

INDUSTRYINSIGHT

Compiled by Neda Simeonova

Seeking Experienced Water/Wastewater Professionals

Is the industry experiencing a qualified employee shortage?

Recent industry surveys show that there is a lack of qualified employees to fill positions in areas of drinking water, wastewater, storm water collection, drainage and solid waste.

Water & Wastes Digest decided to dig deeper and talked to several sources. Here is what Matt Barcus, president of Precision Executive Search, Inc., Terry Warren, P.E., CFM, storm water services manager, engineering department for the town of Cary and David Kress, vice president of water and wastewater operations for Alberici Group, had to say about this issue.



Matt Barcus

WWD: Where do you see the biggest shortage of qualified personnel and why? What can be done to alleviate this shortage?

Matt Barcus: There are a number of reasons for this shortage. First, the industry needs better PR and better marketing—to children, believe it or not. The civil engineering community at large, the leading civil engineering associations like ASCE, AWWA and AWRA and working professionals need to find a way to team up with schools and student organizations that will allow them to expose the students to the exciting projects and opportunities that are available in the profession.

Second, though there has been some adjustment recently, the pay for civil engineering professionals needs a boost. Third, in specific regards to drainage, storm water, hydrology and hydraulics and some of the other micro-specialties in the industry, these are

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Terry Warren

WWD: Why do you think there is a shortage of qualified personnel?

Terry Warren: Storm water regulations, especially regulations related to nonpoint source water quality impacts, only began to be developed in the last 15 to 20 years and are still being refined and implemented. These types of regulations are also becoming much more sophisticated. Storm water quantity issues are also relatively new as urban areas have built out and impacts from impervious runoff have become more substantial. Storm water engineering is still an emerging field, and as a result, the number of experienced qualified people to fill positions is limited.

The town of Cary is fortunate in that it is located in very close proximity to North Carolina State University, The University of North Carolina and Duke University. These universities are pipelining

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David Kress

WWD: Where do you see the biggest shortage of qualified personnel and why?

David Kress: The environmental industry and particularly the water and wastewater infrastructure have experienced explosive growth. There are several reasons for this: The U.S.'s aging systems; the need for new discharge permit requirements; and the migration of population to the Southern tier of the nation. These factors have created a need for new greenfield plants, retrofit of existing plants and a need to provide more maintenance of the distribution systems. The new plants tend to be constructed on the outer edges of communities, which are growing in their direction. Also, plant upgrades and retrofits are increasingly surrounded by swiftly growing neighborhoods. Thus, utility providers are challenged with offering better capacity with additional regulations. Unfortunately,

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Comment Period on ASCE Standard

The American Society of Civil Engineers' Environmental and Water Resources Institute announced it will conduct a public comment period on a new standard, Guidelines for the Physical Security of Wastewater Utilities, from Feb. 20 to April 7.

The standard applies to physical security for wastewater collection and treatment systems and storm water systems.



Puerto Rico Selects MARS Co. for AMR Integration Project

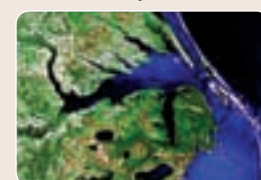


The Puerto Rico Aqueduct and Sewer Authority (PRASA) has

selected MARS Co., Ocala, Fla., to integrate an estimated 30,000 water meters in the San Juan area. PRASA chose a company that could integrate the meters already in the field with new meters.

MARS Co.'s proposal was chosen based on its technical strength, proposed integration, cost competitiveness and the company's superior performance in two rounds of field tests.

Kruger Selected for Monterey Shores Project



Carolina Water Services of Charlotte, N.C., recently selected

Kruger, Inc. to furnish its NEOSEP membrane bioreactor process. The NEOSEP system will upgrade the existing Monterey Shores wastewater treatment facility to increase capacity and improve effluent quality.

"In a place as pristine as the Outer Banks, it is critical that we treat wastewater to a high level of quality with a minimum of environmental impact," Kruger President Mike Gutshall said.

ZURN Industries to Acquire GA Industries

Rexnord, LLC announced that its affiliate, Zurn Industries, LLC, has entered into a definitive agreement to acquire the stock of GA Industries, Inc. for a cash purchase price of \$76 million.

The acquisition expands Zurn's presence in water and wastewater markets in municipal, hydropower and industrial environments.

NSF Offers Product Performance Verification Testing

NSF Intl. Engineering and Research Services (ERS) provides test protocol development and testing of products that do not fall under an existing standard in order to independently verify their performance and safety.

For example, regulatory agencies and manufacturers frequently need independent testing of an innovative environmental technology to verify performance characteristics. When that technology does not fall under an existing certification standard or ETV program, NSF ERS develops the test protocol with the applicable manufacturers, agency and other parties via the consensus process and provides the required testing.

Raleigh, N.C., Uses Magnets to Keep Residents Informed



The city of Raleigh, N.C., sent more than 160,000 households a postcard with

an attached magnet reminding them of effective dates and irrigation instructions for summer water restrictions, in hopes of minimizing shut-offs and conserving water resources.

"I'll put it on the refrigerator. Even though I'm aware of what days I can [use] water and what day I can't, I think it'll be helpful," resident Rodney Holloway told a local ABC news reporter.

U.S. EPA Reports on Clean Water Needs

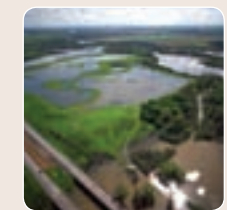


A new report from the U.S. EPA estimates a nationwide capital invest-

ment of \$202.5 billion is needed to control wastewater pollution for up to a 20-year period. The estimate includes \$134.4 billion for wastewater treatment and collection systems, \$54.8 billion for combined sewer overflow corrections and \$9 billion for storm water management.

The report provides information to help the nation make informed decisions about pollution control needs necessary to meet the environmental and human health objectives of the Clean Water Act.

HDR Wins Consulting Contract for Victoria Island Alternative Intake Project



HDR was selected as the prime consultant to provide construction management support services to assist Contra Costa

Water District (CCWD) staff with its alternative intake project on Victoria Island in California's San Joaquin County.

The project, slated to begin in March, will help protect CCWD customers from seasonal fluctuations and long-term degradation of water quality from the Sacramento-San Joaquin River Delta, one of the few inverted river deltas in the world. The project also will provide benefits for important delta fish populations without significant impact on other water users.

Massey Energy Fined \$20M for Clean Water Act Violations



Massey Energy Co., Inc. has agreed to pay a \$20 million civil penalty in a corporate-

wide settlement to resolve Clean Water Act violations at coal mines in West Virginia and Kentucky, the Justice Department and U.S. EPA announced, making it the largest civil penalty levied against a company for wastewater discharge permit violations in EPA's history.

In addition to the penalty, Massey will invest approximately \$10 million to develop and implement a set of procedures to prevent future violations. **WWD**

News compiled by Rebecca Wilhelm

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you ask them pointed technical questions during the interview. Dig deep into their project experience and don't be afraid to post upon them your own hypothetical scenarios and see how they might solve the problem. Once you have a firm understanding of their technical capabilities, you really need to learn about their work philosophy on the nontechnical issues like work environment, customer service, management style and how they get along with their peers. And make sure to verify their credentials regarding licensure and education.

It is also of great benefit to have some of your employees meet with the candidate as well. When all of this is said and done, make sure you check professional references.

WWD: How can employers stay competitive in attracting qualified personnel?

Barcus: Know your competition. Sign up for relevant monthly newsletters from industry associations and websites as they relate specifically to your industry; there are always different reports and articles coming out on these topics and the latest trends in salaries, benefits, training, etc. Keep your ears open, as well. People are always talking about how much they make or what their bonus was, etc. Ask your peers in the industry what they are doing. Contact a recruiter who specializes in your industry and ask them, or hire a

consultant to evaluate your current package. In any event, try to stay ahead of the curve, as falling behind can be detrimental.

WWD: Do you think this industry will continue to see a shortage of qualified employees in the near future? Any solutions?

Barcus: I do, and I have blogged about this a couple of times on ASCE's website. There is so much opportunity in the high-tech industry that many students these days are much more inclined to become computer engineers rather than civil engineers. There is no real short-term answer, with the exception of increasing the pay. The long-term solution is to think outside of the box by reaching out to children all across the country by getting them excited about civil engineering. Needless to say there is shortage, and there will continue to be a shortage unless proactive steps are made in these and many other directions. **WWD**

Matt Barcus is president of Precision Executive Search, Inc., an executive search firm specializing in the placement of civil engineering executives and professionals across the U.S. Barcus can be reached at 610.705.4942 or by e-mail at mbarcus@precision-recruiters.com.

Warren continued from page 62.

engineers and water quality graduates into the local workforce annually. North Carolina State University has introduced a storm water curriculum into their engineering program, so the personnel gap is narrowing.

WWD: Do you think the issue is related to a lack of educational programs and training because specialists in this field must have a wide variety of knowledge?

Warren: Nonpoint source storm water regulations requiring TMDLs, nutrient loading caps for new development, retrofitting existing development to reduce nutrient loading, impervious limits, total suspended solid treatment and peak attenuation treatment are now implemented or being implemented in every watershed within the town of Cary's limits and ETJ. This is probably also true in most jurisdictions throughout the country. These regulations require a brand new thought process for jurisdictions in order to develop a strategy to meet these requirements. There is also a need to dedicate staff exclusively to these issues.

The parameters of storm water services and design are still in the process of being defined. There really is not any institutional tradition to train storm water professionals, so the academic curriculum is also still being defined. Most professionals in the storm water field today are trained as either engineers or professionals in another discipline, have moved into storm water to fill a need and are learning on the job.

WWD: Do you think this industry will continue to see a shortage of qualified employees in the near future?

Warren: The personnel gap is narrowing, and the qualification requirements are increasing. Storm water professionals are beginning to enter the workforce with more practical experience and training. There is still a need to increase the quantity of these professionals, but we are beginning to see that happen. This of course could also just be a function of our proximity to an engineering university.

Environmental regulations, specifically regulations on nonpoint source storm water, have really increased the demand for storm water professionals. I think that universities are beginning to respond to this demand, which will eventually solve any shortage issues.

WWD: How do you stay competitive in attracting qualified personnel?

Warren: The town of Cary conducts an annual class and pay study to ensure that all positions have competitive salaries. It also conducts an annual benefits study to ensure employee benefits are competitive. These studies, especially for certain professional positions such as engineers, compare salaries and benefits in both the public and private sector for specific comparable positions. Employee pay raises are merit-based for the individual employee within the position pay grade scale. Pay grade scales are also studied annually for adjustment. **WWD**

Terry Warren, P.E., CFM, is storm water services manager, engineering department for the town of Cary. Warren can be reached at 919.462.3932 or by e-mail at terry.warren@townofcary.org.

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REPRINTS

WWD ARTICLE

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areas that at times become too niche-oriented. Someone may come out of school and be assigned strictly to drainage and storm water management; great experience, but they become pigeon-holed as they realize they are only being exposed to the storm water or drainage tasks assigned to larger-scale highway or land development projects. By having such a narrow specialization, they are deemed an "expert" and do not get exposure to managing entire projects. This being said, they choose to shift into more traditional roles or departments like transportation or land development, where they feel they can better advance their careers.

The biggest shortage that I see out there today is for talented engineers with a strong understanding of the water/wastewater industry and new technologies like enhanced nutrient removal and biosolids. There is also a strong upward trend in the federal programs segment and finding experienced engineers with experience in water resources, drainage, flood control and floodplain mapping. Additionally, security upgrades to existing infrastructure will continue. Even though there are pockets of private development "slow-down," environmental projects, federal programs and infrastructure improvements are running at top speed.

WWD: What resources can be used to locate qualified employees for this industry segment?

Barcus: The best resource any company has for finding qualified employees is its own staff. Offer aggressive recruiting incentives to your employees for referring any potential candidates that ultimately get hired. Let your own employees be your eyes and ears— they will not let you down.

Invest in a professional website that highlights exciting projects, awards and that has a current careers section.

According to Peter Weddles, owner of weddles.com and an expert in compiling research and statistics on this issue, the number one source of employment for job seekers is answering ads and posting their résumé on job boards. The number two source of employment is through a call from a headhunter or staffing firm.

Stay away from the big Internet job boards like Monster and Career Builder. The trend is to use niche job boards like www.civilengineeringcentral.com. Wherever you choose to run an advertisement, make it a compelling advertisement.

As a search consultant specific to this industry, my first, and of course biased, recommendation is to find an experienced search consultant who knows the industry.

WWD: What is the key to successfully placing job seekers with the right employers?

Barcus: When the market for professionals with an expertise in water resources, storm water management, drainage and wastewater is extremely tight, it is very important not to be hasty. Too often I see firms so strapped for help that they will hire anyone that walks in the door. Clearly you are looking for someone who has the technical expertise you are looking for. Make sure

Barcus continued on page 44.

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they have no place to expand. It is the classic "do more with less" opportunity.

Because of this, our industry is challenged not only to get the work done in a safe, cost-efficient and timely manner but also to find the key personnel with the qualifications and the desire to relocate. Our engineering culture offers contractors many opportunities. The prequalification procedures work well in some locales and less well in others. The bottom line is that the projects always get built; however, not always on time or in a safe, cost-efficient manner. Owners, design engineers, vendors and contractors are all adversely affected when a project fails to meet expectations.

At times, this failure can be traced to the availability of qualified personnel to staff, supervise and execute the work. There is no substitute for having experienced staff, particularly in the water and wastewater plant building segments. We need people who can say: "Been there, done that."

Our industry needs experienced and qualified people, such as project executives who recognize the pitfalls of execution plans and understand owners and engineers. We need superintendents who are well-versed in safety—people who can communicate with owners, plant personnel, resident engineers, subcontractors and craft workers. We need safety managers who can stay on top of fluid work conditions, such as new people coming to the site. An ever-changing subcontract base provides challenges that will test even the most seasoned professional.

We need project engineers and office staff that can keep the paper flowing. General George Patton said: "To keep an army moving we need to feed it," and I believe that to keep a project flowing the paper must move quickly, efficiently and accurately.

WWD: Do you think the issue is related to lack of training and educational programs?

Kress: Our colleges and universities across the U.S. have good construction management and technology programs. There are a number of very good graduates coming out of these schools who are absorbed by the construction industry as a whole. Nevertheless, we find these graduates lack experience, especially within our industry. Alberici attends a number of career fairs where we compete for the best and

Kress continued on page 46.

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