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I have always loved science. As a kid, I spent hours in the creek behind our house catching crayfish and minnows. As a biology major fresh out of college, I worked as a bench chemist, testing water and soil samples for Environmental Protection Agency (EPA) reporting. Then, due in large part to my wife, who is a structural engineer, I became interested in the science of engineering, and returned to school to earn degrees in civil engineering.

I still love science – especially the science of civil engineering – but at this point in my career I am most intrigued by the people behind the science; the people who dedicate their professional lives to protecting public health and the environment. And those people, my friends, are you! That is why it is such an honor to have the opportunity to work with you through NC AWWA-WEA.

In May 2013, the Board of Trustees adopted our Association’s Strategic Plan 2013. That plan outlines not only what we want to be as an Association, but also who we want to be as people. We have set the bar pretty high.

Our core purpose is “to enrich the expertise of water professionals in North Carolina.” Our core organizational values are:

- **Respect for diverse perspectives:** We have an inclusive culture that seeks alternative points of view in dialogue and deliberation, and we enjoy the satisfaction of equal relationships among peers, mentors and friends.
- **Value and respect for volunteer service:** We understand that family and job responsibilities take priority and appreciate the time contributed to the Association.
- **Affordable, high-quality products and services:** We carefully balance cost, price and quality.
- **Integrity:** We demonstrate transparent decisions, honest actions and ethical behavior.
- **Collaboration:** We appreciate the power of working with others to achieve a common vision.

Those are lofty ideals, but our strategic plan does not stop there. Our BHAG (Big Hairy Audacious Goal) is to be “the preferred choice for professional development and continuing education for the water industry of North Carolina.” We even have a “vivid description of a desired future,” which looks like this:

- **Our professional development:** Delivers extensive opportunities for networking, information exchange and collaboration.
- **Our content:** Everything you need from core certification to emerging technologies.
- **Our continuing education:** Recognized and accredited.
- **Our recruitment:** Attracting tomorrow’s professionals through scholarship, student activities and public outreach programs.
- **Recognized:** Recognized nationally; recognizing locally.

Our plan for the future features four goals that we intend to accomplish within the next three to five years. Each of these goals includes specific strategies (which are too lengthy to include in this article) that will help us succeed in our endeavor.

**Goal #1:**
**Training and Continuing Education**
The Association will provide high-quality, affordable training and continuing education.

“Our Association’s Strategic Plan 2013...outlines not only what we want to be as an Association, but also who we want to be as people.”
education that is convenient and of practical value to users.

Objectives:
1. Utilize the highest quality expertise in developing and delivering selected training.
2. Improve the cost effectiveness of the various training delivery methods.
3. Increase the number of attendees to all training events.

Goal #2: Professional Development
The Association will improve networking opportunities, relevant information exchange, and peer collaboration to enhance participation in the water industry profession.

Objectives:
1. Expand networking opportunities at face-to-face events.
2. Enhance online information exchange and peer collaboration.
3. Enhance career development to benefit both employees and employers.

Goal #3: Volunteer Engagement
The Association will provide appropriate and meaningful opportunities for volunteers.

Objectives:
1. Provide an appropriate array of opportunities and activities.
2. Expand volunteer opportunities to the different industry segments.
3. Explore meaningful forms of recognition for volunteer engagement.
4. Enhance the connectivity between volunteer activities and Association mission/vision statement.

Goal #4: Membership
The Association will be a growing and diverse organization that will provide valuable benefits to our participants.

Objectives:
1. Increase the number of members.
2. Increase the diversity of the membership.
3. Improve member satisfaction.

It is very fitting that the theme of this issue of NC Currents is ‘human assets,’ because this topic fits right in with our goals to train, educate, network, connect, expand, and diversify our Association membership. There is nothing more important to our industry than nurturing our younger and less experienced water professionals. And there is no other organization more attuned to North Carolina’s water needs, more committed to protecting public health and the environment, and more motivated to become the leading resource for safe water in North Carolina.

Thank you for being the people behind the science and for the contributions you make each and every day to our environment, our industry, and our future workforce. With all of us working together, I feel confident that we can achieve the goals set for us in our strategic plan and build a rock-solid future for our industry.
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As the 26% of us who are baby boomers arrive at the last decade of our working lives, the topic of human assets might well begin to enter our thoughts. Not surprisingly, we start thinking about those who will be coming behind us to continue our work. Pew Research Center says that on January 1, 2011, 10,000 of us reached our 65th birthday, a daily occurrence that will continue for another 17 years.

In order to ensure the responsible continuation of their work, what should those 69 million retiring individuals do about succession planning? How can we, the incumbents, best help them?

Of course, it is not only retirement that creates job turnover; it is the loss of mission-critical staff who leave one organization to fill voids left in other organizations as boomers retire.

No matter what causes key people to leave, it is essential to plan how their work will continue.

First, we have to be proactive: There is no room in any of our organizations for Scarlett O’Hara and her famous lines: “I can’t think about that right now. If I do, I’ll go crazy. I’ll think about that tomorrow.” Planning and preparation are essential ingredients for good stewardship of our human assets. We might begin with the formation of a succession planning team – or a “HAT,” a Human Asset Team.

Secondly, the HAT needs to build a knowledge platform, using a series of steps.

1. Understand what job(s) are currently being done by each of the current key incumbents. This includes not simply the job title, but the components of the work; the timelines and deadlines; what is working well now, and what is not; and the ‘why’ for each job. I call this the legacy review: trying to determine why things are being done the way they are, knowing that this can be extremely valuable in sorting out the political from the practical motivators.

2. Determine the ‘customers’ and stakeholders – everyone who contributes to or receives the work product for each key human resource. For most jobs, the graphic that would emerge from this analysis would look something like a spider web. The importance of this review cannot be overemphasized because it can potentially lead to a re-allocation of work when human asset pools change. That re-allocation can sometimes improve efficiency and job satisfaction.

3. Develop an accurate assessment of the core competencies (knowledge, skills and abilities) required to perform the full range of tasks for each job.

4. Compensation and benefits review comes next. Ingenuity and flexibility will be required in order to compete for top talent in a small and shrinking pool of experts, especially in a time of tight budgets. If the funds are not there to make a more competitive salary, is there a way to make the job more desirable – perhaps with a flexible schedule – four 10-hour days each week instead of five eight-hour days? Or perhaps a five – four – nine plan, that offers a three-day
weekend every other week? Is a day a week of telecommuting possible? For the high-tech generation, is high-tech equipment essential?

5. Determine the best avenues for searching out new human assets. Are there search resources available? What short cuts can be developed to shorten the search for new human assets and target the right potential candidates?

6. And finally, develop a plan for the post-hire period. Getting new human assets in the door is not the end of the process; it is only the beginning. Providing the right support, the right training, the right communication, the right environment will not only shorten the learning curve, but will help ensure turn-over happens once and does not turn into a churning wheel. It is vital to share the legacy information with new people – explaining the ‘why’ for things that must be done. Whether the reasons are political or practical, it is so important for new people to know how things came to be and whether or not there is flexibility to change in the future. One of the ways to help a good post-hire period is to build a resource team from customers and stakeholders. Those who contribute to the work product or take delivery can and should help provide answers, feedback and resources.

AWWA’s 2013 State of the Water Industry Report indicated that, although the economic downturn has deferred many retirements that would otherwise already have occurred, there is a large cohort of water industry employees who are eligible to retire – “and they represent a significant amount of institutional knowledge that could be lost without proper succession planning and process documentation.” The report further portrays the difficulty that many utilities are having in recruiting, training and retaining skilled employees. Human asset management is not someone else’s job; it is really something that belongs to all of us. We need to take ownership of the piece that lies within our own power. As an organization dedicated to education, NC AWWA-WEA has a role and a responsibility to help build knowledge, skills and abilities for you, our members – that is part of the value we deliver. Those of you who volunteer to mentor or train, or who facilitate the training process, are contributing meaningfully to building sustainability for the water profession. You are part of the solution.

Over the course of a 45-year work-life span, we will spend somewhere between 85,000 and 100,000 hours on the job. Working together to build better job descriptions, enhance job knowledge and better on-the-job collaboration can pay off in huge ways. So does mentoring, training, volunteering to build the workforce of tomorrow. We ourselves are happier and more productive. We deliver better quality work, go home more cheerful to those we love and facilitate better lives for those whom our own lives touch.

Thanks, as always, for all that you do.
The City of Lincolnton, NC commissioned Kruger over 14 years ago to provide them with a high rate ballasted clarification system, ACTIFLO®, as pretreatment. A short time later it became their primary clarification system. In this time, ACTIFLO has treated raw water turbidity spikes of 80 up to 800 NTU and produced settled water turbidity of <1 NTU. Currently the plant gets 260 hour filter runs and filter turbidity water of <0.05 NTU.
The year of 2013 passed quickly as our volunteers and staff worked to provide quality training for water professionals across the state. The committees put the finishing touches on the remaining 2013 events, while at the same time diligently preparing for 2014. Our 2014 calendar is almost complete as we continue to look for new and exciting ways to fulfill the vast array of training needs. Be sure to check our website at www.ncsafe-water.org for details on the events that we have on the horizon.

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* Registration as of 12/10/13*
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The following actions were taken during this meeting:

**Governance Discussion**

1. **Strategic Planning:** Development of a ‘metric dashboard’ to track key indices of interest to the board.

   The board approved a series of data tables for the report that will allow tracking of progress toward meeting strategic plan goals, using data sources already being tracked.

2. **Action Items:**

   a. Ratification of e-vote combining Residuals and Reuse committees: ratified the combination of the two committees, with the name of the combined new committee to be recommended to the board by the new committee.

   b. WEF request for funding for Ad Council Campaign: no funds pledged in year one, and $5,000 each pledged in years two and three, providing acceptable progress has been made with the project.

   c. Confluence Conference future: approved no further engagement in Confluence Conferences in the future; directed the Regulatory Affairs Committee to review potential opportunities with neighboring states, including Virginia.

   d. Raffle policy: reviewed, amended and approved a raffle policy developed at the recommendation of tax counsel with Langdon and Company CPA.

   e. Wastewater Board of Education and Examiners request to survey Operators in Responsible Charge for need to know update: approved request to survey Operators in Responsible Charge (ORCs) to determine need-to-know update requirements, with the understanding that no staff time will be required.

   f. WEF Member Association (MA) dues update: approved WEF member North Carolina Member Association dues of $45 for 2014.

3. **Committee Presentations:**

   Tommy Esqueda, vice chair of the Endowment Committee, presented information to the board regarding the history, current status and future plans of the Endowment Committee, including a recommendation that the Public Education and Endowment committees work together to pursue grant funds, which the board approved. He outlined a proposal to initiate a new capital campaign in 2014 and extend it through 2015 or 2016. All agreed on the need for emphasis on enhancing awareness of the endowment program and availability of funds as a way to increase participation.

4. **Chair’s Report:**

   Chair Jarrell reviewed activities of the Joint Public Education Committee, which has created a task force to explore the possibility of a statewide backflow/cross connection certification. Recommendations were due November 12.

5. **Executive Director’s Report:**

   Membership report was provided. Membership Committee will be reviewing.

6. **Budget Process Overview:**

   Treasurer Hellmann provided an overview of the budget process.

7. **Award Committee Presentation:**

   Chair Jarrell reviewed changes to the award program, including a new award program to be distributed to all conference attendees; increased focus on winners, including re-presentation of awards at agencies, upon request.

8. **Consent Calendar**

   a. Approved minutes of the meeting of May 9, 2013.

   b. Accepted the financial report for May and June with revenue in May of $34,781.03 and expenses of $93,371.29 for a net income of -$58,590.26. Total assets as of May 31, 2013 were $1,017,563.56 with $998,290.62 in checking/savings, of which $254,508.33 is endowment funds. The balance of unrestricted net assets (checking minus outreach and endowment) is $743,782.29. Revenue in June was $63,807.24 and expenses were $56,694.60 for a net income of $7,112.64. Total assets as of June 30, 2013 were $1,024,767.20 with $998,778.26 in checking/savings, of which $252,017.33 is endowment. The balance of unrestricted net assets is $746,760.93.

   c. Accepted committee reports as presented.

   d. Accepted the WEF Report, including information from Barry Gullet who is chairing a committee studying strategic planning for Member Associations. He noted that NC AWWA-WEA is ahead of most.

   e. Accepted the AWWA Report from Steve Shoaf, who advised that AWWA has adopted a new strategic plan.

9. **Adjourned the meeting to September 19, 2013 at Lee S. Dukes WTP in Huntersville, at 10 a.m.**
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### 2014 Committee Chairs and Board Liaisons

(11/21/13)

#### Board of Trustees Committees

**Nominating/CANvass**  
John McLaughlin  
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#### Conference Coordinating Council

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#### External Affairs Council

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**Water For People**  
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#### Technical Program Council

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- **Wastewater Collections & Water Distribution**  
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#### Schools Council

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For more committee information visit individual committee web pages on www.ncsafeewater.org.
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Conferences Coordinating Council
The Conference Coordinating Council was formed in 2011, as an umbrella committee encompassing all the formerly separate Spring and Annual Conference planning committees: Annual Conference Local Arrangements, Awards, Exhibits, Sponsorship, Operations Challenge and Pipe Tapping, and the Spring Conference Committee. “Before, the committees were each doing an excellent job but they were not talking to each other,” says Mary Knosby, Council Chair since 2013. “I am like a hub. I communicate with all the other committee chairs to ensure they are on-track and that the necessary communication is happening.”

The Conferences Coordinating Council is a wonderful way to enhance the process, by which everything comes together for the conferences. “I typically have a lot of individual conversations with committee chairs and I try to attend a lot of meetings to keep track of what is going on,” explains Knosby. “I think the conferences are very important to our Association. I love being part of making these events successful.”

She likens the Annual Conference to a kind of homecoming, which encompasses everything from the Operations Challenge and exhibits to technical sessions, keynote speakers and student events. “I enjoy helping create these opportunities for our members,” says Knosby, adding that she will be continuing in her position through 2014.

After each event, she takes the feedback collected from attendees and passes the information on to the appropriate committee chairs. “Then we evaluate how everything went,” says Knosby, “and look for new ideas and ways to enhance the conferences.”

Annual Conference Local Arrangements Committee
The Annual Conference Local Arrangements Committee encompasses 16 sub-committees responsible for a wide range of activities that are critical to the success of the Annual Conference. “We have a timeline according to which we coordinate activities with the staff at the Association,” says 2013 Chair Lori Brogden. “We get together once a month to go through, who is doing what, and what volunteers and resources they need.”

Activities include signage, publicity, registration, organizing the opening session (including thank you gifts for visiting officers), the golf tournament, etc. Several sub-committees coordinate groups of volunteers to fulfill responsibilities before and during the conference.

Brogden started by volunteering for the Conference at registration many years ago and has been involved ever since. She has also served on the Seminars and Workshops Committee and the Annual Conference Program Committee, coordinated registration for many years, chaired the Spring Conference, and sat on the Board as Secretary. “It’s a lot of fun,” says Brogden. “It gives me the opportunity to meet many people in the industry while doing something I enjoy and truly believe in.”

There are always plenty of volunteers to make the event run smoothly. The Chair is on hand throughout the entire process to help with any issues that may arise. Each year, the Committee selects a Chair from the city where the event will be held and a Vice-Chair from the place where the Annual Conference will be held the following year.

In 2014, the event will be in the City of Winston-Salem with Courtney Driver as Chair of the Annual Conference Local Arrangements Committee. Holding this year’s Annual Conference in Concord created some challenges in terms of fitting all participants in a smaller venue. For this reason, the Pipe-Tapping Competition was held outdoors instead of inside the Embassy Suites Charlotte-Concord Golf Resort & Spa.

“We have a large organization and it keeps growing,” says Brogden, adding that she plans to continue volunteering for many years to come. Next year, she is looking forward going back to the Board, this time as Trustee.

Awards Committee
Launched in 2013, as part of Jackie Jarrell’s vision for her year as Association Chair, the Awards Committee is responsible for recognizing the talents and achievements of NC AWWA-WEA membership, and those who contribute to the accessibility of clean water in NC. “There are a great many of those, toiling away, doing their jobs in relative obscurity, and day after day, improving processes and innovating to maximize efficiency and improve the quality of water resources in our state,” says chair, Adrianne Coombes, Business Developer at McKim & Creed.

This year, the committee has been made up of all NC AWWA-WEA committee chairs, who nominated and selected awardees. There are 16 different committees responsible in some way for awards nominations. “Outside of that, I have been the only other committee member,” notes Coombes, “but I am dedicated to upping my recruitment for the 2013-14 year! Now that I have been through the process once, I understand where I can use help in coordinating national awards submittals and promoting the awards program.” So far, she has one solid recruit - Bahareh Karami, with Black and Veatch- who is helping create a written record of the processes each committee uses to recruit and select...
nominees. This is the first step to ensuring consistency and eliminating the learning curve faced by future Awards chairs when they take on their two-year term. It will also help the committees who are in charge of nomination and selection understand what has been done in the past.

She adds that having legacy members of NC AWWA-WEA involved on the committee would be a tremendous asset, as they have decades of exposure to the membership and are better able to identify long-term active members, who perhaps have not been recognized for their contributions. “There are so many unsung heroes in our industry, we just have to find new ways of boosting them up for recognition,” says Coombes, adding that she enjoys learning about the award recipients and their impressive accomplishments. “We have some really talented and experienced members who blow me away with all that they have contributed to the water and sewer infrastructure and water quality in this state. They bear a heavy responsibility of accountability to ratepayers in determining the best way for limited resources to be allocated.”

Having the opportunity to read many of the winning awards nominations this year proved to be a valuable reminder of all that operators, owners and engineers do to protect public health. “Getting the Awards Committee up and running has been a great experience,” adds Coombes, noting that the committee will be looking for feedback on the best ways to make awards nominations accessible to everyone.

Other plans for next year include ensuring the Association is promoting NC state winners on a national level. A short-form for nominations is being developed to make it easier to identify nominees for awards that receive low submissions. Says Coombes: “Please do not forget to nominate the unsung heroes in your organization for AWWA-WEA awards.”

### Exhibits Committee
Between conference booth fees and sponsorships, vendors provide approximately 40% of the conference revenue, along with education on leading-edge technology and processes. “Everybody recognizes that we have an important role to play in the two conferences,” says Jim Anderson, Chair of the Exhibits Committee.

The eight members of the committee help manage exhibitor check-in by handing out information packages, assisting exhibitors to find their booth and ensuring they have access to any electricity or water they may need. They also help to police the exhibit hall and hand out door prizes. “Our goal is to encourage people to visit the exhibit hall and drive traffic to vendor booths,” explains Anderson. “We are working with the Association on an ongoing basis to see how we can increase booth traffic.”

For instance, this year at the Annual Conference, participants were offered a new ‘hall pass’ option, whereby a volunteer would escort them through the exhibit.
hall to take in four 15-minute educational presentations. By attending all four talks, participants earned a one-hour continuing education credit.

New developments for the upcoming Spring Conference will see participants encouraged to spend time in the exhibit hall for a tail-gate party. Prizes will be drawn for those with bingo cards stamped by the vendors they visit. Exhibit committee members will once again be on hand to help with check-in as well as with set up and breakdown.

“I feel like I am contributing to the Association in a meaningful way by helping to make the conference interesting and self-sustaining,” says Anderson, adding that all the committee members are exhibitors or vendors, typically from small firms.

The committee meets twice a year at each of the conferences, communicating as needed by email and conference calls in between. In the past, members were charged with manually assigning booths to exhibitors but this task is now managed electronically on a first come first serve basis.

Anderson first joined the committee 10 years ago and is now serving his second two-year term as chair. “We welcome anyone who would like to join,” he notes. “We are always looking for fresh blood.”

**Sponsorship Committee**

“If someone is looking for a high impact committee that does not take a lot of time, this is the one,” says David Zimmer, Chair of the Sponsorship Committee and Regional Manager, Carolinas & Tennessee at CDM Smith. In 2013, the Sponsorship Program brought in $41,650 in revenue to the Association, helping to fund activities that have no other revenue source. At the same time, the program adds value and benefits to the membership by increasing the visibility and strengthening the brand of sponsor organizations.

Meeting by conference call, once or twice a year, the eight members of the committee assist staff with implementing the Sponsorship Program, identifying any changes that need to be made. “We look for people to give input on the effectiveness of the program,” says Zimmer, adding that the people on the committee come from all different parts of the industry. “They are bright and talented people and it is a pleasure to interact with them.”

Although the focus of the meetings is often on sponsorship opportunities during the Association’s Annual and Spring conferences, he points out the critical importance and value of the Association’s annual sponsors that support the Association on an ongoing basis. Zimmer is the first chair of the committee that was created in 2011 to improve sponsorship opportunities, an urgent issue at the time. Since then program results have become increasingly strong. Minimal changes to the program are anticipated in the coming year.

Noting that he will be stepping down as chair at the end of this year, Zimmer invites other members to take up the torch. “I think it is good time for me to look for other opportunities to serve our Association and am glad we can provide the opportunity of serving as the next Sponsorship Chair role to another deserving member and leader,” he says.

**Annual Conference Program Committee**

Organizing 120 presentation slots might appear daunting at first glance, but the 30 members of the Annual Conference Program Committee use a well-oiled system to make the process go smoothly. A brief videoconference meeting kick-starts the selection process in April. The chair then sends out a call for papers, including deadlines for when abstracts, papers and presentations are due. “We meet again after the abstracts come in,” says Chuck Shue, who has been a member of the program committee for a number of years, including for the 2013 Conference. “I meet with the track chairs once if not twice in person.”

With a few other volunteers, Shue distributed the 200 abstracts he received to those chairing each of the five tracks in the conference program: water, wastewater, collection and distribution, special topics, and policy and management. Four or five volunteers in each area join the track chairs in evaluating and ranking the abstracts. Firms are limited to ten presentations per conference and individuals to one. The track chairs then send out letters to all those who submitted abstracts, indicating whether they were selected for presentation, designated as alternates or rejected.

“The next committee meeting is critical,” says Shue. “We do that meeting in person if possible.” Committee members group the papers within each track and assign every presentation to a time in the schedule.
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While the 30-minute presentations used to run one after another without pause, there is now a five-minute break in between to allow participants to change locations. “You can plan your attendance a bit better,” notes Shue.

Track chairs are also responsible for finding volunteers to moderate each presentation. At the same time, they continue to monitor the fulfillment of each commitment to present. “There will be changes right up to the day of the conference,” says Shue, adding that there are always people prepared to fill in at the last minute if necessary.

The Annual Conference Program Committee is also responsible for finding a keynote speaker as well as three to five panel speakers for the Wednesday forum. The vice-chair is usually responsible for the latter, based on suggestions from other committees, the program committee and Association staff, as well as a sub-committee that determines the subject to be addressed.

At the 2013 Annual Conference, for the first time, visiting officers from AWWA and WEF delivered a full presentation during the Opening Session, which was held on Veterans Day. Fittingly, the keynote speaker was a former member of the US Army Corps of Engineers, Lieutenant General (Ret.) R. L. VanAntwerp.

“I really enjoyed introducing him at the opening session,” says Shue, who started as a volunteer reviewing the abstracts. “At the same time, I always appreciate the opportunity to really be on top of everything that is being presented.”

The 2014 Spring Conference Committee

A committee of 15 volunteers is responsible for planning the 2014 Spring Conference and interfacing with other committee members and staff. “We have members who are engineers, water and wastewater system operators and industry representatives,” says Chair Kelly Ham. “We were very fortunate to have some committee members who have been involved since the inception of the Spring Conference as well as several new members who bring fresh new ideas, perspectives and energy.”

Other members fall somewhere in between. Ham suggests that a good way to become familiar with the committee is to volunteer as a moderator for the upcoming Spring Conference. She became involved with the committee four years ago when she volunteered for a two-year stint as a track chair. Since then she has also served as program chair and, this year, is chairing the committee responsible for all aspects of the event.

The committee meets on an as-needed basis. “We begin planning for the next conference almost as soon as the previous conference concludes,” explains Ham. Committee members help solicit presentations, plan the conference program, plan conference events, help publicize the event, interface with other committees, help moderate the sessions and take care of other details, as required.

“It is a fantastic group of people,” says Ham. “I enjoy having the opportunity to work with them while giving back to the industry.”

This year, the committee has implemented some new ideas, including returning the conference to its original operations focus. At the same time, the program co-chairs have launched an exciting new initiative, teaming operators and consultants in a shadowing program to share best management practices and tricks of the trade. Another fresh idea is a tailgating-themed social event that allows all attendees to socialize in an informal setting at the conference, rather than at separate, segmented gatherings. Says Ham: “It will be a very exciting and educational Spring Conference.”

2014 Spring Conference Program Committee

A week after the successful 2013 event, the Spring Conference Program Committee started preparations for 2014. The committee is responsible for soliciting engineers and other water and wastewater professionals to prepare abstracts and deliver presentations at NC AWWA-WEA’s annual Spring Conference. “We review and organize the presentations into categories,” says Christene Mitchell, who co-chairs the 15-member committee with Jonathan Ham. Both work for the Cape Fear Public Utility Authority (CFPUA).

The co-chairs then pass on the abstracts to sub-committees for each of the three tracks (water, wastewater and special topics), as well as the Operations & Maintenance Committee chaired by Brandon Garner. The two members of each subcommittee select presentations to be showcased at the conference,
Committee Spotlights

along with a list of alternates. “We had 67 abstracts submitted this year,” notes Ham. “The Operations & Maintenance Committee puts together its program separately and then submits the finished program to the committee for inclusion in the overall program.”

In the past, Mitchell has had the opportunity both to help organize the schedule for the presentations and lend a hand at the conference. “Last year, we changed the theme of the conference to ensure it was more operations-based,” she notes.

Their work with a utility allows Mitchell and Ham to appreciate some of the helpful ‘tricks’ operators use to solve everyday problems. Accordingly, the co-chairs decided to take the new theme – Spring into Operation – one step further this year.

In preparation for the 2014 event, they asked for volunteers from operations departments and consulting engineers across the state to pair up and highlight these tricks of the trade at the conference. The response was very positive.

“We organized a system of operations shadowing to give operators and engineers the chance to pull out those ‘golden nuggets’ for sharing,” says Mitchell. “This is information that is not available in studies or even written down on paper. An added benefit is that consultants get to know some of the people who actually work on the systems they designed.”

Ham hopes that this program will continue successfully in the future and drive operator interest in presenting at the conference. He points out that these presentations will be part of the water, wastewater and special topics tracks. “We are hoping that the rest of the state will see the value in this and that, next year, people will participate in even greater numbers,” adds Mitchell.

In conjunction with the three advisors, the committee also handles all other programming aspects of the Spring Conference, including exhibitors and entertainment. This year, participants can look forward to a Monday evening tailgate party with food, live music and a variety of games (including a cornhole tournament). Participants are asked to wear their favorite sports team gear for the event.

“We are going to have a vendor bingo, with cards to be stamped for visiting with vendors,” says Ham, noting that bingo numbers will start being called at 7 p.m. and conference attendees must be present to win.

Ham is looking forward to actively participating in the events at the conference, and appreciates the support provided by all members of the committee. Mitchell finds volunteering on the committee rewarding as well. “I enjoy the ability to talk casually with people in the same field,” she explains. “We work a lot on projects together but it is great to be able to have some fun and interact with people on more of a personal level.”

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I am a joiner,” says Adrianne Coombes. “I like to be involved in things and meet new people.” It is an approach that has served the McKim & Creed business developer well, in her career as well as in her life beyond work.

After completing a B.S. in civil engineering, with a structures concentration and a minor in business, from North Carolina State University, Coombes worked for several years in the land development field doing civil, site and stormwater engineering. “After getting my PE, around the worst of the economic downturn, land development work was thin,” she recalls. “I was actually downsized after several cuts, and found myself reassessing what I wanted to do with my career.”

She knew that she enjoyed the outreach part of her job as a project engineer, such as representing McKim & Creed at industry events and job fairs. At the same time, she liked the company’s philanthropic values, always looking forward to opportunities to participate with co-workers in activities organized by Meals on Wheels, Adopt-A-Stream and the Make a Wish Foundation.

“Most of all, I loved collaboration with clients,” says Coombes, “whereby I am able to assist in tailoring project outcomes to their most challenging needs. I love the collaborative process of understanding their drivers as priorities change.” For many large engineering projects, design and construction can take several years. With growth and market drivers fluctuating during project execution, owners are often aiming at a moving target. McKim & Creed noticed Coombes’ potential for helping clients deal with these changes. Accordingly, they invited the young engineer to return to the firm in a role that allowed her to capitalize on what she enjoyed best: acting as a liaison with colleagues to ensure they understand and deliver what the clients want and need.

“McKim & Creed is great at moving employees toward their strengths and allowing them to reimagine their future,” explains Coombes. “I have been a great beneficiary of that company philosophy.”

Over the seven years that she has been with McKim & Creed, she has moved from engineering intern to project engineer, then from engineer to her current position as a business developer. “I honestly believe I have the best job at our firm,” says Coombes. “I am able to touch base with our clients on a daily basis and listen to anything and everything they have to say.” Her role involves actively listening to the clients concerns and challenges, then communicating the information back to staff in a constructive way. On her very best days, she comes away satisfied that the company fully understands the needs and wants of the client.

In the highly competitive field of consulting engineering, the smallest things can make a substantial difference in a client’s desire to work with a specific company on a project. “I communicate and strategize with our project teams back in the office about how we can position ourselves to provide the most benefit to our clients,” reflects Coombes. “The goal is to seamlessly integrate our manpower behind their organization’s goals to provide a high level of service to their customers.”

Over the years, the young engineer has had the good fortune of developing rela-
tionships with many people in the industry, including some wonderful mentors. “I really enjoy the ability to get out and speak to people all over the state,” she notes, adding that, sometimes, she even has the chance to visit her hometown in eastern North Carolina. “I have also really enjoyed my involvement in NC AWWA-WEA. I really feel as if I was embraced by this organization, thanks, in part, to the active participation of my mentors and predecessors at McKim & Creed.”

One of those mentors was Les Hall, a strong and early endorser of being involved in the Association. “The more involved I got, the more people I met who emphasized the value of active membership,” adds Coombes. She started by joining the Local Arrangements Committee and was encouraged to become chair a few years later. It is a story she likes to tell to young engineers, who are ‘sticking their toe’ in the waters of the Association for the first time, because of how clearly it speaks to the leadership opportunities open to younger members.

Since her time with Local Arrangements, Coombes has gone on to sit on the Seminars and Workshops Committee, the Communications Committee and the Awards Committee where she currently serves as chair. She hopes to remain closely involved in Local Arrangements when the Annual Conference returns to Raleigh in 2015.

In the meantime, she continues to be involved in many other associations, including the American Council of Engineering Companies, Professional Engineers of NC, North Carolina Economic Development Association, Georgia Water Professionals, and the NC Hospital Engineers Association. This coming year, she will also be participating in the third Climb for Water, benefiting Water For People.

Although traveling is one of Coombes’ passions, she has never traveled out of the country for a fundraising event. Last year, she was one of 22 people who participated in the Climb for Water ascension of Pike’s Peak in Colorado. This January, she will be joining the group climbing the Cotopaxi volcano in Ecuador. When they reach the summit, the climbers will be at the second point closest to the sun on the entire planet – a fact not lost on Coombes. Resonating just as loudly is the importance of the Water For People’s work and, for that matter, her own work in contributing to the success of healthy communities.

“I am excited about the trip and the opportunity to visit a country that has more widespread issues with lack of clean water and sanitation than we have in the US,” she says. “I think it is a great reality check to experience other cultures as often as possible. Seeing the lack of infrastructure and absence of material ‘things’ people have in other places really gives perspective to the ‘needs’ we perceive in our everyday lives here at home.”

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During his 52-year career, Joe Stowe, Jr., has served water and wastewater utilities in nearly every capacity possible, from meter reader to utility director and, later, from project manager to vice president of one of the world’s largest engineering firms. With decades of experience in both utilities and consulting, his name has become synonymous with a level of industry knowledge and experience respected throughout the state – and beyond.

“My earliest memories involve being around a water plant,” says Stowe, whose father worked as a utility manager for the town of Hamlet, NC. “As a toddler, I would go to the plant with my dad and walk around.” The summer before his senior year in high school, he completed his first water certification. He was hired part-time at the small plant, run by the Hamlet Water Company, working summers and weekends as an operator or in systems construction and installation.

Then in 1966, five days after graduating from North Carolina State University with a BS in mathematics, his father passed away at the age of 56, the president of the Hamlet Water approached 22-year-old Joe Jr. to assume his father’s position. Although he had been commissioned by the army as part of the ROTC program, Stowe was able to obtain a short deferment to work at Hamlet until the utility found a replacement.

After a year as superintendent of the water treatment plant, he left for Vietnam to serve with the US Army Signal Corps. Soon thereafter, his colonel – who was dissatisfied with the water quality supplied to the troops – realized that his lieutenant had a background in water treatment. “So, as an extra duty, I had the good fortune to be able to help at the plant,” recalls Stowe, who received a Bronze Star for his meritorious service in the war.

His luck continued. Upon his return from Vietnam, he had the opportunity to work as a superintendent of Water and Wastewater Plants for Fayetteville, North Carolina, a city of approximately 80,000 at the time. A couple of years later, Stowe was asked to become assistant manager. “But, at my request, I maintained the direct responsibility for all of the plants and all 60 or so lift stations,” he recalls.

Then 10 years later, Stowe was offered a challenging opportunity in Virginia with the Hopewell Regional Wastewater System. In its two years of existence, the plant had never operated a single day in compliance. To compound the misery, the Justice Department and the EPA were suing for several millions of dollars. “The lawsuit was settled on the condition that, if we got the plant to operate in a compliant manner for 12 consecutive months, the penalties would be cancelled,” recalls Stowe, adding that he suggested the lawyers add this condition after they scoffed at the idea that he would succeed. “They did – and we did.”

Four years later, what would soon be known as the Charlotte Mecklenburg Utilities Department (CMUD) called, and Stowe returned to North Carolina. “I had always had a dream that I wanted to go to work as director of utilities for Charlotte or Raleigh,” he explains. “I followed several very, very good utility directors there.” One of them was Walter Franklin and the other was Lee Dukes, his father’s peer, whom Stowe, Jr., had met on different committees.

Over the next decade, he would often call on Dukes for advice. During that time, the system expanded by 50% in response to rapid development in the area. Stowe also led the effort to merge the utility systems of all six Mecklenburg County towns, Mecklenburg County, and the City of Charlotte into the CMUD system.

After leading CMUD for 12 years, he was approached by CH2M HILL to join the company as a project manager, vice president, and area manager for the Carolinas in the Southeast Region. By that time, he had been on the municipal side for 32 years. “I still stay close to CMUD,” notes Stowe. “The current director and I get together frequently just to catch up. I try to be a sounding board for him, just like Mr. Dukes and Mr. Franklin were for me. A significant majority of the people who work for Barry [Gullet] are people with whom I had the opportunity to work. They are a solid group. And, all of them have been active at the Association level.”
Stowe had always been actively involved in various professional associations as well, but the switch to consulting marked a period of more intense activity with the Water Environment Federation (WEF) and the American Water Works Association (AWWA). From 1993 to 1996, he was a director of WEF and then served on the Executive Committee, becoming president for 2000-2001.

During his time on the executive committee, he delivered opening session addresses and keynote addresses to WEF Member Associations across the US and Canada, as well as in Mexico, Brazil, Australia and the Netherlands. Among many memorable moments, those that stand out include sitting across the table from the king of Sweden and meeting the Crown Prince of the Netherlands (now the King), discussing water and wastewater issues. In 2000, he led a 26-person delegation on a People-to-People trip to China, visiting the Three Gorges Dam and meeting with government and university officials to share information and best practices.

Stowe discovered that in Wuhan, central China’s largest city, the wastewater treatment plant handled 10% of the waste flow, with the rest going into the river. “They were years behind the US,” he notes. The people in China were routinely told to boil their water before using it.

“I believe that the water industry’s biggest challenge is the large numbers of people around the world who do not have access to drinking water,” adds Stowe.

“Both in the utilities and the professional associations, the people I had the opportunity to work with are such good people,” he says, “that they stand out.”

The Associations have also recognized that Stowe stands out, bestowing on him such honours as the WEF Arthur Sidney Bedell Service Award (1992) and the AWWA George Warren Fuller Service Award (1993). He was also the recipient of the 2004 J.M. Jarrett Award presented by the NC Public Health Association and NC Department of Environment and Natural Resources (DENR) for “Recognition of Significant Contributions to Man’s Environment.” In 2010, he received WEF’s Charles A. Emerson Distinguished Service Award for outstanding service to the water environment profession, and in 2013, the Water For People Robert W. Hite Outstanding Leadership Award. As for the 5-S, he has the honour not only of wearing the golden shovel, but also of calling himself a charter member.

Among all his honours, awards and plaques, the two that hang on his wall at work are particularly significant: one bears the dates 1947-48 and the other, 1977-78. “When I was three years old, my dad was the president of the North Carolina Water Works Operators Association,” he explains. “Exactly 30 years later, I was the president. I am very proud that both my dad and I were in the utility business.”

Currently, Stowe, Jr., is in his sixth year of work as a senior management consultant for McKim & Creed. Throughout his career, he has had many mentors– and been a mentor to many as well – but the one person who has had the greatest influence on his life is his father. “He taught me how to live and how to be a utility person,” says Stowe.

The tradition has continued into the third generation. Of Stowe’s three sons, one is the vice president of operations of the Huntsville, Alabama utilities; another is a civil engineer for a firm in Charlotte; and the third is an English professor and avid environmentalist.

Each of them, in some way, furthers the mission of making universal trustworthy drinking water a reality. “Trust is a big thing when it comes to utilities,” says Stowe, adding that he always concluded his presentations with this important point. “As professionals in the water field, we need to recognize the intense trust that people place in us and celebrate the valuable service we provide.”
Plant Spotlight:
Lake Townsend Water Treatment Plant – City of Greensboro, NC

Information provided by: Barry Parsons, Water Supply Manager
Edited by: David Hamilton, PE / ARCADIS (NC AWWA-WEA Plant Operations & Maintenance Committee)

General
Located in central North Carolina (Piedmont area), Greensboro is home to roughly 300,000 people. It is accessed by thoroughfares such as I-40, I-85, and the new I-73 and I-74 roadways. Greensboro has a water customer service population of 277,000 and provides drinking water from Lake Townsend Water Treatment Plant (LTWTP, supplied by Lake Townsend and upstream impoundments), the Mitchell WTP (whose source is Lake Brandt and Lake Higgins further upstream), and, ultimately, through a network of nearly 1,500 miles of water lines. Acquired in 1911 from a private water supplier and expanded in later years, the Greensboro Mitchell WTP currently has a 24-mgd capacity and treats 10 mgd on an average day. The LTWTP, in operation since 1968, is rated at 30 mgd with an average day flow of 18 mgd and a maximum day flow of 28 mgd. These supplies are currently supplemented with average flows of 6.3 mgd from the new Randleman Lake’s John Kime WTP, 1.5 mgd from the City of Burlington, and 0.5 mgd from the City of Reidsville.

Treatment Processes
The plant uses conventional treatment. Processes include a low lift pump station with five vertical turbine pumps each rated at 9 mgd (three constant speed and two variable speed) and one vertical turbine pump rated at 30 mgd; two rapid mixers; three flocculation trains with five-stage mixing (15 flocculators in all); three rectangular sedimentation basins with six sludge removal units (Trac-Vac); nine dual media sand/anthracite filters with Leopold underdrains and four surface sweeps per filter; disinfection; one 4-mg clearwell; and high service pumping with one 30-mgd (Godzilla) pump, one 17-mgd pump, and one 23-mgd diesel engine-driven pump.

The treatment facility receives its source water from Lake Townsend, which is pumped to the plant through the low lift pumping station. The pretreatment chemicals (algaecide and permanganate) are added and the water flows to the rapid mixers, where primary coagulant (ferric sulfate) is added and alkalinity adjustments using lime and caustic are made. Once thoroughly mixed, the water travels through the parallel flocculation chambers and then through the parallel settling basins. After the settling basins, pH adjustment and chlorine are added to the filter influent of each filter. Water from the effluent of each filter is stored in the clearwell while in contact with free chlorine (sodium hypochlorite), then flows to the high lift pumping station where chlorine (as needed), ammonia (to form monochloramines), fluoride, lime or caustic, and a corrosion inhibitor are added prior to the water being pumped to the distribution system.

Solids Management
All water plant discharge is gravity fed to a lagoon. Prior to arriving in the lagoon, calcium thiosulfate is added to the water to remove chlorine. Occasionally, pH must be adjusted to meet discharge standards and is accomplished by adding sodium hydroxide or sulfuric acid. The residuals settle out and the clear water is discharged into Reedy Fork Creek. Every 12 to 15 months, contractors remove residuals from the lagoon by pumping the contents through a centrifuge or belt press and then hauling the residuals away.

Monitoring and Control
The plant is controlled by SCADA with operator input. Most of the chemical feed systems are automated and, normally, are controlled manually only during emergencies. The emergency standby generator is automated and currently has the capacity to run the low lift station, the plant, and one small driver in the high lift station. The newly upgraded SCADA system is more accurate and more efficient, allowing the operators to have more confidence as they operate the plant.

Unique Features
The Lake Townsend Dam is a unique labyrinth-style dam that recently replaced a
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- Automatic adjustment of biological nutrient removal and chemical addition
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traditional dam structure that was deteriorating due to alkali-silica reactivity (ASR) in the concrete. The new dam operates with no mechanical gates except for one that is used only in case of emergency during a 100-year flood. The dam provides a much longer overflow weir length than the old dam due to its unique zigzag design, and operates by allowing the water to flow over the two lower ‘vaults’ first. Then, as the lake level rises, the water flows over the remaining vaults.

Operational Challenges
A few years ago, the operations staff noticed filter runs were becoming shorter. Normally, this was a seasonal event during lake turnover, and the plant would experience increased iron and manganese events. However, this began to persist throughout the year. During coagulant pilot testing of ferric sulfate, it was determined there was an algae problem. In the past, algae was not considered an issue, but after pilot testing, it was determined that lake treatment with an algaecide during the summer months was needed. Once the treatment began, staff noticed an increase in filter run hours.

Since 2010, lake treatment has been conducted on a regular basis, which has improved the overall efficiency of the plant. To further enhance source water quality, lake aeration is being considered. This is expected to reduce chemical use/costs considerably.

Additionally, meeting the Stage 2 Disinfectants and Disinfection By-Product (D/DBP) Rule has offered an opportunity to improve treated water quality for the City’s customers. In 2010, the City switched from aluminum sulfate to ferric sulfate coagulant at both treatment plants. After a yearlong pilot study, ferric sulfate proved to be the best for removing total organic carbon (TOC), reducing the D/DBPs, and lowering the trihalomethanes (THMs) leaving the plant. To assist in meeting the new rule, the Water Supply Division also decided to switch from sodium hypochlorite to chloramines as the distribution system disinfectant. This has allowed the Water Supply Division to consistently meet or exceed all distribution water quality compliance standards.

Personnel
Staff
The plant is operated by a staff of 62 employees. The operations and maintenance staff include 50 male and seven female personnel. The laboratory staff includes four male and four female personnel. The administrative staff includes one male and three female personnel.

LTWTP has both employee of the month and employee of the year awards that help improve morale and acknowledge those who deserve the recognition. Operators work a 13.33-hour shift, which allows them to have more days off in a week. Most of the maintenance and administrative staff have the option to work a flexible schedule.

Staff Development
Both the Mitchell and Townsend WTPs are ‘A’-certified plants, and each plant has state-certified laboratories. The City encourages all operational personnel to obtain A-surface certifications, and members of the maintenance staff are encouraged to obtain education and certification in maintenance technology. The Water Supply Division has an internal database with sample questions for operator tests, which helps improve skill and knowledge. There are plans to add practice tests and information to the database for maintenance personnel.
In-house training programs for new operators and refresher programs for current operators are in place. The City requires enrollment in the Sacramento Correspondence Course for all new operators. The Water Division is very proactive when it comes to ensuring staff members are able to attend the seminars and lectures needed to improve job skills and professional development.

All seminar handouts and information are uploaded to the internal database for reference by the staff. The Water Resources Department seeks outside agencies and consultants to conduct seminars and training for the staff.

**Health & Safety**
The City of Greensboro has a Water Resources Departmental and Divisional Safety Committee. The committee is facilitated by a division safety and security coordinator and includes members from each part of the Water Supply Division, such as laboratory, maintenance, operations, and administration. The coordinator ensures all required Occupational Safety and Health Administration (OSHA)-related and nonrelated training is scheduled and conducted on an annual or semiannual basis. The coordinator is also responsible for all personal protective equipment (PPE) requirements for the division.

**Awards**
The City of Greensboro Water Resources Department, water treatment facilities, and supporting teams have earned recognition through numerous awards over the past decades. A few of the most notable in the past five years are:
- 2013 – American Council of Engineering Companies (ACEC) Grand Award for Engineering – Lake Townsend Dam
- 2012 – National Rehabilitation Project of the Year – Lake Townsend Dam
- 2010 – ACEC Grand Award for Engineering Excellence – Lake Townsend Raw Water Intake and Pumping Station

**Future Plans**
In the near future, a new backwash station will be installed to allow more consistent backwashes. This will require less time to backwash and less total head to fully expand the filter media. To better clean the media, a new air scour system will be installed to further improve filter efficiency. In addition to the air scour system, media will be replaced in all filters and all filters will be automated during these upgrades.

Phase 1 electrical upgrades were accomplished about four years ago, improving high-voltage service, replacing old switch gear, and providing a new generator. In the near future, Phase 2 electrical upgrades will begin by adding a generator, completing electrical upgrades, and replacing the old switch gear and driver to run the largest high pump.

Studies are under way for the following:
- to feed chlorine dioxide in the raw water intake to reduce D/DBP formation,
- to enhance water quality using dissolved air flotation (DAF), and
- to allow for more economical and efficient ways to dispose of sludge residuals and to determine if residuals removal by the permanently installed equipment and staff will be more cost effective, rather than by contract.

Lastly, there are also plans to automate the high and low lift pumping stations.

**Contact information for more on the Lake Townsend Surface Water Treatment Plant:**
Barry Parsons
barry.parsons@greensboro-nc.gov;
Phone: (336) 373-7643.

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Annual Conference Summary

The 93rd Annual Conference was a memorable success, with 1,078 water and wastewater professionals and 130 exhibitors throughout North Carolina arriving at the Embassy Suites Charlotte-Concord Golf Resort & Spa in Concord, NC on November 10 to kick off this event.

Three days of educational and recreational activities provided the perfect backdrop for exchanging ideas. Attendees gained a national perspective from guests John Alston, AWWA 2013-2014 Vice President and Charles Bott, Water Environment Federation Treasurer.

Papers presented during technical sessions on Monday and Tuesday gave attendees the opportunity to learn from others’ experiences. Technical sessions running all day with no formal lunch break allowed attendees to attend even more sessions and stop for a buffet lunch when they were ready. Wednesday’s forum discussed Implications for Source Water Protection and Treatment. If you were unable to attend, or would like to review a paper presented at the conference, most of the papers are available on the Annual Conference page of www.ncsafewater.org.

There were plenty of activities for attendees with a competitive spirit, including the addition of the Process Control Event to the annual Operations Challenge. Refer to the following pages for winners of the golf tournament, pipe tapping contest, operations challenge, and best tasting water contest.

Many people and organizations were recognized for their achievements throughout the conference. (Refer to the following pages for a list of award winners.) Among those recognized were the 5-S inductees who continued the tradition of collection money for the NC Safewater Endowment. Their efforts earned $1551.32 to add to the annual scholarship fund.

Thank you to everyone who worked to coordinate the conference and to everyone who attended, including the exhibitors and sponsors. Working together, we created a great conference!

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Conference at a Glance

NC AWWA-WEA Chairs, incoming chair Mike Osborne and outgoing chair Jackie Jarrell.

Student Poster Contest 1st place winner: Elisa Arevalo (NC State).

Operations Challenge, 1st place Collections event: Union County Sewer Rats.

Student Poster Contest 2nd place winner: Richard Jenny (NC State).

Operations Challenge, 1st place Maintenance event: Flow Motion MSD.

Student Poster Contest 3rd place winner: Amir Alansari (UNC)

NC AWWA-WEA 93rd Annual Conference Recap
Operations Challenge, 1st place Process Control event: Flow Motion MSD.

Operations Challenge, 1st place Laboratory event: Union County Sewer Rats.

Operations Challenge, 1st place Overall: Union County Sewer Rats.

Pipe Tapping, 1st place winner, City of Raleigh, COR Tappers.

Pipe Tapping, 2nd place winner, City of Concord, Smokin Bits.

Pipe Tapping, 3rd place winner, Union County, Hot Sauce Hole Punchers.

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2013 Award Winners

Golf Tournament Award
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2nd Place Team: Randy Damm, Andy McNeer, Paul Briggs, Scott Oliver
3rd Place Team: Seth Perkinson, Brad Joyner, Mike Dowel, Kathy Current

Women’s Longest Drive: Christie Putnam
Men’s Longest Drive: Wayne Lyles

Closest to Pin
#5: Paul Briggs
#10: Tony McCaley
#15: Eric Williams

Clay Shoot Tournament Award
Overall Highest Score: Mark Landis
Women’s Highest Score: Lori Cooper

Lewis Class 1
1st: Jamie Barnes
2nd: Eric Davis
3rd: Dale Pennell

Lewis Class 2
1st: Barry Shearin
2nd: Blake Carter
3rd: Mark Lomax

Golden Manhole Award
Recognizes individuals who are significant contributors to the advancement of the Systems Design, Education, Training, Certification, Construction, Operations, Maintenance, and Management of Water Distribution Systems or Wastewater Collection Systems.

Theresa Benson, Brown and Caldwell
Walter “Ted” Credle, Durham County
Troy Perkins, Greenville Utilities Commission
Keith Shirley, Charlotte Mecklenburg Utility Department

Collection System of the Year Awards
Recognizes municipalities that protect the public health and the environment through proactive practices of management, operations and maintenance beyond what is required of its NC Department of Environment and Natural Resources (DENR) collection system permit.

Large System: Charlotte Mecklenburg Utility Department
Medium System: Orange Water and Sewer Authority
Small System: Town of Mooresville
Micro System: Durham County

Distribution System of the Year Awards
Recognizes municipalities that protect the public health through proactive practices of management, operations and maintenance of their water distribution system beyond minimum standards.

Large System: Brunswick County
Medium System: Orange Water and Sewer Authority

Select Society of Sanitary Sludge Shovelers (5S)
Recognizes long and faithful service to the Association.

Billy Allen, Charlotte Mecklenburg Utility Department
Chris Belk, Hazen and Sawyer
Ray Cox, Highfill Infrastructure Engineering
George Raftelis, Raftelis Financial Consultants

Wastewater Collections Operator of the Year Award
Given to an individual who has contributed to the successful operation and maintenance of sewage collection systems.

Stuart Rosenberger, Charlotte Mecklenburg Utility Department

Water Distribution Operator of the Year Award
Given to an individual who has contributed to the successful operation and maintenance of a water distribution system.

Timothy Burdine, Jr., City of Asheville

Industrial WWTP Operator of the Year Award
Recognizes outstanding ability, devotion and technical expertise in the operation of an industrial wastewater treatment facility.

Pretreatment: Glenn Cornelisse, Grifols Therapeutics, Inc.
Pretreatment & Land Application: Kenneth Ball, Novozymes North America
Disaster Preparedness Award, Large Utility

Presented to utilities in acknowledgment of outstanding achievement in advancing disaster preparedness initiatives, thereby strengthening our preparedness.

Cape Fear Public Utility Authority

WWTP Operations & Maintenance Excellence Award

Awarded for outstanding plant operation and maintenance efforts, according to the best use of the resources available to that facility.

Eastern Region: Town of Elizabethtown WWTP
Central Region: City of Mebane WWTP
Western Region: City of Shelby, First Broad River WWTP

Special Recognition for Outstanding Contributions to the NC Safewater Endowment

William “Les” Hall
George Raftelis

Student Poster Contest

1st: Elisa Arevalo, NC State University
2nd: Matt Jenny, NC State University
3rd: Amir Alansari, UNC Charlotte

Operations Challenge

Overall Results
1st: Sewer Rats (Union County)
2nd: Flow Motion (MSD Buncombe County)
3rd: Hazardous Waste (Charlotte Mecklenburg Utility Department)
4th: Predators (Union County)

Collections Event
1st: Sewer Rats (Union County)
2nd: Flow Motion (MSD Buncombe County)
3rd: Predators (Union County)
4th: Hazardous Waste (Charlotte Mecklenburg Utility Department)

Lab Event
1st: Sewer Rats (Union County)
2nd: Hazardous Waste (Charlotte Mecklenburg Utility Department)
3rd: Flow Motion (MSD Buncombe County)
4th: Predators (Union County)

Guest Team
1st: Terminal Velocity, City of Virginia Beach, VA

Pipe Tapping

Men’s Division
1st: City of Raleigh Tappers
2nd: City of Concord Smokin Bits
3rd: Union County Hot Sauce Hole Tappers

Women’s Division
1st: City of Asheville Copperheads

Best Tasting Water Contest

1st: City of Raleigh
2nd: Charlotte Mecklenburg Utility Department, Franklin WTP
3rd: PWC Fayetteville

AWWA Water Drop Awards

Recognizes individual members who have provided valuable service and support for AWWA programs and goals through their long standing Association membership.

Gold Water Drop (Maintained membership for 50 years)
Michael P. Bell
James F. Farrell
Lawrence A. Whalen

Silver Water Drop (Maintained membership for 30 years)
Joel J. Brower
Peter C. D’Adamo
Alvin M. Derr
Glen E. Ellmers
John C. Grey, Jr.
Amos L. Moore Jr.
Charles E. Shue

Process Control

1st: Flow Motion (MSD Buncombe County)
2nd: Predators (Union County)
3rd: Sewer Rats (Union County)
4th: Hazardous Waste (Charlotte Mecklenburg Utility Department)
Kasey Monroe
Outstanding Service Award
Given to a member of NC AWWA-WEA whose efforts and contributions have demonstrated outstanding service to NC AWWA-WEA.
Steve Drew, City of Greensboro

Wastewater Laboratory Analyst
Special Recognition
Certification Exam Support: Martie Groome, City of Greensboro
Committee Leadership: Glenn McGirt, City of Burlington

Endowment Scholarship Winners
Carol Bond/NC Safewater Fund
University Scholarship
Alma Beciragic,
Queens University of Charlotte

NC Carol Bond/NC Safewater Fund
Community College Scholarship
Jennifer Doll,
Wake Technical Community College

NC Safewater Fund/GHD Scholarship
Amber Greune,
NC State University

Raftelis Foundation
Elementary Education
Maggie Hennessy,
for the benefit of the NC AWWA-WEA
Model Water Tower Competition

Stockholm Junior Water Prize Winner
Christie Jiang,
NC School of Science & Math

Communication Committee
Photo Contest Winners
Our Members At Work:
Brian Thorsvold, HDR Engineering
Environment:
Rhonda Hutson, Charlotte Mecklenburg Utility Department, Laboratory Services
Structures:
Brian Thorsvold, HDR Engineering
Critters Around Us:
Ted Credle, Durham County

Arthur Sidney Bedell Award
Acknowledges extraordinary personal service to the WEF Member Association based on organizational leadership, administrative service, membership activity, stimulation of technical functions or similar participation.
Ken Vogt, Cape Fear Public Utility Authority

William D. Hatfield Award
Recognizes an individual who pursues an advancement of the art and knowledge of wastewater treatment.
Jeff Mahagan, Town of Hillsborough

George W. Burke, Jr. Safety Award
Encourages an active and effective safety program in municipal and industrial wastewater facilities, and stimulates the collecting and reporting of injury data.
Charlotte Mecklenburg Utility Department

Wastewater Laboratory Analyst Excellence Award
Recognizes an individual for outstanding performance, professionalism and contributions to the water quality analysis profession.
Paul Balsbaugh, City of Wilson

George Warren Fuller Award
Presented to a member of AWWA for distinguished service to the water supply field in the commemoration of sound engineering skill, brilliant diplomatic talent, and the constructive leadership that characterized the life of George Warren Fuller.
Steve Drew, City of Greensboro

Donald E. Francisco
Educator of the Year Award
Given annually to a member who demonstrates outstanding service to the Association and industry through education and training of water and wastewater professionals.
Barry Shearin, Charlotte Mecklenburg Utility Department

Safewater Maintenance Technologist of the Year Excellence Award
Recognizes the hard working maintenance professionals involved in the day-to-day maintenance and upkeep of our state’s plant assets.
David Cox, Charlotte-Mecklenburg Utility Department

Congratulations to all our winners!
# 2013 Annual Conference Exhibitors

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### 2013 Annual Conference Sponsors

#### Golf Tournament

- American R&D
- Carotek
- Crowder Company

#### Clay Shoot

- Schnabel Engineering
- Kick & Wood, Inc.
- willis ENGINEERS

#### Operations Challenge

- Hazen and Sawyer
- HDR
- Kemp Inc.

#### Pipe Tapping

- American Pipe
- HDR
- Kemp Inc.

#### Awards Banquet

- Hazen and Sawyer
- U.S. Infrastructure of Carolina Inc

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#### Student Lunch

- HAZEN AND SAWYER
  - Environmental Engineers & Scientists

#### Monday Lunch

- US Infrastructure of Carolina Inc
  - Black & Veatch
  - Kimley-Horn and Associates, Inc.

#### Tuesday Lunch

- HDR
  - Woolpert
  - Black & Veatch
  - HAZEN AND SAWYER
SPECIAL SECTION

HUMAN ASSETS

SUCCESSION PLANNING

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Water and Wastewater Utility Succession Planning

Preparing Future Leaders to Run the Utility of Tomorrow

By Bradley Jurkovac, GHD, Inc.

Utilities are facing a workforce crisis. As with other industries here in the US, the first ripples of the ‘baby boomer’ effect are already causing concern. Utilities in particular have many key staff members eligible to retire and fewer individuals being made ready to succeed them effectively. Organizations’ knowledge and capabilities are more at risk than ever due to these retirements and other staff departures now more characteristic of today’s fluid workforce. The challenge is potentially far more acute in the water/wastewater industry because federal spending in the 1970’s and 1980’s resulting from the Safe Water Drinking Act and the Clean Water Act created many new jobs that were filled for the first time in those years. These staff members are now reaching retirement age en masse. These factors were ripples leading up to and during the latest recession. They are now becoming waves. A recent study commissioned by AWWA and WEF indicated that 35% of the utility industry workforce is eligible for retirement in 2013. The departure of these long-term employees can represent as much as a 60% loss of knowledge when they depart. The ripples have now grown to waves and, potentially, a tidal wave that requires action.

The risks of failing to develop a succession plan include:

• potential for increased regulatory compliance issues, and
• inability to quickly and effectively respond to changes and emergencies, and
• permanent loss of critical operational knowledge.

To prevent these potential outcomes, utilities should be considering how best to recruit, retain, and develop their workforce. Mindful that the public sector often requires a different approach to succession planning than what is typical in the private sector, a planned approach can result in a sustainable model for the future of your organization.

An outline of steps for succession planning is presented below. These steps are in the building blocks for a program that both helps utilities manage the organization knowledge and provides utilities with choices from within when faced with the task of filling critical roles.

1. Establish a participation policy for learners and coaches/mentors. (see sidebar)
2. Provide an excellent learn/work experience by creating the appropriate environment for participants.
3. Commit to continuity via the mission statement. Succession planning should support your mission, vision, values and goals.
4. Design a leadership development program that provides future leaders with the tools they will need to succeed.
5. Enable the leadership team to actively promote the program so that participants realize this is the ‘path forward’ for your utility.
6. Clarify the strategic business plan and link it to the succession plan to ensure precious time and dollars are being spent on the right things.
7. Clearly define the successor selection process so that participants understand how future roles will be filled.

As utilities begin to consider succession planning and the development of a program, ask the following questions about your organization:

• Do we want to favor promoting from within or from outside? What are the advantages and disadvantages of both approaches?

• Has anyone ever not been promoted because they could not be replaced in their current position? Can we develop programs or processes that will prevent that from happening in the future?
• Do you want to favor promoting from within or from outside? What are the advantages and disadvantages of both approaches?

Here are a few ideas and details to keep in mind when developing and executing a succession plan:

1. Update job descriptions to capture as much of what people do as practical and feasible. This is the best way to prevent important aspects of the work from slipping through the cracks.
2. Automate or document all processes to make it easier for someone new to follow. SOPs and workflow diagrams are excellent tools for capturing these details. Use the Pareto Principle to determine which processes to capture first.

The Pareto principle, also known as the 80-20 rule, states that for many events, roughly 80% of the effects come from 20% of the causes. (Wikipedia)

3. ‘Walk’ interested people (who want to learn or move up) through processes and have them cover during absences or busy times. Keep in mind that people learn new skills in different ways. Reading an SOP, observing a task, doing the work solo, training under an expert and attending formal classroom sessions are all viable ways to learn.
A good succession plan includes the following characteristics that ensure sustainability of the program and your utility:

1. Customized to your organization – take the time to build your own plan vs. ‘shoehorning’ another plan into your organization. One size does NOT fit all.

2. Driven by top management – change in any organization requires that leadership demonstrate strong support for the future vision. Participants need to know that leadership is serious about the program.

3. Focused on development with shared responsibility (development is key – coaching and mentoring require commitment from management and the employee/participant).

4. Focused on future strategy and culture (as business drivers change, so must the succession planning process to ensure that future needs are supported).

5. Focused on objective, multiple assessments of participants (360 evaluations are more reliable than single-rater evaluations to help avoid favoritism or other forms of biased perspectives).

6. Focused on development of cadres of expertise (build ‘pools’ of talent, not queues or slates – which are more common in the private sector). Talent pools will provide your utility with more options at decision time.

A couple of final thoughts concerning succession planning and the process:

1. As utilities become leaner (especially during challenging economic times), staff reductions can eliminate any resourcing availability utilities once had. Utilities need to change the business approach to respond to this changing environment. Succession planning is, perhaps, the best tool for addressing this pressure point.

2. Human Resources can help develop and deploy succession planning for the organization. However, utility leadership should lead the design and implementation of the succession plan because they are the ones who are most dependent on the success of the program. Industry surveys indicate that many utility leaders know they need a succession plan but few utilities are actually working on developing and deploying one for their organization. This discrepancy represents an opportunity for utilities to take a proactive approach today to meet the challenges of tomorrow (though for many utilities, the challenge is happening now). Every citizen has a stake in having a sustainable water/wastewater utility – succession planning is key to utility organizations being able to provide continued outstanding service to its community.

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**EXAMPLE PARTICIPATION POLICY**

**Implementation Process and Schedule**

All employees are expected to participate in the mentoring program with the minimum level of participation being their onboarding experience. The first phase of the program will be limited to XX to YY mentor relationships (mentor or coach relationships); therefore not everyone will participate in the initial phase. All mentoring relationships are voluntary, yet certain coaching relationships may be mandated by an employee performance evaluation program.

**The Mentoring Program Interest Form**

All program participants are requested to complete a mentoring program interest form. The mentoring interest form identifies the role in which an individual desires involvement and the areas in which they are interested in expanding their knowledge and skill. This brief profile provides sufficient data to determine into which category of focus a candidate may be grouped. Where additional information about a candidate is needed, an interest interview will be conducted to clarify their mentoring goals.

**Determine Mentoring Participants**

Mentoring interest forms will be reviewed by the mentoring program manager to identify a cohort of mentoring participants using established criteria for inclusion. The criteria reflect the focus of the three groups being piloted in the initial phase: new employees, current leaders, and individuals with the capacity to be a future leader.

It is possible a sufficient number of mentors, or mentors with the desired knowledge are not available. In this situation, the program manager may elect to recruit additional mentor candidates, identify opportunities for group mentoring, or identify a cohort of participants that must wait for a second implementation.

**Pairing Participants**

Pairing mentor and mentee is based on mutual interests and compatibility of the pair and expertise in specific knowledge areas. Pairing is coordinated by the mentoring program manager. The identified mentor candidates will complete the mentor skills and competency checklists while the mentee will complete the mentee skills inventory and mentor selection worksheet. These tools are used to support the pairing process. Mentors will be suggested to mentees for consideration and if more than one mentor meets the match criteria, the program manager will work with the mentee to determine the best fit in a mentor.

Other tools support the matching process and are available to use as desired. Once a match is determined, the pair will initiate the mentoring relationship.

After the suggested pairing, participants will participate in mentor training then begin the initial conversation toward establishing a mentoring agreement. If an agreement cannot be reached, the pair will be rematched.
SUCCESSION MANAGEMENT OR TALENT DEVELOPMENT

By Van Potter, Lodestar, Inc.

The question of leadership succession management is a common concern for organizations of all types these days. In the world of water management it is of particular concern because so many leaders are of the baby boomer generation and are now beginning to retire in enormous numbers. Each organization will address this in its own way: some will look outside for talent; others will find the leaders they want in their own ranks. The question is of concern because we all want to ensure that the best leaders are selected for the good of the organization.

Some recent research by leadership author, Jack Zenger (The Extraordinary Leader) suggests that even among fortune 100 companies, most current leaders feel they do not have adequate bench strength in their organizations.

There are probably a variety of reasons why this is so, but an obvious one is that leadership development has not been a priority in these organizations. Data compiled by Jim Collins (Good to Great) shows that more than 90% of top-level leaders...what he refers to as “level five leaders” came from within their own organizations. Level five leaders are rare in that they put the success of the organization ahead of their own personal success. It seems that leaders who grow up in an organization may understand it better than outside hires, and may feel a greater sense of commitment to the organization’s success.

The research by these two authors points clearly to the value of Leadership Development in an organization.

Leadership Development in this sense is about developing the leadership capacity of the organization so there are numerous choices for succession in an organization. A strong organization is also a ‘hot house’ for growing numbers of leaders.

Leadership development is a leader’s job, not the job of human resources or of outside classes or consultants...although each should play a part in the process. Developing leaders is less about going to classes and more about the daily work of a leader.

Some of the most effective development ideas do not cost anything. Here are a few ideas from Zenger:

• Expand the subordinate leaders’ scope of authority, allow them to make mistakes and learn from them. Delegate wisely with an eye to development.
• Insure that all employees have a leadership development plan. Make sure this plan is reviewed regularly and clarifies why it is necessary for the good of the organization as well as the leader’s personal goals.
• Provide some type of forum for leaders to safely discuss the challenges of leading, to learn from each other and provide coaching and support for one another.
• Get into the habit of using after-action reviews, and use daily leadership experience to extract learning from large and small experiences. Dialogue what went right as well as what might be improved.
• All leaders should get in the habit of developing their coaching skills and mentoring others in the art of leadership.

Succession management has less to do with selecting the right person and much more to do with developing the capacity of a lot of good people. Leadership development shapes the organization and can ensure its success in the future, by developing commitment, trust, accountability and a passion for the work that the organization does. Bench strength will naturally grow, new talent will be discovered and the leaders of tomorrow will emerge from this environment.

About the Author

Van Potter has over 30 years experience in the field of organizational and management development. He has coached and trained leaders in city, county, state and federal organizations, with a special emphasis on public works, utility and waterworks management and supervisory development. He has held human resource and training management positions in a number of nationally known public and private sector firms. He has a graduate degree in education from Brigham Young University. Van has said, “I am interested in the evolving understanding of human nature as it relates to achievement and productivity in organizations. Emotional intelligence has always been a critical factor in this field but we are only beginning to understand, apply and leverage it.” Van has been teaching business and management classes for the University of Utah and Utah State University for a number of years and has taught in the AWWA Utility Management Institute since 2000.

Van Potter
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The Metropolitan Sewerage District of Buncombe County (MSD) is a special purpose District. It was created by the legislature in 1962 to build a facility to treat the sewage from Asheville, Buncombe County and several small towns. In 1991, after many years of discussions, several adjoining agencies consolidated their workforce, equipment, sewers, rights-of-way, etc., under the authority and direction of MSD. A twelve-person Board provides policy level direction to a general manager (GM). For many people in the wastewater treatment, construction and engineering professions, MSD was and is the employer of choice in western North Carolina. MSD started with 168 employees and, over the last 15 years, through attrition, reengineering and technology applications, employment was reduced to 150 people.

The Basic Math
About seven years ago, MSD management recognized a wave of retirements was coming. After analyzing the workforce to predict who was retiring and when, the HR staff interviewed all employees to determine their goals and developed individualized formal/informal training programs as well as possible work experiences. These activities would help prepare people to step up to supervisory or managerial jobs.

Solving the Problem
MSD’s GM tasked the human resources (HR) department with developing a succession plan in response to our aging workforce, including the managers and directors who were preparing to retire. The first and most critical step was to understand what our GM wanted the program to accomplish. That understanding and subsequent public support drove the program and gave it the attention it needed.

By Jim Hemphill, MSDBC

The GM’s goal was to identify a timeline of potential retirements in key or critical jobs and then to look at the next levels of management and talent to identify a pool of potential high performing replacements. Early in the process, the HR programs manager made a presentation at a management retreat, covering the basic steps that would be undertaken. The HR program manager’s presentation generated several questions that were discussed and answered by the GM. The bottom line was that the GM wanted this succession planning work to be effective and provide options for employees and MSD. Ideally, this would create good options and choices when vacancies happened.

MSD’s plan is based on two documents, William Rothwell’s book *Effective Succession Planning* and particularly, a whitepaper entitled *Ten Key Steps to Effective Succession Planning*. These two documents were great references and can assist an organization in preparation for the replacement of a retiring workforce.

MSD started with an analysis based on age, length of service and potential retirement data for all of the employees, including management. The goal was to figure out who and when key people would be leaving.

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next five years. This five-year-period was the short-term horizon for getting people ready to step up to the next job.

At this point, the division management team identified potential replacements for the retiring people. This discussion identified perceived gaps (training, experiences, abilities, etc.) in the replacements’ backgrounds. One caution in Succession Planning is to be sure that a person does or does not want to move into the job that management has selected for him/her. To find out where people wanted to go, the HR department interviewed every employee and asked some basic, open ended questions: What jobs would you like to be doing in the future? What do you need (training, education, experiences, etc.) to be able to do those jobs? These interviews were all based on ‘no guaranteed promotions.’

About 75% of the people really liked their jobs and the work they were doing. This group generally asked for more technical training that would help them become better at what they were doing or make their work a little more interesting. About 5% indicated that they wanted a completely different career path. If the position they wanted was at MSD, the discussion moved to what training might be required to prepare them for the job. The people who wanted something outside MSD were encouraged to take advantage of the tuition reimbursement program. The remaining 20% desired a specific job, i.e., industrial waste, first level supervision or management. Luckily, most of the staff considered to be ‘high potential’ was in this category. This discussion generated an improvement plan for those identified employees, a plan that included assessments, training, leadership experiences, shadowing and informational interviews.

**Supervisor Training**

Like many companies, MSD has at times ‘promoted the best mechanics’ from inside and hoped for their success. This does not always work. MSD wanted the next set of leaders to have the basic supervisorial or...
management skill sets needed to accomplish their jobs.

To provide the basics to the 20% aspiring supervisors, MSD uses a variety of formal programs including the local community colleges, management associations, North Carolina School of Government, local training professionals, partnerships with other agencies and internally delivered trainings. Historically, MSD staff generally prefers the smallest and least formal settings possible. The ‘basics’ include relevant laws in HR, equal employment opportunity, disciplinary process, safety philosophy and workers compensation processes.

Developing strategies for mid and upper level managers was a bit more challenging. It is critical that the employees have a good grasp of their personal management style, motivations, values and reputations. MSD starts with extended management trainings geared to identifying management styles and internal values assessment. Several staff members benefited from Myers-Briggs or Dominance, Inducement, Submission, and Compliance (DISC) based training. The 360-evaluation process can also be used for development purposes. Sources for these types of training are the American Management Association, the Center for Creative Leadership and local universities (Western Carolina University, East Carolina University, Duke University, Harvard University, University of North Carolina at Chapel Hill, etc.) that offer advanced/ executive programs. You can spend as much money on training as your budget allows.

Participation in the weekly Director’s meetings provides a forum to discuss current and revised policies. Along with planning, budgeting and communications skills, understanding the reasons for management decisions is important to employee morale. In addition, these discussions re-affirm the values of the organization. At MSD, the weekly director’s meeting minutes are taken and posted on the intranet. This process allows any employee to see what is being discussed.

Work Experiences
First Level Supervision
Some people have never been in charge of getting something done. MSD may place these folks in jobs where they are the supervisor for a day or week. The division director monitors the performance and gets feedback from the troops. Sometimes the feedback is good and sometimes areas ‘need improvement.’

The division director shares the feedback with the person, good and bad. One of MSD’s goals is to find out if the person is still interested in being a supervisor or just chasing the money.

Other means to develop and observe leadership skills are activities like United Way campaigns, chairing a committee (wellness, safety, recruiting, training, equipment selection, etc.) or assigning special technical projects.

“Succession planning is not a one-time event.”

Ongoing activities
Succession planning is not a one-time event. Depending upon turnover rate (resignation, retirements) these activities should be revisited with some regularity. The questions that need to be answered are who is retiring? When? Should the job be re-engineered? Does MSD have anybody who will be ready to do that job well? What are the gaps in the possible replacements? Is technology changing the needs of the job? What are the goals of the recent hires?

At MSD, Succession Planning is a regular topic of discussion. MSD has had some success stories that positively affect morale and MSD looks forward to more in the future.

About the Author
Jim Hemphill - Austin Peay State University (BS Business & Psychology) Vanderbilt University (MBA); worked in the HR profession since 1979 as business agent for a TVA union; personnel manager for a submarine and aircraft carrier component manufacturer; employee relations manager for OMC (Evinrude & Johnson outboards); HR director for the City of Spartanburg, SC; currently the HR director for the Metropolitan Sewerage District in Asheville.

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I
n 2012, the Planning Director for the Orange Water and Sewer Authority (OWASA) indicated that he would be retiring in the next nine months. “We were grateful that he provided that much notice,” says OWASA’s Executive Director Ed Kerwin, adding that after being in the position for 25 years, the Planning Director had built an abundance of contacts, networks and systems knowledge. “He was pretty much a one-person shop who handled planning for our organization.”

Under OWASA’s former hiring policy, it was not possible to rehire until the position had been vacated. “I now have the authority, with board approval, to make what is called an Early Hire for Training for certain key positions,” explains Kerwin, adding that as soon as the Planning Director announced his intentions, OWASA took steps to hire his replacement. “Given the uniqueness of that position, there was a three-month overlap during which the outgoing planning director worked side-by-side with the new planning director, mentoring, coaching, and transferring knowledge. That was huge.”

Succession Planning
Succession planning – a process for the timely filling of vacant positions in an organization – is part of a larger theme of workforce development and sustainability that consistently figures as a priority among utilities. This is just as true for small utilities, such as OWASA (135 authorized positions), as it is for medium-sized ones such as the Cape Fear Public Utility Authority (CFPUA), or large organizations such as the City of Raleigh’s Public Utilities Department (CORPUD), home to 642 authorized and 550 filled positions.

At the 280-person CFPUA, succession plans are often left up to individual departments and divisions. However, a more formal process exists for operators. Two operators work each shift at the plant: a control operator and a process operator. Because they are in charge of the plant, control operators are expected to have the highest level of certification and experience. Meanwhile, process operators work on obtaining certifications while gaining skills and experience. “When process operators get their B or A levels, if they have had a good track record and want to move up, they will get first consideration,” explains Mike Richardson, Water Resources Manager at CFPUA. “Then we recruit externally for new process operators.”

For OWASA, being prepared to recruit – either externally or internally – in a timely manner involves routinely updating succession plans. These documents include information such as responsibilities of the position, required skills and experience, coverage during planned or unplanned absences, and an

**Figure 1 – Employee and Leadership Development Project**

- Revised job descriptions
- A unified training program
- Defined career ladders
- New divisional organizational charts
- A new employee evaluation system
- An incentive program that is, in part, monetary
- A new recruitment plan

(Source: CORPUD Employee and Leadership Development Project Update July 2013, p. 3.)
“When we talk about knowledge management, it truly impacts every aspect of our business.”

employee development plan to prepare for promotion. The succession plans are part of a broad Knowledge Management and Workforce Sustainability focus that is one of the goals in OWASA’s Strategic Plan.

At CORPUD, succession planning is also part of a more comprehensive process. The utility uses an industry-standard Effective Utility Management (EUM) framework to identify goals and develop objectives and action items for improvement. Employee and leadership development is one of 10 attributes of the framework. “EUM is an industry-standard framework for creating and maintaining the best utilities possible,” says Ken Waldroup, Assistant Public Utilities Director for Raleigh. “They say if you look at the 10 attributes and focus on improvements in those areas, you will have a world-class utility.”

One of eight goals in the utility’s strategic plan, Employee Leadership and Development is defined as the utility’s effort to recruit, develop and retain a competent, motivated and agile workforce. Under this heading, the strategic plan lists four objectives, each with three action items necessary to moving forward on these goals (Figure 1). The first action item involves performing a gap analysis of staff and skill needs. Accordingly, CORPUD started by creating a survey to capture a cultural understanding of what employees thought was needed in a leadership development project.

Understanding and Support
OWASA adopted a similar approach. “About six years ago, we identified that we needed a lot more time, effort and resources on our most important resource: our human resource,” explains Kerwin, adding that OWASA has its own IT, Finance and HR Department. “When we talk about knowledge management, it truly impacts every aspect of our business. So we engaged employees at all levels and from all disciplines in our discussion.”

Employees were involved in identifying the organization’s most critical knowledge and skills as well as the gaps in knowledge management. This gap analysis identified information about water distribution and collection systems as an urgent priority. “For instance,” explains Kerwin, “a 30-year employee knows that a shut-off valve is located on Franklin Street, by the Church, under a big oak tree. But when that person retires, he goes out the door taking that knowledge with him.”

To address this gap, OWASA completed a four-year program using GPS to field-validate the location of the entire water distribution in its GIS. Now all OWASA employees, regardless of their length of service, will know where that cut-off valve is located because they can count on the GIS system to be accurate. A similar field-validation process is underway for OWASA’s wastewater collection system. Kerwin adds: “It was important that we kept our governing board informed of the importance of our knowledge management work.”

At CORPUD, after the employee survey, the utility hired a third party consultant to help define what actions were needed in the realm of employee and leadership development. The consultant identified some of the market forces as well as the internal and external stressors with an impact on this goal. These can include the demographics of increasing retirements and a shrinking workforce, and the demands of a growing – or in some case, shrinking – service area population.
All of these factors have been in evidence at CFPUA. “We have gone through a lot of retirements,” says Richardson. “We are like everyone else with the baby boomers. Over the last two to three years, I have lost almost more than 50% of my upper management staff. That is knowledge and skills that are gone.” The resulting need to restructure has precluded CFPUA from pursuing workforce development initiatives like those developed at CORPUD and OWASA.

**Workforce Development Plans**

It was only after field-validating its GIS management and implementing a new early hire for training policy that OWASA was able to set its sights on:

1. Completing succession plans for all key positions throughout the organization.
2. Updating the classification and pay systems for all employees. This includes a merit system whereby 10% of employees can be identified as ‘exceptional’ and rewarded with twice the merit pay as an employee identified as ‘successful.’

CORPUD adopted an equally systematic approach. On January 18, 2013, the internal management team held a one-day workshop to appropriately scope and define an Employee and Leadership Development project. At that workshop, the definition of a successful project was determined to involve seven items (Figure 2). The first revolved around revising job descriptions and training plans to match new organizational needs under the strategic plan.

In the proposed organizational realignment, a total of 110 job descriptions would be revised. CORPUD would create 24 new career ladders, allowing for career paths that are technical in nature, with transfer points to a 25th ladder specifically for management. To move up a ladder, employees would be evaluated based on practical and written exams, outside certifications, and citizenship grade—a ‘360°’ evaluation by peers, including people to whom they report and who report to them, on how employees represent the core values of the organization. “That would help guide personal as well as professional development,” explains Waldroup.

Once the new divisional organization is implemented, CORPUD will have fewer managers, each with an increased span of control. “They will focus on managing, while, those at the top rung of the other ladders, will be technical leaders,” explains Waldroup, adding that, in the past, people had to be promoted into management to make more money. “We are looking to give people who have solid management skills a career path in management and people who have solid technical skills a career path too. We want to give people places to go where they can excel.” In accordance with EUM principles the, internal management team recognized the need to reward employees for their efforts to implement the strategic plan. Therefore, CORPUD would like compensation for those at the top end of the technical ladder to be at least equivalent to mid-range on the management ladder.

Unlike the technical ladder, where upward movement is based on experience and skill development, the proposed management ladder is similar to the hiring process. “There has to be a vacancy and you have to interview for it,” elaborates Waldroup. “The idea is that within logical areas of core strengths, people could chart a career from entry level worker to director.”

**Figure 2**

To appropriately scope and define an Employee and Leadership Development project, CORPUD the Department management team held a one-day workshop on January 18, 2013. At that workshop, a definition of a successful employee and leadership development (EL&D) project was determined to be:

- **a)** Revised job descriptions and training plans that match new organizational needs as communicated by the Strategic Plan.
- **b)** A unified training program which serve to develop skills specific to divisional requirements and which are communicated and accounted for in a uniform approach across the organization.
  - **i)** Training plans which support the incentive program; are integrated into the Raleigh Management System and capture institutional knowledge.
  - **ii)** A user-focused training experience which will be evaluated by training recipients on a continual basis.
- **c)** Defined career ladders encouraging both division-specific expertise development and cross functional training.
- **d)** Divisional organizational charts designed to support the roll-out of the Strategic Plan.
- **e)** An employee evaluation system that develops goals for each employee that ties to the Strategic Plan; is supported by a unified training program and allows for an input from co-workers and direct reports to ensure organizational values are demonstrated by the employee.
- **f)** An incentive program that is, in part, monetary; that is associated with prioritization of promotional opportunities, that uses cross functional training, that focuses on Autonomy, Mastery and Purpose for the employee, that supports the unified training program, supports succession planning, and is not directly tied to the existing merit based pay system.
- **g)** A recruitment plan that uses all other components of the E&LD program to recruit and retain a competent, motivated and agile workforce.

(Source: CORPUD Strategic Plan Employee and Leadership Development Project Update July 2013, p. 6.)
“We are looking to give people who have solid management skills a career path in management and people who have solid technical skills a career path too. We want to give people places to go where they can excel.”

He notes that, within the proposed management ladder, CORPUD only has five levels of management: supervisor, manager, superintendent, assistant director and director. “As you move further up the ladder, those job descriptions become more uniform,” says Waldroup, adding that this enables a superintendent to move within his core specialties across divisions. “One of the things we have discussed is rotating management staff among divisions.” This would address the silo effect that occurs within any organization by bringing good management ideas across divisions. Those who chose to take that path would build a skill set that would make them more attractive for promotion.

A radical departure from traditional public utilities organization, this form of ‘broadbanding’ provides employees with the opportunity to build their skills and be rewarded within their jobs, without having to change jobs. As such, it can be an effective retention tool for any large utility. This approach also builds a more skilled and flexible workforce, helping to meet the economic and demographic challenges that make it difficult to add warm bodies to an organization.

Offering attractive skills-based rewards also means that, as employees climb the management ladder, it will become more difficult to move up to the next rung. The organization will demand increasingly strong team-building skills. “Our metrics will be tied to the success and failure of teams,” explains Waldroup, “so your ability to move up the ladder will be dependent not only on yourself but also on your team members.” The proposed incentive and broadbanding programs must result in a net benefit not only to the employee but also to the utility and the city, in terms of a versatile work force, reduced knowledge loss, and a decrease in attrition to competing businesses.

Waldroup cautions that it may be very difficult to implement broadbanding

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outside of a Public Utilities Department, which, as an ‘enterprise fund,’ has a stronger ability to fund such programs. “Other Cities which have implemented broadbanding programs have had mixed results,” he adds, “with difficulty finding funding for general fund functions. On the other hand, enterprise funds, which are operated as a business, have opportunities to fund broadbanding through greater utility efficiencies.”

Recruitment
Although CFPUA does not have as sophisticated an incentive system for workforce development, the Authority does try to identify talent within the organization and hire internally when it can. “We have a lot of specialized positions to fill and trying to find external candidates that are qualified has been challenging,” notes Richardson, adding that it typically takes up to a year, and a significant investment, for operators to become comfortable enough with a particular plant so they can work independently on a shift. In the last three to four years CFPUA has been much more selective in the people it recruits, with a focus on identifying those who have a long-term desire to work in utilities.

The Authority also completed a Compensation and Classification Study in April of 2012. As a result many classifications were updated and the overall wage scale was adjusted. CFPUA tries to stay in touch with other utilities in the state and region in order to remain competitive within the market.

At the same time, the Authority tries to take a long-term view, with the Human Resources Department attending job fairs and making presentations to community colleges and high schools. CFPUA also invites young people to come and tour the plant to expose them to the long-term opportunities available in the water and wastewater industry.

At CORPUD, the new recruitment plan is intended to find ways to attract and reward people who would not normally consider utilities as a job. “We are working on outreach to the three major universities within 50 miles,” says Waldroup. The utility is considering funding internships for both graduate and undergraduate students. Concepts/plans are still in development.

In Cape Fear, Richardson developed a federally-recognized apprenticeship program for water operators when he was working for the City, prior to the formation of CFPUA. It was one of only two in the State of North Carolina at that time. “We were having difficulties competing and getting people so we looked at how we can better serve our needs through training and promotion,” he explains, adding that an incentive process allowed apprentices to qualify for a raise every six months, based on their progress. “But when we became the authority, the program did not transfer over.”

Since then, Richardson has been working with the state labor department to try to revamp and relaunch the program. “The biggest challenge has been competition for budget funds during this time of reduced revenue and economic downturn,” he says. “Hopefully the future will be brighter and I will be able to reinstitute the Journeyman Program.”

Training
All of these factors only make recruiting externally more challenging. On the other hand promoting and hiring internally requires investing in training, education and mentoring, all initiatives that are inextricably tied to succession planning. “We have made it very clear that we expect the supervisor and employee to talk about training and development goals,” says Kerwin. Development is customized to each and every employee, and involves both external and on-the-job training.

OWASA does not have a formal in-house training program with dedicated staff. Instead, the utility takes a broad approach to internal training, leveraging a culture of continuous improvement to promote after-action reviews. These can vary in scope and magnitude, from three people sitting and talking on the tailgate of a pick-up truck to a half-day assessment activity out in the field. “After-action reviews are an opportunity to learn from our experiences,” says Kerwin, noting that all supervisors have received training in conducting these reviews. “We also invite people who might not have been involved in the event in order to promote a transfer of knowledge.”

This approach fits right in with OWASA’s cross-training initiatives, which include writing standard operating procedures (SOPs) and checklists for plant operation and ensuring utility mechanics have the opportunity to spend time on different crews. “That is part of knowledge-transfer as well as efficiency and effectiveness,” says Kerwin. “If we

“We have a lot of specialized positions to fill and trying to find external candidates that are qualified has been challenging.”
have a water main break or weather event, we have a whole pool of cross-trained employees to pull from.”

CFPUA is also committed to cross-training employees, although funding any such initiatives has been challenging. Employee buy-in for cross-training has been minimal because the Authority has not yet developed the procedure and wage package to support the program, one that ties closely with the apprenticeship program. “People are not willing to put in the effort if they are not going to be compensated,” says Richardson.

He adds that having to do more with less has prompted CFPUA to find other ways to implement cross-training. The Authority is continuously reassessing the roles and responsibilities of operators and maintenance staff. For instance, maintenance for both the water and wastewater plants has been combined into a central program, while preventative maintenance is now the responsibility of the operators. “We have had to retrain the operators to work on the equipment,” notes Richardson.

CORPUD is proposing a new unified training program that also focuses, to a large extent, on cross-training. However, the proposed unified training program will also be integrated into the utility’s incentive program, designed to capture knowledge and be a part of the management system. In order to provide a user-focused training experience, CORPUD hopes to have both practical exams and written exams. “We also hope to use professional development organizations like the NC AWWA-WEA to help support our unified training program,” says Waldroup.

“Where we do not have a training tool, we hope to work with the Association to develop it.”

At CFPUA, most of the safety training is conducted internally. However, like all utilities, it depends on outside training from the NC AWWA-WEA, North Carolina Rural Water and the North Carolina Waterworks Operator Associations for certification and continuing education credits. “I get upset when budgets get cut and the first thing to go is travel and training,” says Richardson. “I think it is important for people to get out, network and learn from other utilities. We value our involvement in the associations both on the national and the state level.”

The utility pays for operators’ memberships in the various associations; school and exams fees; and accommodations to attend schools, seminars and conferences. This is also the case at OWASA and CORPUD.

All three utilities also encourage employees to participate in the NC AWWA-WEA and pay their employees’ membership dues. “I think there is a great
deal of value in their participation,” says Waldroup. He adds that sitting on one or more committees may become a required component for moving up the upper end of the career ladder.

“Our state Association is a great resource for networking,” notes Kerwin. “The conferences and training programs are an important part of OWASA’s training. They are effective, reasonably affordable and attainable. They should be part of training and development for everyone in our field.”

Another way to develop best practices is to partner with other utilities. A few months ago, CORPUD’s entire management team, along with a smaller group from the strategic planning team, participated in a two-day visit with peers in Charlotte. These peer-to-peer visits are invaluable sources of knowledge exchange.

All incentive, broadbanding and training programs will be funded from savings derived from operational optimization, another attribute of EUM principles. The returns on this investment are obvious. “To make our business processes as efficient as possible, we have to have the best-trained workforce we can reasonably acquire and afford,” says Waldroup.

Unfortunately, the downward trend in per capita consumption and the ensuing reduction in revenues can preclude the implementation of new programs. Such is the case in Cape Fear. “You still have to pay the bills, operate and pay the debt,” notes Richardson, pointing to the 4% budget cut faced by CFPUA earlier this year.

On the other hand, CORPUD believes it will be able to implement its new workforce development project with no workforce reductions and no loss of pay (although some employee’s pay ranges might change as the result of the restructuring). Some vacant positions can also be eliminated though operational optimization, providing a funding source for the workforce development project. “Together, people, processes and tools will help us become a world-class facility,” says Waldroup, “one that is the most efficient it can reasonably be and delivers world class service at a reasonable cost.”

After all, a treatment plant is more than pumps and processes. “Without people things are not going to work or get done,” says Richardson. That is why, he concludes, workforce development is at the very core of a successful water and wastewater industry.

“Where we do not have a training tool, we hope to work with the Association to develop it.”
Building Sustainability Leadership
By Rich St. Denis

What does it take for organizations to envision, pursue, and achieve sustainability improvements?

Short answer: It takes leadership.

Long answer: It takes a core cadre of dedicated people with the leadership ability to:
- visualize opportunities and devise methods to promote sustainability;
- recognize and counteract obstacles that undermine sustainability;
- establish a direction, goals, and agendas to institutionalize sustainable successes;
- influence others to join the sustainability effort and provide positive feedback;
- inspire others to stick to the effort and try their hardest to reach the established goals; and
- coach, empower, and unify others to do their best at making sustained results a reality.

Effective leadership directly contributes to sustainability in three important ways—the ‘three pillars of sustainability’—people, planet, and profit.
- For people, excellent leadership engages and develops people to perform their best.
- For the planet, determined leadership translates well-intentioned ideas into concrete action for protecting the environment.
- For profit, strong leadership ensures organizations can sustain profitability for the long term.

For the past three years, the Leadership Institute for Engineers, sponsored by the Professional Engineers of North Carolina (PENC), has focused on developing practical leadership skills. Started in 2011, the program has trained small groups of Professional Engineers (PEs) each year, and many of these participants have been members of the NC AWWA-WEA.

Initiated by current PENC Executive Director, Betsy Bailey, the program provides a unique but rigorous developmental opportunity. Bailey has observed, “There is nothing like it for engineers in the state.”

One particular graduate of the class of 2011-2012 agreed with Bailey’s observation. Adrienne Coombes, PE, of McKim & Creed in Raleigh, who is also a member of NC AWWA-WEA, recently wrote: “In an industry where not much credit is usually given to leadership courses, with no measurable return, I have heard nothing but support from both my class and this year’s class on the value of this course. We have all come out feeling that our time and energy was well spent, and that we are more prepared professionally, due to the knowledge and insight that was imparted and the practical implementation that was encouraged during the program. The Leadership Institute has been one of my favorite experiences in engineering. I can attest to the value that I and others have found in the experience.”

Each year, the program begins after participants are recruited, screened, and accepted into the institute’s three-phase curriculum that starts in September. A brief breakdown of the curriculum phases is as follows:

**Phase I: Formal Leadership Training (September-December)**
During the academic phase, participants who are early-to-mid career PEs complete a mix of seven classes, two webinars, and self-paced instruction. They learn and practice ‘hands-on’ skills such as how to set the direction and expectations of the program, how to delegate, how to influence and motivate followers, and how to coach people and unify teams. Other skills include how to lead with emotional intelligence, deal with conflict, solve problems creatively and make tough decisions that get buy-in. Participants also develop their communication skills, particularly for handling risky situations.

Ultimately, this prepares them to lead in ways that foster the long-term sustainability of engineering community.

Phase II: On-The-Job Application (September-December)
After each fast-paced classroom session, participants identify specific opportunities to apply the new leadership knowledge and skills in both their professional and personal lives. They then write After-Action Reports that carefully review their experiences and lessons learned. Mike Shelton, PE, a NC AWWA-WEA member from Kimley-Horn in Charlotte, recently reported on how he sharpened his stand-up presentation skills in one class and applied them a few days later at a Water Resources meeting in Texas. “The group was pretty engaged throughout my presentation,” he wrote.

**Phase III: Culmination Project (January – June)**
After the leadership training phase, participants continue to apply their knowledge on the job and through a culmination project. They each tackle a current issue facing their organization, local community, or the profession to put to work the leadership skills learned in the program.

These culmination projects have ranged from building delegation skills in their company to coaching a youth league basketball team to strengthening unity and morale on project teams at work. One culmination project even tackled ways to protect the prestige of PE licensure in the state of North Carolina. Finally, the projects conclude with a presentation at the PENC Summer Con-
The Leadership Institute for Engineers takes a multi-faceted approach to leadership development and leads to the deep learning and growth of each participant intellectually, emotionally, and behaviorally for the long term. According to the past president of PENC – Gus Simmons, PE, of Cavanaugh & Associates, the Leadership Institute “makes learning a comfortable and enjoyable activity.”

Strong leadership, our human assets (people) can be guided to achieve results, to protect the environment (planet), and to be financially responsible (profit) for future generations. Great leadership promotes the triple bottom line of sustainability.

For further information concerning Leadership Institute for Engineers program, please contact Betsy Bailey, PENC Executive Director by either email at bbailey@penc.org or by phone at (919) 834-1144, ext. 1.

The Communication Committee values your input and feedback as we seek to continually improve and expand NC Currents!

Take Away Message for Sustainable Leadership
The water and wastewater industry faces serious challenges in continuing to provide sustainable service for future generations. Effective leadership is key to the industry remaining sustainable at a high level in the coming years.

But leaders are not born; they have to be developed. The industry’s future depends on training the next cohort of leaders, who can continue to guide engineering organizations and the profession. Through strong leadership, our human assets (people) can be guided to achieve results, to protect the environment (planet), and to be financially responsible (profit) for future generations. Great leadership promotes the triple bottom line of sustainability.

Biographical Notes
Rich St. Denis specializes in leadership, management, coaching, and team building skills. He has 20 years of experience in training and coaching more than 20,000 professionals. He has a BS in Applied Engineering from West Point, an MA in English from Duke University, and MBA from Oklahoma City University. (678) 523-8462
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Sustainability Feature
A typical Sustainability Feature could include a brief description of a project, report, regulation, guideline, etc. in a paragraph or bulleted format, along with associated pictures, graphs, tables, or charts that provide a more visual overview to the reader. If you are interested in submitting an article or have questions or comments about this addition to our publication, please contact Sherri Moore (Communication Committee Chair) at moores@ci.concord.nc.us or Mike Shelton (Communication Committee Vice Chair) at mike.shelton@kimley-horn.com. The Communication Committee values your input and feedback as we seek to continually improve and expand NC Currents!
The NC Safewater Endowment was created to help produce a sustained, educated and trained workforce for the water industry. As more of our Association members contribute to the fund, we are able to increase both the number and the monetary value of available scholarships. One common misunderstanding is that the scholarships are available only to engineering students. While several of the awards are targeted toward engineering students in a water-related concentration, scholarships are available for community college students and teachers. The table below summarizes some general qualifications for the awards that are available for 2014. Please help us spread the word.

### 2014 NC SAFEWATER ENDOWMENT AVAILABLE SCHOLARSHIPS

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<tr>
<th>Award Amount</th>
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<td>North Carolina community college student pursuing a degree in Environmental Sciences or Environmental Education</td>
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<tr>
<td>$2,000</td>
<td>Rising junior in engineering with a water environment concentration at a UNC-system university</td>
<td>Carol Bond Fund, Lynn and Lars Balck Water Environment Stewardship Fund, Rivers &amp; Associates, Inc. Clean Water Education Fund</td>
</tr>
<tr>
<td>$1,000</td>
<td>North Carolina educator or school - in support of clean water and environmental educational initiatives</td>
<td>Raftelis Foundation Elementary Education Scholarship</td>
</tr>
<tr>
<td>$2,000</td>
<td>First year graduate student in engineering with a water environment concentration at a UNC-system university</td>
<td>NC Safewater Fund, GHD Clean Water Fund</td>
</tr>
<tr>
<td>$1,000</td>
<td>Freshman in engineering or science with a water environment concentration at a UNC-system university</td>
<td>Frank and Susan Stephenson Water Environment Scholarship Fund</td>
</tr>
<tr>
<td>$1,000</td>
<td>Engineering student with a water environment concentration at a UNC-system university, with an interest in environmental equipment sales</td>
<td>Environmental Manufacturers’ Representative Scholarship Fund</td>
</tr>
<tr>
<td>$1,000</td>
<td>Rising junior in engineering with a water environment concentration at a UNC-system university</td>
<td>Les and Elaine Hall Water Environment Stewardship Fund</td>
</tr>
</tbody>
</table>

1For application forms and a complete list of criteria, go to [www.ncsafewater.org](http://www.ncsafewater.org)

2At this early stage of the program, awards are sometimes made by combining the available scholarship money from multiple funds.
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NC AWWA-WEA Membership

By: Kelly Boone, NC AWWA-WEA Membership Services Committee Chair
and Nicole Banks, NC AWWA-WEA Communication and Membership Coordinator

When you join NC AWWA-WEA, you are connecting to over 90 years of water and wastewater service in North Carolina and almost 3,200 professionals from across the state and region. Your membership becomes a tool to enhance your career through formal education and networking. The more involved you become, the greater the benefits you receive, and the more valuable of a resource you are to other members and your co-workers.

While many members know why they joined NC AWWA-WEA and what they received through membership, not everyone knows how they fit into the alphabet soup of the acronym ‘NC AWWA-WEA.’ The easy part is the ‘NC.’ All members of NC AWWA-WEA live, work, or have a connection to North Carolina and an interest in its water and wastewater industry. AWWA and WEA represent our parent organizations, the American Water Works Association (AWWA) and the Water Environment Federation (WEF). NC AWWA-WEA is unique in that we are the only state organization that operates both as a Section of AWWA and a Member Association (MA) of WEF united under one board of trustees. This offers many benefits and costs savings to our members.

Our role as both a Section of AWWA and a WEF MA means that the majority of our members come to NC AWWA-WEA through one of these two national organizations. Both AWWA and WEF offer a variety of membership types based on a member’s role in the water/wastewater industry. As a benefit to membership in the national AWWA or national WEF, members also receive membership in their local AWWA Section or WEF MA. For individuals or organizations located in North Carolina, this means membership in the NC Section of AWWA (NC AWWA) for national AWWA members, or membership in the NC Water Environment Association (NC WEA) for national WEF members. Jointly the NC AWWA and the NC WEA are referred to as NC AWWA-WEA. Members of the NC Section of AWWA and the NC WEA do not pay additional dues directly to NC AWWA-WEA. A Section or Member Association assessment is included when members pay national dues, and those funds are distributed to the NC AWWA-WEA. Individuals who are members of the national AWWA and national WEF who are not located in NC, and are members of a different Section or MA but also want to be a member of the NC Section or NC WEA, can pay additional dues through AWWA or WEF and join NC AWWA-WEA in addition to their home Section or MA.

There is a third way to join NC AWWA-WEA, and that is solely at the state level through a NC State Level Association Membership, or NC SLAM. The NC SLAM membership was created in 2006 to provide professionals in North Carolina a more affordable way to network and organize with other professionals on a local level. NC SLAM memberships are managed through the NC AWWA-WEA office in Raleigh and dues are collected directly through NC AWWA-WEA. NC SLAM members receive almost all of the same benefits in NC AWWA-WEA as members who joined through the NC Section of AWWA and the NC WEA, except that NC SLAM members cannot vote in elections, serve as a committee chair, or serve as a member of the board of trustees. NC SLAM members receive all NC AWWA-WEA publications as well as member discounts at all NC AWWA-WEA events. NC SLAM members receive none of the very significant benefits provided by membership in the NC Section of AWWA or the NC Water Environment Association.
that are offered through the national AWWA or national WEF memberships.

So how do you know what type of membership you have? The easiest way is to look at your membership card. Is it from AWWA, WEF or NC SLAM? If you cannot find your membership card, you can contact the NC AWWA-WEA office to find out. If you are not a member, and want to know the full list of benefits as well as figure out what type of membership is right for you, please visit www.ncsafewater.org/about/membership, www.awwa.org, and www.wef.org to learn more.

To all of our members, thank you for your support and participation. Regardless of how you come to NC AWWA-WEA we are happy that you are here. NC AWWA-WEA would not exist or function without your contributions of time and expertise. We hope that you have found your niche within NC AWWA-WEA and are participating actively. If you have not joined a committee or gotten involved with an event, we invite you to further utilize your membership by reviewing our list of committees (available online at www.ncsafewater.org/committees) and making contact with one that fits your interest, or even something you would like to learn more about. Please do not wait to get involved assuming that someone else will do it. It is surprising to think that out of our over 3,000 members, the bulk of the work is carried out by less than an estimated 500 volunteers! In a time when employers are concerned about retiring baby boomers and workforce development, NC AWWA-WEA shares the same concern in relation to our membership and volunteer pool. It is vital to bring new members into NC AWWA-WEA as well as to encourage the growth of each committee. You never know which new committee member may be the one to later develop into a committee chair and possibly into a member of the board of trustees.

The membership services committee is excited that the board of trustees has made membership one of its strategic goals. As a part of this goal, plans are underway to learn more about our members and what they want in the way of services from their Section or MA. As the industry and society develop, NC AWWA-WEA wants to adapt along with them to continue meeting our members’ needs. Working together we can position NC AWWA-WEA to fulfill our vision to be THE leading educational resource for safe water in NC.

NC Currents Future Themes & Submission Deadlines

NC Currents is the official publication of the NC AWWA-WEA. Members, individuals, and committees are encouraged to submit content for the magazine. If you would like to submit an article that is considered for publication in NC Currents please complete the Submission Form & Publication Agreement (available at www.ncsafewater.org) and email both the completed form and your article to Nicole Banks at nbanks@ncsafewater.org. Articles must be received by 5:00pm EST on the listed submission deadline.

The editors of NC Currents welcome the submission of all articles related to the water and wastewater industry. Themes serve as general guidance for each issue, but articles are not limited to a specific theme. Submission of an article does not guarantee publication. The editorial committee will review and select all articles, and authors will be notified of the status of their submission.

<table>
<thead>
<tr>
<th>SUMMER 2014</th>
<th>Theme: Utility Management Best Practices (Submission Deadline April 7, 2014)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theme Leaders: Sherri Moore, Mike Shelton &amp; David Hamilton</td>
<td></td>
</tr>
</tbody>
</table>

Managers for water and wastewater utilities face increasingly complex challenges. Since utility management entails the financial, business, and resource allocation practices which allow individual employees to work in synch as an organization, effective utility managers must inspire staff to capably operate the critical systems that ultimately serve our customers. What practices lead to peak performance? AWWA's QualServ program found these common characteristics among top performing utilities: sound fiscal policies and asset management, highly skilled staff and an investment in ongoing training and career planning, and an overriding focus on customer satisfaction (reference: AWWA M5). NC Currents wants to highlight your proven best practices for utility management. We request your articles for the Summer 2014 issue which describe your best management practices:

- What are your best practices for financial management, such as paying for aging infrastructure improvements, capital improvements, and maintenance operations?
- How have you gained a competitive edge, increased profitability, or maximized support for employees?
- What benchmarking metrics do you rely on to compare your utility's performance with your peers?
- How do you minimize rate increases and still provide competitive compensation to utility staff?
- How do you manage the tension between providing the superior service that customers expect and controlling costs?
- What approaches have worked well for meeting increasingly stringent environmental regulations?

<table>
<thead>
<tr>
<th>FALL 2014</th>
<th>Theme: Safety (Submission Deadline July 7, 2014)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theme Leaders: Marie Schmader, Tom Bach, Marianna Boucher, Wade Shaw, and John McLaughlin</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WINTER 2015</th>
<th>Theme: Alternative Delivery Methods (Submission Deadline September 29, 2014)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theme Leaders: Brigette Welton, Marco Menendez, Kelly Boone and Steve Hilderhoff</td>
<td></td>
</tr>
</tbody>
</table>
Welcome New Members!

The following people became members of NC AWWA-WEA in July, August, or September of 2013 either by joining AWWA or WEF and choosing NC as their home state or as an additional membership state, or by joining at the state level with a NC SLAM membership. We welcome these professionals to the Association and look forward to seeing them at future events and working with them on various projects and committees.

For information on how to join, and the membership options available, please visit www.ncsafewater.org/about/membership. Most of the Association's work is carried out through committees. To learn more about each committee review the list of active committees at www.ncsafewater.org/committees, and click on a committee's name. To express your interest in learning more about a committee, contact the committee chair directly, or complete the Online Volunteer Form available at www.ncsafewater.org/committees.

Next to some new members names, you may see the name of their endorser or sponsor who recruited them to become a member. The endorser/sponsor who recruits the greatest number of members may be recognized at the NC AWWA-WEA Annual Conference with one of the following awards.

The Maffitt Membership Cup honors Mr. McKean Maffitt and is given annually to the member of the NC Section AWWA who secures the greatest number of new members.

The William M. Piatt Membership Award honors Mr. William M. Piatt and is given annually to the member of the NC WEF Member Association who secures the greatest number of new members.

American Water Works Association (AWWA)
Joel Arnold, Town of Cary
Timothy Bardine, Jr., City of Asheville
Jamie Bartram, University of North Carolina at Chapel Hill
Judy Bateman, City of Goldsboro
Deems Blantom, Town of Mount Olive
Timothy Burdine, Jr., City of Asheville
Michael Caldwell, Union County Public Works
Ricardo Campos, Brown & Caldwell
Janet Clarke, University of North Carolina
Rachel Cotter, Onsite Water Management LLC
Charles Daughtry, City of Raleigh
Bobby Fann, Town of Cary
Keith Garbrick, Pease Engineering & Architecture PC
Janean Goodwin, City of Raleigh
William Grant, Union County Public Works
Charles Hardee, Town of Four Oaks
Paulina Haro Camm, City of Raleigh
Adam Hogan, CHA Consulting Inc.
Craig Hollister, Town of Cary
Perry Horne, City of Goldsboro
Dennis Johnson, Unimin Corporation
Panitan Jutaporn
Doug Lassiter, NCSTA
Lin Lin
Breanne Long, Highfill Infrastructure Engineering, PC
Philip Lopina, Charlotte Mecklenberg Utility Department

Water Environment Federation (WEF)
Erica Atkinson
Paul Balsbaugh, City of Wilson
Yaw Bangolame, CDM Smith
Alex Churchill, Info Sense Inc.
Darrell Dewitt, Charlotte Mecklenberg Utility Department

Haley Hamill
Justin Hines, Microdyn Technologies Inc.
Joseph Holden, City of Greensboro
Sheila Hyatt, EBCI, Cherokee WTP
Christie Jiang
Ryan Liu
Kayla Mounce
Owen Pace
Crag Perry
Carmen Pharr
Steve Raper, Geo Raper & Son Inc.
Author Sluder, EBCI Cherokee Water Plant
Eric Smith, CDM Smith
Reynolds Wheeler, WC Equipment Sales Inc.
Hydrologic LLC (organizational member)

NC SLAM
Brandon Bailey, Onslow Water & Sewer Authority
Dale Bailey, City of Asheville
Michael Benoit, City of Durham
James Blevins, City of Winston Salem
Paul Booth, Woodside Environmental Services
Eric Bornowski, City of Raleigh
Antony Bowes, City of Mebane
Paul Bradley, City of Raleigh
Shaun Brinson, Town of Morehead City
Mike Brookshire, City of Asheville
Sibyl Brotherton, Two Rivers Utilities/City of Gastonia
Nathaniel Cathey, City of Greensboro
New Members

Morrison Corbitt, Greenville Utilities
David Creech, City of Raleigh
Richard Crout, Town of Burnsville
Roy Deckard, United Water
Michael DiPierro, City of Raleigh
Zackery Driver, City of Raleigh
James Eubanks, Jr., City of Raleigh
Robert Gallagher, City of Raleigh
John Gast, Keck and Wood Inc.
Jason Grady, Town of Four Oaks
Daniel Grimard, Onslow Water & Sewer Authority
Herbert Harrington, Town of Morehead City
Ray Harris, South Granville Water & Sewer Authority
Nathan Hayes, Town of Boone
Jimmy Heath, Jr., Onslow Water & Sewer Authority
Randall Jarrell, Wastewater Management LLC
Michael Jolly, Louisiana Pacific Corp.
Thomas Justus, City of Brevard Public Services Dept.
Codie Kendrick, City of Durham
Steven Lang, City of Raleigh
Kevin Lawrence, City of Raleigh
Wilmer Lawson, South Granville Water & Sewer Authority
Aubrey Lofton, Union County
Michael Loveless, City of Raleigh
Jose Martinez, Ill, City of Goldsboro
Joshua McDevitt, City of Asheville
Kevin Meanor, Onslow Water & Sewer Authority
Ronnie Medlin, City of Raleigh
Anthony Mencome, Heyward Inc.
Kimberly Midkiff, NC DENR DWR
Stanley Mitchell, City of Raleigh
Ronnie Moree, Union County Public Works
Eileen Navarrete, City of Raleigh
Emmett Phillips, City of Charlotte
Jimmy Portie, City of Jacksonville
Bradley Prevette, Davie County
Jeffrey Ray, City of Asheville
Kimberly Rineer
Paul Robertson, Town of Kure Beach
Joshua Rochelle, City of Jacksonville
Richard Sheppard, Town of Banner Elk
Billy Shi
Jonathan Solesby, City of Asheville
Terry Sparrow, City of Durham
William Spry, County of Davie
Samuel Steele, Union County Public Works
Robby Stone, City of High Point
William Stout, CDM Smith
Darwin Sullivan, Greenville Utilities Company
Nicholas Swinson, City of Jacksonville
Aaron Upton, Lincoln County Public Works
David Varjabedian, Brown & Caldwell
Rob Vawter, Carotek
William Ward, Town of Morehead City
Bernadine Wardlaw, City of Asheboro
Thomas Warren, Jr., City Of Roxboro
Nicholas Waters, Onslow Water & Sewer Authority
William Weaver, South Granville Water & Sewer Authority
Matthew West, Dewberry
Matthew Whaley, Southern Wayne Sanitary District
WATER CERTIFICATION QUESTIONS

Questions provided by the NC AWWA-WEA Water Board of Education & Examiners.

1. Positive-displacement meters ___________ when they are excessively worn.
   a) stop reading b) over register c) under register d) read accurately even

2. Water age due to storage in the water distribution system is ___________ in the early morning hours and ___________ in the late evening.
   a) highest; lowest b) lowest, moderate c) moderate; highest d) lowest; highest

3. The following color indicates a hydrant flow of less than 500 gpm:
   a) green b) red c) blue d) orange

4. Which pump is often referred to as a propeller pump?
   a) radial flow b) axial flow c) mixed flow d) centrifugal flow

Answers:

Certification Corner

MAINTENANCE TECHNOLOGIST QUESTIONS

Questions provided by the NC AWWA-WEA Plant Operations & Maintenance Committee.

1) Schedule 40 PVC pipe
   a) is the preferred piping material for fluoride feed systems.
   b) requires purple primer to clean and prepare the pipe for gluing.
   c) has thicker walls than Schedule 80 PVC pipe.
   d) has thinner walls than Schedule 80 PVC pipe.

2) Drums of hydraulic oil should be stored
   a) horizontally with the bungs below the liquid level.
   b) vertically with the bungs on top.
   c) outside whenever possible.
   d) in refrigerated areas.

3) The bearing closest to the impeller of an end-suction pump is always referred to as the
   a) thrust bearing.
   b) inboard bearing.
   c) outboard bearing.
   d) both a and b.

4) The three terminals of a silicon controlled rectifier (SCR) are
   a) the bridge, anode, and cathode.
   b) the anode, cathode, and gate.
   c) the anode, diode, and bridge.
   d) the triac, cathode, and bridge.

5) Safety wire is used
   a) to tie rebar together in concrete forms.
   b) on threaded fasteners to keep critical components from unfastening.
   c) to network a group of fire detectors together in a building.
   d) to connect the components of a sling psychrometer.

Answers:
1. d) 2. a) Keeping the bungs sealed with oil keeps water and air containing dirt and moisture from entering the drum as it expands and contracts with temperature changes. (Industrial Maintenance, chapter 10—Fluid Power Systems)
3. b) (Pumps & Pumping, lesson three—Centrifugal Pump Components)
4. b) (Industrial Maintenance, Chapter 5—Electronics and Programmable Logic Controllers)
5. b) (Industrial Maintenance, Chapter 3—Service and Repair Principles)
WASTEWATER CERTIFICATION QUESTIONS

Questions provided by the NC AWWA-WEA Wastewater Board of Education & Examiners.

1. What device(s) can be used as an emergency shut-off for the drive unit of a circular clarifier?
   a) Gear reducers  b) Pressure sensors  c) Gear compression system  d) Shear pins

2. Within how many days must a new Water Pollution Control System Operator Designation Form be submitted to the WPCSOCC in the event of a vacancy in the position of Operator in Responsible Charge?
   a) 60  b) 90  c) 120  d) 180

3. Generally, how often should a clarifier be drained and all mechanical and structural parts inspected?
   a) Weekly  b) Monthly  c) Quarterly  d) Annually

4. Nitrification is a process that converts ammonia to nitrate. In this process, alkalinity is consumed which may result in:
   a) pH increase  b) pH decrease  c) pH stabilization  d) MLSS settleability improvement

5. Incomplete nitrification can result in elevated nitrite production. What is a potential effect of this condition?
   a) Increased aeration requirements  b) Stabilized pH  c) Increased waste activated sludge  d) Interference in chlorine disinfection

Answers:

1. d)  2. c)  3. d)  4. b)  5. d)
News and Notes

2014 Spring Conference: Spring into Operation

The time has come to shake off the winter chill and look ahead to warm, sunny spring days at the coast as you make plans to attend the NC AWWA-WEA 13th Annual Spring Conference, "Spring into Operation!" Reserve April 6-8, 2014 to join NC AWWA-WEA at the Wilmington Convention Center for this fantastic spring event. Spring Conference Chair Kelly Ham, along with her team of volunteers, has been hard at work making plans. Look for details about the Spring Conference to appear in the 2014 Volume 1/Winter Training Catalog, at www.ncsafewater.org and in eNews emails.

Burnsville Water Tank Rehabilitated

North Carolina Company Donates Project to Community

The Town of Burnsville is the proud recipient of a rehabilitated ground water storage tank, thanks to Carolina Management Team (CMT) who completed the project at no cost to the town.

To celebrate its 10-year anniversary, CMT wanted to find a way to give back to the communities that have supported the company throughout the years. The result is a new initiative called ‘CMT Gives Back’ that provides deserving communities with infrastructure rehabilitation at no cost. Starting in 2014, municipalities across North Carolina will have the opportunity to participate in an application process to be selected as the next beneficiary.

“The Town of Burnsville has truly scored a homerun,” said Burnsville Mayor Danny McIntosh. “CMT approached the town about this program earlier this year with an offer to repair, recoat, and paint the town’s two million gallon water storage tank. The tank was in dire need of work but, because the cost was over $50,000, the possibility of doing the work soon was remote. CMT came to the rescue with its program to give back to our community.”

The refurbished Burnsville tank was presented to the town at a small ceremony on July 23, 2013.

CMT is a family business, owned by sister and brother Wendy Banks and David Van Zee, with offices in Asheville and High Point. Giving back close to home was important to them. “Growing up in Western North Carolina, it was very rewarding to help restore and preserve Burnsville’s water infrastructure,” Van Zee said. “It has been a pleasure working with everyone in Burnsville on this project as the inaugural recipient of CMT Gives Back.”
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Sanitaire is a brand of Xylem, whose 12,000 employees are addressing the most complex issues in the global water market.
“The town could not be more proud of an imposing structure on water tank hill that has been restored to its original magnificence,” Mayor McIntosh said. “I want to thank all the folks from CMT and the town of Burnsville’s Public Works and Waterworks staff for a job well done.”

About CMT
Siblings Wendy Banks and David Van Zee own Carolina Management Team, (CMT), a concrete repair and protective coating company that repairs and rehabilitates water and wastewater infrastructure of towns and municipalities across the state. CMT has been growing steadily and has grown from two to 28 employees since the business was founded in 2003. CMT offers industrial coating solutions that allow communities to repair steel and concrete rather than replace important assets including, tanks, basins, buildings, piping and other equipment.

Frost & Sullivan Recognizes Huber Technology for Unparalleled Customer Service
Based on its recent analysis of the solid/liquid separation technology market, Frost & Sullivan recognizes Huber Technology, Inc. with the 2013 North American Frost & Sullivan Award for Customer Service Leadership. The company’s outstanding customer service sets it apart from competitors in the fragmented and competitive municipal and industrial water and wastewater treatment market. Focus on factors such as service quality, timeliness of service, impact on overall customer value, and mitigating costs that would normally be added to existing contracts by competitors, showcases Huber Technology’s unique pursuit of customer service excellence.

Understanding that quality of service and the full support of installed product lines ensures customer satisfaction, ongoing efficiency of its product portfolio, and extended product life cycles, Huber Technology created the Huber Service Edge®. This trademarked menu of services creates value for existing clients. Huber Technology’s quality of service commitment includes full support at the design phase, installation, startup, and for ongoing maintenance visits—all at no additional cost.

About Huber Technology Inc.
Huber serves the municipal and industrial wastewater treatment market with high quality liquid-solid separation technology. Huber Technology offers the complete chain of screening, grit, sludge handling, and membrane processes. The company is an original source manufacturer specializing in stainless steel fabrication of technologies for water and wastewater. Headquartered in 35,640 sq. ft. of office and manufacturing space in Huntersville, NC, Huber Technology, Inc. is a member of the HUBER Group as a wholly owned subsidiary of Huber SE, based in Bavaria, Germany. Established in 1872, Huber is a solidly established manufacturer with five generations of craftsmanship to its credit. Known as an innovator, Huber SE is the holder of multiple patents. Huber is the inventor and original manufacturer for the renowned ROTAMAT® products and STEPSCREEN® and has proven experience and expertise with over 25,000 installations worldwide.
Our reputation didn’t just happen. It’s been built project by project for over half a century.

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DENVER, CO
303.791.3600

PHOENIX, AZ
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ATLANTA, GA
770.754.4141

NASHVILLE, TN
615.350.7975

Northeast Brunswick Regional Wastewater Treatment Plant in Leland, NC
Western Wake Effluent Outfall Pipeline in Cary, NC

Background photo taken at Forsyth County Membrane Water Treatment Plant

GARNEY CONSTRUCTION RECENTLY ACQUIRED ENCORE CONSTRUCTION. WE LOOK FORWARD TO THE FUTURE AS WE BRING TOGETHER TWO INDUSTRY LEADERS IN THE WATER/WASTEWATER MARKET.
2014 Schedule of Events

The following schedule is current as of October 30, 2013. For updates or more information, please contact the organization listed with each event. If a listed event does not reference a specific organization, the item listed is a NC AWWA-WEA event. For further details concerning all NC AWWA-WEA events, visit the NC AWWA-WEA website at www.ncsafewater.org or contact the NC AWWA-WEA office directly at (919) 784-9030.

January 2014
13-15 Utility Management Institute
Greensboro, NC
Chuck Christensen, (801) 281-0107, chuckets@gmail.com

February 2014
25 NC AWWA-WEA Seminar: Finance and Management Seminar
Location to be announced
27 NCWTFOCB Exams (application deadline 30 days prior)
Kinston, Morganton, and Raleigh
NCWTFOCB (919) 707-9040

March 2014
10-14 NC AWWA-WEA Eastern Collection & Distribution School
Raleigh, NC
13 NCWPCSOCC Exams
Kenansville, Morganton, Raleigh, Salisbury, & Williamston
NCWPCSOCC (919) 807-6353
18-21 Customer Service Training
Charlotte, NC

April 2014
6-8 NC AWWA-WEA Spring Conference
Wilmington, NC
28-2 NC AWWA-WEA Eastern Biological Wastewater Operators School
Raleigh, NC
29-2 NC AWWA-WEA Physical/Chemical Wastewater Operators School
Raleigh, NC

May 2014
4-10 National Drinking Water Week
6 Lab Tech Day
Raleigh, NC NCWOA, (252) 764-2094, www.ncwoa.com
20 NC AWWA-WEA Seminar: Math for Drinking Water Operators
Morganton, NC
29 NCWTFOCB Exams (application deadline 30 days prior)
Kinston, Morganton, and Raleigh
NCWTFOCB (919) 707-9040

June 2014
3 NC AWWA-WEA Seminar: Management
Raleigh, NC
8-12 AWWA ACE Annual Conference
Boston, MA
AWWA, 800-926-7337, www.awwa.org
12 NCWPCSOCC Exams
Kenansville, Morganton, Raleigh, Salisbury, & Williamston
NCWPCSOCC (919) 807-6353
24 NC AWWA-WEA Seminar: Planning Ahead for the Changing Wastewater Regulatory Environment
Location to be announced

July 2014
14-18 NC AWWA-WEA Western Biological Wastewater Operators School
Morganton, NC
14-17 NC AWWA-WEA Western Maintenance Technologist School & Exam – Grades 1 & 2
Morganton, NC
17 NC AWWA-WEA Seminar: Risk Management Hybrid Webinar
Raleigh, NC
29 NC AWWA-WEA Seminar: Drinking Water Rules and Regulations
Raleigh, NC

August 2014
4-8 NC AWWA-WEA Western Collection Distribution School (tentative)
Morganton, NC
21 NC AWWA-WEA Seminar: Automation
Greensboro, NC
28 NCWTFOCB Exams (application deadline 30 days prior)
Kinston, Morganton, and Raleigh
NCWTFOCB (919) 707-9040

September 2014
TBA NC AWWA-WEA Seminar:
Advanced Topics in Wastewater Operations
Location to be announced
11 NCWPCSOCC Exams
Kenansville, Morganton, Raleigh, Salisbury, & Williamston
NCWPCSOCC (919) 807-6353
15-18 NC AWWA-WEA Eastern Maintenance Technologist School & Exam
Raleigh, NC
27- WEFTEC
Oct 1 New Orleans, LA
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October 2014
2 NC AWWA-WEA Seminar: Collections and Distribution
Location to be announced
13-17 NC AWWA-WEA Coastal Collection & Distribution School (tentative)
Morehead City, NC
22 NC AWWA-WEA Seminar: Risk Management
Location to be announced
28 NC AWWA-WEA Seminar: Water Reuse
Location to be announced
30 NCWTFOCB Exams (application deadline 30 days prior)
Kinston, Morganton, and Raleigh
NCWTFOCB (919) 707-9040

November 2014
16-19 NC AWWA-WEA Annual Conference
Winston-Salem, NC

December 2014
3 NC AWWA-WEA Seminar: Industrial
Raleigh
9 NC AWWA-WEA Seminar: Construction Issues
Greenville
11 NCWPCSOCC Exams
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  Annual dues for 2013 are $45.
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Charlotte | 704-338-6700
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Sunset Beach | 910-575-8800
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CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT’S SUSTAINABLE INFRASTRUCTURE / ASSET MANAGEMENT PROGRAM

CDM Smith is proud to help municipalities across North Carolina with their infrastructure and asset management needs by prioritizing water and sewer system infrastructure for assessment and rehabilitation.