

Planning for a Changing Workforce

Before Your Employees Are All Gone

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By now, we've all heard about the droves of baby boomers getting ready to retire. It's an issue that will affect all workplaces, to one degree or another, and it looks to be particularly severe for the public sector, including water and wastewater utilities. Unfortunately, it's an issue that most organizations haven't considered adequately and aren't equipped to handle.

"The challenge of replacing talented employees has become a major national crisis that must be addressed by not only the public works profession but also by elected officials and public managers in every state, city, and county in America," writes John Luthy, president of The Futures Corporation in the December 2004 *APWA Reporter*.

This pending crisis poses two central challenges: (1) how do we replace the workers who will leave over the next several years and (2)

how do we capture the knowledge and experience that these people have? The answers to these questions and the way we address these challenges will have long-standing implications for our utilities.

Workforce Crisis Looms

The federal government estimates that as many as one-third of its workforce will retire in the next five years. Similarly, a survey of 116 utilities conducted by the Black and Veatch Corporation for the American Water Works Association Research Foundation (AwwaRF) and the Water Environment Research Foundation (WERF) found that these utilities expected to lose 14 percent of staff to retirement within five years and 27 percent in 10 years.

The immediate challenge, then, is to replace retiring workers—a task that's much easier said

than done. The general public, as a rule, has little idea about the importance of public works or what has to happen in order to provide clean, safe water to our homes. Couple this with the fact that salaries are, according to Luchy, often 25 to 40 percent below similar industry positions, and it isn't surprising that workers aren't flocking to town hall looking for jobs.

"As I see it, the recruitment question is a public education issue," says Bob Blanco, a rural development specialist with the Rural Community Assistance Corporation. "If entry level and more complex skills were competitive and properly compensated, the industry would be able to attract and retain an ample talent pool. This means raising rates or generating revenues at the local community to meet this need. To succeed in establishing rate levels that will sustain financially healthy wastewater and drinking water facilities that include compensating operators appropriately will require public or user support."

For many communities, this could translate into "rate shock." Faced with more stringent regulations, aging infrastructure, and the need to be financially secure both now and in the years ahead, most systems are already looking at sizable rate increases. Adding in even more money for market-rate salaries and decent benefits only compounds this situation. A good tactic is to start talking to the public about the importance of good water and wastewater. (An article titled "Rate Increases: Dealing With the Public" is available on the NESc Web site at www.nesc.wvu.edu.)

"Community leaders must invest time on the public relations front to educate, in a sincere and trusting manner, that investment is necessary for the safety and health of the residents and the economic vitality, growth, and quality of life within the community itself," Blanco says.

"How do we create a market?" he continues. "To some extent it exists in the regulator's role. Those facilities not getting the job done and those given ample time to do so should not be rewarded the same way as those who comply with state and federal laws and regulations. The other dimension is the public's role. If the demand or pressure is not at hand, competing economic priorities may prevent positive steps from being taken. So the future of the community can hinge on the community's water infrastructure and the capacity of that community to support utili-

ty services through its technical, managerial, and financial skills. Operator recruitment and retention is a key element."

Recruitment Is Just the Beginning

Finding and retaining employees and coming up with the money to do it is a big challenge in and of itself. And the pending loss of personnel isn't news to most systems.

"But," Luchy warns, "awareness often compounds the true challenge—replacing seasoned professionals who have gained the bulk of their institutional memory through many years on the job with continuous training during years of extraordinary technical innovation. Simply placing ads to replace retiring talent does not address issues of lost institutional knowledge, acquired skills, and community-wide collaborative relationships."

To put this in perspective, a March 7, 2005, *Fortune* article provides a dramatic example. "Way back in the 1960s, [the National Aeronautics and Space Administration (NASA)] spent \$25 billion (in 1960 dollars)—and at one point employed 400,000 people—to send 12 astronauts to the moon," writes Anne Fisher. "But in the 23 years since the Apollo program ended, the engineers who carried crucial know-how in their heads, without ever passing it on to colleagues, have retired or died (or both).

"At the same time," Fisher continues, "important blueprints were catalogued incorrectly or not at all, and the people who drew them are no longer around to draw them again. So, to fulfill the Bush administration's promise to return to the moon in the next decade, NASA is essentially starting all over again. Estimated cost to taxpayers in current dollars: \$100 billion."

While small utilities aren't working on projects this massive, the situation is remarkably similar and perhaps more critical when considering that large organizations can more easily create or depend on some redundancies across personnel. This is not the case with a one operator water system or a multi-system operator.

Capturing Tacit Knowledge

Those who work for small water and wastewater systems often have what's known as "tacit" knowledge. The vast majority of what they know about the system is in their heads and not documented.

"The nature of the utility workplace lends itself to methods that aren't written down,"



observes Myron Olstein, director of organizational strengthening with Black and Veatch Corporation and one of the investigators on an AwwaRF/WERF study of the Frederick County Sanitation Authority in Winchester, Virginia. "You're not going to go running to a book."

For many workplaces, capturing this tacit knowledge has become an important endeavor. Some have gone to considerable lengths to make this a reality.

The San Francisco Bay Area Rapid Transit District, for example, is developing a sophisticated management system so that employee knowledge can be accessed in the future. Departing employees transfer information on their computers to an intranet site, which also houses employee discussions about how they solve various problems. These discussions and additional information are being used to create online courses to train new workers.

The AwwaRF/WERF project was based on a two-day field study. Project investigators came up with 600 processes typical in a medium-sized water or wastewater plant and tried to develop ways to document the knowledge and experience involved in carrying out these activities.

"The knowledge capture process was designed to cover situations where an impending loss of personnel would happen too quickly for classic knowledge management techniques to be applied effectively," says Jason Jennings, a project manager with Black and Veatch and part of the AwwaRF/WERF project. "As the project team found out in working with the pilot utility, the

highest risk of tacit (undocumented) knowledge involved infrequent and/or non-routine events, which are unlikely to be targeted by knowledge management.

"In addition to proving useful in prioritizing and capturing important tacit knowledge," Jennings continues, "the methodology also provided the additional benefits of training for junior staff who did not always understand why they did what they did or what their supervisors did and as a vehicle for process improvement. Also of importance to utilities, the pilot utility was able to continue the knowledge capture process without outside assistance on their own following the two days of onsite assistance."

Small System Solutions

Not every workplace can adopt such high-tech solutions. What are some things that small systems can do to capture knowledge and help future employees?

"Documentation is the answer," says Kevin Kundert, training director with the Montana Water Center and a licensed water operator. "Operators need to know specifications and historical data about the system—what's gone right and what's gone wrong with the system in the past. Where are all the controls, parts, valves, etc.?"

"I know of numerous cases of operators walking off the job after multiple years of service as the only operator of a system and taking much of the knowledge with them when they go," Kundert says. "Not good! System owners must document operational records that can help a new operator



acclimate to the system. Red flags should be popping up for system owners if only one person has all the pieces of the operations puzzle.”

Kundert recommends using the system’s sanitary surveys as a resource. These reports contain a great deal of information about the nuts and bolts of the system as well as its strengths and weaknesses.

Blanco suggests that retired workers might become part of the solution. “If we could hire the retired operators and train them to be trainers, this would be a good start,” he says. “Operating facilities is about some science and a grasp of the fundamentals, coupled with the art of operating a specific facility through years of familiarity with its uniqueness.” An AARP survey supports this idea, finding that most pre-retirees plan to work at least part-time after retiring and that half foresee working into their 70s and beyond. (See the sidebar on page 22 for more about this idea.)

Training Is Key

Mississippi has developed an operator-in-training scholarship fund to help small systems attract new personnel. Administered by the Mississippi State Department of Health (MSDH) with U.S. Environmental Protection Agency operator training set-aside funding, the program helps small communities with salary assistance while a new operator gains the necessary experience, acquires the necessary certification, and is then able to take over the reins as an operator.

“The program began in 2003 with a statewide mailing announcing the program,” says Dan George, training branch director with MSDH’s Bureau of Water Supply. “To date we have had 26 water systems submit applications to participate in the training program, and we’ve had 18 people complete the required training and pass the certification exam.”

Any public water system serving a population of 3,300 or fewer may participate in the program. Individuals seeking to become an operator must be U.S. citizens and have a high school diploma or GED. More than one system may jointly sponsor an operator in the program.

The scholarship pays the participating system or systems \$15,000 over 12 months, \$7,500 over two years, or \$5,000 over three years. “Although there is no minimum salary threshold, we (MSDH) strongly encourage participants to pay the operators the highest possible salary,” George says. “As we all know, the higher the salary you pay a trainee, the more likely it is that you can employ a motivated, highly qualified, and capable person as your operator.”

George also encourages people to recruit trainees who show interest in a career as an operator and to get a commitment in writing. “Water systems should be sure that their selected operator trainee wants to be a waterworks oper-

ator, can learn the business, and pass a certifying exam,” he says. “I would also recommend a personal services contract of some type with the waterworks’ operator. This contract should be written to guarantee the trainee understands the requirements of the scholarship, works to complete the training (including successful completion of the certifying exam), and then agrees to stay with the water system for a period of time.”

“Keep in mind that training isn’t just for new water operators or managers,” Kundert says. “The rules are changing and technology is moving at such a fast pace that recurrent training is needed to just keep from falling behind. New training tools are available and continue to be produced. These allow operators to maintain proficiency without even leaving their home or workplace.

“Another option is to meet continuing education by attending in-person workshops,” he continues. “These training sessions help you maintain a network of contacts who can assist you from time to time—whether they be your peers or technical assistance providers.”



Workforce Planning in Five Steps

There are five critical areas where progress is needed [to plan for worker retirements]. Each requires collaboration with and support from elected officials, personnel managers, and human resource departments, but all offer the means to break the cycle that will otherwise continue to plague the public works profession

1

Provide a clinical assessment of employee retirement, turnover, and retention issues. Prepare a clear, concise, and clinical assessment of employee retirement with schedules showing loss of institutional memory as well as essential technical knowledge and skills. Consider this a discussion paper that outlines the situation pertaining to talent loss, rate of turnover, declining tenure, and recruitment difficulties. Review the status of professional devel-

opment and training programs, indicating their value and your department's current level of formal employee development. Discuss salary surveys, with supportable data related to comparable salaries in similar industries and government agencies. Inform decision makers of the issues with documented impact on program and project delivery, service quality, and cost to the community

2

Focus on employee training and development. For many technical disciplines, half of what is learned in college or in specialized training is obsolete within five to eight years. State and local government have been extraordinarily myopic about continuing professional development, often cutting the very training and development programs that would otherwise help sustain desired quality and service levels. Public works leaders must address this through honest discussions with

elected leaders and policy makers. Establish mentoring programs, develop internal orientation and training programs for core competencies and specialized skills, and create your own development systems. Research tells us that new recruits and established employees will increasingly demand career and professional development. Remember, the only thing worse than training people and having them leave is not training them and having them stay.

3

Use retired technical talent. Recent AARP surveys report that fully 80 percent of retiring baby boomers plan to work in retirement. This will provide and is already providing a huge talent repository replete with every technical specialty and type of experience needed in most departments. The only barriers involve existing policies that might not accommodate individuals who want to work part-time

or have flexible hours. Forward-thinking leaders will recognize this cadre of talented professionals and immediately begin to develop personnel policies that allow flexible contracts. Combined with sensible recruitment and succession planning, using capable retirees will ensure adequate staffing for scheduled projects, provide more senior talent to use as mentors, and will moderate staff costs.

4

Conduct succession planning. Similar to private industry, it is essential that every public works department have a clear management development and succession plan. Take time to analyze the management structure and determine how retirement or resignations might impact service delivery, institutional memory, and operating effectiveness.

For those considered top leadership candidates, provide a formal development program that will allow them to grow professionally while preparing for potential management openings. Invite broad participation—every learning opportunity pays dividends for both the community and your department.

5

Accelerate recruiting. Public works must establish itself as a wise professional career choice. This cannot be done without a totally revamped recruiting system that actively seeks new talent, both early and mid-career. Learn to showcase your department and what it means to the community. Establish a

team of employees who visit local high schools, junior colleges, and universities during career fairs, explaining to prospective candidates the exciting challenges associated with public works. Talk about your history, contributions, projects, career opportunities, job variety, and other aspects of public service.



Don't Wait to Get Started

Admittedly, the prospect of simultaneously getting new personnel on board and trying to capture the collected wisdom of those leaving is a daunting one. The demographic changes we face are complex and won't necessarily be remedied through simple steps. Nevertheless, it is important to get started sooner than later.

The solutions we begin crafting today will result in an easier transition down the road. When it's all said and done, hard work now will result in a deeper understanding of our utilities, a better experience for system personnel (those on the way out as well as those on the way in), and confidence that we won't compromise the public health of our communities.

For more information

The summer 2004 *On Tap* featured a series of articles—including one on rate setting and another on retaining employees—based on the theme “Running Your System Like a Good Business.” This issue is available on the National Environmental Services Center Web site at www.nesc.wvu.edu or may be ordered in hard copy by calling (800) 624-8301 or e-mailing info@mail.nesc.wvu.edu.

The federal government's Office of Personnel Management has information about topics such as workforce retirement and succession planning. For more information, visit their Web site at www.opm.gov/employ or send an e-mail to esmarketing@opm.gov. You may also write to Office of Personnel Management, 1900 E Street NW, Washington, DC 20415-1000 or call (202) 606-1800.

The AARP has a wealth of information about retirement and related issues. Visit their Web site at www.aarp.org to learn more.

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