From the Watershed to the Tap:
A Conversation With Spartanburg Water’s Sue G. Schneider
Earning Advocacy

By Kris Polly

Sue G. Schneider, chief executive officer of Spartanburg Water in upstate South Carolina, is a high-energy, thoughtful individual who takes great pride in her work and organization. She is clearly a highly skilled manager, and Spartanburg Water is an exceptionally well-run water utility. Many water agencies struggle with their public relations and connecting with their ratepayers. Ms. Schneider’s interview reads like a how-to management guide on public outreach with wonderful ideas for any water agency. I loved her list of lessons learned that she brought to her interview:

• Problems have solutions.
• Our challenges are opportunities, and our opportunities are challenges.
• How do you eat an elephant? One bite at a time.
• Communicate to your stakeholders and your customers. Often. And, on terms that they understand.
• Complexity requires innovation and creativity.
• Effective solutions are developed by a diversity of input and support. Use a team. Use everyone’s skills.

Many have likely heard some or even most of her lesson learned. However, Ms. Schneider puts them all to practice in a variety of creative public outreach efforts and nontraditional revenue sources. Her organization’s Water Matters Citizens’ Academy connects directly with the public through an ongoing, educational program. Choose Tap is another great outreach program that engages the public while providing a convenience through water bottle filling stations. Spartanburg Water’s network of 12 self-contained ice and water vending stations serves as another unique revenue source that helps the agency connect with the public. Clearly, Ms. Schneider understands the importance of getting Spartanburg Water’s brand in front of the public in as many helpful and positive ways possible. One of her best interview quotes that is a great example for all water agencies is, “A successful utility is one that is engaging both its employees and its customers, and this begins with a dialogue. We want to earn our customers’ advocacy.”

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Municipal Water Leader

VOLUME 2 ISSUE 9

Municipal Water Leader is published 10 times a year with combined issues for July/August and November/December by Water Strategies LLC
4 E Street SE, Washington, DC 20003

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SUBMISSIONS:
Municipal Water Leader welcomes manuscript, photography, and art submissions. However, the right to edit or deny publishing submissions is reserved. Submissions are returned only on request. For more information, please contact John Crotty at (202) 698-0690 or john.crotty@waterstrategies.com.

ADVERTISING:
Municipal Water Leader accepts one-quarter, half-page, and full-page ads. For more information on rates and placement, please contact Kris Polly at (703) 517-3962 or Municipal.Water.Leader@waterstrategies.com.

CIRCULATION:
Municipal Water Leader is distributed nationally to managers and boards of directors of water agencies with annual budgets of $10 million or more; the governors and state legislators in all 50 states; all members of Congress and select committee staff; and advertising sponsors. For address corrections or additions, please contact our office at Municipal.Water.Leader@waterstrategies.com.

Cover photo: Sue Schneider, chief executive officer of Spartanburg Water.

OCTOBER 2016

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From the Watershed to the Tap: A Conversation With Spartanburg Water’s Sue G. Schneider

Spartanburg Water is two organizations under one brand and leadership: the Commission of Public Works of the City of Spartanburg and the Spartanburg Sanitary Sewer District. It serves approximately 200,000 people in Spartanburg, Cherokee, and Union Counties in upstate South Carolina. With the help of its dedicated team of more than 250 employees, each day it produces an average of 25 million gallons of drinking water and cleans 12 million gallons of reclaimed water for its customers and community. In August 2016, Spartanburg Water was named the “Utility of the Future Today” by a partnership of water sector organizations—the National Association of Clean Water Agencies (NACWA), the Water Environment Federation (WEF), the Water Environment & Reuse Foundation (WE&RF) and the WaterReuse Association—with input from the U.S. Environmental Protection Agency (EPA). Sixty-one utilities were selected to participate in this inaugural group.

Municipal Water Leader’s editor-in-chief, Kris Polly, spoke with Ms. Schneider about Spartanburg Water’s mission and water quality program, its public outreach campaigns, the key lessons of her long-time work in the drinking water and wastewater industry, and what the utility of the future needs to be doing today to be successful for years to come.

Kris Polly: Please tell our readers about Spartanburg Water’s mission.

Sue G. Schneider: Our mission is simple—to provide quality water and wastewater services to the community in a reliable manner. The key word is reliable. As our industry continues to change and external pressures continue to surface—economic, environmental, and regulatory—we find that our innovation results from that promise to be reliable in our efforts to provide the best services we can to our community and our stakeholders. We try to follow the maxim, “Think globally and act locally.” In India, for example, more people have access to cell phones than toilets. The world over, clean drinking water is a dream for many. We are so fortunate in this country to have access to clean water, and we take our mission to be reliable with...
the services we provide very seriously. One thing that we’re very proud of is this: Spartanburg Water was named the “Utility of the Future Today.” We were the only utility in South Carolina to receive this designation.

**Kris Polly:** Please share with us your background and the career path that led you to the role of Spartanburg Water’s chief executive officer (CEO).

**Sue G. Schneider:** Did I know that I would end up in Spartanburg, South Carolina? Not exactly. I was broadly interested in city planning and environmental roles. What I can tell you is that in high school, I participated in an exercise in which we were assigned a leadership role in a community. No one wanted to be the leader of the water and wastewater utility. So I did it. That was my first experience. And here I am, years later, doing what I first did in that exercise. And believe me, it is exercise! I have a career path that has taken different turns, but all the experiences provided me with a great background for serving as the CEO of Spartanburg Water. I have experience in consulting work that includes wastewater evaluation studies, and I have broader land design experience from having been a landscape architect.

My career turned toward regulatory compliance and environmental monitoring in the full breadth of that alphabet soup—the Clean Water Act; the Safe Drinking Water Act; the National Environmental Policy Act; the Resource Conservation and Recovery Act; and the Comprehensive Environmental Response, Compensation, and Liability Act, or Superfund, at U.S. Department of Energy (DOE) cleanup sites. DOE cleanup sites are unique in that they require creative solutions to atypical problems using innovative technologies within the environmental regulatory framework. Anyone who has ever worked at a DOE cleanup site will tell you that the experiences are like none other than he or she has ever faced outside that world. For example, a problem like water treatment is complicated by current or former production processes that are further complicated by the range of contamination that could include chemicals regulated by EPA and radionuclides that are regulated by the Nuclear Regulatory Commission. And then you add state regulations and community expectations on top of that. You accept that nothing is simple and that you need to find the solution.

The last DOE site that I was at in the 1990s became the first in the nation to transform high-level radioactive waste into glass logs for safe, long-term storage. It is a process called vitrification. I was responsible for extensive environmental monitoring (water, air, groundwater, soil, etc.) of a DOE site and working with citizen advisory groups and regulatory agencies on the results. I was responsible for the regulatory compliance permitting and reporting for the complexity of a DOE cleanup site that was using innovative technologies for cleanup.

So how does that make a perfect background for a CEO of a water and wastewater utility in Spartanburg, South Carolina? It’s perfect because it provided an extensive background in problem solving and using technology for creative solutions to complex problems.

I worked with community members, innovative technologies, and regulatory agencies to ensure success. I viewed all those roles and responsibilities as the cross training and exercise I needed to run the marathon sprint that leading an organization like Spartanburg Water requires. All our associates are invested in the work we do, and that is evident in how much they support the mission and vision of the organization.

Our community is diverse. Social media allows us to communicate line breaks and service interruptions; we also use it for education and to recognize our employees. For example, we had an employee who was working as a lake warden. A college student who was at the lake had a heart attack and quit breathing. Our employee immediately administered cardiopulmonary resuscitation, used an automated external defibrillator, and saved the student’s life. When we posted our employee’s picture and the recognition he received from the Red Cross, we got a lot of response.

**Kris Polly:** Your resume shows that for a decade you were the environmental affairs manager for West Valley Nuclear Services, Inc., a subsidiary of Westinghouse Electric. You had overall responsibility for regulatory compliance and environmental monitoring at various DOE sites in Ohio and New York. That’s a big job. Can you tell us what you learned in this role that has helped you at Spartanburg Water?

**Sue G. Schneider:** I have a list of key lessons from my experience in a variety of different roles.

• Problems have solutions.
• Our challenges are opportunities, and our opportunities are challenges.
• How do you eat an elephant? One bite at a time.
• Communicate to your stakeholders and your customers. Often. And, on terms that they understand.
• Complexity requires innovation and creativity.
• Effective solutions are developed by a diversity of input and support. Use a team. Use everyone’s skills.

I think the biggest key lesson is this: You continue to refine and revise your list of things you’ve learned. And realize that as a leader, you learn as much from your team as they learn from you. I would challenge anyone reading
this interview to think about their list of key learnings from their experiences in the industry, or from other industries, as well.

**Kris Polly:** Please tell us about water sources for Spartanburg Water and the treatment infrastructure you have in place.

**Sue G. Schneider:** Spartanburg Water was embracing the future when it couldn't have been easy to do so. Our utility first opened in 1887 as a private enterprise. It grew and became two public utilities, with water in 1907, and with sewer in 1929. Spartanburg Water created three surface water reservoirs on two different rivers to support our community and its development over the past 100 years. Long-range planning from the beginning has put Spartanburg Water in a very favorable position with its water sources. We have two water plants, three reservoirs, and eight regional wastewater treatment facilities. We also centralized our lab capabilities 15 years ago to expand our monitoring capacities and increase efficiency.

**Kris Polly:** Outreach to the community can be important to successful water delivery. Please tell us about your efforts in this regard and especially the Water Matters Citizens' Academy at Spartanburg Water.

**Sue G. Schneider:** One of our communication goals is to meet people where they are. Our industry is experiencing a watershed moment (pun intended). As situations like the lead crisis in Flint grab headlines, we understand that our responsibility extends beyond making sure that the taps run and the toilets flush. People want to know how we do what we do, and it’s incumbent upon us to focus on education and literacy of water matters. A successful utility is one that is engaging both its employees and its customers, and this begins with a dialogue. We want to earn our customers’ advocacy. Along that line of thinking, we launched the Water Matters Citizens' Academy. We’re starting our second class this month. Each year, we invite up to 25 customers to get a look at our operations from the watershed to the tap. They go through six modules that explain everything from our approach to watershed management to collection and distribution, engineering, customer service, water treatment, and water quality. Each participant gets a graduation plaque and feels invested in our organization. All the participants have given Water Matters rave reviews and have been true advocates for Spartanburg Water. The name says it all: Water Matters.

Another example of our outreach is a new initiative called Choose Tap, which was launched to encourage our residents to choose tap water over bottled water. It was inspired as a response to a program called Way to Wellville, which is focused on improving health outcomes, including obesity prevention, in the city of Spartanburg.

Our program is based on five important criteria that are critical to match our vision with the action needed to achieve broad cultural change. They are as follows:

- **Education**—Finding innovative ways to share information and knowledge about tap water.
- **Access**—Meeting people where they are with tap water by installing bottle refill stations.
- **Culture**—Changing mindsets about tap water by encouraging new practices through executive commitment.
- **Data**—Collecting vital information about community preferences and refining our strategies.
- **Health**—Demonstrating that water is the way to wellness.

We’ve installed a bottle refill station in downtown Spartanburg, as well as indoor refill stations at Spartanburg High School. We’re also dispensing free, cold tap water at community events with our locally designed, one-of-a-kind Choose Tap Oasis.
Sue G. Schneider: Water Matters is an example of relationship building. We meet people where they are and explain our role in the community in the context of their everyday world. They stick with us, and we call on each other well after the class has ended, because we created a relationship and brokered it out of a shared interest in making things better. I take this approach to my role as a leader in the community. I have chaired the local chamber board for a two-year term, as well as the United Way. And, I expect my leadership team to do the same. I challenge them to get involved and provide them the necessary time and support to be a part of the community. This culture ensures that Spartanburg Water embeds itself in the important work that makes our community such a great place to live, work, and play. I’m a better person from being involved. There is no better training for some of my young managers than sitting in on a United Way committee that has to decide who gets what. They always come back from those meetings changed in how they look at their community. These relationships help us grow.

Kris Polly: How do you integrate sustainability and resilience into your water system? How does that relate to meeting the challenges of climate change?

Sue G. Schneider: Sustainability requires a focus on people, planet, and performance—the triple bottom line. Spartanburg Water recognizes that there are shifts occurring in all three aspects that have to be addressed for a sustainable water utility. The people shift is occurring as highly trained people are growing older and retiring, but Spartanburg Water is making efforts, such as training on inclusion and shared leadership responsibility, that will help us to be inviting to the next generation of utility leaders. We are in the process of building a high-performance team culture that is marrying together the best elements of values and traditions of multiple generations. This is a convergence of our legacy workforce (we have folks who have been at Spartanburg Water for more than 40 years) and the millennials who are entering the workforce and looking for the right culture.

We also do hands-on ethics and diversity training for our managers. This has a tremendous effect on our teams and how we adapt and prepare for the future, and it helps our staff grow in the organization and in the industry.

Spartanburg Water Is Preparing to Meet Challenges Over the Next Decade

- Maintaining and increasing climate-ready resiliency.
- Repairing and replacing infrastructure that was put in place over six generations.
- Educating the stakeholders on the value of water and working creatively and collaboratively to address rate affordability.
- Using technology and innovative solutions to address challenges in an effective and deliberate manner to ensure the maximum value at the best investment value.
- Identifying new revenue sources.

Nontraditional revenue sources include:

**Twice the Ice Automated Vending**

Spartanburg Water has invested in a network of 12 self-contained ice and water vending stations located throughout Spartanburg County. These units are entirely premanufactured and delivered to the site, requiring only electrical and water hookup to begin operation. Each contains fully automated ice-making and packaging machinery as well as supplementary water filtration and disinfection. It has so far delivered 20 million pounds of ice and directed $2 million dollars back from this investment to fund Spartanburg Water’s five-year capital reinvestment plan to repair and replace aging infrastructure.

**Hydroelectric Power or Green Energy**

Spartanburg Water has been providing power to the R.B. Simms Water Treatment Facility through hydroelectric generators since 1926. As the plant and community grew, R.B. Simms’ hydropower units shifted from meeting all its power needs to functioning as a power offset for operations. R.B. Simms now sells this green energy to its power provider and then buys it back at a lower rate, combining the utility’s water and power operations to maximize revenue from both. Revenue varies depending on the available water in its reservoirs, ranging from $0–$30,000 monthly. In 2014, R.B. Simms invested in a complete rehab of the existing hydro generators, providing a 20 percent increase in efficiency and extending their life for many years.
For example, in the last year, 38 internal promotions were completed in addition to annual merit increases. There were 20 external hires in the same period. Internal promotions include career path and job posting opportunities. The promotional increase was approved by our commission and is set at 5 percent for the 2016–2017 budget.

Our climate is changing. In December, I walked outside and there were spring-like blooms sprouting all over. That’s because we had an unusually warm winter, even by southern standards. This has an effect on the reservoirs. The shift in climate is affecting our planet, as waters may become warmer and seasons become dryer, which can degrade water quality. Spartanburg Water is positioning itself by proactively improving water quality with oxygenation of the supply; monitoring of conditions that can increase nutrient loads; and updating responsive treatments, such as the use of powder activated carbon. These steps will improve the water utility’s performance today and into the future.

Our approach to resiliency is also a marathon sprint. It takes time to implement a strategy. For example, we did a study of taste-and-order compounds of two of our reservoirs. We raised Lake Blalock 10 vertical feet and increased 2.6 billion gallons of water to be stored. The process took 10 years. We changed our disinfection process to be more efficient. Our oxygenation project is helping us give our reservoirs a deep breath of liquid oxygen, which improves the health of the lake; improves fish habitat; and inhibits the growth of algae, which thrive in oxygen-depleted portions of the lakes and create taste-and-odor-causing byproducts. We’ve also refined our intake structure.

**Sue G. Schneider:** Spartanburg Water has a lead management initiative and has been very successful in avoiding lead contamination. Please tell us about your program and why it’s successful.

**Sue G. Schneider:** From everything I learned in my previous roles, communication is the number 1 factor, particularly in the arena of how a utility manages the conversation about something like lead. When the situation in Flint occurred, our customers were justifiably concerned, and it was up to us to ensure not only their safety but also their literacy and education about water treatment. We developed a webpage that highlighted our lead management program, drafted op–ed pieces, addressed our program in speaking engagements, used social media, and spoke openly about our program to anyone who had a question. We could do that because we have a strong legacy of looking ahead and going above and beyond the requirements of, for example, the lead and copper rule.

Our program is based on corrosion inhibition because we cannot control the typical primary source of lead in water systems, which tends to be older plumbing and fixtures in homes. We treat the water sufficiently to prevent lead and copper from corroding if they should be present. Our 20-plus years of testing shows that our program has been effective. In fact, our 2016 results indicated no ongoing concern with the effectiveness of our corrosion control program.

Spartanburg Water has always maintained a responsive program for lead and copper, but this year the emphasis shifted from meeting and exceeding the requirements to an additional proactive level of customer support and education. This year, our staff was able to speak to approximately 40 percent of the customers during the initial calls before sampling and took the additional communication step of making personal contact with approximately 90 percent of the customers prior to the sampling event.

**Kris Polly:** Spartanburg has a good record of water quality reports. How do you manage your system to ensure that you meet water quality targets consistently?

**Sue G. Schneider:** Water quality is everything that we do. It’s what our customers expect, and as our CEO, it’s what keeps me focused on continuous improvement and innovation. It’s not enough to only focus on what’s been successful in the past. What worked in the past may not be sufficient for the future as we experience less favorable conditions, such as long periods of drought or longer periods of hot weather.

We do more than what is required, and we’re recognized for that. Spartanburg Water has been an active member for more than 20 years of the Partnership for Safe Water, a national volunteer initiative developed by EPA and other water organizations representing water suppliers striving to provide their communities with drinking water quality that surpasses the required federal standards.

This year, we received the 15-year Directors Award, which recognizes systems that have completed a successful review in the Partnership’s Self-Assessment and Peer Review Phase, a phase in which utilities examine the capabilities of their treatment plant operation and administration and then create a plan for implementing improvements. Spartanburg Water has maintained the Directors Award for 15 years, an honor achieved by only 165 water utilities across the country. Our Landrum Water Treatment Facility was awarded for successful reviews for the ninth consecutive year. Maintaining Directors Award status for 15 years demonstrates our philosophy of constant vigilance to improve water quality.

*For more information about Spartanburg Water’s water quality efforts, visit its website at www.spartanburgwater.org.*
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- Alan W. Hansten P.E Manager
North Side Energy Canal Co., Ltd.

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Maintaining Old Dams in Urbanizing Areas

The recent damage and destruction caused by Hurricane Matthew in the southeastern United States highlights the need for proper maintenance and upkeep of earthen dams and levees. More than 11,900 such dams have been built under the authority of the Natural Resources Conservation Service (NRCS) for flood control in cooperation with local sponsors, which include states, counties, municipalities, and local landowners. These facilities are an important mechanism in defending surrounding areas from flooding. However, the advanced age of many dams combined with rapid urbanization around them poses significant challenges to those trying to maintain and upgrade those structures.

More People, More Problems

John Wolfhope and Ron Lemons, division manager and senior vice president, respectively, for Freese and Nichols, Inc. (FNI), noted that while maintaining any type of infrastructure has its challenges, the most significant for these structures are changes in the areas surrounding the dams.

According to Mr. Wolfhope, who is the current president of the United States Society on Dams and serves on the National Dam Safety Review Board, many NRCS dams were originally built decades ago in rural areas that are now much more populated and urban. “These dams were never imagined to be right in the middle of several-thousand-home neighborhoods like they are, in rapidly growing areas where suburbs are now what a few years ago were rural, agricultural areas. So it’s just a whole different set of issues related to how they function being right in the middle of a community.”

Mr. Lemons, a past president of the United States Society on Dams and a past member of the National Dam Safety Review Board, agreed, noting that the NRCS dams were designed to only withhold a certain amount of flooding because the consequences for loss of a dam in rural areas were minimal. However, in an urbanized watershed the consequences are much more significant, including public safety and economic concerns. Urbanization upstream of the dams contributes to flood waters collecting more quickly and to safety concerns downstream when dams overflow. Mr. Lemons and Mr. Wolfhope said that while overflow can be a big issue, it is not a deficiency of the dams’ design; rather, it is more an issue of how things have changed around the dams, with areas both upstream and downstream becoming increasingly urbanized.

Flooding at Upper Brushy Creek Water Control and Improvement District Dam 7, located 6 miles west of Round Rock, Texas, after Tropical Storm Hermine in 2010. The dam’s storage capacity is 321 acre-feet.
Challenges and Costs

As facilities age, they require maintenance and upkeep to remain functional and viable. Mr. Wolfhope noted that dams can last much longer than 50 years, but improvements are needed for them to continue to be as effective as intended to meet current dam safety standards. According to Mr. Wolfhope, maintenance and upkeep cost for these structures have increased significantly because of the required improvements for an urban setting as well as differences in environmental awareness and dam safety laws now compared with when the dams were built 50 years ago.

In the state of Georgia, where the situation of addressing aging dams is much the same as states across the country, the costs of dam upkeep can be high for municipalities and private landowners who own dams. Tom Woosley, program manager of the Georgia Department of Natural Resources Safe Dams Program and current past president of the Association of State Dam Safety Officials, pointed out that while many structures are a source of liability for owners, they do not generate income. “A lot of them are recreational ponds or are located within a subdivision. So they’re an amenity, but they do not generate a lot of income. A city or a county can own dams as part of its water system, and it can charge fees to generate the income to fix the dams. However, this is a very small percent of the dams. The majority of dams are privately owned. Those dams owned by a few individuals or small family businesses face a challenge of funding.”

An Example of State Requirements

The classification and regulation of dams varies from state to state. Georgia’s framework provides a good example of how those regulations play out. Georgia has two classifications of dams: Category 1 dams are high hazard, which means they have a high probability of loss of life if they were to fail; category 2 dams do not have a high probability of loss of life.

The state classifies a dam as high hazard if, according to Mr. Woosley, “there are things like schools or housing developments in the downstream flood zone or proposed to be built in the flood zone.” In Georgia, there are 475 category 1 dams, which are inspected every two years, and about 5,000 category 2 dams, which are inspected every five years.

In 1990, the state of Georgia promulgated rules that required local governments to provide information to the state about proposed developments below category 2 dams prior to permitting the development. The state uses that information to determine whether the development will cause the dam to be reclassified as category 1. The state then advises the dam owner about the risks and liabilities involved. Mr. Woosley explained that, “[the rules] do not stop a project, but rather alert people about what is going on and what might happen, so some solution can be worked out. This process gives [the state] an opportunity to let the dam owner know about potential risks, and the owner can work with the developer.”

Routine Maintenance and Rehabilitation

Acknowledging that each aging dam presents a unique challenge and solution, Mr. Woosley extolled the virtues of routine dam maintenance. “A simple thing any dam owner can do is routine maintenance, such as trimming vegetation a couple times per year around the dam or making sure there are no trees growing on the dam. It will help dissuade burrowing animals like muskrats and beavers from showing up.”

Where routine maintenance is no longer an option, more comprehensive solutions are necessary. One solution that comes to mind is dredging the silt beneath the lakes behind the aging dams. However, Mr. Wolfhope said that dredging is both challenging and expensive. He identified the disposal of the dredged soil as the greatest challenge, adding that testing can lead to the soil being classified in such a manner that it cannot be easily disposed of, which adds cost and complexity to those efforts. Mr. Lemons also noted that when reservoirs are dredged, it is almost always
for recreational purposes rather than for water supply maintenance purposes.

While each dam rehabilitation or maintenance is unique, Mr. Wolfhope and Mr. Lemons stated that such projects tend to focus on three areas: raising the embankments by adding dirt or concrete, fixing outlet pipes, and adjusting emergency spillways to provide proper runoff protection. Mr. Wolfhope noted that adjusting those emergency spillways is particularly challenging due to the location of many communities built after the construction of the dam.

A rehabilitation program for 21 flood control dams in urban areas outside Austin, Texas, by the Upper Brushy Creek Water Control and Improvement District highlights the importance of being proactive in dam rehabilitation. In 2002, the district voters approved a small property tax increase to fund the effort to bring the dams up to safety standards. Since 2003, FNI has assisted the district with the design and worked with state regulators and local landowners to prioritize and implement repairs as funding became available. “This is a good model that others should follow. Most state regulators are willing to be partners to get things done. They know that it can’t all be done by tomorrow but has to be done over time. It’s about managing risk and prioritizing.”

**Education and Outreach**

One factor necessary for successful projects is education and outreach to state regulators, local communities, and private landowners to help all stakeholders understand the need for rehabilitation and encourage them to remain engaged to bring it to fruition. Mr. Wolfhope explained that most NRCS dams are located on private land, with agreements between landowner and federal government and easements for the dam for the local sponsor. Therefore, it is necessary to work with local landowners to get access to the facilities.

At the state level, that type of engagement has helped to increase awareness about aging dams. Mr. Woosley explained that Georgia’s Safe Dams Program has conducted workshops at the county and local levels to reach out to both public and private dam owners. “When the owners don’t understand their liability, they often don’t meet with us or do necessary maintenance, which leads to problems. Landowners may know there is a lake, but fail to realize the existence of the earthen dam. However, owners who meet with us during inspections and come to training workshops generally understand the consequences of dam failure, and they tend to do routine maintenance.”

Mr. Wolfhope stressed that forming relationships is key to getting cooperation from landowners, but he added that they will often buy in and work cooperatively once they are educated and engaged. He cited this as a reason for the success of the Upper Brushy Creek Water Control and Improvement District project, as well as other successful projects completed in populated areas.
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It is easy to forget the sheer audacity of it all.

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In the March 2016 issue of Municipal Water Leader, we interviewed former Guadalupe–Blanco River Authority (GBRA) General Manager Bill West about his partnership and initiative with The Aransas Project (TAP). In this interview, we focus on his distinguished career and leadership in water resources management in Texas and his departing wisdom for the current and future leaders of our nation's resources.

Kris Polly: You’ve had an amazing career, Bill. Before we go down memory lane, is there anything you’d like to share with our readers?

Bill West: In the days following my retirement ceremony, I reflected back on my career and must say that it's all been a big dream that came true and lasted for 46 years.

Kris Polly: Please tell us about your formative years: where you grew up, your education, and your aspirations. How did you come to be involved in water resources?

Bill West: I grew up in the Texas hill country, which includes Kerrville, Fredericksburg, and San Marcos. My father worked for the state’s soil and water conservation service, and he was transferred to different areas in the region. I attended high school in San Marcos and spent a couple years at the local Texas State University. I transferred to Texas A&M University and graduated with a bachelor's degree in engineering.

I was born to be an engineer. Water management is in my blood and became my life-long career. My father's side of the family was based in agricultural management. It was more than a natural fit for me. It was my destiny and my passion.

As I was preparing to graduate from Texas A&M University, I began applying for jobs in the area. I was living in San Marcos at the time and decided to visit the Lower Colorado River Authority (LCRA) in Austin. I was invited for an interview with the river authority's chief engineer. At that time, the LCRA was dominant in power production. Its focus was on building power plants and transmission lines for Central Texas. Water management had inadvertently become less of a priority. The chief engineer at the authority asked me if I knew anything about scheduling water, and I responded that I certainly did. The chief engineer hired me and I became LCRA's "water boy."

Kris Polly: Tell us about your move to GBRA. How did you become general manager? What did you hope to accomplish when you took the helm?

Bill West: I worked my way up at LCRA in both the power and water sections of the operation, so I had experience in both issues, although my last few years at LCRA were focused exclusively on water. In fact, I set up my own water resources division at LCRA. It turned out to be a great opportunity.

Then, in 1993, at the height of the Edwards Aquifer
wars, the Texas state legislature passed the Edwards Aquifer Authority Act. It was a politically tumultuous time for water managers in the region. The general manager of GBRA at that time lost his job due to the political wars, and the board was looking for a new leader. My background in local water issues and experience with the Texas state legislature made me an ideal fit for the role of a lifetime. My mission was to end the wars and make peace by solving the battles over the Edwards Aquifer.

Kris Polly: Looking back over your career, you doubtless have accomplishments you are very proud of. Please tell our readers about the accomplishments of which you are most proud.

Bill West: From a general water resources management standpoint, I am very proud of my involvement and efforts in various issues throughout the state of Texas.

At LCRA, I helped negotiate several landmark water lawsuits that had a beneficial effect on water resources management.

At GBRA, I think the long-term solution that I engineered to manage the Edwards Aquifer wars was one of my biggest accomplishments. I brought the recovery implementation plan to Texas, which was a result of my efforts dealing with Endangered Species Act (ESA) issues while I was the president of the National Water Resources Association. My experiences at the National Water Resources Association helped me to create a process to resolve the Edwards Aquifer battles, including the development, adoption, and issuance of state permits related to managing the resource. The conservation plan now in place for the Edwards Aquifer is the culmination of my efforts.

My efforts and success in human resources management at both LCRA and GBRA also stand out for me.

Kris Polly: Can you give our readers any important lessons about ESA issues that might help them with such issues?

Bill West: The most important ingredient in dealing with ESA issues is endurance. I would advise anyone dealing with these issues to engage experts in the field—don't try to do it by yourself.

Kris Polly: Please share with our readers what you believe is the right water management philosophy for the current era. How does the political environment play into
today's strategies for a viable water management effort?

Bill West: I think the challenges facing water managers certainly vary from state to state, but there are universal impediments that ought to be removed at the national, state, and local levels to create more beneficial water management plans everywhere. Unfortunately, local interests can and often do cloud what may be the best policy for the whole. Personal egos can get in the way of sound policy judgment. We all need to be mindful of these challenges and work to advocate for the best water management policy possible.

Kris Polly: In the last year, you led the inception of an innovative partnership with TAP. Please tell us why that’s important and what the outlook is for the initiative.

Bill West: The initiative was the result of two long-time warring factions [GBRA and TAP] that came together for a common cause and produced 10 points of water management strategy that we collectively believe will benefit the ecology and economy of the Texas coast. My hope is that this initiative will serve as a model for resolving other long-standing disputes across the country. I am optimistic that sound policy decisions will be developed and implemented through the GBRA-TAP partnership.

There is a tremendous amount of support that has evolved from the environmental and water communities. I am very proud of this partnership and look forward to the fruit it will bear.

Kris Polly: Please give us your wisdom for the future of water management. What challenges lie ahead and what will the water managers of the future need to do to meet them?

Bill West: Water resources management will continue to be a major issue, not only for the United States, but the entire world. We need the brightest minds in the country to help us all work on water management issues today and tomorrow. The structure of resource management in the future is yet unknown, but I believe that the two most important issues for the United States are food and fiber. If we fail to successfully manage our water resources for the benefit of the country, it will have grave consequences for all walks of life and put this nation in a great handicap. We need to come together and understand that proper management of our resources is not only the key to our survival, but the solution to the nation's most important domestic challenges. Our success as a nation in this century and beyond will depend on our collective effort to manage all our natural resources with great skill and care.
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For more than 30 years, Watertronics LLC has designed and manufactured pumping systems for municipal water use, landscaping, and agricultural use. Based in Heartland, Wisconsin, the company is committed to providing the best possible products and services to its customers. Over the years, Watertronics has refined its pump station technology and control and has developed the technical training capacity to meet the maintenance needs of its customers.

Municipal Water Leader’s editor-in-chief, Kris Polly, spoke with Watertronics Director of Engineering Kirk Burlage and Watertronics’ Pump Service Network Director of Service, Greg Melotte about the pump design and service that makes the company unique.

Engineering Cutting-Edge Control: A Conversation With Kirk Burlage

Kirk Burlage is the director of engineering for Watertronics. He has over 30 years of experience in mechanical engineering and management, with a focus on processes that improve quality and efficiency and reduce costs. In his conversation with Kris Polly, Mr. Burlage spoke about the products his company designs, the philosophies and principles that guide Watertronics, and how he helps to further the company’s goals.

Kris Polly: What made you want to become an engineer?

Kirk Burlage: I grew up with grandparents who were dairy farmers, and I developed a mechanical aptitude while helping on their farms. This led to an interest in mechanical engineering, and I decided to pursue that as a career. Although I’ve only been at Watertronics for a year and a half, I’ve been working as an engineer for almost 30 years. My background is primarily on the management side of engineering. I’m really a process person.

Kris Polly: Please describe the design of Watertronics’ pump stations.

Kirk Burlage: Our designs consist of both standard configurations and custom-engineered solutions. We can provide anything that our customers need, but we do try to steer them toward the more affordable, standard configurations whenever possible. However, we are always willing and able to accommodate custom-engineered solutions. We consider ourselves a technology integrator as well. Our stations have hydraulic, mechanical, electrical, and control components. We combine all those components into our final designs.

A small fraternity of companies has the capabilities we do. I think the magic at Watertronics is really on the control side. Water pumping technology is relatively mature, but the control aspect is what is really new and often cutting edge. The use of PLCs [programmable logic controllers] and other control platforms has greatly increased the flexibility of the control of pump stations. We pride ourselves on the flexibility of the control systems we use to meet a customer’s needs.

Kris Polly: As director of engineering, what does your day typically look like?

Kirk Burlage: The primary objective for the engineering team is to ensure that we are completing our designs for new orders in a timely fashion, and as the director, I’m often helping the engineers prioritize their work. I’m constantly looking for ways to improve our process, our efficiency, and the quality of our output.

Kris Polly: How do you use defined engineering practices to improve efficiency, reliability, and cost in your product?

Kirk Burlage: We try to develop design standards based around best practices, but we also try to leverage our legacy designs and products so that we can reuse things to be as quick and efficient as possible. Wherever we can reuse a design that we know has been proven, we want to make sure that becomes the given standard moving forward.

Kris Polly: How do you measure increased efficiency or reduced costs or waste?
Kirk Burlage: We have identified key performance indices, or KPIs, that we measure ourselves against. We have developed some measures that not only quantify the quality of the information that we receive from our sales force to drive our designs, but we have also developed metrics around our output based on the on-time delivery of our engineering projects. We also have performance KPIs based on revenue dollars sold relative to the number of engineering hours that went into a job.

Kris Polly: What should policymakers know about the engineering side of pumping stations, and what could they do to support business in this area?

Serving Country and Customer: A Conversation With Greg Melotte

Watertronics Pump Service Network (PSN) provides service to all its water products lines worldwide. Greg Melotte is PSN’s director of service. He has been with Watertronics since December 2014.

Prior to that, Mr. Melotte served in the Marine Corps in the enlisted ranks as an electronics telecommunication specialist, after which he was in the Marine Corps Reserves as an electrician. He was promoted to the officer ranks as a combat engineer, heavy equipment, utilities, civil affairs and commanding officer. While in the Marine Corps Reserves, Mr. Melotte also became a technician and service manager for American Superconductor.

Mr. Melotte spoke Kris Polly about his career in the water business, how Watertronics provides superior service to its customers, and how that aspect of the water business has evolved over the years.

Kris Polly: What can you tell us about the Pump Services Network? How did it originate, and how did it evolve?

Greg Melotte: Watertronics originally developed PSN in 2003 to provide technical support to all its customers and clients. The original iteration of the network was a service manager with technicians who would travel to do all the installation and commissioning of these systems. But as the company began to expand and had more systems in the field, it became difficult to get to all the clients and perform the necessary work in a cost- and time-efficient manner while providing immediate support to our clients.

The company decided to change its direction. We identified independent service providers all over the world who worked on pump stations, interviewed them, and invited them to work for Watertronics as service representatives and technicians in their area. The network grew from there, and we went from having technicians on the road to having them answering phones in-house to help the service providers and clients with technical product support and also answer customers’ questions 24/7.

We now certify independent service providers yearly at our five-day in-house PSN Service School, which allows them to work on our equipment. This school consists of lectures and hands-on training in our plant in Hartland, Wisconsin. After being certified by us, those providers perform all service work, including set-up, start-up, warranty, preventative maintenance, and retrofits and upgrades on our systems for the life of the systems.

Kris Polly: Was the decision to use independent service providers based on how many people you were sending out on the road for service calls prior to that?

Greg Melotte: Yes. We found that it was easier and more effective to use the independent service providers around the world, because they can quickly be at a customer’s site in minutes or hours rather than days, which is critical to our clients. The providers build relationships with customers when doing service or maintenance work on the system, which builds their business and takes care of our clients. We have about 9,000 systems in the field, so it would be difficult and costly to have that many technicians on the road to service that equipment and our clients in a timely manner. Without water, our client’s golf courses, landscape products, and crops will die—they would lose everything.

Kris Polly: How does Watertronics integrate customer service into the life cycle of the pumps?
Greg Melotte: Our service providers and clients both agree that what makes Watertronics special is the high-quality service we provide. It has been a priority of ours for a long time and still is. We have experienced technicians answering the phone 24/7 to help answer questions or to guide customers or service partners’ technicians through issues.

Our technicians have the skill and field experience to answer almost any question about how our systems operate, from the most fundamental to the most complex. PSN believes it is important to educate our customers and end users on the specifications and design parameters of our systems, so they know what the equipment can and cannot do. This helps to prevent many breakdowns and maintenance issues from happening in the first place. Customers greatly appreciate the fact that we go out of the way to answer phones, return calls promptly, thoroughly answer their questions, and solicit feedback from them on our performance.

We have some systems that are over 20 years old, and they need maintenance and replacement occasionally. The independent service providers handle all those issues for the client. We supply the parts for that, but we also produce retrofit kits that can allow the systems to integrate new technology. With our online Parts and Ready Reference system, service partners can order parts for our systems and have them shipped anywhere in the world as fast as they need them.

Kris Polly: How big is your staff right now?

Greg Melotte: We are up to nine people in-house at Hartland.

Kris Polly: Do you see any trends that have come about based on your service network model? What else have you learned from customers beyond what parts and services they need?

Greg Melotte: We are starting a PSN service council this year with a key group of our independent service partners so we can learn where the market is heading and how we can do a better job of meeting our clients’ present and future needs. The councils will allow us to know which of our clients in all our markets—agriculture, golf, landscape, municipal, and even ends users—are expanding, leveling off, or shrinking, so we can adjust our focus accordingly. We continually evolve and expand our product lines in response to changes in the world’s water market needs.

Kris Polly: What are some of the challenges that you face on a regular basis?

Greg Melotte: One challenge is the cyclical nature of the business. Spring and summer are extremely hectic for us and our service partners. As the northern hemisphere warms up, winterized systems are started up along with the 400–500 new systems that were installed over the winter; at these times, we all work very long hours to meet our clients’ needs and requirements for water. It is always a supreme effort on my in-house team to provide the service expected from us, but that is what we always do.

Kris Polly: Do you provide specialized training, or do you work with someone else to provide it?

Greg Melotte: My staff does most of it, as they are the duty experts at Watertronics. We bring in outside experts and product engineers from time to time for some specialty training, including some of our service providers who have experience in very specific product types that our customers ask for in their annual surveys. We even train customers who buy our systems so they can perform basic functions on their own, as well as talk to service providers about how the product works so when they do need to call for assistance, they can provide accurate information.

Kris Polly: How did you get into the water business?

Greg Melotte: Primarily through my military background. I have been a technician of sorts since I got out of high school. I joined the Marine Corps in 1976, became an electronics communications specialist, and went through many iterations of that training. I later went into the Reserves and became an electrician as well as a utilities officer, which made me responsible for the generators; electricity; water; and heating, ventilation, and air conditioning equipment that build support bases.

I helped provide all the water that the Marine Corps drank in Iraq in 2003. My platoon of 165 Marines and 3 other officers produced over 9 million gallons of purified water from the Tigris and Euphrates Rivers. As the infantry pushed forward during the invasion, we would try to catch up and get the water to them as quickly as possible.

In 1996, I joined a company called American Superconductor, in which I grew the service department from 2 people in one office to over seven offices and 34 people around the world. I came to Watertronics to allow my predecessor, Bob Emmerich, to scale back to part-time work in the later stage of his career. Bob basically knows everyone in the water industry and is a great resource.

Kris Polly: What should every end user know about PSN?

Greg Melotte: We are here to help them 24/7, no matter what their needs are, and that we will do everything in our power to address those needs so they can continue to achieve their goals. Watertronics provides a completely reliable water product solution that will last them for many years.
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Shaping the Utility of the Future: A Conversation With NACWA’s Adam Krantz

It has been said that we can either shape the future or be forced to live with how it shapes us. One organization that has taken this sentiment to heart is the National Association of Clean Water Agencies (NACWA), a leading advocacy organization for municipal wastewater and stormwater agencies. NACWA was established in 1970. It represents municipal agencies across the country on all aspects of water policy, including the integration of innovative technologies to enhance sustainability, improve economic viability, and achieve energy independence for its members.

One of NACWA’s primary means of achieving its mission is the Utility of the Future (UOTF) initiative, which recognizes the innovative efforts of wastewater agencies nationwide. Municipal Water Leader’s senior writer, John Crotty, recently spoke with NACWA’s chief executive officer, Adam Krantz, to discuss how the UOTF initiative came about, what NACWA is working to achieve regarding water policy, and how technology can help wastewater agencies carry out their mission in the future.

John Crotty: Please describe your membership and its water policy goals.

Adam Krantz: About 300 wastewater treatment facilities across the country are NACWA members, ranging from large cities to small population areas. Approximately 45 percent of those entities serve populations of 150,000 or less. Our main policy focus is on the Clean Water Act. Our goals are to make sure that the federal government is a full partner with state and local governments, that federal and state policies for wastewater are fair and work for our communities and ratepayers, and that legislative and regulatory decisions are based on sound scientific and economic foundations.

John Crotty: What is the Utility of the Future initiative?

Adam Krantz: It’s a trend we’re seeing and actively encouraging among clean water entities nationwide. Utilities are expanding from the maintenance and operation of wastewater systems to resource recovery in which the wastewater stream is regarded as a resource for recovery rather than just being discharged. Technology now allows utilities to engage in energy recovery, which allows them to reuse energy onsite and become energy neutral; some are even generating surplus energy from their waste stream. Utilities are installing wind farms on land they own. There is a large supply of nutrients running through wastewater plants, and we are able to extract them from the biosolids and use them as fertilizer that can be sold. The reuse and recycling of treated wastewater is another vital effort at many wastewater utilities. The UOTF initiative helps to highlight leading practices and new technologies at some utilities with the goal of sharing these innovations across the spectrum of utilities—small, medium, and large.

John Crotty: Please describe the collaboration of organizations that developed the UOTF concept.

Adam Krantz: We partnered with the Water Environment Federation and the Water Environment & Research Foundation to release the initial UOTF blueprint in 2013 to document the evolution and innovation that many wastewater utilities were undergoing. This past September, all three organizations gathered at the Water Environment Federation’s Annual Technical Exhibition and Conference to recognize utilities that are meeting the goals of the UOTF initiative. We had 61 recognition
recipients from a variety of projects.

Many of these utilities aren’t doing these programs for UOTF recognition; they’re doing them because they make sense for their ratepayers. There is still a benefit, however, in publicizing these efforts so that other agencies can learn from them.

Utilities are moving toward a new culture of recognizing and sharing innovation rather than keeping their heads down for fear of coming under scrutiny from the U.S. Environmental Protection Agency and the press. Water costs for families are rising, which is causing financial and political stress in many communities, and our members have to explain what they do and why new investments in green infrastructure or other technologies are beneficial in order to convince communities to agree to rate increases to fund those projects. Sharing and publicizing the success of these new, innovative programs is an excellent way to demonstrate the benefits of such investments to all stakeholders.

**John Crotty:** What are some of the utilities that are exemplifying some of the ideals and best practices of the UOTF?

**Adam Krantz:** One good example is Gresham, Oregon. Gresham runs a small utility that I believe is creating more energy than it needs to power its facilities and selling the excess to the grid. The utility will get a full return on its initial investment after 10 years. The Milwaukee Metropolitan Sewerage District has its Greenseams program, which creates green space and ensures that the green space becomes part of a systematic way to keep rainwater in place and to reduce storm water runoff that causes flooding and sewer overflows. This approach conserves land and keeps water in place. Milwaukee is also ahead of the curve with its sewer overflow notification and monitoring systems.

San Francisco has done a lot of community engagement that creates local community buy-in whenever a project is proposed. Orange County, California, and the city of San Diego are both leading the way in water reuse efforts.

Los Angeles is also taking a holistic view of water management with its One Water LA initiative, which will enhance conservation, reduce water importation, and improve storm water management.

**John Crotty:** What is your primary message to elected officials about water and wastewater policy?

**Adam Krantz:** The challenges we face are in part a result of how far technology and infrastructure management have come since the Clean Water Act was
signed into law over 40 years ago. The Clean Water Act is virtually silent on how to balance water quality with things like sustainability, climate change, and energy independence. So utilities have to find ways to prioritize needs and resources. We want the Environmental Protection Agency, Congress, and states to understand this issue and to take action to ensure a net environmental approach or an integrated planning approach that can be flexible enough to reflect changing trends and evolving challenges.

From a federal standpoint, water infrastructure has actually been more of a factor in this election than in past years. Numerous candidates from both parties have discussed it, specifically in relation to the Flint, Michigan, crisis, but also as part of larger discussions on infrastructure investment. This is a sign of progress in our efforts to cut through the traditional narrative that infrastructure only refers to transportation, energy, or schools. We would like to have a dedicated infrastructure program introduced and passed that makes water a top national priority to be addressed. Incentivizing UOTF-style work could also be a beneficial component of any broader tax reform efforts.

John Crotty: What should every elected official know about utility managers?

Adam Krantz: Utility leaders have to manage complex technological infrastructure; prevent any service interruptions or breakdowns; and navigate a difficult political environment at the local, state, and federal levels. They are public servants who take on the job because it is important to them, their communities, the environment, and public health, and NACWA will help make sure that they will be successful in making the Utility of the Future a reality.
Enriching communities.
Improving the quality of life.
Lexington County is located in the suburban area of Columbia, South Carolina. Much of the fast-growing area receives its water and sewer services from the Joint Municipal Water and Sewer Commission (JMWSC). The JMWSC formed in 1992 and began operations the following year when Lexington County Council conveyed its water and sewer systems assets and liabilities to the JMWSC.

From its 4 original members, the JMWSC now has an 11-member board representing most of the county. The board comprises elected officials, ranging from city and council members to mayors. Our 29 employees serve 15,000 water customers and 4,200 sewer customers over a 150-square-mile area. One of the biggest users is Michelin, which has two tire production plants within our system that produce more than 30,000 tires per day. Another is Lexington County School District 1, which is one of the top-rated and fastest-growing school districts in the state.

JMWSC purchases all its water from a surface water treatment plant on Lake Murray. We have a strategic partnership with the city of West Columbia, which owns and operates the plant. We currently own over 12 million gallons per day of water capacity at the treatment facility, almost 54 percent of the plant’s permitted capacity. We pay an economy-of-scale-type rate to purchase treated water. This is determined by factoring our actual flows into the total cost of operating the plant.

The sewer system is a conventional distribution system with a mixture of force main and gravity pipes. JMWSC partnered with the city of Cayce to upgrade its state-of-the-art Regional Wastewater Treatment Plant, which began operation in October 2012. This regional wastewater facility has a 25-million-gallon-per-day capacity, and all sewer is processed through its facility for clean discharge into the Congaree River.

Growth and Urbanization
Our county has seen considerable growth in recent years, and we have had to grow our water and sewage capabilities accordingly. In 1993, we had 1,100 water customers, compared to the 15,000 we have today. We saw a 6 percent growth in our water customers last fiscal year.
year, and a 5 percent growth in 2015. JMWSC strives to encourage development and growth while maintaining excellent service at affordable rates to our customers.

Careful planning over the years help to make our utilities accessible. Part of the land purchase decision for developers is the ability to access water and sewer services. JMWSC requires the submission of utility plans for new residential or industrial developments to ensure they meet our specifications to connect to the system. Additional requirements include that utility infrastructure be deeded to JMWSC once permitted. The fees from residential development are paid by the developer, which are factored into development costs. JMWSC has successfully worked with both industrial and residential developers to accommodate additional growth.

Adopting Technology to Improve Efficiency

JMWSC operates a slim and efficient utility. Planning, reinvesting, and adopting more technology has benefitted a utility our size. We have fully automated telemetry and meter-reading system, which means that 100 percent of our meter readings are via radio signal. Our employees still use a vehicle to collect those meter reads, but we have less than one-quarter of 1 percent failure on those reads. It takes about three and a half days to read our entire system versus having employees manually read, which would take up to a month.

JMWSC has built a strong foundation for a useful GIS system that provides the ability to remotely access plans, identify problems, and come up with solutions onsite. Many times, that capability has been the difference between issuing a boil advisory or not. The plans are at our operators' fingertips, as opposed to coming into the engineering room, going through files, and finding the right phase of a subdivision to determine the necessary materials to make a repair. Instead, employees can log in remotely to do that. The benefit to the quality of service we can provide our customers is immeasurable.

In 2009, JMWSC committed to and invested in in evaluating our Supervisory Control and Data Acquisition (SCADA) system. The existing system had been in use for 11 years and was in need of attention. We implemented a plan for rewriting much of our PLC coding for better communication throughput and migrating to the VTScada HMI software. The new system provides a more stable environment and has been extremely reliable.

Technology has enabled JMWSC to provide more service to our customers with the same number of employees. We are providing service to more customers per employee every year.

Meeting the Challenges

Despite our growth and success, JMWSC does have its challenges. We are completely dependent on the Lake Murray surface water plant for our water supply, which can pose a challenge at times. Our employees continue to evaluate growth and the relationship with our provider to ensure efficiency for moving forward. These are 20- to 40-year decisions that affect the future of Lexington County, our customers, and the needs of our utility. We anticipate continued growth in the future, so we need to make sure we continue to secure safe water for our customers.

The age and condition of our infrastructure is a constant challenge to address as well. Fortunately, we have not had any significant issues. JMWSC is only 23 years old, and our oldest service areas are only 40–50 years old, both of which are relatively young
for public utilities. While JMWSC’s biggest rehabilitation projects have involved its sewers, our capital improvement plans have enable us to stay on top of all of our infrastructure maintenance.

Part of our responsibility as a public water utility is to make sure we remain a strong resource for elected officials when it comes to the effect of regulatory issues. Membership in the Water Utility Council and the SC Water Quality Association help us stay abreast of legislative issues.

JMWSC has had a significant amount of pipeline relocation due to U.S. Department of Transportation projects, such as road expansion or modification, which forces us to move water mains that are on a right-of-way by the road. In the last 10–12 years, we have spent nearly $5 million on water line relocation with no return on that investment. Budget and rate planning assist in anticipating these costs, but it still presents enormous challenges.

Utilities need to operate like a true enterprise regardless of whether they are publicly owned. System
rates should pay for the system’s cost of delivering services, but that has not always been the case. By planning for these challenges and others, JMWSC’s financial viability remains strong. JMWSC maintains an Aa3 credit rating from Moody’s and an AA from Standard & Poor’s.

Self-Improvement

A year ago, our leadership staff went through a strategic planning exercise to help us understand our current position and where our utility is headed. This was an invaluable experience for staff. Working at such a fast pace can sometimes make it hard to understand what another department is going through. The strategic planning process involved celebrating our successes, understanding our challenges, knowing how different departments can help each other, and coming up with a set of management objectives for JMWSC. This helped build more ownership in what we do as well as help set our vision for what we need to keep doing.

Part of that self-evaluation involves how to better help our employees. By taking care of our employees, we can better take care of our customers. JMWSC provides a day of health screenings and flu shots for employees and their families at no cost to them. We began this program a couple years ago, and it has helped give employees and their families peace of mind and keep them healthy, while benefitting JMWSC as an employer through a reduction in the amount of sick days taken due to illness each year.

Looking Ahead

The growth that has occurred in Lexington County over the last 30 years has been significant. I do not know that anyone could have imagined that JMWSC would be the size that it is today. Our vision is to continue to protect the environment and provide safe drinking water and fire protection for our residents, businesses, and industries. We are striving to keep up with the pace of growth in our region by continually evaluating our capacity and stakeholder partnerships to meet our customer needs, developing our human resources, investing wisely in technology, and remaining financially viable.

Jay Nicholson is the general manager of the Joint Municipal Water and Sewer Commission in Lexington, South Carolina. He has worked for JMWSC for 18 years. You can reach Mr. Nicholson at JNicholson@lcjmwsc.com.
Deep Trekker is a company that shows what can happen when a group of innovators come together with a groundbreaking idea to solve real-world problems. Sam Macdonald, Shawn Pette, and Jeff Lotz started the company in 2010. The three Canadian entrepreneurs were friends who dropped a flashlight into Lake Huron and, as a result, set out to improve the technology and capabilities of underwater remotely operated vehicles (ROVs).

The Company
Macdonald, Pette, and Lotz established their company in Kitchener-Waterloo, just outside of Toronto, and soon came up with a design for an underwater robotic camera that was compact, easy to use, robust, and extremely maneuverable in water. Their first sales were to a fish farm in Norway in 2011, and now they sell to infrastructure, municipal, law enforcement, military, research, commercial diving, shipping, and recreational customers. The company’s workforce has grown to 25 people.

Deep Trekker’s product line started with small underwater ROVs, sometimes called underwater drones, designed to provide affordable and accessible underwater inspection. Since then, the company has developed new and innovative products, such as the...
Pipe Crawler, which can operate inside both wet and dry pipes. Amanda Coulas, Deep Trekker’s marketing manager, said that the Pipe Crawler is as easy to use as the company’s previous ROV designs, but it is much more compact and affordable than others on the market.

Worldwide Sales

Deep Trekker has sold products all over the world, ranging from Europe to Asia and South America. However, Ms. Coulas noted that the United States is one of the company’s largest markets. “We have a wide range of American customers using our products, including municipalities; government agencies; contractors; commercial diving companies; and individuals using them for recreation, especially in Florida,” she said. Both the U.S. Army Corps of Engineers and U.S. Bureau of Reclamation are Deep Trekker customers.

Innovative Technology

Ms. Coulas said that Deep Trekker’s products have the only fully portable submersible ROVs on the market. She said that the DTG2 line of ROVs can dive up to 500 feet below the surface and the larger DTX2 ROV can dive as deep as 1,000 feet. All the ROVs have internal cameras that can turn 270 degrees, and they can be outfitted with additional equipment, such as sonar, cutters, grabbers, or other tools. The ROVs are very versatile and can be configured to almost any task the customer might need them to perform.

Ms. Coulas also noted that, unlike competing underwater ROVs, all the electrical power for Deep Trekker vehicles comes from internal batteries, which simplifies the designs and allows them to go places other vehicles cannot. “Our Pipe Crawler is the only one on the market that is truly portable and does not require a dedicated truck or topside power in order to function,” she said.

Adaptive Versatility

As a new, entrepreneurial company, Deep Trekker is always on the lookout for new products or services to offer its customers. Ms. Coulas says that the company prides itself on staying ahead of the innovation curve and on providing high-quality service. “We’re always continuing to innovate for our customers, which is where our development funding and ideas come from. We’re always open to new customers, new ideas, or new needs that we can fulfill.”

For more information about Deep Trekker’s line of ROVs, please contact Amanda Coulas, marketing manager, at (519) 342-3177.
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2016 CALENDAR

October 12–14  Texas Water Conservation Association, Fall Meeting, San Antonio, TX
October 16–19  Association of Metropolitan Water Agencies, 2016 Executive Management Conference, Scottsdale, AZ
October 26–28  WESTCAS, Fall Conference, Phoenix, AZ
November 3     Columbia Basin Development League, Annual Conference, Moses Lake, WA
November 3–4   Idaho Water Users Association, Water Law Seminar, Boise, ID
November 13–17 American Water Resources Association, Annual Conference, Orlando, FL
November 14–16 National Water Resources Association, 85th Annual Convention, San Diego, CA
November 20–22 Nebraska Water Resources Association & Nebraska State Irrigation Association, Joint Convention, Kearney, NE
November 29–December 2  Association of California Water Agencies, 2016 Fall Conference & Exhibition, Anaheim, CA
December 6–7   American Water Summit, Miami, FL
December 6–8   National Ground Water Association, Groundwater Week, Las Vegas, NV
December 14–16 Colorado River Water Users Association, 2016 Annual Conference, Las Vegas, NV
January 24–26, 2017 Idaho Water Users Association, Annual Convention, Boise, ID
January 24–26, 2017 Texas Ground Water Association, Annual Convention, San Marcos, TX
January 25–27, 2017 Colorado Water Congress, Annual Convention, Denver, CO

To include your event in the calendar, e-mail Municipal.Water.Leader@waterstrategies.com.