs in other sectors and tend to involve more extensive work experience and on-the-job training.

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Our research reveals 10 common challenges water leaders face in achieving a sustainable workforce transformation:

Providing sector-wide coordination

Scaling workforce solutions is difficult because the water sector is fragmented into tens of thousands of water utilities—most of them small and sometimes financially struggling. Even without significant financial barriers or differences in the structure of utilities, accessing and replicating best practices can be challenging. Additionally, water sector employment data is not standardized, which impedes monitoring and strategic analysis of the sector’s situation and progress. Solving sector-wide challenges requires compiling and sharing existing best practices while obtaining reliable, granular data that defines and quantifies workforce needs. Some utilities have access to these resources, though usually on an episodic rather than continual basis, and there is very limited sector-wide availability.

Recruiting job candidates from underrepresented groups

Utilities’ recruitment and training programs are often disconnected from grassroots, community-serving organizations that can reach underrepresented people and those facing high barriers to workforce entry. At the same time, these potential employees may need social service case management support, basic financial support, and pre-training programs to be prepared to enter the job market—something many water utilities do not routinely provide.

Addressing capacity differences among utilities

Most water utility jobs are in metropolitan regions, but the workforce is also fragmented among thousands of very small utilities. About 85 percent of all water utilities have three or fewer employees,⁶ and more than 80 percent of all drinking water utilities serve fewer than 500 people each. More broadly, about 37 percent of total water utility employment is in just 25 metropolitan areas.⁷ The differing capacities of utilities (e.g., small or large, urban or rural, financially struggling or financially stable) suggest potential difficulties in designing solutions that all utilities can implement. In many cases, this will require a high level of collaboration among utilities and talent suppliers, such as community colleges and community-based nonprofits, to design and implement regional-scale solutions capable of generating sufficient quantities of diverse, skilled job candidates that meet all employer participants’ needs.

Targeting mission-critical utility occupations

Utilities have numerous occupations, but water plant and wastewater plant operators stand out as high-priority targets for workforce development. More than a third of utility workers—roughly 102,000 people—are employed as water and wastewater plant operators.⁸ Operators are one of the six largest occupations in utilities—along with meter readers, electricians, plumbers, pipefitters, steamfitters, pipelayers, and industrial machinery mechanics—that makeup about 60 percent of all water utility jobs.⁹ Workforce development for water should prioritize the promotion of mission-critical occupations and skills.

Growing awareness and changing negative perceptions of water utility jobs

Potential job candidates may not be aware of water utility job opportunities or may have misperceptions about these jobs. Our 2019 research from “Making the Water Sector an Employer of Choice” found that many adults believe water jobs require more time than most other jobs, are stressful, and require skills they lack. On the other hand, adults with little or no college education identified several positive traits of water work, such as water jobs being important for the community and the environment while having a strong sense of mission.¹⁰ Findings from this research suggest new ways for utilities to market job openings.

Funding workforce efforts

Workforce development requires financial investments. Although some funding is available from federal and state governments as well as philanthropic sources, it's likely water utilities must use some of their own financial resources to pay for programs needed to secure their future workforces. However, as data from Black & Veatch's *2023 Water Report* notes, many utilities will have difficulty making these investments as "budgets are tight and fixing the frailties of assets carries a steep price tag that ratepayers aren't overly receptive to helping cover."¹¹ One approach may be to earmark a portion of public investment in water infrastructure for workforce development. More generally, utility leaders need support raising awareness about the public health and environmental risks of underfunding workforce development.

Eliminating barriers and red tape

Labor market factors often impede transformational efforts. Some utilities' human resources systems, such as civil service, credentialing, and licensing standards for occupations, may pose unnecessary requirements and processes that impede recruiting and hiring. For example, instead of credentials required upon hiring, some credentials could be earned on the job.

Providing career clarity

The occupational skills and certifications utilities require are not uniform, which may lead to employee confusion, talent development inefficiencies, and a lack of transferability. Water and wastewater utility hiring managers are often constrained by civil service systems and can lack the capacity to keep up with labor market changes and adjust recruitment, hiring, and retention practices.

Navigating competition

Utilities' pay and benefits packages may be competitive with other public entities but less so against private competitors. Certain skilled professions, such as electricians, are also highly desired by other sectors that can offer higher wages.

Preparing for the future of water management

The water sector is evolving rapidly and workers are being asked to contend with greater complexities. Future water utility leaders are faced with addressing the ever-growing impacts of climate change, volatile water quantity, and persistent water quality issues throughout the country. They will need fundamentally different or expanded skills than those required in the water sector today, requiring a transformation of how rising professionals and utilities see their roles and the skillsets they hone to address new challenges.

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~ **85%**

Percent of all water utilities that have three or fewer employees.

> **80%**

Percent of all drinking water utilities that serve fewer than 500 people each.

Existing Water Workforce Development Initiatives

Since 2017, the US Water Alliance has been elevating the opportunity to ensure universal participation in the economic benefits of water operations and infrastructure investments. Our experience includes launching and supporting a [national network](#) dedicated to advancing Water Equity, releasing the 2022 [Diversifying the Water Workforce Toolkit](#) and accompanying recruitment communications research, producing the [Advancing Racial Equity at Water Utilities Toolkit](#), and collaborating across our network of [200 members and partners](#) to lift up best practices in equitable workforce development.

In developing the strategies and initiatives recommended in this report, the US Water Alliance also explored important workforce initiatives by our peer water and wastewater organizations and others advancing water workforce issues beyond the municipal level.

[American Water Works Association \(AWWA\)](#) maintains an online Career Planning Portal; provides workforce knowledge sharing through conferences, publications, and educational programming; offers scholarships; and operates a leadership academy, a veteran initiative, and college student chapters to educate students about the water industry as a career path and about water in general. AWWA published *The Water Workforce: Strategies for Recruiting and Retaining High-Performance Employees* and *Water Sector Workforce Sustainability Initiative Report*.

[Association of Metropolitan Water Agencies \(AMWA\)](#) successfully advocated to the US Environmental Protection Agency (EPA) and Congress in 2022 requesting that water utilities be given “strong consideration” as recipients of grants for the new Water Workforce Infrastructure Development Grant Program. AMWA partners with EPA and other water organizations to host the “Creating the Water Workforce of the Future” webinar series. Additionally, its Utility Management Committee provides expertise on water utility management issues—including workforce development—and allows members to connect on building an equitable workforce and other aspects of utility operations.

[Milwaukee Water Commons](#) published *Water Needs Assessment: Pathways to Employment in a Water Centric City* in partnership with the University of Wisconsin, Milwaukee, Center for Economic Development to understand current and future conditions of the water workforce and develop inclusive and equitable pathways to water careers. Milwaukee Water Commons is the lead facilitator of the Milwaukee Water Equity Taskforce, which operates three working groups focused on workforce and training pathways, community collaboration and partnerships, and procurement and local business opportunities.

[National Rural Water Association](#) administers a nationwide Registered Apprenticeship Program through a network of 36 State Rural Water Affiliates, where over 520 apprentices are currently registered and 120 apprenticeships have been completed in the occupation of Water and Wastewater System Operation Specialists. The National Rural Water Association provides resources to support this program’s efforts to advance professionalism, engage youth, and diversify the industry’s talent pool by actively engaging in diversity, equity, inclusion, and accessibility recruitment methods. Through this network, participating employers can upskill incumbent workers and train the next generation of water professionals.

Rural Community Assistance Partnership (RCAP) provides training and technical assistance to build local capacity for all roles in water and wastewater systems—from operators to clerks. RCAP provides operator trainings every year to help new operators earn and existing operators maintain or advance their certifications. In 2023, RCAP completed need-to-know criteria and a job task analysis for utility clerks, which they soon hope to turn into a full certification and training program. RCAP also developed a national rural leadership institute for water—piloted in New Mexico and Michigan—that will be translated into Spanish and further piloted in the US South and US Caribbean in 2024 with a specific focus on empowering local rural women and leaders from Black, Indigenous, and Communities of Color.

The US Environmental Protection Agency operates a Water Infrastructure Water Workforce Development Grant Program to help build the water workforce and connect individuals to career opportunities in water utilities.

The Water Environment Federation (WEF) sponsors InFLOW, a scholarship program to enhance diversity and inclusion in the water workforce. InFLOW has two tracks: STEMpath, which supports historically underrepresented ethnic and racial groups, and CareerTech, which partners with local chapters of The Corps Network in WEFTEC host cities. WEF has an annual Operator Scholarship fund, Operations Challenge, and hosts leadership trainings including the Water Leadership Institute, a competitive program bringing together people from across the country and job types. Additionally, WEF hosts events and conferences for education and networking including the world’s largest annual water event—WEFTEC, as well as online training courses and webinars, publishes regular workforce columns in their monthly magazine, Water Environment & Technology, and maintains a career center for job postings. Finally, WEF hosts the US Stockholm Junior Water Prize, which recognizes excellence in high school-level water research. WEF and AWWA work together to support WorkforWater.org and the AWWA-WEF Veterans Initiative.

Water Professionals International (WPI) has the water industry’s only nationally and internationally recognized water and wastewater certification and professional designation. This work has assisted in the certification of more than 500,000 water and wastewater treatment professionals and counting through its testing service, which provides the water industry’s only standardized exam for water, wastewater, collection, and distribution operators.

The Water Research Foundation (WRF) published projects entitled Strategic Workforce Plan and Employee Value Proposition (WRF 5982), Building Workforce Skills for Intelligent Water Operations (WRF 4663), and Developing Curriculum and Content for DPR Operator Training (WRF 4772) in the last five years. Their ongoing and future research includes DE&I Best Practices for the Water Sector Workforce (WRF 5186), Preparing the Water Sector to Embrace Technology (WRF 5178), and Best Practices to Attract and Retain a Diverse Water Workforce (WRF 5238).



Building the Water Utility Workforce



Business-as-usual in water utility personnel systems and labor markets will not secure or transform the water utility workforce. A key approach to solving water's workforce challenges is partnerships—both among utilities and between utilities and education, training, and community-based organizations—at local, regional, state, and national scales. There are best practice examples to build on, but very few were designed to create impact at scale. Our research shows a common need for workforce programming to be implemented in ways that match the large-scale nature of the challenges. Specifically, the US Water Alliance recommends three strategies and nine related initiatives that span local, regional, and national scales to meaningfully address the scale of our water workforce challenges.

Strategy 1: Grow Water's Talent Pipeline

Act collectively to significantly increase the number of applicants while reducing barriers to entry for diverse candidates. Impactful initiatives to grow water's talent pipeline could:

- **Engage young people.** Engaging education partners and organizations serving diverse youth (e.g., foster care services, high schools, community colleges, juvenile justice systems, shelters, etc.) would help generate alignment on needs and opportunities for young people to learn from and connect with water employers. It could also scale educational offerings and employment pathways. Some existing water sector training and employment programs offer excellent precedents and opportunities to partner on and scale culturally responsive, standardized learning experiences. *(Local scale; Regional/statewide scale)*
- **Create “Earn and Learn WaterCorps” internship and career opportunities.** Creating an “Earn and Learn WaterCorps” would prepare and train participants for entry-level employment in multiple water utility occupational classes. This type of paid training opportunity could build on the success of existing local programs like PowerCorps and have a significant impact through partnerships with community-serving organizations that specialize in meeting the needs of candidates facing high barriers to entry—helping build a pipeline of skilled, qualified, and diverse talent. *(Local scale; Regional/statewide scale; National scale)*
- **Collaborate regionally.** Increasing the number and scale of regional water workforce collaboratives would facilitate structured relationships between employers, community-serving organizations, labor organizations, and education/training providers within regions, helping build and maintain effective and equitable water sector talent supply chains. *(Regional/statewide scale)*

- **Think outside of the civil service box.** Enhancing, modifying, and creating alternatives to civil service systems where possible would provide needed flexibility in hiring, retention, and advancement processes as well as criteria, wage levels, and career paths at public water utilities. Multi-sector collaboration that includes labor, utilities, and municipalities could better assess opportunities and develop feasible models and policy tools. *(Local scale; Regional/statewide scale)*

Strategy 2: Standardize Practices

Connect utilities and their partners with nationally accepted, standardized resources to expedite and strengthen place-based impact. Impactful initiatives to standardize practices could:

- **Create common water career pathways.** Developing clear, common career pathways in water could clarify, streamline, and codify the core academic, technical, and employability skills for targeted occupations. It could also help potential and current talent envision and realize their ideal career trajectories. *(Regional/statewide scale; National scale)*
- **Build a national water workforce database.** Developing and managing a comprehensive national water workforce database would fill key knowledge and data gaps such as the design of existing and effective water workforce programs, the diversity of the water workforce over time, and workforce needs by location and type. *(National scale)*
- **Develop a workforce-focused national communications campaign for water.** Developing shared communications materials to elevate water as a sector of choice could assist local water utilities with cost-efficient talent recruitment. A coordinated campaign could also demonstrate why state and federal lawmakers should help invest in water workforce solutions. *(National scale)*

Strategy 3: Inspire and Prepare Water Leaders

Curate curricula and cultivate networks and communities of practice to spread and scale the skills, practices, and capacities leaders need to tackle increasing water challenges. Impactful initiatives to do this could:

- **Cultivate and support One Water leaders.** With growing climate impacts, regulatory demands, aging infrastructure, affordability, pollution, and supply challenges, water leaders need new skills, strong networks, and adaptability. Emerging and established leaders could all contribute to and benefit from focused leadership development delivered through transformational experiences, curricula, and training. *(National scale)*
- **Support and deepen equitable human resources (HR) management.** A new national water HR network or community of practice is needed to surface and spread best practices, guidance, and tools to solve talent gaps and enhance water workforce diversity, recruitment, training, retention, and growth. *(National scale)*



Bringing Water Workforce Initiatives to Life



1

Engage Young People

The water utility sector has a well-developed set of professional organizations, training providers, and credentialing systems, but there is a lack of wide-scale awareness of water work opportunities among the emerging workforce. Increasing awareness and connecting young people ages 14–24 to the sector can help narrow existing and emerging talent gaps. A youth engagement initiative could build upon efforts currently in practice and create a common language for engagement. Youth engagement could create compelling learning experiences demonstrated to resonate with younger audiences to introduce this demographic to water utility jobs and water career pathways. Starting with a scan of similar efforts on smaller scales, the field needs a common language and framework for youth engagement, which will likely involve partnerships between water utilities, water education providers, and youth-based organizations (e.g., foster care, high schools, shelters, community colleges, juvenile justice, etc.). Including youth-based organizations can help ensure any standardized communications and educational materials are culturally responsive. Ideally, future educational and communications materials would be designed as a uniform regional, statewide, or national initiative, allowing local utilities to leverage educational materials most relevant to their community. The Alliance’s role could vary and include functions like elevating existing best practices in youth engagement and convening necessary partners to develop new, inclusive educational materials for distribution through a common channel.

2

Create “Earn and Learn WaterCorps” Internship and Career Opportunities

The idea behind a WaterCorps initiative is to prepare and recruit participants for entry-level employment in targeted water utility occupational classes, thereby supplying utilities with skilled, qualified, and diverse talent to hire. The Alliance seeks to partner with members and partners to design and pilot local or regional WaterCorps initiatives that provide participants ages 16–30 with hands-on job readiness, education, and training—including paid internships, pre-apprenticeships, and more—that can be replicated and/or scaled nationally.

WaterCorps could be especially beneficial to young people facing high barriers to entry. A potential building block for regional workforce collaboratives, this initiative could center partnerships with community-serving organizations that ensure the specific needs of underrepresented job candidates, such as skills-building and career navigation, are incorporated in program design. Potential key partners also include a mix of education and training providers (e.g., high schools, community colleges, and unions); utility employers at local and regional scales; and funders (e.g., federal and state grantmaking agencies, community foundations, and employers).

By linking employer demand with hands-on skills-building, paid educational and training offerings, and community needs, a WaterCorps initiative may yield more equitable outcomes than traditional on-the-job training. One key first step toward creating national WaterCorps efforts would be to collect and synthesize existing information from successful water internship programs and create a menu of best practices that utilities can use. These resources can inform any new model interested partners create while saving utilities time and money.

3

Collaborate Regionally

With appropriate funding and capacity, the Alliance and partners seek to support new regional workforce collaboratives. Regional water workforce collaboratives create structured relationships between water sector employers, community-serving organizations, labor organizations, and education and training providers—especially community colleges—to build and maintain a water sector talent supply chain. A collaborative can form at a regional or statewide scale where there is a common labor pool and/or common training resources to reliably meet hiring needs. An intermediary or backbone support organization usually serves as the convener of a regional workforce collaborative and provides staffing support to create the appropriate connections between partners.

Regional workforce collaboratives can be incredibly beneficial. Successful ones often seek engagement and decision-making participation from underrepresented candidates or community-serving organizations acting in underrepresented candidates' interests and work to ensure equitable outcomes. Collaboratives can also institutionalize culturally responsive programming within broader utility workforce efforts. One central hypothesis about regional water workforce collaboratives is that they do a better job of reaching underrepresented job candidates because they harness partnerships to engage those facing high barriers to entry and provide additional support beyond what a utility alone might be able to provide. Participants in regional water workforce collaboratives can increase capacity and efficiency gains by pooling staffing and resources, reducing regional fragmentation and duplication, and providing a dedicated structure focused solely on the collaborative's goals, funding, and operations.

Statewide examples of collaboratives:

- [Jersey Water Works](#) is a statewide collaboration of utilities, unions, nonprofits, corporations, higher education institutions, and local governments focused on transforming New Jersey's water infrastructure, including utilities' workforces.
- [The Arizona Western Apprenticeship Coordinators Association](#) provides a medium for the exchange of ideas, methods, and information relative to apprenticeship training, journeyman training, and more. Membership consists of administrators and/or training coordinators registered with the State of Arizona, community college administrators, state and federal government agencies such as the US Department of Labor, the Bureau of Apprenticeship and Training, the Arizona Department of Commerce Workforce Development Division, and the Arizona Department of Education, and other public and private agencies.

Regional examples of collaboratives:

- [IEWorks](#) (Inland Empire Works) consists of six water agencies in the southern California Inland Empire region working together to increase the number of highly qualified candidates for mission-critical positions in the water/wastewater industry while ensuring economic equity by providing internships, registered apprenticeships, and pre-apprenticeship programs like its [IE Black Worker's Center Pre-Apprenticeship Program](#).
- [Baywork](#) (Bay Area Water/Wastewater Workforce Reliability) in the San Francisco, CA, Bay Area is a 14-year-old consortium of 40+ water and wastewater utilities projecting a unified voice in workforce development plans, developing and implementing programs for a high-performing water workforce, and building relationships with partners and stakeholders to ensure the reliable workforce needed to serve customers and protect the environment.

4

Think Outside the Civil Service Box

Many water utilities operate within local or state civil service systems that set the rules for hiring and promotions. Often, these systems may hinder utilities' ability to attract and retain talent and hold employees accountable for their performance. The US Water Alliance believes developing alternatives and improvements to civil service models would create a better context to effectively recruit new candidates, pursue retention practices that support underrepresented candidates, and provide flexibility in wage levels to incentivize strong performance and job satisfaction.

The Sewerage and Water Board of New Orleans (SWBNO), which has 1,300 employees, has initiated a consultant-led process to assess its civil service system. SWBNO seeks to develop approaches that would provide flexibility, wage levels, career paths, and other features tailored to the utility's needs. "Working within the structure of the Civil Service System as it currently functions has challenged the utility's ability to be flexible and adapt to changing economic and industry conditions," the utility's 2023 RFP for a consultant stated.¹² The utility "needs a system that supports its ability to act as the unique utility that it is rather than a more typical City agency. For example, SWBNO believes that utility-specific job descriptions, market-based salaries, merit-based performance policies, and targeted job training in water industry topics would significantly help support its current workforce."¹² The project, which began in 2023, has an 18-month timeline to complete an analysis, recommendations, and implementation. Any changes in the model would have to be adopted by the state legislature. The Alliance encourages SWBNO and other utility and city efforts to maximize the effectiveness of their personnel systems and intends to amplify lessons learned from New Orleans.

5

Create Common Water Career Pathways

Nationally, water utility careers lack a common and transparent understanding of the specific steps that help workers advance to a desirable occupation or new role. Well-articulated career pathways could support workers' transitions from education into the workforce and from their first job through their desired career progression.

Given the low visibility of the water sector as a place to work, the Alliance is interested in supporting the creation of an integrated collection of resources intended to clarify, streamline, and potentially codify core academic, technical, and employability skills for targeted mission-critical water utility occupations. Creating a common set of user-friendly career pathway "maps" can help explain common career progressions by clearly outlining the education, experience, skills, and credentials required for each step in the career pathway and the potential options workers may have to expand into new areas. Ideally, the same career pathways could be used across different regions in a way that unifies how the public understands water sector employment opportunities. Career pathways resources would bolster other initiatives (regional water workforce collaboratives, WaterCorps, and youth engagement) and would also be valuable as standalone resources.

6

Build a National Workforce Database

Useful water sector employment data would unlock strategic decision-making towards progress. The US Water Alliance is interested in supporting a national workforce data benchmarking system to document and track water workforce demand, diversity, and talent gaps over time.

The 2018 Brookings Institution study, [Renewing the Water Workforce](#), was a landmark study in compiling and analyzing available federal data. However, that data has not been regularly updated and has major gaps. Solving sector talent gaps requires collecting reliable, granular data that defines and quantifies those gaps. There are good examples of data collection at the individual utility level and even some limited regional scales, but the fragmentation of the water utility sector means that there is very limited sector-wide data.

Current quantitative data gaps include:

- Occupations in which supply constraints are the most acute
- The number of current and anticipated vacancies
- The annual hiring rate
- The racial and gender diversity of the existing water utility workforce
- The similarities and differences between rural and urban utility workforce needs
- The capacity of relevant training/credentialing programs
- The matriculation rate from these programs

Implementing a national workforce database would provide utilities, policymakers, and workforce agencies with water workforce information that covers local, regional, and national levels. Reliable, baseline data would provide an understanding of common workforce challenges within specific regions and at other scales, increasing capacity to prioritize efforts and demonstrate the need for funding. Finding ways to reflect individual career trajectories in the data could also help the sector understand how under-represented candidates and people facing high barriers to entry are progressing and be used to develop more equitable workforce programming in the future.

7

Develop a Workforce-Focused National Communications Campaign for Water

A national water workforce communications campaign would provide a centralized platform to elevate and promote water jobs as “careers of choice.” This would assist efforts to grow water’s talent pipeline while also educating state and federal audiences about why the nation’s water workforce challenges are of dire consequence and deserving of their policy and funding attention. [The Value of Water Campaign](#), which educates and inspires the nation about how water is essential, invaluable, and in need of investment, could be leveraged as a launching point for a new workforce-focused campaign.

Showcasing water workforce challenges can also assist water utilities in their efforts to attract federal, state, local government, and philanthropic funding. Dedicated communications initiatives would also be opportunities to normalize equitable water workforce efforts and draw positive attention to utility programs available to jobseekers without exclusively relying on employer-driven marketing.

8

Cultivate and Support One Water Leaders

Emerging and established water leaders need support developing new capacities to help the water sector contend with more complex water challenges. Leadership development that inspires and prepares participants to meet these challenges head-on would also do more to retain workers than typical advancement opportunities. Steeped in water equity and the One Water approach, the program the US Water Alliance seeks to create would be designed to make the water sector a more welcoming place for under-represented groups and help participants innovate and solve problems through a cross-sector approach.

By being a part of the One Water Leadership effort, water workers would benefit from network-building with those leading innovation, cross-sector partnerships, equity, and sustainability and be prepared for supervisory and leadership positions in the water sector. Program components may include:

One Water Leadership Development

- One Water Essential Leadership Capacities
- Adaptive management
- Technical, managerial, financial, and engagement/equity leadership responsibilities
- Common career pathways
- Climate-conscious leadership

Cultural Competency Training

- Water utilities as anchor institutions
- Racial Equity Toolkit for Water Utilities
- Pillars of Water Equity

Transformational Experiences

- Hands-on volunteering and skills development opportunities
- Situational self and organizational assessments
- Educational site visits to explore One Water projects, programs, and practices
- Topical leadership institutes and excursions

Network Building

- Mentoring Connections programming
- Peer cohorts and alumni programming

9

Support and Deepen Equitable Human Resources (HR) Management

Several water utilities have implemented innovative, effective, and equitable HR practices. For this reason, a structure or platform for HR professionals in water utilities to develop and share best practices, learn from each other, and develop new implementation tools for workforce equity and solving talent gaps could be very effective.

An equitable HR management network or community of practice would illustrate multiple “how-to” opportunities for HR leaders to implement equitable best practices shared by their peers including practices like skill-based hiring that focuses on effective, relevant, and accurate measurement of a candidate’s skills; incorporating local equitable hiring efforts into utility contracting and procurement processes; and embedding culturally-responsive programming within broader utility workforce efforts. These practices could lead to faster recruitment, stronger employee retention, and fewer barriers to entry for underrepresented, low-income, or diverse candidates.



The [utility trainee recruitment and training program](#) implemented by Saint Paul Regional Water Services and Ramsey County recently removed a driver’s license requirement from its application process, as a third of applicants did not possess this. The removal of this barrier could increase the entry of underrepresented candidates, thereby increasing equitable outcomes of the program and subsequently diversity of the utility staff as a whole.



Conclusion



Water utilities have an unexpected opportunity to turn the workforce crisis they face into a transformational opportunity that establishes an equitable workforce for decades to come. To be successful, we must share a common understanding of goals, challenges, and solutions; work together locally, regionally, and nationally to design and implement solutions; and persist over the long term. Efforts are already underway, but they must be expanded, deepened, and accelerated. This report offers strategies and initiatives that when taken collaboratively are intended to do just that. A new and transformational water workforce playbook is being written, and we invite you to join us in this crucial work.

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, 29–30, <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," 25–26.
- 4 Brookings Institution, "Renewing the Water Workforce," 41.
- 5 Mike Orth, "2023 Water Report," Black & Veatch, July 2023, 5, <https://www.bv.com/resources/2023-water-report#contentdl>.
- 6 Brookings Institution, "Renewing the Water Workforce," 32.
- 7 Brookings Institution, "Renewing the Water Workforce," 18.
- 8 The US Bureau of Labor Statistics, "Occupational Employment and Wage Statistics," <https://www.bls.gov/oes/current/oes518031.htm>.
- 9 Brookings Institution, "Renewing the Water Workforce," analysis of Bureau of Labor Statistics Occupational Employment Statistics from 2016, 17.
- 10 US Water Alliance, "Making the Water Sector an Employer of Choice," <https://uswateralliance.org/wp-content/uploads/2023/09/Message-Research-Findings-1.pdf>.
- 11 Mike Orth, "2023 Water Report," Black & Veatch, July 2023, 8, <https://www.bv.com/resources/2023-water-report#contentdl>.
- 12 Greater New Orleans Foundation, "Request for Proposals for Workforce Model Analysis, Development, and Implementation," January 2023, <https://www.gnof.org>.
- 13 Brookings Institution, "Renewing the Water Workforce," 39.

About the US Water Alliance

The US Water Alliance is a member-supported national nonprofit that aligns diverse stakeholders to develop common-ground and transformational solutions to our nation's most pressing water challenges. We educate the nation on the true value of water and engage an expanding base of One Water champions, initiate new approaches and solutions to our most pressing water challenges, accelerate the adoption and scaling of the mindset, practices, and policies behind the One Water approach to advance a better quality of life for all, and celebrate what works to advance the One Water movement and solutions to inspire and spread innovation in water system transformation. Our nearly 200 members and partners include utilities, public agencies, community organizations, engineering and technology firms, environmental groups, agricultural interests, labor unions, researchers, artists and culture bearers, and many others.



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