

Building the Workforce for Tomorrow's Safe Water

By Steve Hubbs, PE

October 18, 2019

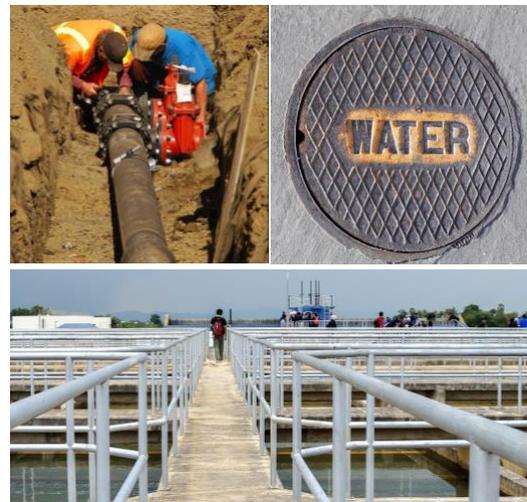
Reliable, 24/7 operation of the nation's water utilities depends on access to a qualified workforce—particularly sufficient numbers of certified water operators who run the equipment and control the treatment processes for drinking water, wastewater, and stormwater. These allied and evolving fields are increasingly linked through [water reuse](#) to ensure that Americans have access to clean and safe water and to help protect the environment.

According to a 2018 report by the Brookings Institution, nearly 1.7 million workers fill over 200 different job descriptions across the U.S. water sector.¹ In addition to water operators, these positions include skilled trades like electricians and technicians to engineering, science, financial, administrative, and management jobs. Water sector employees can be found in the largest metropolitan utilities and at the smallest rural facilities. For example, U.S. drinking water workers from almost 50,000 community water systems of all sizes are responsible for safely treating, disinfecting, and providing the **over one billion glasses of [drinking water](#) that are consumed each day.**

The Water Quality & Health Council has previously written about the urgent need to repair and replace water infrastructure assets (e.g., [Sticker Shock and the Nation's Drinking Water Infrastructure Challenges](#)). A critical element of this involves a looming shortage of the highly trained workforce needed to operate, maintain, and renew U.S. water systems.² This shortage is due both to an aging workforce eligible for retirement and an inadequate “pipeline” to attract and develop new talent to work where they are needed the most. These simultaneously result in enormous challenges and opportunities for the U.S. workforce. Having retired 15 years ago from the Louisville Water Company, I am now seeing [some of those workers](#) who filled the gaps in the past two decades approaching retirement, knowing that they will be taking with them the extensive institutional knowledge that takes decades to build.

A Silver Tsunami for Water Utility Workers

By now, many of you have probably heard or read about the term “[silver \(or gray\) tsunami](#)” and its general implications for the nation and its workforce. Unfortunately, these concerns are a very real and significant problem for the water sector. Our workforce is aging; [per the Brookings Institution report](#), an estimated one-third of drinking water and wastewater operators will be eligible to retire within the next decade. Large-scale retirements are already cutting into the pool of skilled, qualified workers in many U.S. utilities, resulting in major staffing vacancies and challenges. At the



¹ Brookings Institution. 2018. Available online: <https://www.brookings.edu/wp-content/uploads/2018/06/Brookings-Metro-Renewing-the-Water-Workforce-June-2018.pdf>.

² Government Accountability Office. 2018. WATER AND WASTEWATER WORKFORCE: Recruiting Approaches Helped Industry Hire Operators, but Additional EPA Guidance Could Help Identify Future Needs. Available online: <https://www.gao.gov/assets/690/689621.pdf>.

same time, a lack of public visibility combined with national declines in career and technical education fields has reduced interest among the next generation of workers needed to fill these water sector positions. There is also an ongoing and pervasive lack of gender and ethnic diversity in the water workforce. For all these reasons, developing a new, diverse water sector workforce is key to ensuring that we continue to enjoy safe, reliable water in the future.

This workforce crisis did not happen overnight; it has been at least a decade in the making. Although staffing is largely the responsibility of individual utilities, the U.S. Environmental Protection Agency ([EPA](#)), states, and other water-related federal agencies and organizations—often in collaboration—offer support for water workforce development to help ensure safe water for people and the environment. The latter include the American Water Works Association (AWWA), the Association of State Drinking Water Administrators, and the National Rural Water Association (e.g., [NRWA Apprenticeship Program](#)). I'd like to highlight a few of these organizations and activities.

EPA's Water Workforce Initiative

EPA has been an active leader and partner in addressing water workforce issues, and is charged with developing a strategic workforce plan as part of America's Water Infrastructure Act of 2018. Last month, following a late 2018 [National Water Sector Workforce Convening](#), EPA announced a [Water Workforce Initiative](#) to help municipalities of all sizes facing critical staffing shortages. The goal of the EPA-led initiative is to provide federal leadership, collaborate with diverse partners, and increase public awareness to bolster long-term, generational interest in water sector careers. Following further engagement with its partners, EPA plans to release a draft Water Workforce Initiative for public comment in early 2020.

AWWA and the Partnership for Safe Water Program

AWWA has developed extensive workforce strategies that include building resources to help attract, recruit, train, and retain talented and skilled employees while recognizing the importance of knowledge transfer within a utility. AWWA is also a co-sponsor of the [Work for Water website](#) with the Water Environment Federation, which is traditionally focused on wastewater. The AWWA-led [Partnership for Safe Water](#) is a voluntary program between six key organizations of the drinking water community (including EPA) and more than 300 water utilities nationwide serving nearly 100 million people. The Partnership approaches its primary goal of improving public health through a utility-driven program that strives for excellence beyond current regulatory requirements. The Partnership focuses on the workforce, from front-line operators to upper management, and provides the resources and structure needed to develop the highly qualified workforce needed now and in the future.

Water Utility Workforce Challenges and Opportunities

Water professionals work together every day to provide clean water and essential services for their communities through an increasingly integrated concept of "one water": drinking water, wastewater, reclaimed (reused) water, and stormwater. The sector is also stepping up efforts to ensure that a sustainable and diverse pool of qualified water professionals is available to meet future needs for U.S. utilities of all sizes and in all locations. My career in the water sector has been truly rewarding, providing me with a wide range of opportunities in engineering, science, management, and operations. I'm encouraged by the students I've worked with over the years, knowing that those choosing to work in the water community will be embarking on a fulfilling career dedicated to public and environmental health.

Steve Hubbs retired from water treatment operations at the Louisville Water Company in 2004. He remains an active volunteer in the drinking water community today.