



the water & wastewater workforce

By Caitlin Cunningham

Mark Lundgren, like many Americans, is job hunting. When he began postgraduate environmental engineering studies at the University of Minnesota, Lundgren thought that he would walk across the commencement stage and into one of many career opportunities. Historically, students in the program had received job offers from multiple local firms. But after earning his master's degree with a focus in wastewater treatment, Lundgren finds himself—and several of his classmates—struggling to secure work despite the oft-publicized shortage of fresh-faced water and wastewater professionals.

An undergraduate biology major, Lundgren subsequently made the decision to pursue a career in wastewater treatment. He found the field's job stability, pay scale, technical nature and reported demand to be appealing. Fast forward a couple years, and Lundgren is up against an army of applicants vying for a handful of coveted openings, many of which would require relocation.

As he continues his search, does the aspiring treatment professional anticipate expanded opportunities for water and wastewater professionals? "Unfortunately, I believe that infrastructure spending, both in the private sector and the public sector, will lag behind an economic recovery," Lundgren told *Water & Wastes Digest (WWD)*. "This, in combination with the fact that senior engineers are not retiring due to the decreases in their personal savings and the state of the economy, will most likely mean that the job market in our sector will continue to be bleak for the next few years. However, I believe that there will be a few forward-thinking companies that will understand the need to develop young talent before the mass retirement of senior staff members."

By the Numbers

The water and wastewater industry comprises about 145 million workers, according to an October 2008 report from the Water Environment Federation (WEF) Task Force on Workforce Sustainability. In its 2009 State of the Industry Report, *WWD* found the average age of its subscriber to be 54 years—an industry snapshot, but a telling one.

The first round of baby boomers, many of whom joined the industry in the 1970s with the passage of the Clean Water Act and the Safe Drinking Water Act, are coming up on retirement age. As these seasoned operators, engineers, maintenance personnel and other skilled workers prepare to make their exit, it is the general consensus in the industry that the line of young, qualified individuals waiting to fill their shoes falls short. Enrollment in bachelor's degree engineering programs declined sharply during the 1980s and more gradually throughout the 1990s; only in the

new millennium have some programs begun to see a participation upswing. Further complicating the issue, a mass exodus of long-time employees poses a potential "brain-drain" effect unless their know-how is well transferred to successors.

This impending employment gap has become a top-priority concern and talking point in the industry over the past decade. To avert a workforce crisis such as those currently being experienced in the health care and information technology sectors, for example, many water and wastewater groups have set out to gather supporting data and use it for recruitment and knowledge retention purposes.

WEF and other industry advocate organizations have sponsored workforce-related research initiatives. Some common themes being identified and acted on include:

- Developing a better public understanding of engineering and the water sector;
- Offering funding and other incentives for students and faculty studying water topics; and
- Sharing research findings across groups and encouraging collaboration to improve the workforce situation.

From the Field

When *WWD* asked readers in February to share their experiences and thoughts regarding the industry's current employment situation, we received several responses—none too sunny. But to our editorial staff's surprise, the challenges presented, as with those conveyed by Lundgren, had less to do with an insufficient employee pool and more to do with limited budgets and scarce hiring.

The superintendent of a West Coast city's water treatment facility wrote: "My city has basically had a hiring freeze over the past year, with vacant positions unfilled, including utilities, water, sewer, street

Published vs. perceived trends, and collaborating for industry success

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and wastewater treatment plant. I don't see any increase in labor for the next two years. Continued shrinking in labor is more probable."

Another respondent, the president of a water and wastewater equipment and service provider, said: "Tax dollars, either income or real estate, are directly proportional to wastewater treatment plant and water treatment plant funding. We are experiencing a slowdown in our area of the nation as we have some of the highest unemployment percentages. The ARRA [American Recovery & Reinvestment Act] funds we are seeing presently will be diminishing, and the local and state funds have been cut. It's our belief the water and wastewater industry has not bottomed yet."

Call to Action

Data compiled and published by reliable sources paints a picture of a water and wastewater industry in trouble: one facing an imminent talent shortage, albeit a promising gap for the budding professionals in demand. From the field, comments from current and would-be water and wastewater staffers portray a different kind of grim reality: that of an industry with serious funding obstacles and thus limited job opportunities.

To begin untangling these mixed messages and establishing stability in the water and wastewater job market, the industry must rally support for new infrastructure construction and upgrades. In its 2009 Report Card for America's Infrastructure, ASCE assigned a grade of 'D-' to both the drinking water and wastewater categories. And signs of improvement are lacking; the latest U.S. Environmental Protection Agency estimates show the gap between current investments in and projected needs for industry infrastructure to stretch hundreds of billions of dollars wide.

In 2009, PA Consulting Group prepared an encouraging report on behalf of the Clean Water Council (CWC), a coalition of 35 national organizations dedicated to protecting and enhancing U.S. water and wastewater infrastructure. Titled "Sudden Impact: An Assessment of Short-Term Economic Impacts of Water and Wastewater Construction Projects in the United States," the study tracked and analyzed 116 industry projects completed in 2006 and 2007 in California, Georgia, Minnesota, New Mexico and Pennsylvania.

The final report indicates that a \$1-billion investment in national water and wastewater infrastructure triples itself by generating \$2.87 billion to \$3.46 billion in demand for goods and services. This same \$1 billion, according to the research, can create 20,003 to 26,669 jobs—roughly half of these in water and wastewater construction.

Ultimately, the assessment concluded that water and wastewater projects bring immediate value to local economies in three fashions:

1. Direct impact via job creation and materials/supplies purchases;
2. Indirect impact stemming from point No. 1; and
3. Induced impacts as workers spend money that is then respent, known as the "multiplier effect."

The text also highlights long-term economic, environmental and quality-of-life benefits—future employment growth, fire protection, flood control and cleaner waterways among them.

Securing greater support and thus funding for water and wastewater construction will create jobs in and of itself, and an active market with employment opportunities will attract greater interest from students as well as workers considering career changes. The call to action rings loud and clear.

If we as industry proponents accept the challenge, we can garner financial assistance, promote a capable, sustainable workforce and protect our own retirement

plans by utilizing the various resources at our disposal. Together, we can reach out to taxpayers and legislators, sharing information and experiences that demonstrate the dire need for immediate and significant federal-, state- and local-level investments in the water and wastewater infrastructure that sustains their livelihood, and ours. **WWD**

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