

# Workforce Strategies

MANAGING TODAY'S STAFFING CRISIS

## City and County Leaders Should Prioritize Utility Workforce Development

BY PETER CAVALLI

**Public utilities are the operating backbone of modern communities. Clean water, reliable wastewater treatment, functioning stormwater, wastewater collection systems, reclaimed water systems, and the crews who maintain this infrastructure—such as pipes, pumps, meters, and related treatment—need to be developed, maintained, and managed. These services are essential to public safety, public health, and economic development.**

**F**or senior leaders in city and county government, workforce development related to utility employees should be viewed and funded as a strategic infrastructure investment rather than an optional human resources (HR) program. The reasons are straightforward: operational resilience, regulatory compliance, cost containment, succession readiness, and community trust all depend on managing a well-educated, trained, and ethical workforce.

### A WORKFORCE IN TRANSITION

Utility professionals exist in a shifting workforce environment, and several converging trends are placing new pressures on this environment. A significant proportion of skilled operators and tradespeople are approaching retirement, creating a wave of turnover. At the same time, the technical complexity of utility systems is increasing. Digital supervisory control and data acquisition systems, asset management integrated with geographic information system technology, advanced metering infrastructure, and tighter regulatory standards require different skill sets than those of even a decade ago.

Simply put, this isn't the same work environment I entered in the mid-to-late 1990s, and such changes are occurring at an increasingly rapid pace. In addition, younger workers entering the labor market often have less exposure to trade careers, making recruitment a strategic challenge. These dynamics require active

workforce planning and continuous training to, at the least, maintain service levels and legal compliance.

### BUILDING A STRONGER UTILITY WORKFORCE

Training matters to senior management. From a management perspective, workforce development affects performance and risk in measurable and palpable ways. Well-trained operators reduce the frequency and duration of service interruptions, lower the chance of permit violations, and decrease overtime and damage-related costs associated with errors. Training also supports preventive maintenance and asset lifecycle-extending practices. Improvements in workforce development help delay capital replacement and reduce long-term costs through better care and earlier problem detection. Academically, studies have linked workforce quality to utility performance metrics, demonstrating that investments in human capital pay dividends in reliability and cost efficiency.

Regulatory environments for drinking water and wastewater aren't static. Federal and state agencies increasingly emphasize operator certification, competency, and documented training as elements of capacity, reporting, and permitting. Furthermore, federal grant programs and technical assistance initiatives increasingly reward or require workforce development components. For example, US Environmental Protection Agency programs and grant

selections explicitly support apprenticeship and training capacity building in the water sector. Senior managers who proactively align workforce strategies with regulatory expectations improve their competitive position for external funding as well as reduce the risk of noncompliance penalties and the political exposure that comes with them.

Workforce programs should be comprehensive and sequential, using a balanced approach. Outreach and recruitment, onboarding and apprenticeship, continuous technical training, leadership development, and succession planning all need to be addressed through varied, cohesive, collaborative, and innovative methods.

Outreach efforts can include partnerships with community colleges, technical colleges, and workforce development consultants. Additional development opportunities may come through veterans' programs, professional association scholarships, and government funding sources. I have worked with one of the oldest public works training facilities in the country—previously known as the Public Works Academy at Pinellas Technical College and housed within the Pinellas County (Fla.) School District—and we used all these measures. We also partnered directly with local municipal governments, whose professionals often served as subject matter experts and contributed to course planning, implementation, instruction, and leadership.

### STRENGTHENING TALENT PIPELINES AND SKILLS

Effective workforce development focuses both on expanding the local candidate pool and advancing equity goals. Apprenticeships and structured on-the-job training help build competency and reduce early turnover. For incumbent workers, a

mix of technical courses, cross-training, and leadership development creates a clear career ladder that improves retention and cultivates future supervisors and managers. Case studies show that utilities that combine these elements achieve higher retention and more effective knowledge transfer. When utilities create a learning culture, employees take pride in their expertise and are more willing to share this knowledge and experience, leading to effective knowledge transfer.

City and county budgets are inevitably constrained. To make the business case for workforce development, leaders should quantify the likely returns: reduced emergency repair costs, fewer permit exceedances, lower overtime and contractor reliance, extended asset life through improved maintenance, and faster response times during storms or other emergencies. But the argument shouldn't rely solely on what can be easily measured. Nonfinancial benefits, such as improved morale, stronger succession plans, and enhanced public trust, are equally material. When workforce programs are tied to operational key performance indicators and asset management plans, they are no longer training expenses but strategic investments.

Leveraging professional associations and academic partners can accelerate these efforts. Municipal leaders don't need to reinvent the wheel. Organizations such as AWWA and American Public Works Association (APWA) provide technical guidance, work force development toolkits, accreditation frameworks, and peer networks supporting both organizational and individual growth. AWWA's resources help utilities design recruitment, training, and succession strategies, whereas APWA's publications, training, and committee work offer public works-specific templates and policy guidance. These associations also facilitate benchmarking and knowledge transfer, enabling smaller utilities to adopt proven practices refined by larger agencies.

### CORE ELEMENTS OF A SUCCESSFUL WORKFORCE STRATEGY

Senior managers should consider several design principles when building or expanding a workforce development program:

- Align to operational priorities. Training should be mapped to critical assets, regulatory deadlines, and emergency response roles. Use competency models to define required skills for each position and tier within the organization.
- Blend classroom education, hands-on learning, and mentorship. Adult learners retain technical skills best when formal learning is reinforced through on-the-job coaching and mentorship. Apprenticeship models and structured shadowing programs are especially effective.
- Track outcomes. Document training participation, skill attainment, incident rates, and performance metrics. Data-driven programs are easier to defend in budget cycles and more likely to be replicated.
- Build partnerships. Collaborate with community and technical colleges, vocational training providers, workforce development consultants, veterans' organizations, and regional workforce agencies to develop pipelines and diversify recruitment channels. Associations like AWWA and APWA offer entry points to these partnerships.
- Take an equity and inclusion lens. Workforce development is an opportunity to expand access to middle-class careers in communities that have been underrepresented in utility trades. Programs that focus on inclusive recruitment and support services broaden the labor pool and strengthen public trust. This builds both communities and organizations.

Programs succeed when leaders set clear expectations and assign accountable owners. A workforce development

steering group should include human resources, risk management, utility/public works leadership, finance, and training partners. This coming together of leaders ensures alignment with budget cycles, capital planning, capabilities, resources, and operational goals. Embedding training requirements into job descriptions, performance evaluations, and promotion pathways (career ladders) creates organizational incentives for participation and continuous improvement.

From the perspective of city and county senior managers, the imperative is clear: a capable, well-trained utility workforce is essential to the maintenance, operations, management, and resilience of the water sector's critical infrastructure. Workforce development reduces operational risk, supports regulatory compliance, contains costs, and sustains community confidence. By leveraging available resources, academic evidence, and local partnerships, municipal leaders can assemble successful, pragmatic, measurable programs that secure service continuity today and build institutional capacity for the decades ahead. Treating workforce development as strategic infrastructure and not as a discretionary expense will pay dividends in reliability, fiscal stewardship, and public safety. Such collective commitment strengthens both the infrastructure that communities rely on and the communities themselves.

#### ADDITIONAL RESOURCES

- Zach, J. 2025. Managing Knowledge Transfer in the Digital Age. *Opflow*. 51:4:6. <https://doi.org/10.1002/opfl.2088>
- England, W. 2025. Engaging Youth Through the Model Water Tower Competition. *Opflow*. 51:2:8. <https://doi.org/10.1002/opfl.2059>
- Bonhart D, Elliott J, Rowland C. 2024. Distribution Worker Apprenticeship Program Creates a Pipeline of Future Talent. *Opflow*. 50:10:6. <https://doi.org/10.1002/opfl.2030>