



RENEWING THE WATER WORKFORCE

Improving water infrastructure and
creating a pipeline to opportunity

JOSEPH KANE AND ADIE TOMER, JUNE 2018



SUMMARY

As the U.S. economy continues to grow, many communities are struggling to translate this growth into more equitable and inclusive employment opportunities. Simultaneously, many of the nation's water infrastructure assets are in urgent need of repair, maintenance, and restoration. Yet the workers capable of carrying out these efforts are in short supply due to an aging workforce eligible for retirement and the lack of a pipeline for new talent.

However, addressing these two challenges together offers an enormous infrastructure and economic opportunity. Constructing, operating, designing, and governing water infrastructure systems demands a skilled workforce, and hiring a diverse workforce can support greater economic mobility. To unlock this opportunity, local, state, and national leaders must work together to better understand current workforce challenges and develop new techniques to hire, train, and retain water workers.

By analyzing occupational employment data, this report explores the water workforce in greater depth to uncover the accessible, well-paying opportunities in this sector. In particular, it finds:

A. In 2016, nearly 1.7 million workers were directly involved in designing, constructing,

operating, and governing U.S. water infrastructure, spanning a variety of industries and regions. Water utilities employ many workers, but multiple other industries and establishments, including engineering firms and construction contractors, are essential to the water sector too. Collectively, the water workforce fills 212 different occupations—from positions in the skilled trades like electricians and technicians to financial, administrative, and management positions—that are found everywhere, from big metropolitan markets to smaller rural areas.

B. Water occupations not only tend to pay more on average compared to all occupations nationally, but also pay up to 50 percent more to workers at lower ends of the income scale. Water workers earn hourly wages of \$14.01 and \$17.67 at the 10th and 25th percentiles,



respectively, compared to the hourly wages of \$9.27 and \$11.60 earned by all workers at these percentiles across the country. Significantly, workers across 180 of the 212 water occupations—or more than 1.5 million workers—earn higher wages at both of these percentiles, including many in positions that tend to require lower levels of educational attainment.

C. Most water workers have less formal education, including 53 percent having a high school diploma or less. Instead, they require more extensive on-the-job training and familiarity with a variety of tools and technologies. While 32.5 percent of workers across all occupations nationally have a high school diploma or less, a majority of water workers fall into this category, speaking to the lower formal educational barriers to entry into these types of positions. However, 78.2 percent of water workers need at least one year of related work experience, and 16 percent need four years or more, highlighting the need for applied learning opportunities.

D. Water workers tend to be older and lack gender and racial diversity in certain occupations; in 2016, nearly 85 percent of them were male and two-thirds were white, pointing to a need for younger, more diverse talent. Some water occupations are significantly older than the national median (42.2 years old), including water treatment operators (46.4

years old). Meanwhile, women make up only a fraction of employment in some of the largest water occupations overall, including plumbers (1.4 percent). Finally, there is a particularly low share of black and Asian workers employed in the water sector; together, they only make up 11.5 percent of the water workforce, compared to 18 percent of those employed in all occupations nationally.

Based on these findings and dozens of conversations with utility leaders and other workforce groups, the report lays out a new water workforce playbook for public, private, and civic partners to use in future hiring, training, and retention efforts. Utilities and other employers need to adjust existing hiring procedures and pilot new training efforts in support of the water workforce; communities need to hold more consistent dialogues and develop more collaborative platforms; and national and state leaders need to provide clearer technical guidance and more robust programmatic support.

Ultimately, the report reveals the sizable economic opportunity offered by water jobs, including the variety of occupations found across the country, the equitable wages paid, the lower educational barriers to entry, and the need for more diverse, young talent.