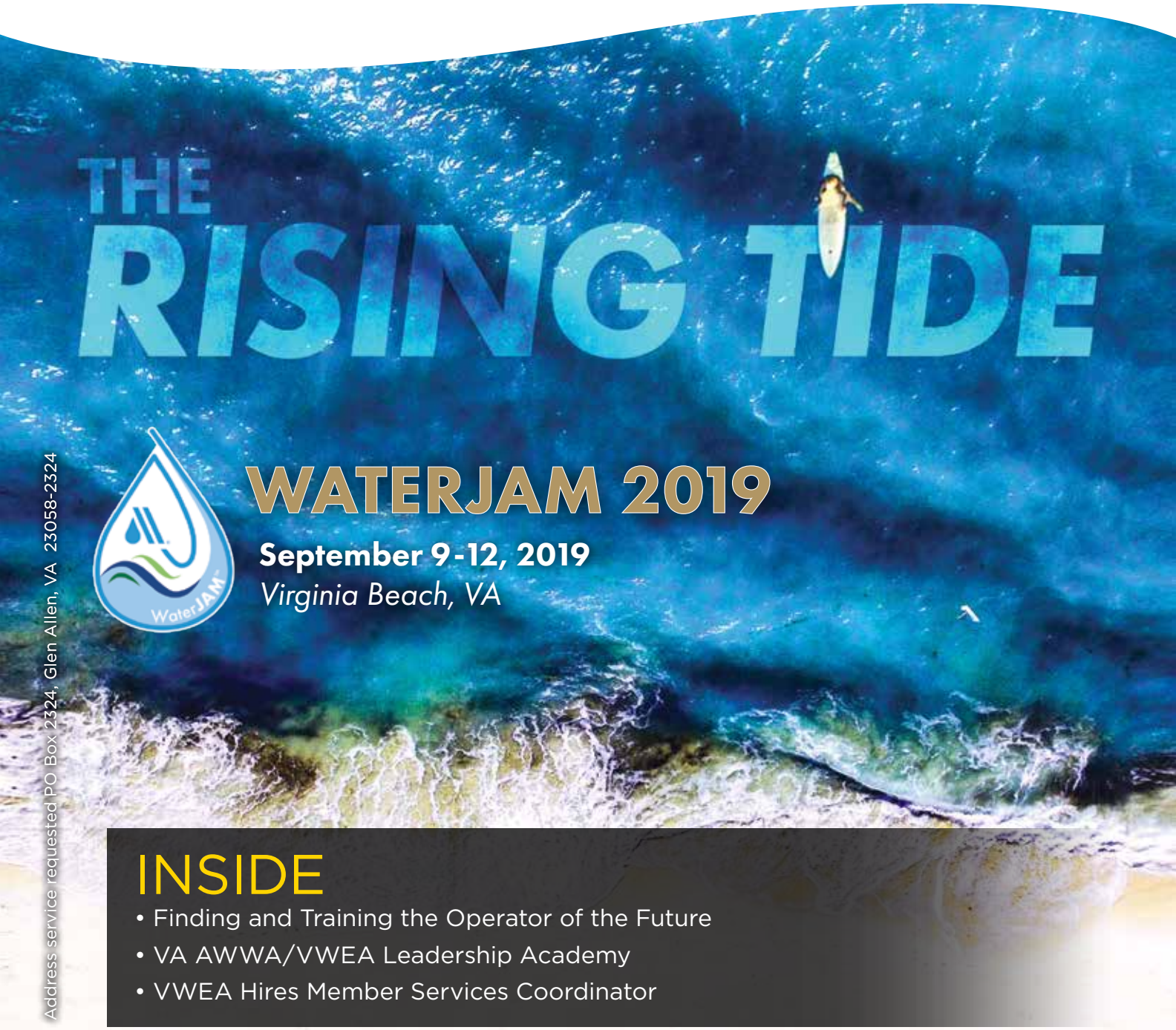
THE CONDUIT

SUMMER 2019

THE OFFICIAL PUBLICATION OF THE VIRGINIA WATER ENVIRONMENT ASSOCIATION, INC.



Address service requested PO Box 2324, Glen Allen, VA 23058-2324

INSIDE

- Finding and Training the Operator of the Future
- VA AWWA/VWEA Leadership Academy
- VWEA Hires Member Services Coordinator

VWEA EST. 1947
Virginia Water Environment Association

Our Vision: The Virginia Water Environment Association (VWEA) will preserve and enhance Virginia's Water Environment, now and for future generations.



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The report offers an enhanced understanding of the strategies communities implement to cost-effectively improve the health of local water bodies and deliver related benefits.



The full report can be downloaded at waterrf.org

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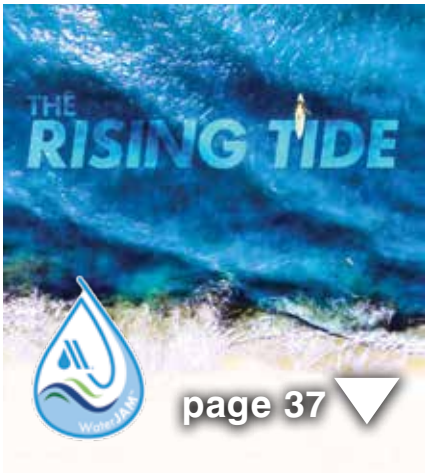
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COVER FEATURE

WaterJAM 2019

WaterJAM 2019 will be held on September 9-12 in Virginia Beach. The annual conference brings together more than 1,700 water professionals. This year's theme, *The Rising Tide*, reflects the industry's increasing focus on flood-control management programs, stormwater system improvement, flood prevention and alleviation, and protection of community assets.

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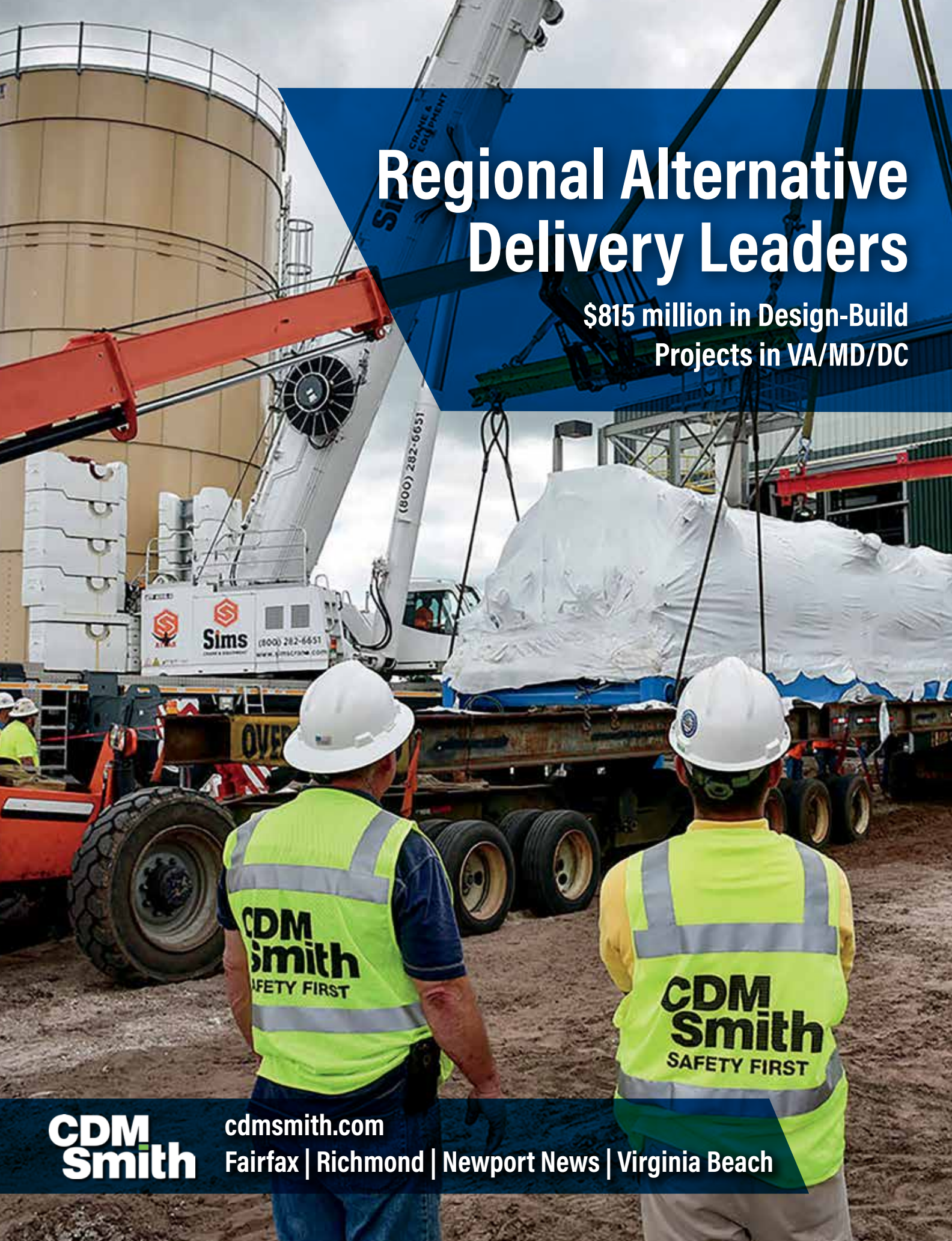
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Virginia Water Environment Association

OFFICERS AND DELEGATES

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Shawn Heselton
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sheselton@hrsd.com

President Elect 2018-2019
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HDR
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Vice President 2018-2019
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pyi@hazenandsawyer.com

Past President 2018-2019
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scott.shirley@westernvawater.org

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gregeverhart@combs-associates.com

Federation Delegate 2016-2019
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steve.johnson@alfalaval.com

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nina.andgren@uosa.org

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AlexRenew
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Karen.Pallansch@alexrenew.com

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rhendrix@pfrwta.com

Young Professionals Representative 2018-2019
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Summer Sailing – ScholarSHIP and StewardSHIP



Shawn Heselton, President

"And so with the sunshine and the great bursts of leaves growing on the trees, just as things grow in fast movies, I had that familiar conviction that life was beginning over again with the summer," the American fiction writer F. Scott Fitzgerald wrote in *The Great Gatsby*. Summer is upon us, which has caused me to reflect on the past three quarters and look forward to the last quarter as VWEA President. Before focusing on the last two "SHIPs" of the Association, I would like to sum up two past events and feature some futures ones.

The Stormwater Committee hosted its annual seminar on April 25 at the Westin in beautiful downtown Richmond. The one-day event had 166 attendees, a 19% increase from last year, and 22 exhibitors. The seminar focused on recent updates to the Chesapeake Bay Model, updates to local planning targets, the development of the Phase III Watershed Implementation Planning, and ongoing research on loading rates from urban stormwater runoff and stream bank erosion.

The Education Committee Seminar was held on May 8-9, also at the Westin in Richmond. The event attracted 179 attendees, a 13% increase from last year, and 12 exhibitors. The seminar focused on industry trends to reduce energy use and meet increasingly stringent nutrient limits while preserving and protecting the water environment. There was also a mock trial during which industry experts debated the value of using carbon for biological nutrient removal versus carbon for energy recovery.

The summer begins with a number of fantastic events like the Operations Education Conference, with its Safety Seminar and Operations Challenge Competition, and the Good Laboratory Practices Conference and will end with WaterJAM (Joint Annual Meeting) 2019. The 8th Annual Operations Education Conference will be held in the new Hotel Madison located in the beautiful Shenandoah Valley and will feature a Safety Seminar on hidden hazards found all around us. There will also be technical tracks focusing on utility management, biosolids, and collection systems. The 25th annual Good Laboratory Practices Conference will be held on July 29-30 in Charlottesville. The event's silver jubilee will provide attendees with the latest information on major issues such as method updates, laboratory accreditation, and new technologies.

The WaterJAM Committee has been hard at work slating technical sessions, staffing volunteer positions, planning incredible events, and pulling together detailed communication materials. The showcase event for VWEA and VA AWWA will be held at the Virginia Beach Convention Center starting on Monday, September 9 and will conclude on Thursday, September 12. Please see *www.vwea.org* for more details.

ScholarSHIP

With the never-ending rise in tuition, scholarships are an amazing VWEA offering. Scholarships not only provide financial assistance, but are also a great way to recognize a person's accomplishments. Five scholarships have been a mainstay of VWEA:

- Undergraduate Student Scholarship.
- Rising Freshmen Scholarship.
- Sonny Roden Memorial Graduate Student Scholarship
- Member Dependent Scholarship.
- Operators Scholarship.

For the last five years, VWEA has awarded close to $60,000 from a self-sustaining scholarship fund of nearly to $220,000! VWEA has also had the pleasure of sending 12 operators employed in the wastewater treatment field at a Virginia utility to the Wastewater Treatment Plant Operators Short Course in Virginia Beach between 2014 and 2018! For more information on scholarships, please visit *www.vwea.org/page/Scholarships*.

StewardSHIP

As mentioned in the Spring 2019 issue of *The Conduit*, organizational stewardship is a key component of VWEA's Strategic Plan. Stewardship is the careful and responsible management of something entrusted to one's care. For VWEA, maintaining financial stability while being a premier water quality association for its members is paramount.

There are a number of different actions VWEA is looking at implementing in the next year in order to achieve organizational stewardship. In today's day and age, short videos are a mainstay in social media. VWEA is looking to put together a promotional video that will highlight the association but, more importantly, its members. The Association is also looking at expanding its educational reach geographically by moving existing conferences, seminars, and workshops around the state. Finally, as the Student Activities Committee grows, so does the need for increased advertising about VWEA in Virginia colleges.

In closing, I would like to express my deepest gratitude to all of the members, committee volunteers, and committee leadership of VWEA for a great year. I look forward to serving you as Past President next year!

Water Environment Federation® the water quality people®

VWEA EST. 1947 Virginia Water Environment Association

WEF and VWEA Saddened by Tragedy in Virginia Beach

WEF and VWEA are profoundly saddened by the tragedy in Virginia Beach that claimed 12 lives, including several people who worked for the City's Public Works and Public Utilities Departments. Some of those who lost their lives or were injured are members of WEF and VWEA and are known across the broader water sector.

"The WEF Board and staff extend their deepest sympathies to the families, friends, and colleagues of those individuals impacted by this senseless tragedy," said Tom Kunetz, WEF President. "We and our entire water family will keep them in our thoughts and prayers and provide support however we can."

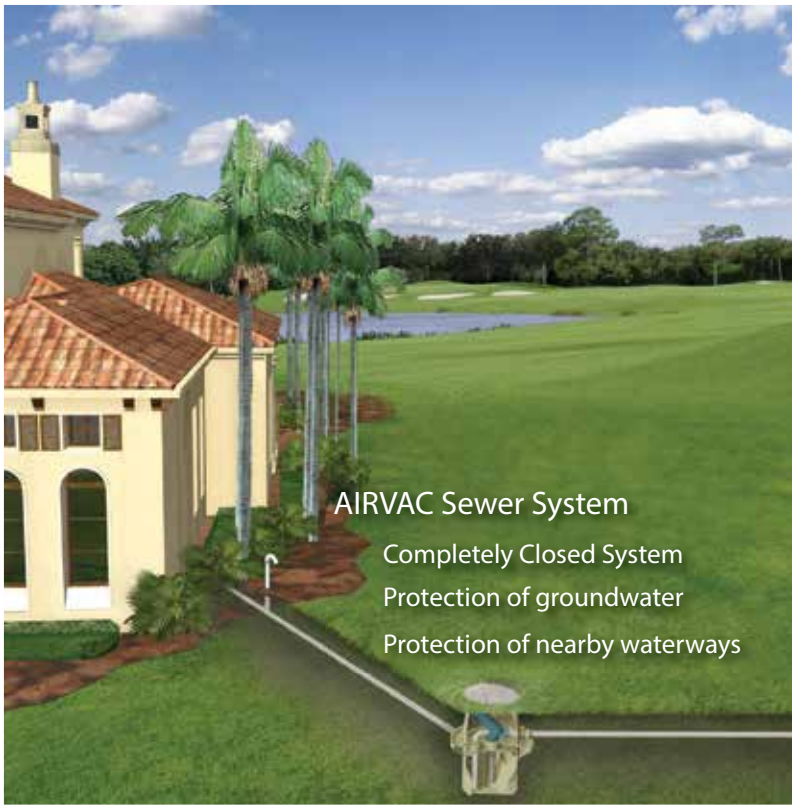
"On behalf of the VWEA Board and staff, I want to offer my sincere condolences to the victim's families and friends of the horrific tragedy," said Shawn Heselton, VWEA President. "We are much more than an organization; we are a family. I encourage all members to offer comfort and support in this time of need."



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Looking Forward VEGA

VWEA
EST. 1947
Virginia Water Environment Association

VWEA Official Notice of Nominations

The Board of Directors has put forth the following slate of officers for election at WaterJAM in Virginia Beach, VA. Nominations may be made from the floor during the Business Meeting in accordance with the Bylaws of the Association. The election of officers will occur during the VWEA Business Meeting on Wednesday, September 11 from 3:00 p.m. to 4:00 p.m.

President Elect: Phill Yi

Vice President: Evan Bowles

Young Professional Representative: Jun Meng

Secretary/Treasurer: Greg Everhart

WEF Delegate: Kevin Wood ⊖

VWEA Hires Member Services Coordinator



VWEA is pleased to announce the addition of Leigh Blecki to our staff as Member Services Coordinator. Leigh is a graduate of Penn State University with a BA in Communications. She brings with her association management experience in the area of membership and program development. The addition of Leigh to our staff will assist VWEA in increasing our services to members and water professionals across Virginia. Leigh resides in the Richmond area with her husband and two daughters. She is an active member of the PTA and enjoys vacations at the beach and college football. Leigh can be reached at *leigh.blecki@vwea.org*. Join us in welcoming Leigh to VWEA! ⊖

Inside Drops for Manholes

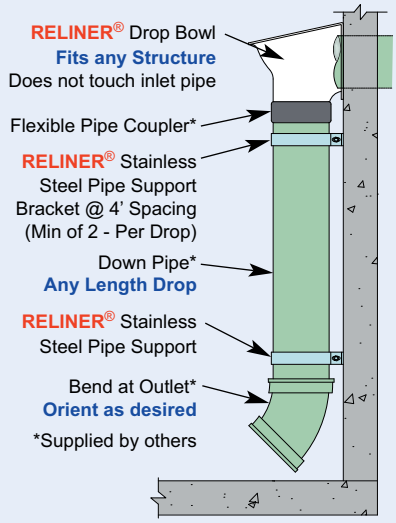
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VA AWWA/VWEA LEADERSHIP ACADEMY

WATERJAM 2019 – WATERJAM 2020

Cost:
$700/participant

Applications Open:
May 22nd, 2019

Applications Due:
July 10th, 2019

Submit to:
admin@vaawwa.org

Questions? Please contact:

Michele Siminari
(msiminari@fairfaxwater.org)

What is it?

The newest VA AWWA/VWEA initiative which is focused on providing a training program that facilitates professional growth by enhancing communication and leadership skills through workshops and networking opportunities

Topics of interest:

- Moral and Ethical Leadership
- Emotional Intelligence
- People Styles
- Project Management

Includes:

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WATERJAM 2020 PARTICIPATION	**COMMITTEE INVOLVEMENT**

FOR MORE INFORMATION GO TO: WWW.VAAWWA.ORG

American Water Works Association
Virginia Section

VWEA
Virginia Water Environment Association

LEADERSHIP ACADEMY
APPLICATION TIMELINE



- **Wednesday, May 22, 2019:** Application available for submission (7 weeks).
- **Wednesday, July 10, 2019:** Application due.
- **Thursday, July 11, 2019:** Application review period begins (2 weeks).
- **Thursday, July 25, 2019:** Application review period ends. Final acceptance list and waitlist generated (2 days).
- **Friday, July 26, 2019:** Applicants notified of acceptance status, with invoice included in the acceptance (1 week).
- **Friday, August 2, 2019:** Waitlisted members notified of acceptance status (if applicable) (1 week).
- **Friday, August 9, 2019:** Accepted members' deadline to confirm Leadership Academy participation. Early bird WaterJAM registration ends.
- **Monday, September 2, 2019:** Payment due date for Leadership Academy invoice.
- **Monday, September 9, 2019:** WaterJAM 2019 begins.

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VA AWWA/VWEA LEADERSHIP ACADEMY
2019-2020 APPLICATION

Background: The Leadership Academy is the newest VA AWWA/VWEA Committee developed for individuals of all ages in the industry interested in leadership topics, including moral and ethical leadership, emotional intelligence, people styles, project management, and more. The Leadership Academy is organized into a year-long course that will kick off at WaterJAM 2019 and will conclude at WaterJAM 2020. The course will entail:

- Committee involvement – participants will join a committee and help plan an event or get involved in committee activities.
- A kick-off workshop at WaterJAM 2019.
- Four conference calls.
- Three day-long workshops in rotating locations throughout Virginia.
- A concluding workshop and graduation at WaterJAM 2020.

Program Cost and Inclusions: The VA AWWA/VWEA Leadership Academy will require a fee of $700 per participant. This cost will include: Three (3) full-day workshops with breakfast, snacks, and lunch, WaterJAM 2020 registration, a kick-off meeting at WaterJAM 2019, and a concluding meeting at WaterJAM 2020. Program cost will not include transportation costs to workshops, any lodging expenses, or WaterJAM 2019 registration costs. Participants may attend the kick-off meeting at WaterJAM 2019 without registering for WaterJAM. Invoices for the Leadership Academy will be sent to applicants after acceptance to the course and must be paid in full before the kick-off meeting at WaterJAM 2019.

Instructions: Please read the instructions before completing the application. In order for your application to be considered, VA AWWA/VWEA must receive all complete materials by the application deadline of July 10, 2019. Applications should be completed electronically and submitted by email to VA AWWA/VWEA (*admin@vaawwa.org*).

Leadership Academy Membership Application, VA AWWA/VWEA Membership Application or Member ID Number, Resumes, and Letter of Support must be submitted as one (1) package to VA AWWA/VWEA.

Forms can be emailed to:
admin@vaawwa.org

Application Checklist:

___ 2-page Application
___ Letter of Support from Supervisor
___ Resume
___ VA AWWA/VWEA Membership Application (If not currently a member)

1. Application Information

Name:_____ Business Phone: _____

Email:_____ Cell Phone: _____

Company:_____

Time with Company:_____

Work Address: _____

Current Position: _____

Licenses or Certifications held: _____

Plans to obtain Licenses or Certifications: _____

_____

Position Description/Role: _____

_____

_____

Continued on reverse.

Current Career Goals: _____

_____

_____

Are you a member of VA AWWA/VWEA? Yes or No. If No, please provide application for membership in Leadership Academy Application Package.

If Yes, VA AWWA/VWEA Member ID: _____

List volunteer activities with VA AWWA/VWEA: _____

_____

_____

Please list any other community involvement activities and indicate the organization name, dates of participation, and any leadership roles held:

_____

_____

Please list any other Leadership Trainings or Seminars you have attended: _____

_____

Please list your educational history and degrees held: _____

_____

Brief Essay (500 Word Limit): Please include:

- Description of why you would like to be a part of the Leadership Academy.
- What you hope to gain from the program.
- Discuss a leader you admire and why.

_____

_____

_____

_____

2. Letter of Support Guidelines

Each applicant must submit one (1) Letter of Support completed by the applicant's work supervisor from the applicant's current employer. The Letter of Support form can be found at *www.vaawwa.org*. Applications are not reviewed until complete with the Letter of Support. All items should be submitted together, once all items are complete, they may be submitted online by email (*admin@vaawwa.org*). Application materials submitted separately will not be reviewed.

Name of work mentor or supervisor completing your Letter of Support: _____

3. Program Statement Agreement

The Leadership Academy has a competitive application process. Classes are designed to have a balance of professionals from different fields within the water and wastewater industry; class sizes are limited to provide an enriched, focused experience for attendees.

By signing or typing your name below, you are certifying that you have read and understood this application:

Signature: _____

Date: _____

VA AWWA/VWEA LEADERSHIP ACADEMY
2019-2020 APPLICATION
LETTER OF SUPPORT

Leadership Academy Background: The Leadership Academy is the newest VA AWWA/VWEA Committee developed for individuals of all ages in the industry interested in leadership topics, including moral and ethical leadership, emotional intelligence, people styles, project management, and more. The Leadership Academy is organized into a yearlong course that will kick off at WaterJAM 2019 and will conclude at WaterJAM 2020. The course will entail:

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Instructions: The Letter of Support should be completed by the applicant's current supervisor. The Letter of Support must be submitted with the other application materials (Membership Application or Member ID Number, Resumes, Letter of Support) as a part of one (1) package to VA AWWA/VWEA. In order for applications to be considered, VA AWWA/VWEA must receive all complete materials by the application deadline of July 10, 2019. Applications should be completed electronically and submitted by email to VA AWWA/VWEA (*admin@vaawwa.org*). Leadership Academy Membership Application, VA AWWA/VWEA Membership Application or Member ID Number, and Resumes must be submitted in one package to VA AWWA/VWEA.

Letter of Support Inclusion: Please provide the following information:

Supervisor Name: _____

Supervisor Email and Phone Number: _____

Supervisor Title: _____

- How long have you worked with the applicant?
- How would you describe your work experiences with the applicant?
- Why do you think this applicant is a good candidate for the Leadership Academy?

_____

_____

_____

Supervisor Signature: _____

Date: _____

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By Katherine Saltzman

Finding and Training the Operator of the Future

Obstacles and paths to water operator careers

Amid retirement surges across the water workforce, there are ongoing discussions about the urgency to recruit, train, and retain new professionals. Part of this effort involves establishing the water sector as an attractive career path that supports essential infrastructure and protects public health and the natural environment.

However, the water sector faces additional challenges that most sectors do not. Training requirements and certification expectations vary among states and, naturally, among utilities that differ in size, revenue, and process capacity. But the challenges go deeper. They include limited access to updated, peer-reviewed training materials; inadequate time and money for operators to study or maintain continuing education requirements; and the challenges of keeping pace with rapid technological changes. These challenges are in addition to equipping employees with the complex science, technology, engineering, and mathematics components necessary to be a water operator.

However, solutions are emerging to overcome these challenges and secure the workforce of the future. Organizations, states, and utilities are finding ways to attract and train the essential employees who will protect our infrastructure, environment, and public health.



Water Sector Uniqueness

As highlighted in the 2018 Brookings Institution report *Renewing the Water Workforce: Improving Water Infrastructure and Creating a Pipeline to Opportunity*, many of the water sector's concerns about its workforce reflect similar social, labor, and economic concerns across all U.S. sectors. These concerns include high retirement rates, limited pools of qualified replacements, and fear of technical knowledge loss. The report calls these concerns "emblematic of bigger economic trends and broader policy issues facing the country, including the continued need to support a new generation of workers amid mounting retirements, changing technologies, and other labor market shifts."

But where the water sector stands apart is its need for greater upfront preparation in terms of extensive training, skills, and knowledge competency. The Brookings report states a U.S. Bureau of Labor Statistics finding that water sector jobs have a higher threshold for entry.

More than 78% of water workers need at least one year of related experience and 16% of water workers need four or more years' experience prior to joining the water workforce. Moreover, about 44.7% of water workers need at least one year of on-the job training to qualify for their positions. Compare this to the national average of 5.6% of jobs across all occupations that need more than one year of on-the-job training, according to the data.

In addition to on-the-job training, water workers are required to operate various technologies and tools as part of their daily responsibilities. These requirements add additional complexity to operator jobs and training. According to the Brookings report, "Water workers embody the definition of skilled trades. On average, water workers use 63 different tools and technologies each, compared to the six tools and technologies typically used by workers in all occupations nationally."

Entering the Water Workforce

Even though most sector newcomers lack operational experience, each still is required to pass a Level 1 certification exam and possess hands-on experience as prerequisites for employment. With these considerations, utilities typically hire entry-level employees without a license and provide a certain amount of time for the employee to study for and pass a certification examination. Those who pass are then promoted to a full-time, certified operator position. This pre-certification periods ranges from 30 days in some states up to one year in others.

"We have a chicken and egg system here: you can't get hands-on experience unless you have a license, but you can't get a license without hands-on experience,"

said Sidney Innerebner, principal and owner of Indigo Water Group LLC, a wastewater consulting and operator training company. Innerebner also is authoring WEF's new Wastewater Treatment Fundamentals series.

Supporting Continual Operator Training

Once hired, operators are expected to continue studying for higher certifications and collect continuing education units (CEU). Larger utilities may have an in-house trainer who develops a CEU curriculum related to facility processes or equipment. This trainer works with the entire operations staff to help prepare them for certification exams. However, midsize and small facilities, which make up most treatment systems in the U.S., typically don't have the resources to support in-house training; therefore, operators self-study and use external trainers or online courses to prepare for examinations.

Despite the options available, there is concern among operators and trainers that the Need-to-Know (NTK) Criteria, which is tested for in certification exams and incorporated into curriculums for CEUs, may not always apply to the processes at an operator's facility or be relevant to their daily responsibilities, Innerebner said. NTK criteria is extensive but lacks detail on which topics are necessary for exam preparation or responsibilities in the field, making it difficult for operators to study, she explained.

"One of the big issues with training is that it's often geared toward more complicated systems. If you look online, you could probably find 100 classes on activated sludge but more than 85% of the treatment plants in the U.S. are lagoon systems," Innerebner said. "It's hard to find training on lagoon systems or classes on wastewater treatment ponds."

Additionally, acquiring CEUs and preparing for a certification exam require time. In some cases, operators are given working time to prepare and test; this requires them to get shifts covered. In other cases, operators must use time off to maintain their licenses and training.

In Colorado, for example, week-long operator training classes would meet the entire training requirements for three years, Innerebner said. But this requires coverage at the facility as well as travel expenses.

Other options include online training, which provides more scheduling flexibility. Indigo Water Group has about 650 operators enrolled in online training class.

"Operators like it better so you can do it over time, it's a little easier to incorporate in the day," Innerebner said.

Updating Materials

A significant portion of operator training materials, including U.S. Environmental Protection Agency manuals, have not been updated since the late 1970s or the 1980s, Innerebner said. She added that training materials typically have been based on work practices at facilities instead of scientific research.

"We have learned a lot about wastewater treatment in the last 40 years. A lot of stuff has changed how we teach, has changed our understanding of the process," she said.

"We've been in a cycle of asking people in the field what they do every day at work and then basing training materials on that instead of setting standard practices based on scientific research. The result is a cycle that always looks backward instead of forward," she explained.

To provide new training materials, WEF developed the Wastewater Treatment Fundamentals series. In addition to being double-peer-reviewed by water sector experts, the series aims to assist in translating the world of wastewater treatment to individuals who have held technical jobs outside of the water sector. "I try to take new concepts and relate back to what people already know. It's easier to hang things on your framework than to build a new framework altogether," Innerebner said. Because many operators come from mechanical backgrounds, it helps to relate new topics to familiar ones, she explained. For example, biology and bacteria can be compared, albeit imperfectly, to engines.

"Live with the imperfect analogy until you can get a better understanding of what's actually happening," Innerebner said. "That goes a long way with helping people learn."

Keeping Pace with Technology

Utilities and trainers work to keep pace with rapid technological changes to ensure their staff and operators are prepared to handle new equipment. This has led to training that focuses primarily on technology at a facility. While this training is valuable, it needs to be coupled with education on the general curriculum.

"I am seeing more clients asking for very specific training on the technology they have at their location, on-site training for specific technology," said Scott Jameson, a water and wastewater operator trainer and consultant in British Columbia, Canada. Jameson offers classroom courses and on-site training for utilities in the region.

Sometimes the tech training is to reduce a knowledge gap after losing a senior operator; other times, however, utilities are trying to multitask and prepare operators

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for certification exams and train them on new technology at the same time, Jameson said.

"I find them more and more willing to pay to have an instructor to come to their sites," Jameson said. "This is tied into the idea that they want training focused on the technology they are using."

He cautioned, however, that this doubling up doesn't work well if the goal is to pass a certification exam. Jameson said he takes the time to sort out this difference with his clients. He works with them to clarify their objectives to provide the training truly needed.

The Operations Challenge competition held annually at WEFTEC and similar state and regional events are examples of programing that combines operations training and skill development with practice on new technologies. To keep the competition fresh and challenging, the events are redesigned periodically. These events introduce competitors to new processes and technologies and provide hands-on experience with new and different equipment.

Apprentice Programs and Technical Schools

One highly visible path through which newcomers can enter a water sector career is apprenticeship programs or technical schools. Some utilities have created these programs or built partnerships with local colleges to help facilitate the education and hands-on training necessary for an operator position.

South Platte Water Renewal Partners (formerly known as the Littleton Englewood Wastewater Treatment Plant) has done both. Cindy Goodburn, a WEF member who now works as an independent consultant to help organizations improve workforce development and organizational skills, started the apprentice program in the 1990s when the utility struggled to fill Operator A positions.

"At the time, we were focused on the A certification. Most A operators are really secure where they are working. They have the 'golden chain,' fully vested in all of their retirement stuff, maxed out on vacation – all those benefits that make it difficult to leave and start with a new organization," she explained. "Our answer to the golden chain was that we would build our own."

Though there have been some changes, the goals of the apprentice program remain the same. Operators are given a designated time frame in which to obtain higher certification levels; they are incentivized with pay increases.

"Each time the person passed a new certification, they got promoted to a new operator certification and received a payline raise. We paid for all of their schooling, their books, certification exam," Goodburn said. "But their end of the deal was that they had a certain timeframe in which to complete these [tasks]. The goal was to get all our operators A-certified and there was a maximum amount of time. If at any of those points they couldn't pass the exam, we would have to terminate employment. But we've only had to do that a couple of times over all these years [that we have had this program]. It's just been a huge success."

This facility also maintains a partnership with a local community college with a water quality management program. Many of the college students interned at the facility as part of their curriculum. These same students later joined the apprentice program to become operators.



Goodburn noted that utilities can help direct curricula at technical colleges to ensure colleges prepare students for workforce needs. For example, when supervisory control and data acquisition systems were introduced to the facility, few staff possessed the needed skills to use them. As Goodburn searched for employees or students to fill the role, she discovered that the community college was providing an outdated curriculum.

"The instrumentation and controls [curriculum] were in the electrical degree programs and it was so antiquated [that] it wouldn't do us any good," she said. "That's kind of my soapbox on partnering with local educational institutions and helping them understand what is needed in the industry for their students to graduate and get into a job."

Taking this collaboration one step farther, the Water Engineering Technology (WET) Program at Okanagan College in Kelowna, British Columbia has a curriculum recognized by the Environmental Operators Certification Program, which is the main certifying entity for the region. The WET Program also is a nationally accredited engineering technology program. All certified engineering technology programs are mandated to meet regularly with an advisory committee to determine curriculum and skills needed for the workforce.

"We have to keep in contact with the industry. All of the Engineering Technology programs are mandated to have a Program Advisory Committee comprising individuals from different industries that our students would go and work in," said Allison O'Neill, Chair of the Water Engineering Technology Department. These committees "advise us on changes in the industry. We also ask them about our curriculum [and] when we propose curriculum changes, they review those changes to ensure they fit with the need of the industry."

The committees include members from public and private sector organizations, including local municipalities, the water resource recovery facility, consultants, urban planners, as well as representatives from the Province of British Columbia's Ministries of Environment & Climate Change Strategy and Forests, Lands, Natural Resource Operations & Rural Development.

"We make sure that we have broad representation. We also try to make sure that our advisory committee includes WET graduates who are working in the industry because they understand both the curriculum and the industry," O'Neill said.

Interactive Development

The Brookings report also includes recommendations to involve stakeholders in training development. The report suggests that since water workers are required to maintain CEUs, utilities and other water employers should provide additional frameworks and "develop competency models – or customize existing models – to promote continued learning and skills development among staff."

Tasks associated with this development include defining and measuring types of knowledge, skills, and abilities needed among water workers within the organization. The report also recommends creating more robust programs to introduce younger, nontraditional workers to the water sector to acquire hands-on experience.

Goodburn noted that the success of the apprentice program is based on supporting staff and operators at each level of their career and providing training and opportunities to move upward.

"One of the things we were successful at was developing people in their careers," Goodburn said. "I used to tell my staff – and it would freak them out – 'I want you to work yourself out of your job every five years, but I want your new job to be here, with us, at Littleton/ Englewood'."

"I think that's philosophically what the management was looking for: those people that really wanted to reach, grow, and really make a career out of it, not just a job. I think that has really been the success in the apprentice program and throughout the rest of the organization because people do have the opportunity to grow."

Katherine Saltzman *is a publications assistant at WEF (Alexandria, VA), where she works on WEF's Operator Initiative programs.*

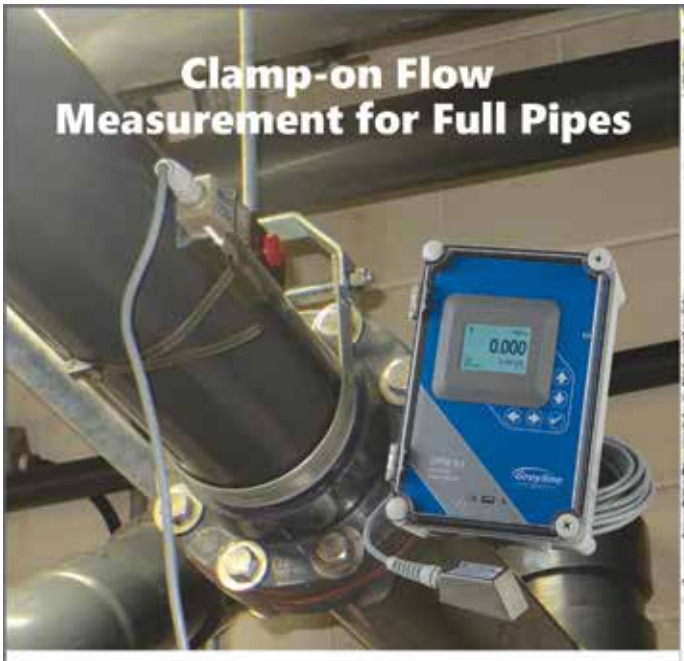
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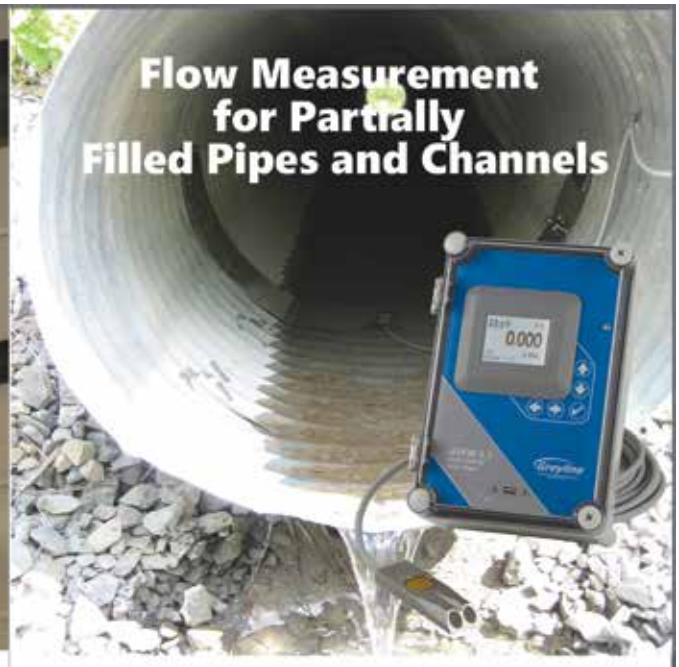
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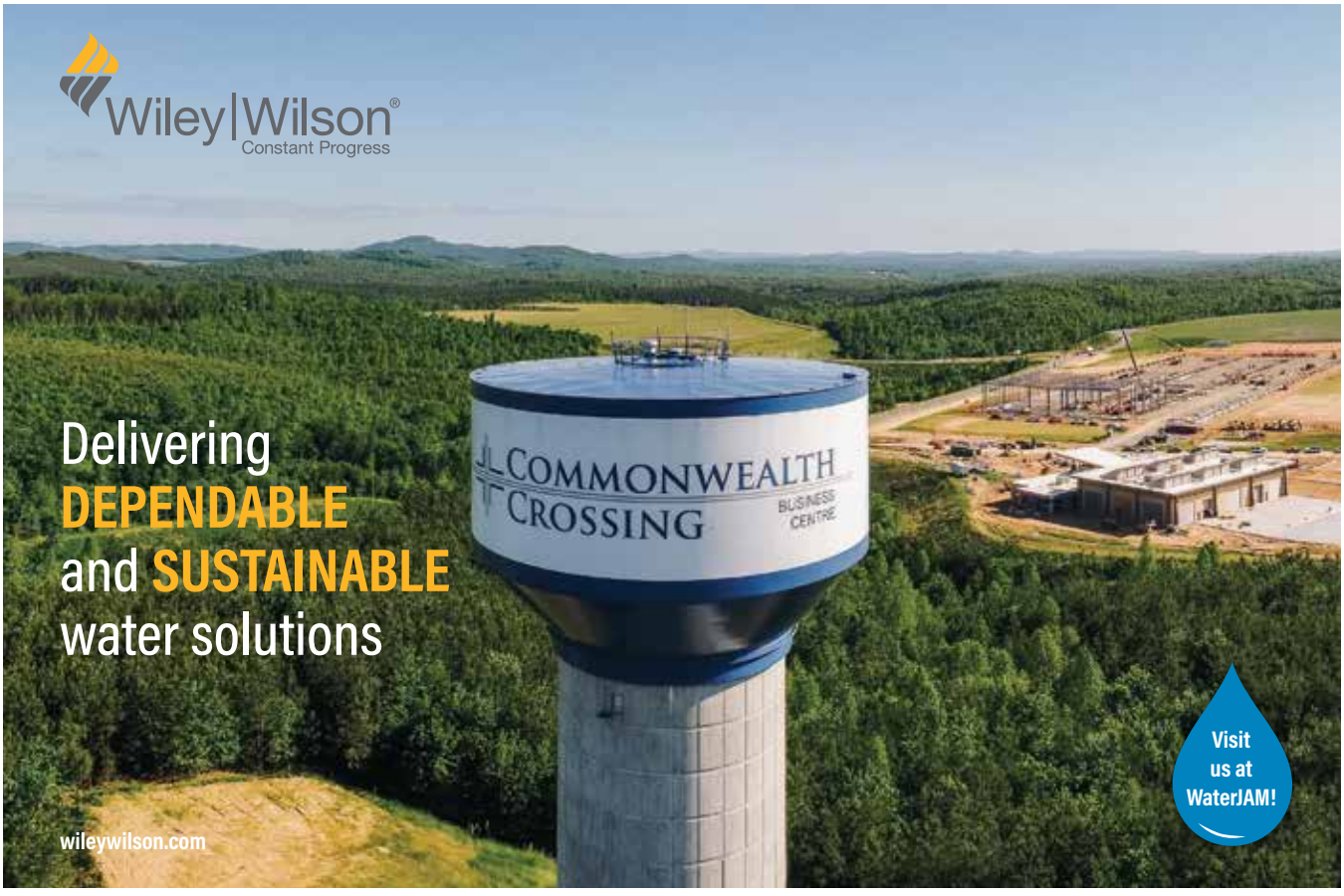
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I Am Not My Brother's Keeper

Oh, Really?

By Joseph Scott, VWEA/AWWA Safety and Security Committee

The following is a true story. Only the names have been changed.

Tim and Riley had worked together for years. Not only did they work in the same location, but in the same truck. They were a team. They did their jobs efficiently for a long time.

The day it happened wasn't a particularly hot day. The jobs for that day were not particularly difficult. As Tim and Riley were heading from one job site to another, Tim said that he wasn't feeling well and requested they stop by the store so he could get some antacid for his acid reflux. They stopped at the store. Tim purchased what he needed, took some of the medicine, and they went on with their day.

At the end of the workday, Tim and Riley parked their vehicle as they always did. Riley got out of the vehicle and was waiting for Tim. Tim said that he still wasn't feeling very well and that he was going to sit in the truck and rest for a bit. Riley left Tim sitting in the truck. As the rest of the staff was preparing to leave for the day, a couple of guys asked if anyone had seen Tim. Nobody recalled seeing him and they all went home for the evening.

Early the next morning, Riley walked out to the truck as he did every work day to get things ready for the upcoming jobs. When he arrived at the truck, Tim was there, deceased. Riley reported this to his supervisor and all of the proper calls were made, investigations took place, and Tim was taken away.

Some of the supervisors were later heard to say things like: "Maybe we should have checked to see where he was" or "I wish I would have known, I would have helped him." Others said they noticed he hadn't been looking well in the days prior. Hindsight is 20/20 and all good intentions are for nothing if we don't follow through to help those we suspect may be in need. Can you imagine what Riley went going through, walking up and finding his friend dead in the vehicle, thinking that he might have been able to do something to prevent Tim's death? What about the other staff that asked about Tim but never followed through? How must they have felt? How long would it have taken to check on Tim and maybe save his life?

Anytime there is a death on the job, it is a horrible thing – especially if it could have been prevented in the first place. I have always been taught, in all of my training, to watch out for others around me. As a crew leader I know of my responsibility to others: to ensure equipment is in good shape and is being used properly. To make sure traffic control and work zones are set up correctly. To be sure the crew has proper safety gear for the job. If it is hot, to have a cooler full of water. If it is cold, to rotate people in and out of vehicles to allow time to warm up. It is my responsibility as the leader.

But this is not just the responsibility of the person in charge. Safety and well-being are everybody's job. You may be the one person who can make a difference in somebody's life. I have pulled more than one person out of the way of oncoming vehicles because they were not watching where they were located in a work zone. I have refused to do a job because I thought it was too dangerous to do under the existing conditions. And yes, I have saved a life because I was able to recognize a medical condition a co-worker was having and talk him into going to see the doctor. His doctor told him if it wasn't for me pressuring him to go, he may very well have died if he had ignored the situation. I don't say these things to make myself seem special – I am not. I say these things because they are true. When I am on a job, whether in the field or in the office, I am my brother's keeper, as each of you should be. I want everybody to go home at night with all of the fingers, toes, and whatever else they came to work with.

I have been involved in the safety aspect of my career for decades now. I have served on safety committees, procedural committees, and panels for employee safety. Over the years I have had multiple training sessions in first aid, CPR, workplace safety, situational awareness,



"You are your brother's keeper – and your brother should be your keeper, too."



and other topics. One of the items I have always taken away from these training sessions is: training is given to protect not only myself, but others around me. I have taught many safety courses and in each one I stress the importance of watching out for fellow workers. The safety and health of others is truly everybody's job, especially in some of the jobs we do where there may be no quick response by rescue crews or others. It is up to us to help.

Most large companies and government employers provide training to their employees. I would hope that most of you reading this article have had some type of First Aid/CPR training as well as other safety training sessions. I hope that each of you knows the symptoms of heat exhaustion, heart attack, stroke, and other conditions. If not, after reading this article, I hope you learn them and maybe ask your employer to provide such training. In today's world, this information is available on the Internet and is easily accessible. Each of you has had some type of experience with the safety and well-being of another person, whether it is a co-worker, spouse, family member, or child. Humans have an innate sense of when something is wrong and should act on that feeling.

Today, as you finish reading this article, take a minute and put yourself in Riley's place. It would have taken a mere moment out of his day to help Tim. Put yourself in the supervisor's position knowing that they should have checked to ensure all of the employees had left for the day. Put yourself in the place of those who were asking where Tim was and never went to find him. Think about Tim's family and friends who will miss him. Then put yourself in Tim's place, sitting in the truck, hurting, not feeling well, alone…

You're not your brother's keeper? YES, YOU ARE! And your brother should be your keeper as well. Let's all go home safe at the end of each and every day.



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25th Annual Good Laboratory Practices Conference

By Mignonne Wint, Chair, Laboratory Practices Committee

The VWEA/VA AWWA Joint Laboratory Practices Committee is proud to announce that the 25th Annual Good Laboratory Practices Conference will be held at the Omni in Charlottesville on July 29-30, 2019. The theme is "Celebrating the VA GLPC Silver Jubilee. New Beginnings built on a 25 Year Foundation." The event will consist of workshops and technical programs.

Workshops will be held on July 29 and will cover the following topics: basic lab skills and techniques, annual calibration timing, water system probes, ion analysis instrumentation, VPDES permits, and gravimetric techniques. Technical programs will be presented on July 30 and will cover the following topics: drinking water, wastewater, and management. There will be an exhibitors' reception on the evening of July 29 with the latest in instrumentation and equipment on display.

The Good Laboratory Practices Conference is an excellent opportunity to meet and network with fellow professionals from all over Virginia and earn CPEs for wastewater and water operators and CECs. Information regarding these worthwhile events, as well as contact information, will be posted on the event pages of the VWEA and VA AWWA websites: *www.vwea.org/event/LPC2019*. Registration opened in mid-May. Be on the lookout for more information to come!

The Laboratory Practices Committee also plans to present a workshop at this year's WaterJAM in Virginia Beach on September 9. This year's theme is "The Rising Tide."

The Laboratory Practices Committee membership is represented by a variety of municipal wastewater and drinking water laboratories, commercial laboratories, as well as regulatory agencies and



laboratory vendors. Meetings are held throughout the year to discuss such interesting topics as laboratory issues, changing methodologies, regulatory concerns, and quality assurance requirements.

There is still time to join the Laboratory Practices Committee and be part of putting together a great conference. Meetings are held at the Henrico County Water Reclamation Facility (9101 WRVA Road, Henrico, VA 23231). Subcommittee meetings start at 10 a.m. and the full committee meeting starts at 11 a.m. There is a short technical presentation and lunch is provided. We encourage everyone interested to join, participate, and take advantage of the wealth of knowledge and experience of our members. For more information, please contact Mignonne Wint: mignonne.*wint@norfolk.gov*.

2019 GLPC AGENDA

Celebrating the VA GLPC Silver Jubilee. "New Beginnings built on a 25 Year Foundation"

July 29, 2019

Morning Workshops: 8:45-11:45

- **Let's Get Into the Ions Part 1: ICP/ICP-MS**, presented by David Bass PerkinElmer; **GC/GC-MS**, presented by Paul Macek, Shimadzu
- **VPDES – Permitting Nuts and Bolts**, presented by Curt Linderman DEQ Water; **Systems, probes, ISE, pH, and DO Workshop**, presented by Peter Poczatek, YSI

Afternoon Workshops: 1:30-4:30

- **Suspend Your Disbelief, Gravimetric Analysis Doesn't Have to Be Tedious**, presented by David Smith, Environmental Express
- **Let's Get Into the Ions Part 2: IC**, presented by Buddy Goodnight, Thermo Fisher Scientific; **CFA,** presented by Sarah Leibenguth, SEAL
- **Basic Lab Skills and Techniques**, presented by Wayne Staples, DEQ; **Annual Calibration Timing**, presented by Jojean Bolton, Fairfax Water

For July 30, 2019, the morning session will consist of four presentations:

- **25 Years of LPC – Past, Present and Future**, presented by Sherry Williams, Newport News Waterworks
- **What are emerging compounds and why should we be concerned?**, presented by William Lipps, Eurofins Eaton Analytical
- **Key Updates on Water Quality and Quantity Regulation in Virginia**, presented by Patrick J. Fanning, Troutman Sanders LLP
- **The Laboratory Certification Timeline in Virginia: Glancing back & focusing forward**, presented by Cathy Westerman, DCLS

The afternoon is split into three sessions with four 30-minute presentations each. The following is a list of the topics to be covered:

Session 1 – Drinking Water

- **UCMR4: The First 18 Months**, presented by William Lipps, Eurofins Eaton Analytical
- **Development of an Automated Method for Off-Flavor Compounds using HS-Trap-Gas Chromatography-Mass-Spectrometry,** presented by Bill Hahn, PerkinElmer
- **1,4-Dioxane, NDMA and Using GC/MS/MS for Environmental Analysis**, presented by Megan Boggio-Pennington, HRSD
- **Source Water Cyanotoxin Monitoring Program at Newport News Waterworks,** presented by Anna Maria Miller, Newport News Waterworks

Session 2 – Wastewater

- **The Impact of Acid Mixtures in Total Recoverable Iron Analysis using Microwave Digestion**, presented by Shannon Labocki, HRSD
- **Automated Solid Phase Extraction (SPE) in Analysis of Contaminants of Emerging Concern (CECs) in Natural Waters**, presented by Dongmei Alvi, Occoquan Water Monitoring Laboratory
- **Ammonia Colorimetric Testing by Gas Diffusion on Segmented Flow Analyzers**, presented by Sarah Leibenguth, SEAL
- **Virus Concentration Method Optimization for Wastewater and Water Reuse**, presented by Hannah Thompson, HRSD

Session 3 – Management

- **Developing successors and talent management. Are you and your Employees taking the right steps?**, presented by Juan Reyes, Fairfax County DPU
- **Cyanotoxin Assessment and Management Plan for a Mid-Atlantic Water Supply**, presented by Mike Hotaling, PE, Newport News Waterworks
- **Comprehensive Review of Interferences with a Comparison of Available Correction Techniques for the Analysis of Water and Wastewater by ICP-MS**, presented by David Bass, PerkinElmer
- **Lab Automation: A Practical Guide to Selecting the Right LIMS**, presented by Ken Ochi, ATL

2019 VWEA Education Seminar

By Jennifer Walsh, Chair, Education Committee

Waste as a resource and the push toward energy neutrality were on the agenda at the 2019 VWEA Education Seminar held at the Westin Hotel in Richmond on May 8-9, 2019. The theme for this year's seminar was "Pulling Common Threads: The Water-Energy-Nutrient Nexus." Industry experts from across the nation, operations staff from Virginia, regional consultants, and manufacturing representatives came together to discuss state-of-the art technologies and innovative approaches to resource recovery and energy efficiency in today's wastewater treatment industry.

The conference kicked off with a Welcome Reception featuring a VWEA Trivia Night where participants formed teams to test their knowledge of water trivia against a room full of water professionals.

The keynote speaker Dr. Nancy G. Love, PhD, PE, BCCE (University of Michigan) presented her research team's findings on the collection and separation of urine for nutrient recovery. Dr. Love's team has had some exciting results using fertilizers derived from collected urine for agricultural applications. Attendees were left with the thrilling question: Is nutrient recovery from urine the key to food stability for the future?

Dr. Love was followed by Jim McQuarrie, PE from Metro Wastewater Reclamation District (Denver, CO), who presented on the District's work to meet permit requirements by greening their operations for improved resource management and recovery. Mr. McQuarrie's presentation was in-theme with the Education Seminar's shift this year to include operator-driven optimization.

A highlight of the seminar was the *Carbon for Energy or Carbon for BNR: A Landmark Case for Resource Management* mock trial, where two teams of wastewater process experts acted as "lawyers" and presented the cases for the use of carbon in a treatment context. The trial was both educational and humorous, provoking many questions on the future of resource recovery infrastructure.

Topics presented during the afternoon breakout sessions included optimizing plant performance with "smart" operators; navigating the interconnectivity of conventional and advanced wastewater treatment to achieve resource recovery; strategic approaches to FOG management; thermal drying for biosolids management; developments in sidestream BioP processes; treating recalcitrant nutrient fractions generated from THP; and the implementation of mainstream shortcut nitrogen removal.



Young professional attendees networking at the Welcome Reception before the water trivia event.

Total registered conference attendees numbered at 170, with 13 exhibitors showing in the Exhibit Hall. Thanks to all who contributed to making this year's conference an overwhelming success!

VWEA is pleased to announce that the 2020 Education Seminar will be preceded by the first annual Virginia Utility Management Conference (two conferences, same location, back-to-back). Mark your calendars for the first annual joint conference to be held on May 6-7, 2020 at the Westin Richmond! If you are interested in joining the committees, please contact:

- Jennifer Walsh, Education Committee Chair, 571-327-4036, *jwalsh@hazenandsawyer.com*
- David Parker, Education Committee Vice Chair, 202-787-2038, *David.Parker@dcwater.com*
- Tim Moore, Education Committee Vice Chair Elect, 757-278-4086, *tim.moore2@tetratech.com*
- Paul Delphos, Utility Management Committee Chair, 757-779-7083, *Paul.Delphos@aecom.com*
- Christene Mitchell, Utility Management Committee Vice Chair, 757-282-9889, *cmitchell@hrsd.com*



Morning Speaker Jim McQuarrie (Denver Metro), Jennifer Walsh (Committee Chair), and Keynote Speaker Dr. Nancy G. Love (University of Michigan).



Industry experts from the mock trial: Beverly Stinson, Samuel Jeyanayagam, Brian Bakke, Chris Wilson. and Wendell Khunjar.

WATERJAM
DIGITAL KNOWLEDGE COMPETITION

Calling Student and YP members to enter the
Digital Knowledge Competition!

DKC presentations are 30 seconds to 2 minutes and should present a concentrated message to showcase recent or ongoing research, or innovative or novel ideas related to the fields of water and wastewater. Video submissions may utilize any combination of footage, photographic images, animation, voice-over, music, humor, etc. to illustrate the message. Presentations will utilize video to engage, educate, and interact with audiences local and remote to WaterJAM.

All Digital Knowledge Presentations will be presented on a dedicated monitor at WaterJAM for the region's Industry Professionals to enjoy! Student and YP winners will be selected. First place and second place winners will be awarded $500 and $250, respectively.

Concise abstracts (max 200 words) must be submitted no later than **Friday, August 16, 2019.**
No video will be reviewed without abstract submission and approval.
Final video submissions must be received no later than **Friday, August 30, 2019.**

Visit www.vwea.org/?page=DigitalKnowledge for more information.

Contact Rebecca Holgate with questions: rholgate@hazenandsawyer.com

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Joint VWEA/VA AWWA Student Activities Committee Announcements

Digital Knowledge Competition

See the flyer on page 30.

Student Design Competition

This year, the 2019 Student Design Competition was held at the Henrico County Water Reclamation Facility in Richmond, VA on April 12. Eight teams entered the competition, making this year's event a full day.

Congratulations to all the teams that participated in this year's competition. This year, Virginia will be represented by George Mason University in the wastewater category and Old Dominion University in the environmental group at the national Student Design Competition at WEFTEC in Chicago, IL.

First-place Wastewater Team: George Mason University



Team: Michael Parker, Michael Quiroga, Amir Akbarzadeh, and Josiah Eidson.

First-place Environmental Team: Old Dominion University



Team: Kyle Bush, Laura Saunders, and Corynn Brett.

Second-place Wastewater Team: Old Dominion University



Team: Zachary Ware, Abdulrahman Ozturk, Anny Guerrero, and Robert Bricker.

Second-place Environmental Team: Virginia Tech



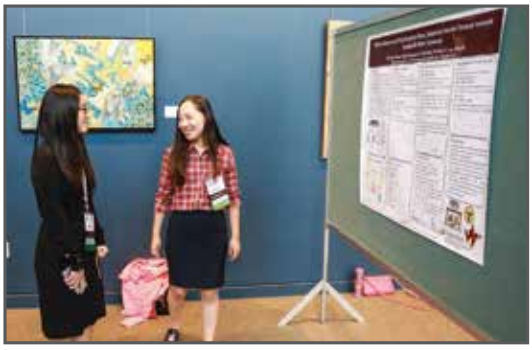
Team: Rachael VanWormer, Akshay Jain, Rusty Rouillier, and Kyung Sun Chung.

A special thanks to the judges who contributed their time and expertise in reviewing the students' work: Maureen O'Shaughnessy (H.L. Mooney Advanced Water Reclamation Facility), James Grandstaff (Henrico County Water Reclamation Facility), Doug Fredericks (HDR, Inc.), and James Pyne (Old Dominion University).

WATER JAM
FRESH IDEAS POSTER CONTEST







An event for students and young professionals

All ideas water and wastewater

The top poster related to drinking water topics will go on to represent the Virginia AWWA Section at the 2019 AWWA Annual Conference and Exposition and win $1,000 to cover travel costs.

The top poster related to a wastewater topic will receive a prize of $1,000.

Jack Lee - jjlee@dewberry.com
Daniel Edgell - daniel.edgell@hydromaxusa.com
Hanna Montoro - Hanna.Montoro@arcadis.com

Abstract Submission Deadline - August 2, 2019 | Abstract Word Limit - 125 words or less

SUBMIT YOUR ABSTRACT TODAY!

VWEA Virginia Water Environment Association



American Water Works Association VirginiaSection

Many Activities are Planned for WaterJAM 2019

The WaterJAM Young Professionals Committee is more active than ever! With so many events planned for WaterJAM 2019, there will be plenty of opportunities for young professional attendees to get involved.

This year's Young Professionals Committee-sponsored **Service Project** will be a "Clean the Creek" event held with the Virginia Aquarium. This will be a great way for young professionals to become hands-on and help clean up the local environment.

Come engage in the **Young Professionals Workshop** "Growing with the Industry: Where Water Can Take You." The speakers and panelists will provide a variety of insights from across the public and private sectors. This workshop is designed to speak directly to YOU. Some potential topics include choosing a path in the industry, networking, continuing education, and much more!

The **Digital Knowledge Competition** and the **Fresh Ideas Poster Contest** are both amazing opportunities for young professionals and students to demonstrate their work in water and wastewater to a large group of industry professionals – not to mention compete for a chance to win cash prizes and recognition. The Digital Knowledge Competition allows students and young professionals to present their research and/or design project via video format to engage, educate, and interact with local and remote audiences. The winning videos will be shown at the WaterJAM banquet for all to see!

The Fresh Ideas Poster Contest is also a great way for young professionals and students to display and present work in a more traditional poster format. Their posters will be presented to judges at WaterJAM 2019 and will be displayed in the lobby for all industry professionals to view and discuss.

Once again, the WaterJAM Young Professionals Committee will be hosting the **Cornhole Challenge** booth in the Exhibit Hall. Use this space to take a break between seminars and challenge fellow conference attendees to a game of cornhole. Enter to win a brand new set of regulation cornhole boards!

The **Young Professionals Committee Meeting** held at WaterJAM is open to all young professionals and is the perfect opportunity to network with fellow young professionals, find out about young professionals events around the state, and learn how to get more involved! The Young Professionals and Student Reception immediately follows the Young Professionals Committee Meeting, so attendees can continue to network while enjoying some light appetizers and drinks.

Having young professionals at WaterJAM is not just beneficial to the young professionals themselves, but also to their employers through the skills and relationships that develop from the various events and seminars. If you are a young professional who needs justification for your employer to send you to WaterJAM, participation and involvement in the Young Professionals Committee and its events will get you there!

Visit the Committee's page (*https://vwea.site-ym.com/page/YoungProfessionals*) to find your regional Vice Chair's current contact information. Questions regarding any WaterJAM young professionals event can be directed to Allison Lee: *alee@hazenandsawyer.com*.

WaterJAM 2019 Young Professionals Workshop: "Growing with Industry: Where Water Can Take You"
Tuesday, September 10
1:30 p.m. to 5 p.m.

The water industry provides infinite opportunities for all professionals, especially young professionals. What are the various career pathways? How can young professionals determine their path while realizing their full potential? How can all professionals develop their networking circles? What skills and continued education have current project managers and industry leaders found useful in achieving their goals?

This session will answer these questions and more during three 30-minute presentations and a 60-minute panel discussion focused on the theme of career growth. The presentations will be delivered by leaders in the water industry from around the Commonwealth. The panel discussion, including audience Q&A, will provide the opportunity to dive deeper into specific topics regarding carving your path within the industry.

The speakers and panelists, including Andrew Newbold (Hazen and Sawyer), Jason Kerns (HDR), and Patrick Lewis (Dewberry), will provide a variety of insights from across the public and private sectors. Potential topics include how to choose your path in the industry, networking, continuing education, how to be the most efficient and effective in leaving your mark, and more!

Contact Stephanie Acosta (*sacosta@dewberry.com*), Kelsey Kenel (*kelsey.kenel@hdrinc.com*), or Ashly Thomas (*athomas@hazenandsawyer.com*) for additional information.



Member Spotlight

Each year the VWEA recruits, attracts, and adds new members to its ranks. Our diverse membership includes students, academics, and professionals (working and retired) from the public and private water industry and beyond. A list of recent member additions and their current affiliations (if known) are presented below. You can get to know a little more about our current membership by checking out the member bios included herein.

Yousuf Akbari
Amirabbas Akbarzadeh
Mayasa Al Mahdawi
Carey Allen, Kiewit Water
Maxwell Bijak, Fairfax County
Murilo Bizon
Nathan Blanton
Crystal Bloom
Chase Blunt, Henrico County Water Reclamation Facility
Beverly Boateng
Robert Bricker
Miesha Brock, Alexandria Renew Enterprise
R. Burkart, Prince William County
Kyle Bush
Kelly Butcher, Alexandria Renew Enterprise
Grace Carter
Julianne Chechanover, Arcadis
Jenn Clarke, City of Richmond
Jen Cobb
Ryan Cole
Kiet Do
Rex Downs, Water Pollution Control Division, Town of Leesburg
Amelia Flanery
Gregory Grim, Frederick County Sanitation Authority
Nikolai Gurdian
David Hall, Alexandria Renew Enterprise
Ladonna Hardy-Wilson, City of Richmond
Robert Hoover, Fairfax County Wastewater Collection
Ju-Hsuan Huang
Daniel Huff, Alexandria Renew Enterprise
Chad Huskey, Daparak, Inc.
Yvonne Johnson
Christopher Kelly
Ronald King
Ian MacDougall, Balfour Beatty Infrastructure, Inc.
Ray Masters, Daparak, Inc.
Jeffrey Merritt, RJN Group
Austin Moody, Alexandria Renew Enterprise
Nhan Nguyen, Alexandria Renew Enterprise
Natasha Nicholson, O'Brien & Gere Engineers, Inc.
Mishelle Noble-Blair, Upper Occoquan Service Authority
Craig Pearson, OBG
Seth Poe
Clinton Popp
Michael Quiroga
Sara Rashid, Fairfax County Government
Noel Reyes, Alexandria Renew Enterprise
Tom Sansoni
Chris Santaniello
Paul Schaufert
Cindy Sherman, Stoney Creek Sanitary District
Jay Sim
Daylan Smith
Michael Spangler, Water Pollution Control Division, Town of Leesburg
Horace Stephenson, Alexandria Renew Enterprise
Breon Stratton, Alexandria Renew Enterprise
Kirk Sutton, Hazen and Sawyer
Brittany Szczepani
Rachel Vanwormer
James Wentzel
Andy Whaley
Grant Whittle
David Wilcox
Sarah Williams
Justin Wilson
Jordan Word



Name: NICOLE SCHNEITER

Month or Years with VWEA: 1 year
Company/profession: Aegis Environmental, Inc.
Years of Experience: 2.5 years
Home Town: Orlando, FL

What kind of projects do you work on? ESC inspections at solar construction sites and supporting LDAR programs and air compliance at chemical plants.

What drew you into joining VWEA? I was interested in joining VWEA to become more involved in my community and to meet people with the same professional interests and passions as me. As a consultant, I also work with all mediums (not just water), so VWEA allows me to stay up to date on what's happening in the water world.

What is your favorite thing to do outside the office? I love running, cooking, yoga, discovering new breweries, and enjoying a glass of wine with friends on my front porch in the fan!



Name: KATHLEEN WHITTEN, P.E.

Month or Years with VWEA: 1 year
Company/Profession: Senior Project Engineer, Loudoun Water, Ashburn, VA
Years of Experience: 10 years
Home Town: Rockport, MA

What kind of projects do you work on? I manage the design of Loudoun Water's capital projects and studies. I work on linear and vertical water and sewer projects, assessments, and studies. I am currently working on the design of a new 1 MGD sewer pump station, improvements to two smaller sewer pump stations, a 30-inch-diameter raw water pipeline across a reservoir, and Loudoun Water's risk and resiliency assessment.

What drew you into joining VWEA? Many of my co-workers are members and my abstract was accepted at WaterJAM last year. I presented on Loudoun Water's pipe replacement program before the conference was ended prematurely.

What is your favorite thing to do outside of the office? Gardening, riding bikes, creating experiments, and doing arts and crafts with my daughter.



Name: KRISTEN WALLS

Months or Years with VWEA: 2 months
Company/Profession: Environmental Scientist, Tetra Tech
Years of Experience: 3 years
Home Town: Mechanicsville, VA. I currently reside in Virginia Beach, VA.

What kind of projects do you work on? Groundwater sampling and data management, stormwater infrastructure surveys and assessments, preliminary assessments, and report writing.

What drew you into joining VWEA? After joining Tetra Tech, I heard about VWEA and thought it was great way to network with other like-minded professionals.

What is your favorite thing to do outside of the office? Kayaking, boating, hiking, running, and traveling.



Name: JOANNE CARPENTER

Month or Years with VWEA: 1 year
Company/Profession: Director of R&D, CHEMetrics, Inc.
Years of Experience: 35+ years
Home Town: Plymouth, MA

What kind of projects do you work on? Product development, manufacturing, marketing, and technical support.

What drew you into joining VWEA? It is a chance to learn about analytical challenges in the wastewater arena and network with analysts and vendors.

What is your favorite thing to do outside of the office? Hike, kayak, and research genealogy.



Name: MONIKA BUELTEL

Month or Years with VWEA: 1 year
Company/Profession: Water/Wastewater Engineer, Greeley and Hansen
Years of Experience: 2 years
Home Town: Minneapolis, MN

What kind of projects do you work on? Since I'm a young engineer, I am gaining experience in a variety of projects to uncover what specialization interests me the most. Currently I work on both water and sewer projects. For water work, I am on the project management team at a newly constructed water treatment facility, assisting with project closeout. For sewer work, I am primarily focused on inflow and infiltration (I&I) studies, working both on a project analyzing flow meter data for I&I severity and a project with field work inspecting manholes for potential I&I. I enjoy the variety of office, site, and field work.

What drew you into joining VWEA? The events that are organized through VWEA, especially for young professionals, are what drew me to joining VWEA.

What is your favorite thing to do outside of the office? My favorite thing to do outside of the office is spend time outside with friends and family! I enjoy running, hiking, kayaking, and reading on the beach. ⊖

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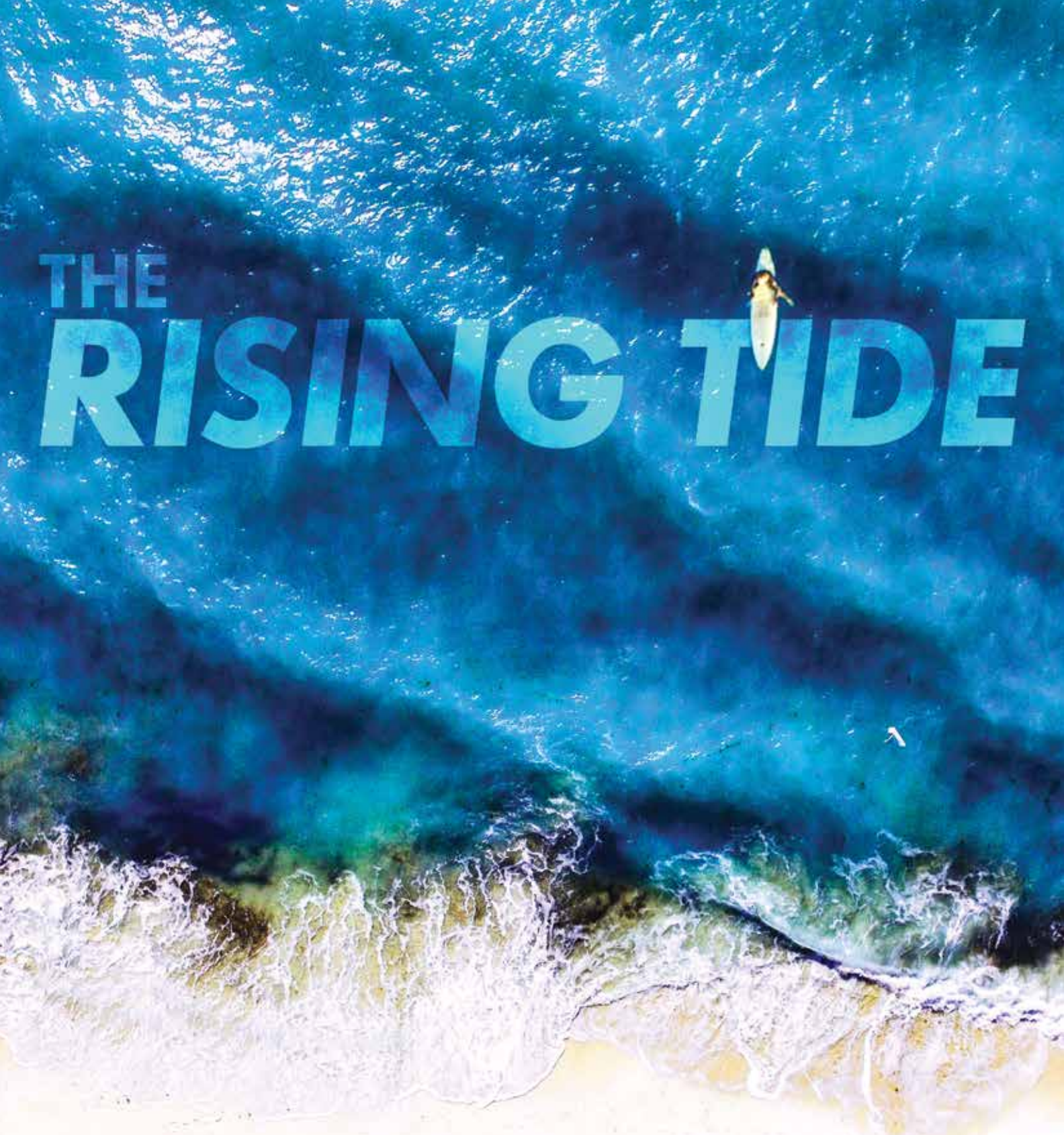
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WATERJAM 2019

September 9 - 12, 2019

Virginia Beach, VA

SUSTAINABILITY INITIATIVES

The 2019 WaterJAM Committee, along with the Sustainable Utilities Committee, is proud to announce we are continuing our "Going Green" initiative and are seeking to be the greenest WaterJAM conference to date! Be on the lookout for the usual sustainable "green" initiatives such as multiple recycling stations, locally-sourced menu options, and local vendor products. This year we will be promoting plastic reduction since we are seeing the effects of years of plastic usage in our oceans and injuries to our wildlife.

This will be the fifth year that our exhibitors can earn "The Tidy Otter" Award for Sustainability! Each exhibitor meeting our Sustainable Exhibitor requirements will receive an award to be posted at their exhibit, and their company name will receive special recognition on all exhibit hall maps. Be on the lookout for "The Tidy Otter" award at participating exhibitors' booths!

Other continuing initiatives include:

- Reducing the number of signs and handouts through the use of double-sided printing.
- Printing reusable signs on recyclable material.
- Printing attendee planners and banquet menus on recycled, processed, chlorine-free paper.
- Continued improvement to the WaterJAM App to reduce the use of paper products.
- Locating off-site events within walking distance or providing group transit options.
- Having water bottle filling stations available during the conference.
- Eliminating use of single-serve condiments, sugar, and creamer.
- Reusing lanyards.

Please support our efforts by participating in recycling efforts; using the water-fill stations with reusable water bottles; walking, carpooling, or taking mass transit to off-site events; and reducing your usage of materials during the conference. If you still have your lanyard from last year – or from another event – bring it and reuse it. Then be sure to return your lanyard at the end of the conference so that it can be reused next year! If you have ideas for next year's conference, please contact Andrea Edgerton (*aedgerton@hazenandsawyer.com*).





WELCOME!

On behalf of the Virginia Section of the American Water Works Association and the Virginia Water Environment Association, we want to extend a warm invitation to the 2019 Joint Annual Meeting in Virginia Beach, Virginia, this September.

As water, wastewater, and stormwater infrastructure challenges fill the headlines more than ever before, water professionals continue to rise and meet these challenges head on! Our theme, The Rising Tide, highlights our industry's commitment to excellence in protection of the public and the environment, and the continued development of breakthrough processes and technologies that will allow us to tackle tomorrow's most daunting problems. The networking and technical education opportunities at WaterJAM are designed to concentrate on these focus areas.

In order to build on our history of successful and growing conferences, the WaterJAM 2019 Committee has been working tirelessly to once again host the premier State Conference for water, wastewater, and stormwater professionals.

As always, WaterJAM 2019 will provide numerous technical growth opportunities (including continuing education credits) covering the latest industrial trends as well as a variety of social activities for all attendees. You can expect outstanding presentations and workshops, along with fun social events that will provide many opportunities for networking with friends and colleagues.

We are extremely excited about this year's conference, which is guaranteed to maintain the standard of excellence you have come to expect from the Virginia WaterJAM!

Adrianna Dimperio
Conference Co-Chair

Matt Harrison
Conference Co-Chair

P.S. Don't forget to follow us on Facebook (*facebook.com/VirginiaWaterJAM*) and Twitter (*@WaterJAM_VA*). ⊖

Join the Party!
Become a WaterJAM Volunteer!

It takes hundreds of volunteers to make the WaterJAM conference a success! If you are planning to attend WaterJAM, please consider volunteering a few hours of your time to help with the logistics and on-site aspects of events throughout the conference. (Please note: volunteers will NOT receive free registration.)

If you are willing to help, please contact Kimberlee Stubbs at *STU005@henrico.us* or 804-501-7633 to sign up.



LOCATION

THE VIRGINIA BEACH CONVENTION CENTER

1000 19th Street, Virginia Beach, VA 23451

All conference technical sessions and exhibits will be held at the Virginia Beach Convention Center (VBCC), the nation's first convention center to earn LEED® Gold certification from the U.S. Green Building Council.

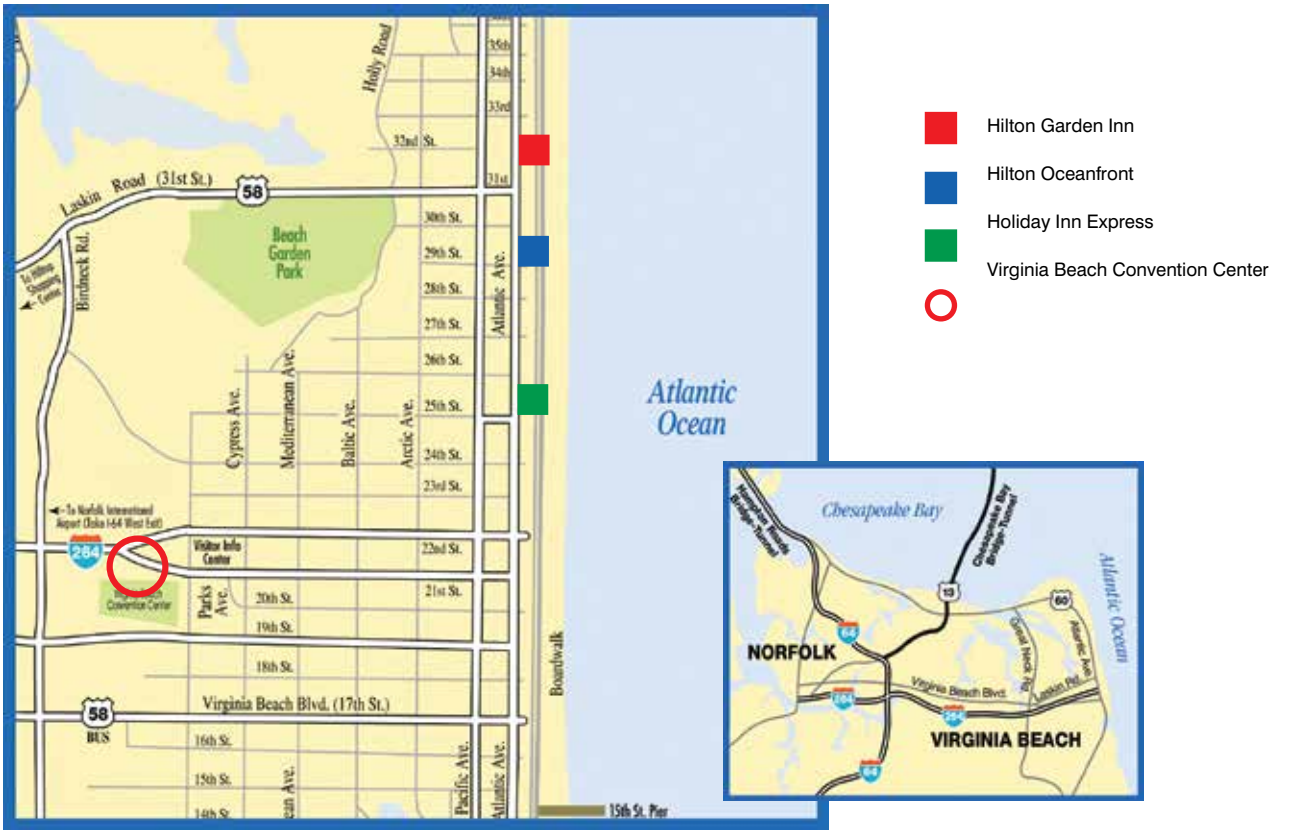
With nearly 29,000 square feet of meeting space, over 150,000 square feet of column-free exhibit space, one of the largest ballrooms on the East Coast, and more than 2,200 free parking spaces, it's the perfect location for WaterJAM 2019!

Located only minutes from the beach and resort area, the VBCC is convenient to a variety of arts and entertainment venues and family-friendly attractions, so you can enjoy new sights, sounds, and culinary delights within a short ride of the conference center.

DRIVING DIRECTIONS

When approaching from the west, routes are I-64, U.S. 460, or U.S. 58. From the north and south, convenient routes include I-85 or I-95, U.S. 17, and U.S. 13 (crossing the world-famous Chesapeake Bay-Bridge Tunnel, a 17-mile span connecting Virginia's Eastern Shore with Virginia Beach). These routes intersect with I-64, which connects with the Virginia Beach-Norfolk Expressway (I-264) and leads directly to the Virginia Beach oceanfront.

When traveling from routes northwest of the Hampton Roads region, motorists are encouraged to use a faster, alternate route via I-664 Monitor Merrimac Memorial Bridge Tunnel (MMMBT), off of I-64 East. While the mileage to reach the beach is greater, I-664 tends to be less congested and the time spent idling in traffic is statistically reduced. Simply take I-64 East to I-664 (Exit 264) to I-264 (Exit 15A), which will lead to the oceanfront. When leaving to return home, take I-264 West to I-664 North (Exit 299) to I-64 West (Exit 1A).



AIR TRAVEL

Norfolk International Airport (*www.takeorf.com*) is 20 minutes from the Virginia Beach oceanfront and is serviced by most major U.S. carriers. The IATA airport code for Norfolk International Airport is ORF.

Allegiant, American, Delta, Frontier, Southwest, and United offer convenient access to hundreds of cities worldwide. Airport terminals are open 24 hours a day, seven days a week. Travelers are encouraged to contact their airline for ticket counter hours and required check-in times.

Be sure to also allow extra time to complete the security screening process. In general, the recommended arrival time at the airport is 90 minutes prior to departure time for domestic flights and two hours for international flights.

GROUND TRANSPORTATION

SHUTTLE SERVICE

James River Transportation
757-963-0433 or 866-823-4626

Shuttle service operates between Norfolk International Airport and Coastal Virginia/Northeast North Carolina cities. Reservations are not required for arriving passengers but are recommended. James River Transportation's counter is located in the Arrivals Terminal (baggage claim area) near Baggage Carousel 3 and is staffed 24 hours daily.

RENTAL CARS

Rental car reservation desks are located in the Arrivals Terminal on Level 1. Hours of operation: 4:30 a.m. to 1:00 a.m. daily. Rental car pick-up located on Level G – Garage A. Rental car return is located on Level 2 – Garage A.

Alamo: 800-462-5266
Enterprise: 800-736-8227
Avis: 800-831-2847
Hertz: 800-654-3131
Budget: 800-527-0700
National: 800-227-7368
Dollar: 800-800-4000
Thrifty: 800-357-2277

RIDE HAILING

Lyft and Uber are permitted to do business at Norfolk International Airport.

TAXIS

Taxis are located outside Arrivals Terminal Door #4. Five ride for the price of one to the same destination. Drivers accept cash and some credit cards.

Andy's Cab Co.: 757-461-8880
Norfolk Checker: 757-855-3333
Black and White: 757-855-4444
Oceanside Executive: 757-455-7602
City Wide Cabs: 757-319-3368
Southside Cab: 757-423-0154
Duke Cab Co.: 757-202-3564
Waterside Taxi: 757-531-6430
East Side Cabs: 757-718-0937
Yellow Cab of Norfolk: 757-857-8888

PUBLIC TRANSPORTATION

Hampton Roads Transit (HRT) provides public transportation in the Virginia Beach area. VB Wave is an easy way to get around the Virginia Beach Oceanfront. Wave trolleys make stops along Atlantic Avenue at the Virginia Aquarium, the Ocean Breeze Water Park, the Holiday Trav-L-Park, the KOA campgrounds on General Booth Boulevard, and the Shops at Hilltop. These hybrid electric shuttles are also a lot of fun. For routes, stops, and fares, go to *www.gohrt.com/services/vb-wave*. To travel further afield, check *www.gohrt.com* for information about HRT's bus, ferry, and light rail services. ⊖

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www.hiltongardeninnvirginiabeach.com
Rate: $149 single and double
(rates DO NOT include tax)
Parking: free self-parking; $16 valet parking
Online reservations: *http://bit.ly/2K5Mn2x*
Group Name: WaterJAM 2019
Group Code: WAJ (use this code to take advantage of the discounted group rate)
Reservation deadline: August 8, 2019

HILTON VIRGINIA BEACH OCEANFRONT

3001 Atlantic Avenue,
Virginia Beach, VA 23451
Phone: 757-213-3000
Toll-free reservations: 1-800-HILTONS
www.hilton.com/en/hi/hotels/index.jhtml?ctyhocn=ORFVHHF
Rate: $159 city view/$169 ocean view
(rates DO NOT include tax)
Parking: $10/night self-parking;
$16 valet parking
Online reservations: *http://bit.ly/2VloHIB*
Group Name: WaterJAM 2019
Group Code: WAJ
(use this code to take advantage of the discounted group rate)
Reservation deadline: August 8, 2019

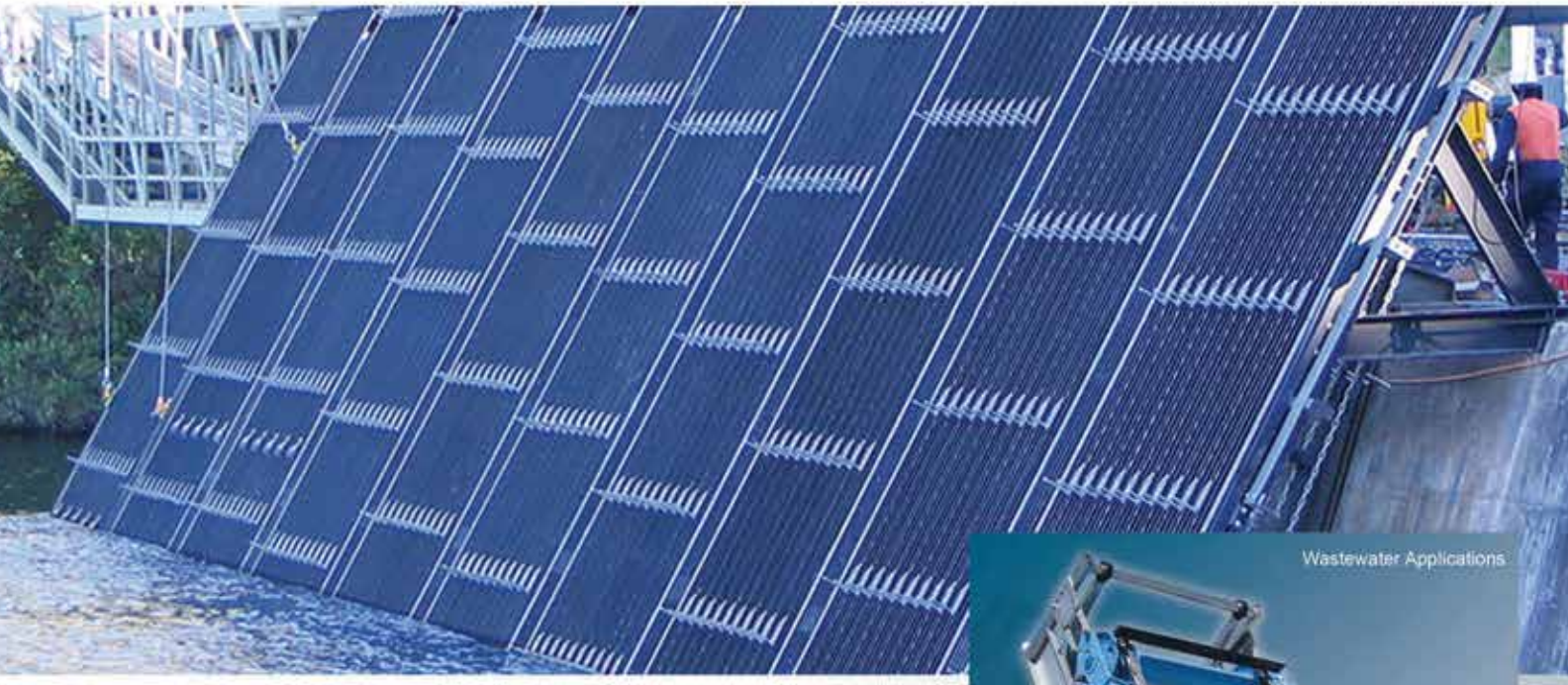
HOLIDAY INN EXPRESS

2607 Atlantic Avenue,
Virginia Beach, VA 23451
Phone: 757-491-6900
Toll-free reservations: 1-800-HOLIDAY
www.hiexpressvb.com
Rate: $99 single and double
(rates DO NOT include tax)
Breakfast included;
one complimentary parking space/room
Online reservations: *http://bit.ly/2Kp8lOj*
Group Name: 2019 Annual WaterJAM
Reservations Code: JAM
(use this code to take advantage of the discounted group rate)
Reservation deadline: August 9, 2019

BOOK INSIDE THE BLOCK!

We encourage conference participants to stay at our designated host hotels because our contracts stipulate that the price we pay depends on the number of hotel rooms we say we can fill. We have to make this prediction when we sign the contract – as much as two years before the conference. However, if we fall short of our room block, we have to pay for empty hotel rooms. Therefore, we respectfully request that you reserve only the rooms you'll actually use. When you overbook and then cancel your reservations at the last minute, we run the risk of failing to meet our room block. Meanwhile, other participants are forced to stay at non-conference hotels, often at higher rates and/or farther away from the conference venue. ⊖

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Ryland Brown	(704) 756-0088	ryland@clearwaterinc.net
Ed Houchens	(804) 306-6176	ehouchens@clearwaterinc.net

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EDUCATION CREDITS

All technical sessions potentially qualify for professional engineer's education credits. Continuing education credit hours (CECs) as defined by Virginia regulation 18 VAC 10-20-683 are offered to professional engineers for attending technical presentations during the conference. Each technical presentation will be 25 minutes in length and represents 0.5 CECs. It is the responsibility of the individual seeking the CECs to determine the applicability of the respective technical presentation(s) in meeting their individual licensure continuing education needs and requirements. VA AWWA and VWEA CECs are transferable to professional development hours (PDHs), where 1.0 CEC equals 1.0 PDH.

VA AWWA and VWEA are providing continuing professional education credits (CPE) for waterworks and wastewater operators for attendance at some technical presentations, mobile sessions, and workshops during the WaterJAM conference. Each approved technical presentation or mobile session will be worth 0.5 CPEs. Each technical presentation will be 25 minutes in length. Each mobile session will consist of three hands-on presentations and will be 50 minutes in length. All presentations or sessions listed in the planner that are eligible for credit have a symbol (as shown).


Wastewater


Water

Name badges will be marked with a QR code and Assistant Moderators will be scanning badges following each presentation. Attendees must have their badge scanned after each presentation in order to receive credit. (Note: all presentations, regardless of whether a symbol is presented, are eligible for Professional Engineering credits.)

EXHIBITOR INFORMATION

With its largest layout EVER, the WaterJAM 2019 Exhibit Hall will host over 200 exhibitors and hands-on demonstration trailers showcasing the latest in water, wastewater, and stormwater technology, equipment, and services. Vendor representatives will be displaying the latest products and services available, providing information to keep you up to date on advances in the industry. There will be utility competitions, the Water For People raffle, the Cornhole Challenge, and the Networking Reception featuring the Water Reach Silent Auction! As always, snacks, refreshments, and meals will be available in the Exhibit Hall.

Once again blending technical programming with the exhibition experience, Mobile Sessions will return to the Exhibit Hall this year. Mobile Sessions offer attendees the opportunity to earn education credits for attending a set of Exhibitor presentations given at their booths. Exhibitors will have the opportunity to volunteer for this program, which has proved very popular since it was introduced in 2017!

The Sewer and Water Art Gallery (SWAG) is also returning this year. SWAG is a "museum" that showcases many of the strange items that Virginia's sewer and water industry professionals have encountered while working in the field. Visitors are allowed to vote for their favorites, with the top three exhibits receiving awards. As in years past, this exhibit is certain to be entertaining, educational, and enlightening!

Continuing our efforts to make WaterJAM a certified Virginia Green sustainable event, every exhibitor who qualifies as part of our going green initiative will receive the Tidy Otter Sustainable Exhibitor Award to be displayed at their booths.

WaterJAM continues to be the largest water, wastewater, and stormwater focused technical exhibit in the Mid-Atlantic region, so don't miss out this year! Find more information about exhibiting at WaterJAM 2019 at *www.vaawwa.org* or *www.vwea.org* or *http://bit.ly/2Haxzer.*

EDDY AND NILES ARE BACK!

Eddie and Niles are returning to WaterJAM 2019 for more fun! Niles is WEF's smiling and friendly crocodile mascot, and Eddy is AWWA's bright-eyed, tennis shoe-clad water drop mascot. The two of them will be hanging out in the Exhibit Hall and Registration Area of the conference, so stop by, say "Hi," and get your picture taken with them. Don't forget to share your pic on Twitter using #WaterJAM19!



PROFESSIONAL HEADSHOT PHOTOGRAPHY

Do you need a professional photo to include with your bio? Is your current headshot looking a little dated? We have the answer!

The WaterJAM Committee is excited to offer the services of a professional photographer to this year's attendees. For the low cost of only $35, you can have your portrait taken right on site! You will be given a unique hyperlink to a website where you can view and download your high-resolution photos.

Only 100 appointments will be scheduled, so register early! Select the Headshot Photography option on the registration form. If you wish to have your photo taken but need to pay for it separately, you can return to the registration site and add it after your initial registration is complete. Alternatively, you can sign up at the registration desk when you arrive at WaterJAM.

UTILITY TRAVEL GRANTS

Each year, VA AWWA's Membership Engagement Committee awards grants to small utility employees to offset the cost of attending the conference. The grant monies are to be used for travel, lodging, and conference-related expenses only. The purpose of the grant is to increase the involvement of small water systems and encourage participation by individuals who may not otherwise have been able to attend.

Applications are available on the VA AWWA website (*www.vaawwa.org*). For more information or application forms, please contact Geneva Hudgins (434-386-3190 or *Geneva.Hudgins@vaawwa.org*).

GET THE WATERJAM APP

Stay connected at WaterJAM 2019 with our mobile app. You can view the full conference schedule and sort/filter Technical Sessions. You can also customize and save your personal schedule right in the app! Other features include:

- Search capability.
- Maps of the Meeting Rooms and Exhibit Hall.
- Details about exhibitors and VA AWWA/VWEA sponsors.
- Speaker contact information.
- Local info (transportation, hotels, and restaurants).

The app will be available for download directly from Apple iTunes or Google Play approximately one month prior to the start of the conference.

HOW TO REGISTER

We strongly encourage you to use the online registration system: *http://bit.ly/2Haxzer.* (Note: the new site cannot handle multiple registrations; therefore, only one registration can be completed at a time.) If paying by check, you can print the forms from the pdf version of this planner (*www.vwea.org* or *www.vaawwa.org*). Please consider the environment and print only the pages you need.

WHAT'S INCLUDED IN YOUR REGISTRATION?

Full Conference Registration

Opening Night Meet & Greet Reception; Keynote Session; All Technical Sessions; Mobile Sessions; Exhibits; Continental Breakfast, Lunch, and Breaks each day; Networking Reception featuring the Water Reach Silent Auction; Awards Banquet Reception or the YP & Student Reception; and the Awards Banquet & Fun Night. (Note: the Exhibitor Rate does not include the Meet & Greet Reception or the Awards Banquet & Fun Night.)

Single-day or Half-day (Thursday) Registration

Technical Sessions; Mobile Sessions; Keynote Session (Tuesday only); Exhibits; Breakfast, Lunch, and Breaks on the day registered.

Exhibit Hall Pass (Utility Staff on Wednesday Only)

Exhibits, Breakfast, Lunch, and Breaks.

Extras

The Golf Tournament, Clay Shoot, 5K Fun Run, Special Breakfasts, Workshops, and Plant Tours are not included in the conference registration packages and require additional fees.

Extra tickets for the Awards Banquet & Fun Night, Meet & Greet Reception, and Networking Reception may be purchased to supplement single day packages.

Note: The YP Service Project and Orientation Breakfast are free events.

REGISTRATION BASICS

All speakers, volunteers, and individuals attending workshops, technical sessions, exhibits, and social functions are required to be registered and admission to all events, including receptions, luncheons, and the banquet will require a registration badge. Pre-registered attendees may pick up their name badges and program materials at the registration desk located near Box Office B at the times listed in the conference overview.

Registration Deadlines >>	Early Bird Rate On or before 8/9/2019	Regular Rate After 8/9/2019
Full Conference		
Member	$410.00	$480.00
Non-member	$475.00	$555.00
Plant, Collection System, Distribution or Maintenance Staff	$250.00	$275.00
Exhibitor	$235.00	$275.00
Retiree/Guest/Spouse	$130.00	$130.00
Student	FREE	FREE
Single Day		
Member	$255.00	$280.00
Non-member	$320.00	$350.00
Plant, Collection System, Distribution or Maintenance Staff (Full Conference)	$120.00	$145.00
Exhibit Hall Pass (Only on Wednesday for Utility Plant, Collection System, Distribution or Maintenance Staff)	$50.00	N/A
Retiree	$80.00	$80.00
Student	FREE	FREE
Half-Day Thursday		
Member	$125.00	$145.00
Non-member	$155.00	$170.00
Plant, Collection System, Distribution or Maintenance Staff	$50.00	$65.00
Retiree	$50.00	$50.00
Student	FREE	FREE



SUNDAY, SEPTEMBER 8

1 PM - 4 PM	Water Taste Test	Virginia Beach Boardwalk at 31st Street
2 PM - 4 PM	VWEA Board Meeting	Meeting Room 3A
3 PM - 4:30 PM	VA AWWA Board Meeting	Meeting Room 3B

MONDAY, SEPTEMBER 9

7 AM - 5 PM	Registration Desk Open	Pre-Function Area (Lobby)
7:30 AM - 3 PM	WaterJAM Golf Outing & Cookout	The Signature at West Neck, Virginia Beach, VA
8:45 AM - 2 PM	WaterJAM Clay Shoot	Old Forge Sporting Clays, Providence Forge, VA
9 AM - 11 AM	YP-Sponsored Service Project	Virginia Aquarium & Marine Science Center, Virginia Beach, VA
2 PM - 6 PM	Exhibitor Set-Up	Exhibit Hall ABC
7 PM - 10 PM	Meet & Greet Reception	Hilton Virginia Beach Oceanfront, Peacock Ballroom

PRE-CONFERENCE WORKSHOPS:

8 AM - 5 PM	Laboratory Practices Workshop (Full Day)	Meeting Room 2CD
1 PM - 5 PM	Wet Weather Storage Solutions (Half Day)	Meeting Room 2B
1 PM - 5 PM	What Does it Mean to be a Sustainable Utility? (Half Day)	Meeting Room 2A
1 PM - 5 PM	Enhanced Coagulation Strategies – Testing, Operations, and Optimization (Half Day)	Meeting Room 1B

TUESDAY, SEPTEMBER 10

6:30 AM - 8 AM	Water For People 5K Fun Run/Walk	Virginia Beach Boardwalk at 31st Street
7 AM - 5 PM	Registration Desk Open	Pre-Function Area (Lobby)
7 AM - 5 PM	Speaker Ready Room	Show Managers' Room
7:30 AM - 9 AM	Keynote Session Continental Breakfast	Outside Meeting Room 1BCD
7:30 AM - 9 AM	Orientation Breakfast	Meeting Room 2AB
7:30 AM - 11 AM	Exhibitor Set-Up	Exhibit Hall ABC
9 AM - 11:30 AM	Keynote Session	Meeting Room 1BCD
11:30 AM - Noon	Grand Opening of Exhibits	Exhibit Hall ABC
11:30 AM - Noon	VA AWWA 1st Business Meeting	Meeting Room 1BCD
11:30 AM - 6:30 PM	YP Cornhole Challenge	Exhibit Hall ABC
11:30 AM - 6:30 PM	Sewer and Water Art Gallery	Exhibit Hall ABC
11:30 AM - 6:30 PM	Committee Meetings	Meeting Rooms 5A & 5B
Noon - 1:30 PM	VWEA Membership Appreciation & Awards Luncheon	Ballroom 1
Noon - 1:30 PM	Lunch for Those Not Attending VWEA Luncheon	Exhibit Hall ABC
1 PM - 1:30 PM	Moderator and Assistant Moderator Orientation	Show Managers' Room
1:30 PM - 5 PM	Concurrent Technical Sessions 1-10	Various Meeting Rooms
2 PM - 3 PM	Mobile Session 1	Exhibit Hall (Meet in Registration Area)
2 PM - 6 PM	Water Reach Silent Auction (bidding)	Exhibit Hall ABC
3 PM - 4 PM	Break	Exhibit Hall ABC
4 PM - 5 PM	Mobile Session 2	Exhibit Hall (Meet in Registration Area)
5 PM - 6:30 PM	Networking Reception Featuring the Water Reach Silent Auction	Exhibit Hall ABC
7 PM onward	Free Night	

WEDNESDAY, SEPTEMBER 11

7 AM - 8 AM	VWEA Golden Rodent Breakfast (VWEA Past Presidents)	Meeting Room 5C
7 AM - 8:30 AM	Utility Managers' Breakfast	Meeting Room 1B
7 AM - 5 PM	Registration Desk Open	Pre-Function Area (Lobby)
7 AM - 5 PM	Speaker Ready Room	Show Managers' Room
7:30 AM - 9 AM	Continental Breakfast	Exhibit Hall ABC
7:30 AM - 4 PM	Exhibition Area Open	Exhibit Hall ABC
7:30 AM - 4 PM	YP Cornhole Challenge & Raffle	Exhibit Hall ABC
7:30 AM - 4 PM	Sewer and Water Art Gallery	Exhibit Hall ABC
8 AM - 8:30 AM	Moderator and Assistant Moderator Orientation	Show Managers' Room
8 AM - Noon	YP Poster Session	Pre-Function Area (Lobby)
8 AM - 2 PM	VA AWWA Student Water Challenge Workrooms	Meeting Rooms 4D, 4E, 5A, 5B
8:30 AM - Noon	Concurrent Technical Sessions 11-20	Various Meeting Rooms
9 AM - 6 PM	Committee Meetings	Meeting Rooms 1B & 5C
9 AM - 10 AM	Mobile Session 3	Exhibit Hall (Meet in Registration Area)
10 AM - 11 AM	VA AWWA 2nd Business Meeting & Section Forum	Meeting Room 3AB
10 AM - 11 AM	Break & VWEA Ops Challenge Demonstrations	Exhibit Hall ABC
11 AM - Noon	Mobile Session 4	Exhibit Hall (Meet in Registration Area)
Noon - 1:30 PM	VA AWWA Membership Appreciation & Awards Luncheon	Ballroom 1
Noon - 1:30 PM	Luncheon for Those Not Attending VA AWWA Luncheon	Exhibit Hall ABC
1:00 PM - 1:30 PM	Moderator and Assistant Moderator Orientation	Show Managers' Room
1:30 PM - 5 PM	Concurrent Technical Sessions 21-30	Various Meeting Rooms
1:30 PM - 2 PM	WEF Student Design Competition Wastewater Team Presentation	Meeting Room 4AB
2 PM - 2:30 PM	WEF Student Design Competition Environmental Team Presentation	Meeting Room 4AB
2 PM - 3 PM	Mobile Session 5	Exhibit Hall (Meet in Registration Area)
2:30 PM - 5 PM	VA AWWA Student Water Challenge Presentations	Meeting Room 4AB
3 PM - 4 PM	Break & VA AWWA Distribution Rodeo Demonstrations	Exhibit Hall ABC
3 PM - 4 PM	VWEA Business Meeting	Meeting Room 1D
4 PM - 5 PM	YP Committee Meeting	Meeting Room 1B
4 PM - 8 PM	Exhibitor Break Down	Exhibit Hall ABC
5 PM - 6:30 PM	YP & Student Reception	Ballroom Foyer
5 PM - 6:30 PM	Awards Banquet Reception	Ballroom Foyer
6:30 PM - 10 PM	Awards Banquet & Fun Night	Ballroom 1-2

THURSDAY, SEPTEMBER 12

7 AM - Noon	Registration Desk Open	Box Office B
7 AM - 11 AM	Committee Meetings	Meeting Room 4D & 5C
7 AM - Noon	Speaker Ready Room	Show Managers' Room
7:15 AM - 8:45 AM	5-S Breakfast (5-S Members)	Meeting Room 5C
7:30 AM - 9 AM	Continental Breakfast	Outside Meeting Room Suite 2-3
8 AM - 8:30 AM	Moderator and Assistant Moderator Orientation	Show Managers' Room
8:30 AM - Noon	Concurrent Technical Sessions 31-40	Various Meeting Rooms
10 AM - 10:30 AM	Break	Outside Meeting Room Suite 2-3
12:45 PM - 4:30 PM	Stormwater Workshop: Pollutant Trading (Half Day)	Meeting Room 1B
12:30 PM - 2:30 PM	WaterJAM Committee Post-WaterJAM Meeting/Lunch	Meeting Room 5C
12:30 PM - 2:30 PM	VA AWWA Post-WaterJAM Board Meeting/Lunch	Meeting Room 4D
12:30 PM - 3 PM	Plant Tour	HRSD SWIFT Research Center, Suffolk, VA
12:30 PM - 3 PM	Plant Tour	City of Chesapeake's Lake Gaston WTP, Chesapeake, VA

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THERESA O'GRADY

VICE-PRESIDENT (2018-2020)
AMERICAN WATER WORKS ASSOCIATION

Theresa is the Water Resources Group Manager for Crawford, Murphy & Tilly, Inc. in Aurora, IL. With 24 years of experience in the water industry, Theresa has been an active member of AWWA since 1996.

Involved in the Illinois Section, Theresa has served two terms as Trustee – District 2, Vice-Chair, Chair-Elect, Chair, and Past-Chair. On the Association level, she is serving on the Board of Directors as the Illinois Director and Vice President. She is also a member of the AWWA Engineering and Modeling Applications Committee. She is also a member of Mid-Central Waterworks Association and Kane County Water Association. Currently, she is serving as the Resident Representative on the Will County Stormwater Planning Committee.

Theresa holds a BS degree in Civil Engineering with a Hydraulics & Hydrology Emphasis from the University of Illinois, Champaign-Urbana and is a licensed Professional Engineer in Illinois. She lives in Naperville, IL with her husband (Michael) and two kids (Aidan and Riona). ⊖



JACQUELINE A. JARRELL, P.E.

PRESIDENT-ELECT
WATER ENVIRONMENT FEDERATION

Jackie Jarrell, P.E. is the 2018-2019 President-elect of WEF, an international organization of water quality professionals headquartered in Alexandria, VA.

Jackie has been with Charlotte Water for more than 29 years. For the past 18 years, she has been responsible for the overall management of the operation and maintenance of five wastewater treatment facilities consisting of a total capacity of 123 million gallons per day (MGD), with the largest plant permitted at 64 MGD. She is also responsible for the related Residuals Program, producing more than 90,000 wet tons/year, and the Industrial Pretreatment Program, with more than 60 significant industrial users. Recently, Jackie serves as the Operations Chief responsible for wastewater operations, which includes oversight of regulatory functions, process control, industrial pretreatment, and continuous improvement programs within the operations areas.

As a WEF member, Jackie has held multiple leadership and committee roles, including serving as Chair of the Utility Management Program Symposia and the first Vice Chair of the Utility Management Committee.

Also an active member of the North Carolina Water Environment Association (NCWEA), Jackie helped develop NCWEA's strategic plan in 2013 and is the current Chair of the Nominating Committee. She has also chaired the Public Education Committee, the Annual Conference Committee, and the Program Committee. In 2013, Jackie served as the MA Chair and worked on related subcommittees such as Water For People (including a trip to Bolivia in 2011), the Wastewater Schools Committee, the Endowment Committee, and the Plant Operations Committee. She is actively involved with the North Carolina Water Quality Association, a regulatory advocacy organization of utilities in North Carolina, and is a past chair and a current board member.

Jackie is a registered professional engineer in the state of North Carolina and holds a Biological Wastewater Grade II OIT. She received a B.S. in Engineering from the University of North Carolina-Charlotte. Jackie is the 2014 recipient of the Arthur Sidney Bedell Award. In 2015, Jackie, along with her colleagues, was awarded the Gascoigne Wastewater Treatment Plant Operational Improvement Medal. ⊖

KEYNOTE SPEAKER

TUESDAY, SEPTEMBER 10 • 9 AM-11:30 AM • MEETING ROOM 1BCD



REAR ADMIRAL ANN C. PHILLIPS

US NAVY (RETIRED)
SPECIAL ASSISTANT TO THE GOVERNOR FOR COASTAL ADAPTATION AND PROTECTION FOR THE STATE OF VIRGINIA

Ann C. Phillips is the Special Assistant to the Governor for Coastal Adaptation and Protection for the State of Virginia. Prior to joining the administration, she worked to address sea level rise and climate impact on national security at the regional, national, and international level, and chaired the Infrastructure Working Group for the Old Dominion University-convened Hampton Roads Sea Level Rise Preparedness and Resilience Intergovernmental Pilot Planning Project.

Preceding her work on climate impact and sea level rise, Ann served nearly 31 years on active duty. She had the honor to commission and command USS MUSTIN (DDG 89) and to command Destroyer Squadron 28. Her final Flag command was as Commander, Expeditionary Strike Group TWO, including all the Amphibious Expeditionary Forces on the East Coast of the United States.

Ann earned a Master of Business Administration from The College of William and Mary's Mason School of Business in 2016. She is a 1983 graduate of the University of North Carolina at Chapel Hill. In addition, she is a certified Chesapeake Bay Landscape Professional, Level 2.

THE RISING TIDE: COASTAL ADAPTATION AND PROTECTION IN VIRGINIA

Virginia is experiencing an increase in extreme weather events and natural disasters that threaten public health and safety, the environment, and the economic wellbeing of the Commonwealth, including ports, military installations, transportation infrastructure, tourism assets, farms, and forests. To make Virginia resilient requires a comprehensive, collaborative, whole of society approach – engaging the federal and state government, localities, businesses, non-profits, and most of all, citizens.

On November 2nd, 2018, Governor Ralph Northam signed Executive Order 24, "Virginia's roadmap to make our built environment more resilient to floods, hurricanes, fires, and other extreme weather events. " ~ Governor Ralph Northam, November 2, 2018.

Executive Order 24 will set statewide standards, create and implement the Virginia Coastal Resilience Master Plan, and align statewide communication, collaboration, and coordination efforts to protect and adapt our coastline and State. Virginia will lead, but we need "All hands on deck." ⊖

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FEATURED SPEAKER

TUESDAY, SEPTEMBER 10 • 9 AM-11:30 AM • MEETING ROOM 1BCD



PETER COLOHAN

EXECUTIVE DIRECTOR, INTERNET OF WATER

Peter Colohan is the Executive Director of the Internet of Water (IoW), a project based at Duke University's Nicholas Institute for Environmental Policy Solutions.

Peter comes to the IoW after nearly a decade of federal service with the National Oceanic and Atmospheric Administration (NOAA). At NOAA, Peter was a key advocate for the development of the National Water Model and the creation of the NOAA Water Initiative. He also served as a Federal Coordinating Lead Author for the Water Chapter of the Fourth National Climate Assessment, published in November 2018. Peter was an enthusiastic participant in the 2017 Aspen Dialogue Series on Water Data, co-led by the Nicholas Institute, which led to the creation of the Internet of Water.

From 2012-2014, Peter served as the Assistant Director for Environmental Information within the White House Office of Science and Technology Policy under President Barack Obama, on assignment from NOAA, where he worked closely with all federal agencies responsible for climate, water and environmental science and technology. Prior to his federal service, Peter advised NOAA as a consultant on the development of the Group on Earth Observations, an intergovernmental body dedicated to the global exchange of environmental data and information. He served as that body's Executive Officer from 2003 to 2005.

INTRODUCING THE INTERNET OF WATER

The Internet of Water (IoW) is a vast yet simple idea: water challenges are large and growing, and everyone can benefit from better access to water data. Why is it easier to find a video of kittens going down a slide than it is to find out about your local stream? The challenge is first societal, then technical. People and institutions have to agree to share, exchange, and manage water data in a more open, modern way before meaningful technical investments can be made. The IoW intends to demonstrate the value of open, FAIR (Findable, Accessible, Interoperable [does it work with my stuff], and Reusable) water data to help communities address water problems, gain new insights about their water resources, and ultimately, for both communities and ecosystems to thrive through sustainable water resource management and stewardship.

In 2017, the Aspen Institute collaborated with Duke University's Nicholas Institute for Environmental Policy Solutions and Redstone Strategy Group to convene a dialogue with diverse stakeholders (utility managers, agricultural producers, software developers, and representatives of public sector agencies and nongovernmental organizations) to discuss what barriers exist and what steps are needed to improve the nation's water data infrastructure. That dialogue led to the 2017 report, "Internet of Water: Sharing and Integrating Water Data for Sustainability," a bold vision for how to improve water data infrastructure nationwide to fundamentally transform water management. This idea sparked the imaginations of several philanthropic foundations, which stepped in to fund the Internet of Water project beginning in 2018. The IoW is managed by a small Duke start-up team working to realize the project's vision and mission. By 2021, the IoW aims to be a self-sustaining network supported by an independent organization.

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PRE-CONFERENCE EVENTS

WATER TASTE TEST

Sunday, September 8, 1 PM - 4 PM
Virginia Beach Boardwalk at 31st St.
(the Neptune Statue)

The Water Taste Test/Education Booth is returning once again to WaterJAM. This year, the event will be held at the Virginia Beach Oceanfront on the Boardwalk at 31st Street. Located next to Neptune's Park, the 34-foot statue of King Neptune will overlook our efforts to educate the public. The purpose of the Water Taste Test is to allow the public an opportunity to compare Virginia Beach tap water with bottled water in a blind, side-by-side taste test. In addition to the taste test, we will show the public the difference in cost between bottled water and tap water. We'll also provide brochures presenting fun facts about water and sewer systems for public education purposes.

Come join the fun! The water will be refreshing and free! If you have any questions or want to volunteer to help, please contact Chris Graves (757-385-4967 or *ChGraves@vbgov.com*).

GOLF OUTING AND COOKOUT

Monday, September 9, 7:30 AM - 3 PM
The Signature at West Neck,
3100 Arnold Palmer Drive,
Virginia Beach, VA 23456
www.signatureatwestneck.com
Tel: 757-721-2900
Cost: $95/person
Registration starts and range opens at 7:30 AM

Registration includes: continental breakfast, green fee, cart, range balls, lunch, and prizes! Shotgun start is at 9 AM. The format will be four-person captain's choice. Individuals may also sign up for the tournament. Registration will be limited to 144 golfers, so register early. Lunch, served after the tournament, will feature a raffle and prizes. Proceeds from the raffle will be donated to Water For People.

Please indicate on the registration form if you are interested in donating a raffle prize (merchandise, gift certificates, etc.). Sponsorship opportunities for breakfast, lunch, hole-in-one prizes, and tee boxes are also available. Register to play in and/or sponsor this event at *http://bit.ly/2Haxzer.* For info, contact Paul Delphos (757-779-7083 or *Paul.Delphos@aecom.com*) or Thom Lipinski (571-291-7792 or *tlipinski@loudounwater.org*).

CLAY SHOOT

Monday, September 9, 8:45 AM - 2 PM
Old Forge Sporting Clays, 7945 Long Reach Road, Providence Forge, VA 23140
www.oldforgesportingclays.com
Tel: 804-966-2955

The WaterJAM 2019 Clay Shoot will be held at Old Forge Sporting Clays in Providence Forge, 90 minutes west of Virginia Beach Convention Center and 30 minutes east of Richmond International Airport.

Mandatory safety instruction begins at 8:45 AM with a shotgun start (pun intended) at 9 AM. The entry fee is $80/person and includes 100 targets, lunch, and door prizes. You will need to bring hearing protection, safety glasses, and a minimum of five boxes of #7.5, 8, or 9 light field load shotgun shells of the appropriate gauge for your shotgun. This is sure to be a fun time for everyone! Due to the recent popularity of this event, we're limiting registration to the first 85 shooters.

Register for this event on the main conference registration form: *http://bit.ly/2Haxzer*. Please note that sponsorships are available for $75. The sponsorships are used to enhance our door prizes. Everyone goes home with a door prize!

Questions? Cowntact Taylor Turner (804-665-1075 or *taylor.turner@arcadis.com*) or Greg Everhart (804-559-4259 or *gregeverhart@combs-associates.com*).

SPECIAL EVENTS

WATER FOR PEOPLE 5K FUN RUN/WALK

Tuesday, September 10, 6:30 AM - 8 AM
Virginia Beach Boardwalk at 31st St.
(the Neptune Statue)

Add a little fun to your morning and head to the oceanfront for a scenic run or walk for an extremely worthwhile cause. The Water For People Committee is hosting a 5K Fun Run/Walk (an event for all levels of fitness). Enjoy the beautiful boardwalk and earn some bragging rights with a "5K Finisher" ribbon to attach to your name badge. Check-in begins at 6:30 AM and the event starts at 7 AM.

The registration fee is $40 and includes refreshments and a T-shirt. If you register by August 9, you will receive a custom race T-shirt; after that time, you will receive a Water For People shirt. Sponsorships are available for $120. If you sponsor by August 9, your sponsorship will include your company logo on the T-shirt and recognition on Twitter. All proceeds from this event will be donated to Water For People, an international nonprofit committed to building a world where all people have access to safe drinking water and sanitation and no one suffers or dies from water- or sanitation-related diseases. Learn more at *www.waterforpeople.org*. Questions may be directed to Jamie Bondurant (*jbondurant@hazenandsawyer.com*).

FREE NIGHT

Tuesday, September 10, 7 PM onward

No WaterJAM activities are planned for this night. You're free to explore the area or experience a night on the town with friends and colleagues. There are many great places to enjoy in Virginia Beach. Be sure to check the WaterJAM app for a list of local restaurants. Brochures and informational literature will also be available at the VBCC and in hotel lobbies to help you decide how to spend your evening. (Note: If you schedule a private event, please respect the Networking Reception and allow time for attendees to leave the conference at 6:30 PM to change for and/or travel to your event.)

RECEPTIONS

OPENING NIGHT MEET & GREET RECEPTION

Monday, September 9, 7 PM - 10 PM
Hilton Virginia Beach Oceanfront,
Peacock Ballroom, 3001 Atlantic Ave.
at 31st St., Virginia Beach, VA 23451

Please join us on Monday night at 7 PM at the Hilton Virginia Beach Oceanfront to kick off this year's WaterJAM with great hors d'oeuvres, your favorite beverages, and the best of company. Note: If you're not a guest of the Hilton Virginia Beach Oceanfront, complimentary valet parking will be provided (tips are appreciated).Please be aware that the valet serves all hotel guests as well as guests of the hotel's two restaurants, so it's possible there will be a wait to get your vehicle returned after the event. Self-parking is $2 per hour in the city garage attached to the hotel's second level.

NETWORKING RECEPTION FEATURING THE WATER REACH SILENT AUCTION

Tuesday, September 10
Reception: 5 PM - 6:30 PM
Auction begins at 2 PM. Final bids at 6 PM.
Exhibit Hall ABC

Come join us for light hors d'oeuvres and drinks at the Networking Reception featuring the Annual Water Reach Silent Auction! Mingle with friends and colleagues as you place bids on a great selection of artwork and other items donated by Virginia businesses. Credit/debit card payments are now accepted, so bid high and bid often!

Auction proceeds will be donated to the Water Reach Committee, which assists small water systems throughout Virginia. Don't miss this opportunity to take home some unique items while supporting one of VWEA and VA AWWA's key initiatives to bring safe water and proper sanitation to people in Virginia who are without.

If you are an artist, craftsperson, or company that wishes to donate an item for the auction, contact Jeff Kapinos at *jkapinos@rkk.com* to make donation arrangements.

SPECIAL BREAKFASTS

ORIENTATION BREAKFAST

Tuesday, September 10, 7:30 AM - 9 AM
Meeting Room 2AB

If this is your first time at WaterJAM, please join us on Tuesday morning for the Orientation Breakfast with a game show-style competition. The game, starting at 8 AM, will focus on how to get the most out of your WaterJAM experience while providing some laughs. No matter who has the most points at the end, YOU will be the winner! Please indicate on the registration form if this is your first WaterJAM and whether you plan to attend this free event. For more information, contact Kelli Stamm at *kstamm@precisionmeasurements.com*.

VWEA GOLDEN RODENT BREAKFAST

Wednesday, September 11, 7 AM - 8 AM
Meeting Room 5C

This breakfast is for VWEA Past Presidents only. Please indicate on the registration form if you plan to attend.

UTILITY MANAGERS' BREAKFAST

Wednesday, September 11,
7 AM - 8:30 AM
Meeting Room 1B

This breakfast is an excellent opportunity for managers, directors, and senior staff from wastewater and drinking water utilities to share ideas, discuss trends, and address critical issues. A brief overview on current topics will be presented. Please indicate on the registration form if you plan to attend.

5-S BREAKFAST

Thursday, September 12, 7:15 AM - 8:45 AM
Meeting Room 5C

This breakfast is for 5-S members only. Please indicate on the registration form if you plan to attend.

SECTION FORUM

VA AWWA 2ND BUSINESS MEETING & SECTION FORUM

Wednesday, September 11, 10 AM - 11 AM
Meeting Room 3AB

Theresa O'Grady, Vice-President of AWWA, will be hosting a Town Hall Meeting for all AWWA members. The session will start with a very brief presentation and then shift to a discussion forum.

BANQUET

AWARDS BANQUET & FUN NIGHT

Wednesday, September 11
Reception: 5 PM - 6:30 PM, Ballroom Foyer
Dinner: 6:30 PM - 8 PM, Ballroom 1-2
Fun Night: 8 PM - 10 PM, Ballroom 1-2

The fun begins at 5 PM with light hors d'oeuvres and cocktails in the foyer outside the Grand Ballroom. The Awards Banquet, beginning at 6:30, will feature the presentation of awards to distinguished recipients. Immediately following dinner, a sumptuous dessert bar will be awaiting you at the Fun Night. There will be plenty of excitement, laughs, good music, dancing, and fun. Activities will include air hockey, foosball, pool, darts, dual shooting game, giant Jenga, virtual reality games, and an interactive game show. This will be a great time for everyone!

EXHIBIT HALL EVENTS

SCAVENGER HUNT

Tuesday, September 10, 11:30 AM - 6 PM
Wednesday, September 11, 7:30 AM - 4 PM
Exhibit Hall ABC

This is a fun way to meet and support our exhibitors! Pick up a Scavenger Hunt clue tally sheet and bag in the Exhibit Hall at the Scavenger Hunt booth. Spend time Tuesday and Wednesday in the Exhibit Hall, tracking down exhibitors by following clues. When you successfully identify an exhibitor, they'll affix a stamp to your clue tally sheet. Turn in your tally sheet to the designated collection station by 4:30 PM on Wednesday to determine if you are one of the two winning individuals who have correctly identified the most exhibitors.

MOBILE SESSIONS

Tuesday September 10, 2 PM - 3 PM
and 4 PM - 5 PM
Wednesday September 11, 9 AM - 10 AM,
11 AM - Noon, and 2 PM - 3 PM
Exhibit Hall ABC
(Meet in Registration Area in Lobby)

Mobile sessions are back by popular demand to WaterJAM 2019. Five mobile sessions will be offered in the Exhibit Hall this year. For each complete Mobile Session attended, attendees will have the opportunity to earn continuing professional education credits (CPE) for waterworks and wastewater operators and continuing education credit hours (CECs).

Mobile Sessions will meet in the Registration Area and, led by the Mobile Session Moderator, will travel as a group to a series of exhibitor booths. At each stop, the group will receive a brief presentation from the exhibitor to provide context for their product, as well as an explanation about what their equipment does and a description of how it works. Mobile Sessions will give attendees a unique opportunity to start a dialogue with vendors and gain firsthand experience with the equipment. The Mobile Session Moderator will scan attendees' nametags following each completed session. Attendees must attend the entire session and have their badges scanned in order to receive credit.

We'll share more information this summer via newsletters and social media

as the Mobile Session themes are developed! There's sure to be something to interest everyone who would like to earn credits while exploring the latest industry technology, equipment, and services in the Exhibit Hall.

CORNHOLE CHALLENGE

Tuesday, September 10, 11:30 AM - 6:30 PM
Wednesday, September 11, 7:30 AM - 4 PM
Raffle: Wednesday, September 11, 4 PM
Exhibit Hall ABC

Have a little time between sessions? Or just been sitting for too long? Check out the Cornhole Challenge in the Exhibit Hall, where you can show off your skills or try playing for the first time. It's FUN AND EASY TO LEARN! Team up with co-workers, colleagues, and supervisors. You can play as many times as you like, with as many different teammates as you wish! The more times you participate, the more times your name will be entered in the raffle to win your very own custom cornhole set! Stop by the WaterJAM Cornhole Challenge and give it a try!

SEWER AND WATER ART GALLERY

Tuesday, September 10, 11:30 AM - 6:30 PM
Wednesday, September 11, 7:30 AM - 4 PM
(Voting ends at 1 PM Wednesday. Winners posted at 2 PM)
Exhibit Hall ABC

The Sewer and Water Art Gallery is BACK! The exhibit is a "museum" of things that Virginia sanitary sewer, stormwater, and drinking water industry professionals have encountered in the field and found to be interesting, confusing, or downright CRAZY! Items from municipalities across Virginia will be on display with the goal of providing entertainment, education and enlightenment about some of the unique challenges faced by our industry professionals.

Gallery visitors will get to vote for their favorite items, and awards will be given on Wednesday afternoon to the top three exhibits based on visitor voting. So, make sure to get your vote in early! You can also try to guess what the mystery item thing is to be entered in a raffle for a chance to win an awesome prize!

PROFESSIONAL DEMONSTRATIONS

VWEA OPERATIONS CHALLENGE EVENTS

Wednesday, September 11, 10 AM - 11 AM

The VWEA Operations Challenge recognizes excellence and professionalism in the operations and maintenance, laboratory, safety, and collection systems aspects of wastewater treatment. Operations Challenge teams will be demonstrating the following events:

Pump Maintenance

The purpose of this event is to test the skills of maintenance/operating teams to respond to trouble at a sanitary sewer lift station that has resulted in an alarm. The scenario: A pump trouble alarm was received via the SCADA system at the Operations Control Center. A crew has been dispatched to troubleshoot the alarm. The team will need to troubleshoot the electrical control panel, troubleshoot and perform routine maintenance on the KSB





submersible pump, and restore the pump station to normal operating condition.

Collections System
This event simulates connecting a 4-inch PVC sewer lateral to an existing 8-inch PVC sewer pipe while in service (a "wet" pipe). Programming of a Hach A5950 Sampler will be also required. The purpose of this procedure is to create a sampling program for a composite sample (1 bottle).

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Don't forget to stop by the Operations Challenge table in the Exhibit Hall to watch the DVD and see pictures of past VWEA and WEF competitions featuring Division I & II national winners and other participating Virginia teams, as well as a display chart of invitational competitions. Printed brochures, and information for event coordinators and new teams will be available for anyone interested in participating with the Operations Challenge.

VA AWWA DISTRIBUTION RODEO DEMONSTRATIONS

Wednesday, September 11, 3 PM - 4 PM
Exhibit Hall ABC

Rapid Tappin'
This demonstration is wet and wild as teams race against the clock to install a ¾-inch water service. A ¾-inch corporation is installed in the pipe. Copper tubing is attached to the corporation and to a meter yoke with a curb stop. This is a timed event with penalties assessed for leaks, safety violations, and quality of the service installation. Come and see the state's finest teams demonstrate this exciting event.

Hydrant Hysteria
Hydrant Hysteria is the newest, fast-paced, head-to-head competition to see how quickly a team can assemble a fire hydrant. This competition is a measure of a three-person team's skill at assembling a hydrant quickly, totally and accurately. All parts are to be assembled in the proper manner and the reassembled hydrant shall be tested by the judges for ability to operate correctly. Penalties are assessed for safety and procedural violations, for parts not assembled correctly and for missing parts.









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YP-SPONSORED SERVICE PROJECT

Monday, September 9, 9 AM - 11 AM
Virginia Aquarium & Marine Science Center, 717 General Booth Boulevard, Virginia Beach, VA 23451

The volunteer event this year will be a "Clean the Creek" event with the Virginia Aquarium. Volunteers will help support the Aquarium grounds, including Owls Creek, surrounding nature trails, and parking lots.

Upon arrival, the volunteers will register with the aquarium and receive all required materials. The aquarium will provide trash bags, gloves, and trash grabbers; however, volunteers should bring work gloves. Since the event is outside, volunteers should wear long pants, socks, and closed-toed shoes.

Please consider volunteering and bringing a friend or co-worker! Volunteer T-shirts and lunch will be provided. Sign up when you register for WaterJAM and include your desired T-shirt size. For information, contact Pearl Ashitey (*peashite@vbgov.com*), Kayla Yingst (*kayla.yingst@alexrenew.com*), or Rachel Schwaab (*22rschwaab@gmail.com*).

We look forward to seeing you there!

YP WORKSHOP 2019

Tuesday, September 10, 1:30 PM - 5 PM
Meeting Room 4AB
"Growing with Industry: Where Water Can Take You"

The water industry provides infinite opportunities for all professionals, especially young professionals. What are the various career pathways? How can young professionals determine their path while realizing their full potential? How can all professionals develop their networking circles? What skills and continued education have current project managers and industry leaders found useful in achieving their goals?

This session will answer these questions and more during three 30-minute presentations and a 60-minute panel discussion focused on the theme of career growth. The presentations will be delivered by leaders in the water industry from around the Commonwealth. The panel discussion, including audience Q&A, will provide the opportunity to delve deeper into specific topics regarding carving your path within the industry.

The speakers and panelists will provide a variety of insights from across the public and private sectors. Potential topics include how to choose your path in the industry, networking, continuing education, how to be the most efficient and effective in leaving your mark, and more!

Contact Stephanie Acosta (*SAcosta@Dewberry.com*), Kelsey Kenel (*Kelsey.Kenel@hdrinc.com*), or Ashly Thomas (*AThomas@hazenandsawyer.com*) for additional information.

VA AWWA STUDENT WATER CHALLENGE & VWEA STUDENT DESIGN COMPETITION WINNERS' PRESENTATIONS

Wednesday, September 11, 1:30 PM - 5:00 PM
VWEA Student Design Competition Presentations:
Wastewater Team Presentation – 1:30 PM
Environmental Team Presentation – 2 PM
VA AWWA Student Water Challenge Presentations – 2:30 PM
Meeting Room 4AB

The Annual VA AWWA Student Water Challenge is for science, engineering, and environmental majors from Virginia colleges and universities. It will focus on using a combination of engineering and science to address a real-world water quality issue. Student teams from competing schools will be given a water quality/water treatment problem on the competition day and will be allowed approximately five hours to develop a proposed solution. The winning team will receive a traveling trophy, a plaque, and a $1,200 first-place prize. The second-place team will receive a plaque and $500 cash prize. Come cheer on your alma mater! The winners will be announced on Wednesday evening at the Awards Banquet.

Prior to the presentations for the Student Water Challenge, the winning teams in the 2019 VWEA Student Design Competition (George Mason University [Wastewater] and Old Dominion University [Environmental]) will give their presentations. This will be their final opportunity to practice before competing in the National Student Design Competition at WEFTEC 2019. Please attend and give them your best critique and support so that they represent Virginia well at WEFTEC!

DIGITAL KNOWLEDGE COMPETITION

The Student Activities Committee and Young Professionals (YP) Committee are pleased to be hosting the Digital Knowledge Competition. This is an open platform for students and YPs to share their work in a creative way at WaterJAM! This competition provides students (undergraduate, graduate, postgraduate) and YPs an opportunity to present their research and/or design projects utilizing video to engage, educate, and interact with local and remote audiences. These presentations can showcase recent or ongoing research, innovative solutions, or novel ideas related to the fields of water and wastewater.

During WaterJAM, all digital presentations will be presented on a dedicated monitor in the Exhibit Hall for the region's industry professionals to enjoy! Submissions will also be available on YouTube.



Student and YP winners will be selected. First and second place will be awarded $500 and $250, respectively. The winning videos will be played at the WaterJAM banquet.

Please check out the monitor located near the Exhibit Hall entrance to view the videos during WaterJAM or go to *http://www.vwea.org/?page=DigitalKnowledge* to view these videos at any time.

Contact Rebecca Holgate (*rholgate@hazenandsawyer.com*) for additional information.

YP COMMITTEE MEETING

Wednesday, September 11, 4 PM - 5 PM
Meeting Room 1B

Come meet your fellow Young Professionals, find out what is going on around the state, and learn how to get more involved! The YP Committee is a great way to network and build relationships that will last a lifetime! Check your attendee planner or the WaterJAM app for location information after you arrive.

YP & STUDENT RECEPTION

Wednesday, September 11, 5 PM - 6:30 PM
Ballroom Foyer

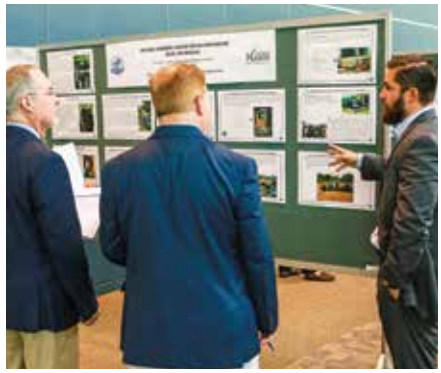
The YP & Student Reception is a great time to network with young colleagues in a relaxed setting. Come out and meet other young professionals and students who represent the future of the industry. The reception will be held prior to the Awards Banquet and light appetizers will be available. Drink tickets will be provided and there will be a cash bar. If you have any questions, please contact Allison Lee (*alee@hazenandsawyer.com*).

YP FRESH IDEAS POSTER CONTEST

Tuesday, September 10, Noon - 5 PM (set up) and Wednesday, September 11, 8 AM - Noon (judging)
Pre-Function Area (Lobby)

The Fresh Ideas Poster Contest is available to both students and YPs and is a great opportunity to display and present your work at WaterJAM 2019.

A poster displaying your work will be available for all WaterJAM attendees to view as they enter the conference. A panel of industry experts will judge the posters. The creator of the top drinking water-related poster will receive a $1,000 cash prize from VA AWWA and will be invited to represent the Virginia Section at the 2020 AWWA Annual Conference and Exposition (ACE). Assistance with travel expenses is available. The top wastewater, stormwater, or other environmental-related topic will receive a $1,000 cash prize from VWEA.



For more information on the poster contest or to submit an abstract, please contact Jack Lee (*jjlee@dewberry.com*), Hanna Montoro (*Hanna.Montoro@arcadis.com*), or Daniel Edgell (*Daniel.Edgell@hydromaxusa.com*).

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MONDAY WORKSHOPS

FULL-DAY WORKSHOP

Laboratory Practices
Monday, September 9, 8 AM - 5 PM
(credits pending)
Meeting Room 2CD

This workshop will help provide managers and leaders tools to develop or update risk assessments and emergency response plans (ERPs). It will discuss the regulatory updates and research on the management of drinking water, wastewater, and reuse, with the end goal of ensuring water quality.

HALF-DAY WORKSHOPS

Wet Weather Storage Solutions: From CIP Planning and Capacity Management to Construction, Operations and Maintenance
Monday, September 9, 1 PM - 5 PM
Meeting Room 2B

This workshop will focus on the conceptualization and implementation of wet weather storage projects for collection systems. Emphasis will be placed on data analysis needed to site and properly size a wet weather storage facility. Comparisons will be made between wet weather storage and traditional conveyance and treatment alternatives in a collection system, whether big or small. The workshop will also include hands-on exercises to give all attendees an opportunity to explore the benefits of wet weather storage solutions or refine their understanding of such facilities. Lastly, we will address other planning and design considerations, including the fundamentals of storage tank construction, operation, and maintenance using real project case studies.

Enhanced Coagulation Strategies – Testing, Operations, and Optimization
Monday, September 9, 1 PM - 5 PM
(credits pending)
Northwest River Water Treatment Plant, 3550 S Battlefield Blvd, Chesapeake, VA 23322

A key focus of the workshop will be how to balance multiple treatment objectives with optimal coagulation, including turbidity removal, control of DBP formation, iron/manganese removal from source water, corrosion control, and residuals production. This workshop will describe hands-on training for testing to optimize the coagulation process and present utility case studies of coagulant selection and optimization. Note: Attendees are responsible for their own transportation.

What Does it Mean to be a Sustainable Utility?
Monday, September 9, 1 PM - 5 PM
Meeting Room 2A



Many water utilities and municipal agencies have made commitments to "sustainability," but folks often struggle to understand what that really means. How are utilities actually sustainable? What does that mean? How can my utility be more sustainable? The VWEA/VA AWWA Sustainable Utilities Committee has organized this workshop to help you answer these questions. Our invited workshop speakers will include leaders within Virginia utilities and municipalities who will discuss how they've engrained sustainability within the culture and actions of their organizations. Speakers will also include subject matter experts who will discuss trends and case studies that contribute to overall sustainability as high as the utility management level, all the way down to individual pieces of water infrastructure.



THURSDAY WORKSHOPS

HALF-DAY WORKSHOP

Pollutant Trading – How It's Done, Who's Doing It and Why
Thursday, September 12, 1:00 PM - 5:00 PM
Meeting Room 1B

This half-day workshop will review the legal framework for pollutant trading in Virginia, examine the formats and mechanisms available for trading (including cross-sector trading), discuss the factors influencing decisions to buy and sell credits and examine current municipal trading operations for meeting stormwater pollutant reduction requirements. Speakers will include legal experts, nutrient bankers, and municipal buyers and sellers.



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Chesapeake's Lake Gaston Water Treatment Plant (LGWTP) is an 8 MGD surface water treatment plant that has been in operation since 2006. The treatment plant is a direct membrane filtration facility that includes strainers, aluminum chlorohydrate coagulation, submerged ultrafiltration membranes, manganese contactors and disinfection. The tour will also include discussions on their Aquifer Storage and Recovery facility, a highly successful coagulant evaluation study, and a visit to their nearby raw water storage lakes which employ the use of floating pump stations.

The cost is $20 and includes a boxed lunch. Please note on your registration form if you plan to attend. Please note: transportation between the VBCC and the LGWTP will not be provided.



HRSD SWIFT RESEARCH CENTER

THURSDAY, SEPTEMBER 12, 12:30 PM - 3 PM • 6909 ARMSTEAD ROAD, SUFFOLK, VA

HRSD, the regional wastewater collection and treatment utility, has recently embarked on a transformational program that affects all aspects of the region's water supply and quality. Currently, HRSD meets all of its permitted effluent discharge parameters for nutrients and sediment to the Chesapeake Bay; however, this still includes discharges of nearly 4 million pounds per year of nutrients and 15 million pounds of sediment. Groundwater use in the region has significantly lowered subsurface aquifer levels and has contributed to ground subsidence across the region. The Hampton Roads area is sinking each year. It has been identified as the second most vulnerable region in the country for sea level rise and higher levels of recurring flooding.

The Sustainable Water Initiative for Tomorrow (SWIFT) Program was conceived as an idea to assist with many of these challenges. Rather than discharging more than 120 MGD into the Chesapeake Bay, HRSD is proposing to implement an advanced water treatment system at the end of the treatment process at several of its plants. The highly treated water, which meets primary drinking water standards and is compatible with the receiving aquifer, will be used to recharge the Potomac Aquifer. This year, HRSD completed construction of the SWIFT Research Center at its Nansemond Treatment Plant in Suffolk. The SWIFT Research Center contains a 1 MGD demonstration-scale treatment facility, supports the pilot-scale research efforts, and includes areas for public outreach. This tour will provide a complete background on the issues the region is facing and how HRSD is working to help with the SWIFT Program. HRSD staff, operators, and consultants will be on hand to discuss the facilities and answer questions.



The cost is $20 and includes a boxed lunch. Please note on your registration form if you plan to attend. Space is limited, and this tour fills up quickly, so make your reservations early. Please note: transportation between the VBCC and HRSD's SWIFT Research Center will not be provided.

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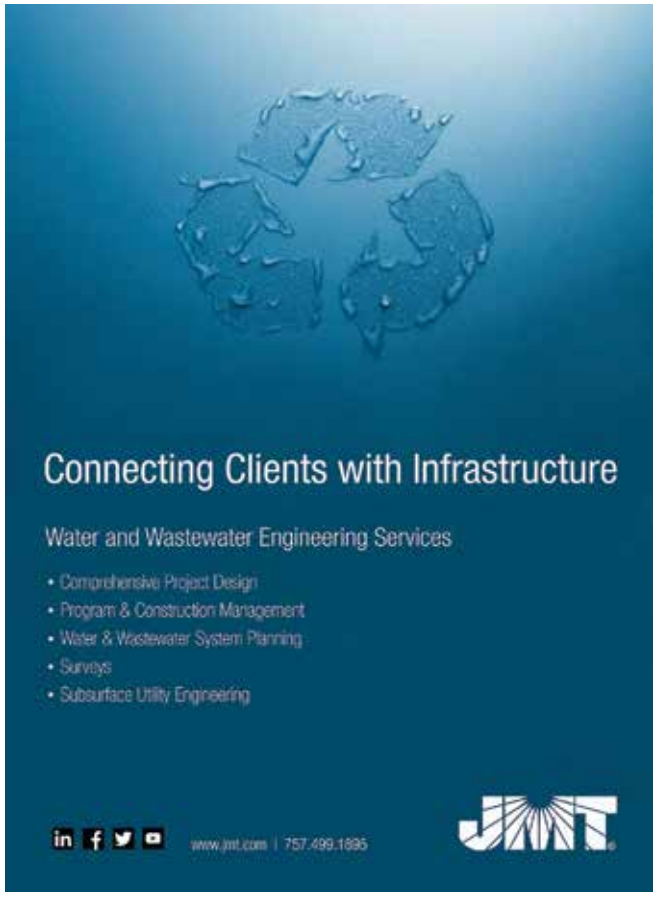
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BLACK & VEATCH

Tuesday, September 10 — Time: 1:30 - 2:00 PM

Session Name & Number Location	Credits	Presentation Title Presenter
Session 1: Public Outreach and Education **Meeting Room 1C**		**Looking for a Way to Create a Public-Private Partnership? Start with Outreach! The AlexRenew and Virginia American Water Story**
		Lisa Van Riper, *Alexandria Renew Enterprises*; Alison Bibb-Carson
Session 2: Design and Construction I **Meeting Room 1D**		**Distribution Water Main Rehabilitation Using a Spray-On Structural Lining**
		Robert Cotten, *Fairfax Water*; Jerry Scott
Session 3: Nutrient Removal and Recovery **Meeting Room 2A**		**Free Ammonia Resistance of NOB Developed in Continuous Flow Aerobic Granulation Reactor Performing Partial Nitritation**
		Zhaohui An, *Virginia Tech*; Tim Kent, Charles Bott, Zhi-Wu Wang
Session 4: Alternative Project Delivery **Meeting Room 2B**		**Innovative Delivery Yields Innovative Technical Solutions**
		Mike Hanna, *Black & Veatch*; Phil Cummins, David Hill, Ann McPherson
Session 5: Water Forum **Meeting Room 2CD**		**A New KPI for Valve Operability Optimization**
		Dave Lewis, *Wachs Water Services*
Session 6: Wastewater Treatment I **Meeting Room 3AB**		**Evaluation of Peracetic Acid for Disinfection of Filtered Secondary Effluent at Washington Suburban Sanitary District**
		Beth Maloney, *Stantec*; Malcolm Taylor, Caroline Nguyen, Joseph Jacangelo
Session 7: Planning and Modeling I **Meeting Room 3C**		**Water All Around –** **Planning for Future Water and Wastewater Needs in Mount Pleasant, SC**
		Matthias Wittenberg, *CDM Smith*; Sheryl Smith, David Niesse, Meredith Miller, Pradeep Sudini
Session 8: Asset Management I **Meeting Room 3DE**		**Leaking It or Giving It Away:** **Understanding the Value of Leak Detection vs. Meter Inaccuracy**
		Jonathan Gunn, *Johnson Controls*
Session 9: YP Workshop **Meeting Room 4AB**		**Growing with Industry: Where Water Can Take You**
		Andrew Newbold, Hazen and Sawyer: "Building Bridges in the Water Industry: Getting from Here to There"
Session 10: Technology Forum I **Meeting Room 4C**		**TBD**
		TBD

Tuesday, September 10 — Time: 2:00 - 2:30 PM

Session Name & Number Location	Credits	Presentation Title Presenter
Session 1: Public Outreach and Education **Meeting Room 1C**		**Encouraging Middle School Students to Explore the Water Industry Through a Model Water Tower Competition**
		Michelle Bouchard, *Prince William County Service Authority*; Mark Titcomb
Session 2: Design and Construction I **Meeting Room 1D**		**Design and Construction of the Major Water Supply Artery for Loudoun Water: Making It Last for 100 Years**
		David Cooper, *Dewberry Engineers*; Martin Kazmierczak; Gerardo Castaneda
Session 3: Nutrient Removal and Recovery **Meeting Room 2A**		**Inline Enhanced Biological Phosphorus Removal at WSSC**
		Caroline Nguyen, *Washington Suburban Sanitary Commission*; Marty Johnson, Sam Amad, Malcolm Taylor, Mike Hanna, Ann McPherson
Session 4: Alternative Project Delivery **Meeting Room 2B**		**Client/End User and Construction Manager Commissioning Approach for Design/Build Project – Lesson Learned**
		David Jacobson, *Arcadis*; Jun Fang, Eric Liang
Session 5: Water Forum **Meeting Room 2CD**		**Safe Yield Assessment for the James River**
		Ben Wright, *Hazen and Sawyer*; Alexandra McIntyre, Roger Arnold, Chris Tabor
Session 6: Wastewater Treatment I **Meeting Room 3AB**		**Design of WWTP and Collection with Highly Variable Seasonal Flows at a Ski Resort in Environmental, Steep, Wooded, Rocky Terrain**
		David Rigby, *Century Engineering*
Session 7: Planning and Modeling I **Meeting Room 3C**		**Real Time Hydraulic Modeling at DC Water**
		Russell Deason, *Mott MacDonald;* Alireza Parhami
Session 8: Asset Management I **Meeting Room 3DE**		**Applying Innovative GIS and Business Intelligence Technology Solutions to Support Utility Asset Management and Operations**
		Jayson Brennen, *CDM Smith*
Session 9: YP Workshop **Meeting Room 4AB**		**Growing with Industry: Where Water Can Take You**
		Jason Kerns, *HDR*; "Avoid Leaving Footsteps in the Sand and Leave a Permanent Mark on the Water Industry"
Session 10: Technology Forum I **Meeting Room 4C**		**TBD**
		TBD

Tuesday, September 10 — Time: 2:30 - 3:00 PM

Session Name & Number Location	Credits	Presentation Title Presenter
Session 1: Public Outreach and Education **Meeting Room 1C**		**Managing a Dam Crisis and International Media Attention** Jes Gearing, *Lynchburg Water Resources*; Timothy Mitchell
Session 2: Design and Construction I **Meeting Room 1D**		**Case Study of Blending Blowers for Optimum Aeration Efficiency** Paul Petersen, *Atlas Copco*
Session 3: Nutrient Removal and Recovery **Meeting Room 2A**		**Ammonia Recovery from Urine Using Electrochemical Cell and Air Stripping** Akshay Jain, *Virginia Tech*; Jason He
Session 4: Alternative Project Delivery **Meeting Room 2B**		**Living in Three Different Worlds:** **An Owner's Perspective on D/B/B, D/B, and CMAR Projects Delivered Concurrently** Laura Kirkwood, *HRSD*
Session 5: Water Forum **Meeting Room 2CD**		**Using DMAs to Investigate NRW** Christie Patel, *Brown and Caldwell*; Joe Thurwanger, Julie Black
Session 6: Wastewater Treatment I **Meeting Room 3AB**		**Handling Grit in More Ways Than One – Lessons Learned at Loudoun Water** Rick Zaepfel, *Loudoun Water*; Sarah Lothman, Michael R. Rumke, Jeff Angiel, Kendra Sveum, Janice Carroll, Phill Yi
Session 7: Planning and Modeling I **Meeting Room 3C**		**Near Real Time Hydraulic Modeling** Nathan Griffin, *Prince William County Service Authority*; Annie Short
Session 8: Asset Management I **Meeting Room 3DE**		**An Update on HRSD's Asset Management Journey –** **Where We Are, Where We Have Come From and Where We Are Going** Will Williams, *Black & Veatch*; Anas Malkawi, Martin Jones
Session 9: YP Workshop **Meeting Room 4AB**		**Growing with Industry: Where Water Can Take You** Patrick Lewis, *Dewberry Engineers;* "Rising Above the Tide: Networking into A Path of Career Growth"
Session 10: Technology Forum I **Meeting Room 4C**		**TBD** TBD

Tuesday, September 10 — Time: 4:00 - 4:30 PM

Session Name & Number Location	Credits	Presentation Title Presenter
Session 1: Public Outreach and Education **Meeting Room 1C**		**Fairfax County's Wastewater Management Works with Local Pharmacies and Universities In Medication Pilot Program** Melissa Atwood, *Fairfax County Wastewater Management*
Session 2: Design and Construction I **Meeting Room 1D**		**Going Deep to Avoid Conflict – Microtunneling for Utility Construction** Dennis Funk, *Gannett Fleming*
Session 3: Nutrient Removal and Recovery **Meeting Room 2A**		**Evaluation of Phosphorus Recovery Through Struvite Crystallization and Brushite Precipitation** Andre Adams, *Centrisys*; Menachem Tabanpour, Gerhard Forstner
Session 4: Alternative Project Delivery **Meeting Room 2B**		**Comparing Three Procurement Methods Used to Purchase Water Treatment Plants for Smaller Service Areas** Thomas Stanton, *Water Membranes Systems, LLC*
Session 5: Water Forum **Meeting Room 2CD**		**What It Really Takes to Implement Remote Water Quality Monitoring** Michael Mulcare, *Mott MacDonald*; Essey Woldemariam
Session 6: Wastewater Treatment I **Meeting Room 3AB**		**Don't Forget Secondary Clarifier Design Features to Improve BNR Performance** Anjana Kadava, *Black & Veatch*; Ed Kobylinski, Jim Fitzpatrick, Gary Hunter
Session 7: Planning and Modeling I **Meeting Room 3C**		**AlexRenew's Drop Shaft Design and Physical Modeling** Liliana Maldonado, *Alexandria Renew Enterprises*; Liliana Maldonado, Caitlin Feehan, Justin Carl, Kelvin Coles
Session 8: Asset Management I **Meeting Room 3DE**		**Vallejo Flood and Wastewater District's Pragmatic Asset Management Journey** Mert Muftugil, *GHD*; Charles Card, Gage Muckleroy, Johnson Ho
Session 9: YP Workshop **Meeting Room 4AB**		**Panel Discussion (continued): "Growing with Industry: Where Water Can Take You"** Andrew Newbold, *Hazen and Sawyer*; Jason Kerns, *HDR*; Patrick Lewis, *Dewberry Engineers*
Session 10: Technology Forum I **Meeting Room 4C**		**TBD** TBD

Tuesday, September 10

Time: 4:30 - 5:00 PM

Session Name & Number Location	Credits	Presentation Title Presenter
Session 1: Public Outreach and Education **Meeting Room 1C**		**Communicating Emerging Contaminants to Your Customers**
		Mike McGill, *WaterPIO*
Session 2: Design and Construction I **Meeting Room 1D**		**Innovative MBR and BNR retrofit in a Western Pennsylvania Wastewater Treatment Facility**
		Joel Kostelac, *GHD*
Session 3: Nutrient Removal and Recovery **Meeting Room 2A**		**Converting MBBR to IFAS ANITA Mox to Improve Treatment of THP Sidestream**
		Meg Hollowed, *Veolia Water Technologies*; Hong Zhao,Magnus Christensson, Romain Lemaire, Sudhakar Viswanathan
Session 4: Alternative Project Delivery **Meeting Room 2B**		**Strategies for Success – Delivering a $110M Advanced Water Treatment Facility via Design Build**
		Zuleyka Marquez, *Gannett Fleming*
Session 5: Water Forum **Meeting Room 2CD**		**Reducing Reliance on Groundwater**
		Paul Peterson, *Arcadis*; Larry Dame
Session 6: Wastewater Treatment I **Meeting Room 3AB**		**A Case Study on the Moorefield Wastewater Treatment Plant System Upgrade with the MOB™ Process**
		Justin Bell, *Nuvoda US*; Jason Calhoun
Session 7: Planning and Modeling I **Meeting Room 3C**		**Modeling to Support the Military**
		Ken Orie, *McKim & Creed*; Stephanie Hudik
Session 8: Asset Management I **Meeting Room 3DE**		**Putting Your Money Where Your "Need" Is: Implementing an Asset Management-Driven CIP Framework**
		Russ Dalton, *Hazen and Sawyer*; Chad Pritchett
Session 9: YP Workshop **Meeting Room 4AB**		**Growing with Industry: Where Water Can Take You**
Session 10: Technology Forum I **Meeting Room 4C**		**TBD**
		TBD

Wednesday, September 11

Time: 8:30 - 9:00 AM

Session Name & Number Location	Credits	Presentation Title Presenter
Session 11: Utility Management I **Meeting Room 1C**		**First-of-Its-Kind-in-Virginia Project: HRSD's SWIFT Full-Scale Implementation Program Initiation**
		Lauren Zuravnsky, *HRSD*; Bohdan Bodniewicz, Paul Delphos
Session 12: Collection and Interceptor Systems I **Meeting Room 4AB**		**Evaluating Challenges of Rehabilitating Small Diameter Force Main Using Cured-in-Place Pipe (CIPP) Lining**
		Tenzin Jigme, *RKK*; Shravani Ravadagundhi, Christopher Mata, Tenzin Jigme
Session 13: Water Resources **Meeting Room 2A**		**PFAS, Wastewater Treatment, and Indirect Potable Reuse: A Utility's Perspective on the Importance of Source Control**
		Dana Gonzalez, *HRSD*; Jon Nelson, Andrew Keisel, Charles Bott
Session 14: Water Treatment I **Meeting Room 2B**		**Mitigating Bromate Formation During Ozonation Using a Novel Combined Advanced Oxidation Process**
		Christina Alito, *HDR*; Rob Hoffman, Gwen Woods-Chabane
Session 15: System Operations & Maintenance **Meeting Room 2CD**		**Remote Monitoring for Cost Savings to the City of Lexington**
		York Grow, *Duncan-Parnell*
Session 16: Biosolids Management and Solids Handling I **Meeting Room 3AB**		**Impact of Efficient Polymer Activation on Sludge Dewatering – Two Case Studies**
		Yong Kim, *UGSI Solutions*; Brian Hawley, Mike Whitaker
Session 17: Emerging Technology **Meeting Room 3C**		**UTILALERT™ – A"Plug & Play" Excavator-Mounted Notification Device/System to Discern Digging Activity and Prevent Damage**
		Jeffrey Griffiths, *HydromaxUSA*
Session 18: Young Professionals Paper Session **Meeting Room 3DE**		**Using Asset Management and SSES Planning to Develop and Prioritize Capital Improvement Projects**
		Ryan Muncy, *Kimley-Horn*; Jamie Weist, Sean Fisher
Session 19: Government Affairs **Meeting Room 1D**		**DEQ Priorities Update**
		David Paylor, *Virginia Department of Environmental Quality*
Session 20: One Water **Meeting Room 4C**		**Update on Next Generation Biological Wastewater Reuse System for NASA**
		Fei Dai, *Pancopia*; Holly Anne Matel, Bill Cumbie, John Whitelaw, Kevin Gilmore, Matias Vanotti

Wednesday, September 11 — Time: 9:00 - 9:30 AM

Session Name & Number Location	Credits	Presentation Title Presenter
Session 11: Utility Management I **Meeting Room 1C**		**Thank You for Being a Friend: Loudoun Water's Strategic Relationships are Golden**
		Sarah Lothman, *Loudoun Water*; Thom Lipinski
Session 12: Collection and Interceptor Systems I **Meeting Room 4AB**		**Fresh Air! Improving Neighborhood Air Quality Through Effective Collection System Odor Mitigation**
		Stephanie Acosta, *Dewberry Engineers*; Randall Flowers
Session 13: Water Resources **Meeting Room 2A**		**Maryland's Newest Dam Preserves a Community's Most Valuable Resource**
		Sophia Liskovich, *Gannett Fleming*; Anthony Nokovich
Session 14: Water Treatment I **Meeting Room 2B**		**Saving Lives with Safe Water – Protecting Our Veterans with a State of the Art Membrane Plant**
		John Civardi, *Mott MacDonald*; Brian Aylaian
Session 15: System Operations & Maintenance **Meeting Room 2CD**		**Pump Vibration and Surge Investigation at Critical 460-MGD Combined Sewage Pumping Station**
		Edward Talbot, *OBG*; Robert Dudley
Session 16: Biosolids Management and Solids Handling I **Meeting Room 3AB**		**Dissolved Phosphate Control & Sludge Dewaterability Improvement by Using Cerium Chloride**
		Dian Zhang, *Virginia Tech*; Bob Angelotti, Erick Schlosser, Zhi-Wu Wang
Session 17: Emerging Technology **Meeting Room 3C**		**Making State of the Art the Standard**
		Bob Bonk, *Draper Aden Associates*; David Barton
Session 18: Young Professionals Paper Session **Meeting Room 3DE**		**What Is the Impact of Excess VFA Addition to a RAS Fermenter on Biological Phosphorus Removal and Denitrification?**
		Kathryn Printz, *Virginia Tech & HRSD*; Stephanie Klaus, Kester McCullough, Lindsey Ferguson, Cody Campolong, Charles Bott
Session 19: Government Affairs **Meeting Room 1D**		**Water Permitting Update**
		Melanie Davenport, *Virginia Department of Environmental Quality*
Session 20: One Water **Meeting Room 4C**		**Replenishing Water Resources in Parker, Colorado Rueter-Hess Water Purification Facility Taps a Renewable Supply**
		Alan Pratt, *Dewberry Engineers*; Patrick Radabaugh

Wednesday, September 11 — Time: 9:30 - 10:00 AM

Session Name & Number Location	Credits	Presentation Title Presenter
Session 11: Utility Management I **Meeting Room 1C**		**Succession Planning for Aging Infrastructure & Staff**
		Turner Perrow, *Woodard & Curran*; Jay Sheehan
Session 12: Collection and Interceptor Systems I **Meeting Room 4AB**		**Commissioning and Operation of DC Water's New CSO Tunnel System During the Wettest Year on Record**
		Nicholas Bonacquisti, *DC Water*; Carlton Ray, Moussa Wone, John Cassidy, Brandon Flora
Session 13: Water Resources **Meeting Room 2A**		**GIS Vulnerability Tool for Public Water Supplies – Integrating Publicly Available PFAS Data with Analytics**
		Joseph Quinnan, *Arcadis*; Deborah Roth, Brian Webb
Session 14: Water Treatment I **Meeting Room 2B**		**Using Zeta Potential to Achieve Optimum Water Treatment Performance**
		Nicolle Boulay, *Stantec*
Session 15: System Operations & Maintenance **Meeting Room 2CD**		**Pump Station Preferences and Lessons Learned – An Owner's Perspective**
		Kenneth Beaman, *HRSD*; Claude Stevens, Jeff Scarano
Session 16: Biosolids Management and Solids Handling I **Meeting Room 3AB**		**Proactive Planning Pays Off – Lessons Learned from the BRWRF Interim Biosolids Project**
		Jennifer Walsh, *Hazen and Sawyer*; Matt Van Horne, Mike Rumke, Sean Stunkle, Erik Smedley, Sam Flores
Session 17: Emerging Technology **Meeting Room 3C**		**Water's Worth It! "Is it Leaking? Where? Looked for It, Found It, Fixed It"**
		Jimmy Stewart, *Pure Technologies*
Session 18: Young Professionals Paper Session **Meeting Room 3DE**		**Implementing Asset Management Software in a Mid-Sized Water and Wastewater Utility**
		Michelle Cock, *City of Salem Water Department*
Session 19: Government Affairs **Meeting Room 1D**		**WQS and TMDLs**
		Jutta Schneider, *Virginia Department of Environmental Quality*
Session 20: One Water **Meeting Room 4C**		**Sustainable Water Initiative For Tomorrow Research Center (SWIFTRC) Preliminary Aquifer Recharge Experience**
		Daniel Holloway, *Jacobs*; Mark Lucas, Lauren Zuravnsky, Charles Bott, Jamie Mitchell, Chris Wilson, Ted Henifin

Wednesday, September 11 — Time: 11:00 - 11:30 AM

Session Name & Number Location	Credits	Presentation Title Presenter
Session 11: Utility Management I **Meeting Room 1C**		**Utility Assets from Start to Finish**
		Erik Ray, *Spotsylvania County Utilities*; Bradley Sacra, Michael Edwards, Lou Garcia
Session 12: Collection and Interceptor Systems I **Meeting Room 4AB**		**Rehabilitation of 125' Deep Brick Manhole Leading to Degraded 350', 78" x 66", Egg-Shaped Brick Culvert w/ Geopolymer Mortar**
		Kit Jones, *Vortex Companies*; Steve Henning
Session 13: Water Resources **Meeting Room 2A**		**Reservoir Management for Algae and Algal Toxin Control**
		Elizabeth Crafton, *Hazen and Sawyer*
Session 14: Water Treatment I **Meeting Room 2B**		**Ozone-Biofiltration for Controlling Extreme Taste and Odor Events**
		Chris Schulz, *CDM Smith*
Session 15: System Operations & Maintenance **Meeting Room 2CD**		**Preserving Institutional Knowledge Through Developing Standard Operating Procedures**
		Wayne Sirna, *Dewberry Engineers*; Ali Nemati
Session 16: Biosolids Management and Solids Handling I **Meeting Room 3AB**		**Not an Easy A: Overcoming Obstacles Associated with the Beneficial Use of Class A Biosolids**
		Amanda Marsh, *CHA Consulting*; Lawrence Hoffman
Session 17: Emerging Technology **Meeting Room 3C**		**How HRSD Is Operating Their Collection System Like a Stock Exchange**
		Maria Comuniello, *EmNet*; Ryan Radspinner, Jennifer Steffens
Session 18: Young Professionals Paper Session **Meeting Room 3DE**		**The Innovation Awards: Making Advancements in the Wastewater Treatment Industry Through Employee Recognition**
		Audrey Arnold, *Prince William County Service Authority*; Kathy Bentz
Session 19: Government Affairs **Meeting Room 1D**		**Biosolids Update**
		Neil Zahradka, *Virginia Department of Environmental Quality*
Session 20: One Water **Meeting Room 4C**		**Contaminant Removal Through Soil Aquifer Treatment During Managed Aquifer Recharge**
		Thomas Dziura, *Virginia Tech*; Prarthana Pradhan, Germano Salazar-Benites, Chris Wilson, Charles Bott, Mark Widdowson

Wednesday, September 11 — Time: 11:30 AM - Noon

Session Name & Number Location	Credits	Presentation Title Presenter
Session 11: Utility Management I **Meeting Room 1C**		**Optimizing Billing and Customer Service with Multiple Third-Party Contractors – It's All About Work Flow!**
		Dana Hargrove, *Hazen and Sawyer*; Ryan Nagel, Jerry Byerly, Jeanie Grandstaff
Session 12: Collection and Interceptor Systems I **Meeting Room 4AB**		**Sewer Sleuthing of the Oxon Run Interceptor to Remediate a Significant Overflow**
		Robert Bell, *OBG*; Srinivasa Gadiparthi, Eric Schroeder
Session 13: Water Resources **Meeting Room 2A**		**Wise County PSA Raw Water Intake Upgrade**
		Alan Harrison, *Wise County PSA*; Eric Price
Session 14: Water Treatment I **Meeting Room 2B**		**Portsmouth's Lake Kilby Water Treatment Facility Treatability Study**
		Rachel DuBois, *Jacobs*; Jay Maggi, Ed Snyder, Ronnie Ricks, Sandra Raphael
Session 15: System Operations & Maintenance **Meeting Room 2CD**		**Rethinking Electrical Safety – A Programmatic Approach to Arc Flash and Electrical Safety**
		Julio Mayen, *Greeley and Hansen*
Session 16: Biosolids Management and Solids Handling I **Meeting Room 3AB**		**The Many Different Ways to Raise Steam for a THP Project**
		Michael McWhirter, *Stantec*; Kevin Selock, Jesse Hoffman, David Socha, Teri Poussard, Jonathon Maclaren
Session 17: Emerging Technology **Meeting Room 3C**		**Carefully Balancing Energy at a CHP Facility**
		Jesse Hoffman, *Stantec*; John Willis, Stan Dabek, Joe Merry, David Socha, Matt Van Horne, Joe Uglevich
Session 18: Young Professionals Paper Session **Meeting Room 3DE**		**Communities of Need – How Does Loudoun Water Help?**
		Andrew Beatty, *Loudoun Water*; Thomas Lipinski
Session 19: Government Affairs **Meeting Room 1D**		**Virginia's Phase III WIP**
		Jutta Schneider, *Virginia Department of Environmental Quality*; Melanie Davenport, *Virginia Department of Environmental Quality*
Session 20: One Water **Meeting Room 4C**		**Hey, Can We Use That? The Expansion of New Kent County's Water Reclamation/Reuse System**
		Kris Edelman, *Arcadis*; Harold Jones

Wednesday, September 11 — Time: 1:30 - 2:00 PM

Session Name & Number Location	Credits	Presentation Title Presenter
Session 21: Technology Forum II **Meeting Room 1D**		**TBD** TBD
Session 22: Wastewater Forum **Meeting Room 1C**		**Controlling Phosphorus Recycles and Scaling with Struvite Precipitation** Chris Moline, *HDR*; Brian Balchunas, Lawrence Hentz, Robert Hindt
Session 23: Design and Construction II **Meeting Room 2A**		**HRSD Sets the Bar HI: Designing a Fully HI Compliant Sewer Pump Station for HRSD** Alan Edwards, *AECOM*; Tim Marsh
Session 24: Condition Assessment **Meeting Room 2B**		**PCAT – Non-Invasive Pipeline Condition Assessment for Water and Sewer Force Mains Using Inverse Transient Pressure Wave Analysis** Mike Funk, *HydromaxUSA*
Session 25: Wastewater Treatment II **Meeting Room 2CD**		**Enhanced and Simple Wet Weather Treatment with Pile Cloth Media Filtration** John Dyson, *Aqua-Aerobic Systems*
Session 26: Stormwater I **Meeting Room 3AB**		**Impact of Periodic High Concentrations of Salts on Bioretention Nutrients Performance** Meigan McManus, *Fairfax County Government*; Allen Davis
Session 27: Distribution and Operations **Meeting Room 3C**		**Lead Service Line Replacement Master Planning – Concepts Through Implementation** Roger Arnold, *Hazen and Sawyer*
Session 28: Sustainability and Resiliency I **Meeting Room 3DE**		**Establishing a Framework for Lifeline Infrastructure Resilience Programs** Ahmad Habibian, *CDM Smith*
Session 29: Student Water Challenge **Meeting Room 4AB**		**WEF Student Design Competition Wastewater Presentation: "Solids Handling Upgrades at H.L. Mooney AWRF"** *George Mason University*: Amir Akbarzadeh, Josiah Eidson, Michael Parker, Alan Quiroga, Michael Quiroga
Session 30: Small Utilities **Meeting Room 4C**		**Balancing the Impact of Septage Acceptance on Biological Nutrient Removal Performance** Ladan Holakoo, *GHD*; Thor Young, James Ritter

Wednesday, September 11 — Time: 2:00 - 2:30 PM

Session Name & Number Location	Credits	Presentation Title Presenter
Session 21: Technology Forum II **Meeting Room 1D**		**TBD** TBD
Session 22: Wastewater Forum **Meeting Room 1C**		**Finding the Right Solution for Phosphorus Harvesting: A Risk-Based Approach to the Evaluation of Process Alternatives** Greg Knight, *Black & Veatch*; Engin Guven
Session 23: Design and Construction II **Meeting Room 2A**		**Well, It Matters To Me! Part 2 – The Importance of Minimizing Impacts to the Public in Large-Scale Utilities Replacement Projects** Nicholas Robertson, *Draper Aden Associates*; Andy Snyder
Session 24: Condition Assessment **Meeting Room 2B**		**Zinc-Coated DIP Force Main Study: Utility Applies Corrosion Engineering for Thorough Results** Andrew Fuller, *AECOM*; Belinda Wilson, Brent Werlein, Will Gibson
Session 25: Wastewater Treatment II **Meeting Room 2CD**		**UV Disinfection of Wet Weather Primary Effluent: Lessons Learned from a Large WWTP** Bernardo Vazquez-Bravo, *Greeley and Hansen*; Edwin Edmondson, George Guhse, Kurt Stykemain
Session 26: Stormwater I **Meeting Room 3AB**		**Stormwater Management Within a Coastal Flood Protection Project** Timothy Hare, *Arcadis*
Session 27: Distribution and Operations **Meeting Room 3C**		**Cranking Up the Pressure in DC – Lessons Learned from Starting Up a New Pressure Zone in DC** Jason Garz, *Mott MacDonald*; Deidre Saunders, Getachew Melsew
Session 28: Sustainability and Resiliency I **Meeting Room 3DE**		**Public Utilities' Utilization of FEMA Hazard Mitigation Assistance Programs: Lessons Learned** Michelle Stanley, *Arcadis*; Keren Bolter, Edward Fernandez, Lori Gale, Michael Wooden, Anne Urenda
Session 29: Student Water Challenge **Meeting Room 4AB**		**WEF Student Design Competition Environmental Presentation: "Magnolia Avenue Shoreline Restoration"** *Old Dominion University*: Corynn Brett, Kyle Bush, Laura Saunders
Session 30: Small Utilities **Meeting Room 4C**		**Small Doesn't Mean Simple: Balancing Appropriate Innovation and Economics for Plant-Wide Biosolids Improvements** Ryan Hendrix, *Peppers Ferry Regional Wastewater Treatment Authority*; Clarke Wallcraft, Matt Van Horne, Paul Vavonese

Wednesday, September 11 — Time: 2:30 - 3:00 PM

Session Name & Number Location	Credits	Presentation Title Presenter
Session 21: Technology Forum II **Meeting Room 1D**		**TBD** TBD
Session 22: Wastewater Forum **Meeting Room 1C**		**Implementation of Hydrocyclone Technology to Assess the Potential for Sludge Settleability Improvements** Matthew Brooks, *Upper Occoquan Service Authority*; Bob Angelotti, Tim Gallagher, Adrienne Willoughby, Ed Fleischer, Yewei Sun
Session 23: Design and Construction II **Meeting Room 2A**		**Sliplining with 42-Inch Steel Pipe Renews Critical 48-Inch Cast Iron Water Main** Jordan Carrier, *Garney Companies*
Session 24: Condition Assessment **Meeting Room 2B**		**Maximize Condition Assessments Using Drones** Liz Sitter, *GHD*; Micah Archibald
Session 25: Wastewater Treatment II **Meeting Room 2CD**		**Saving Energy and Money Through Better Wastewater Treatment Plant Mixing** Michele Braas, *Xylem*
Session 26: Stormwater I **Meeting Room 3AB**		**The Downfall of a Dam: Navigating the Removal of a High-Hazard Dam and Environmental Remediation** Erin Hawkins, *City of Lynchburg*; Timothy A. Mitchell, Laura Henry-Stone
Session 27: Distribution and Operations **Meeting Room 3C**		**A Systematic Approach to Pump Station Hydraulic Performance Testing: Theory vs. Reality** Martin Kazmierczak, *Dewberry Engineers*; Christine Thiel
Session 28: Sustainability and Resiliency I **Meeting Room 3DE**		**A Hurricane is Coming – Is Your Facility Ready?** Taha Mohammed, *CDM Smith*; Paul Pouliot, Robert Magsipoc
Session 29: Student Water Challenge **Meeting Room 4AB**		At 1:30 pm, the winning teams of the Wastewater and Environmental categories of the 2019 VWEA Student Design Competition will give their presentations in preparation for representing Virginia at WEFTEC 2019. Immediately following, the teams in the 2019 VA AWWA Student Water Challenge will present the findings from their day's work on a water quality, treatment, or distribution problem. Winners will be announced at the Awards Banquet.
Session 30: Small Utilities **Meeting Room 4C**		**Cost Effectively Optimizing Biological Nutrient Removal at a Small Utility: A Case Study of the 2.53 MGD Louisville WWTP** Patrick Radabaugh, *Dewberry Engineers*

Wednesday, September 11 — Time: 4:00 - 4:30 PM

Session Name & Number Location	Credits	Presentation Title Presenter
Session 21: Technology Forum II **Meeting Room 1D**		**TBD** TBD
Session 22: Wastewater Forum **Meeting Room 1C**		**Improving Activated Sludge Performance Using Wastewater Microbiology as an Operations Tool** Lindsay Swain, *CHA Consulting*
Session 23: Design and Construction II **Meeting Room 2A**		**It Takes Two to Tango Towards Project Closeout: The Dance Between Owner & Contractor During Startup of a New Water Treatment Plant** Monika Bueltel, *Greeley and Hansen*; Carolyn Hannoch
Session 24: Condition Assessment **Meeting Room 2B**		**Creek Crossing Risk Assessment – A Dual Condition Assessment of Sanitary Infrastructure and Urban Streams** Susan Hamilton, *Richmond Public Utilities*; Ben Custalow, Brandon Cooper
Session 25: Wastewater Treatment II **Meeting Room 2CD**		**Optimization of Secondary Clarifiers – Achieve Low TSS and TP Limits by Installation of a Variable Clarifier Inlet System** Gerhard Forstner, *CNP – Technology Water and Biosolids Corp.*
Session 26: Stormwater I **Meeting Room 3AB**		**Beavers... Dam!** Warren Wilczynski, *Michael Baker International*; David She
Session 27: Distribution and Operations **Meeting Room 3C**		**Satellite-Assisted Pipe Leak Detection Pilot Study – Is It Worth It?** Leita Bennett, *GHD*; Glenn Pearson
Session 28: Sustainability and Resiliency I **Meeting Room 3DE**		**When You Need a Bigger Bucket: Containing the Storm, a Wet Weather Success** Timothy Castillo, *Rivanna Water and Sewer Authority*; Michelle Simpson, David Tungate, Brian Porter
Session 29: Student Water Challenge **Meeting Room 4AB**		At 1:30 pm, the winning teams of the Wastewater and Environmental categories of the 2019 VWEA Student Design Competition will give their presentations in preparation for representing Virginia at WEFTEC 2019. Immediately following, the teams in the 2019 VA AWWA Student Water Challenge will present the findings from their day's work on a water quality, treatment, or distribution problem. Winners will be announced at the Awards Banquet.
Session 30: Small Utilities **Meeting Room 4C**		**Reverse Osmosis Replacement Membrane Selection Based on Total Cost of Ownership and Water Quality in Gloucester, Virginia** Andrew Newbold, *Hazen and Sawyer*; Brenton Payne, James Dawson

Wednesday, September 11 — Time: 4:30 - 5:00 PM

Session Name & Number Location	Credits	Presentation Title Presenter
Session 21: Technology Forum II **Meeting Room 1D**		**TBD** TBD
Session 22: Wastewater Forum **Meeting Room 1C**		**The Impact of Granule Size on the Inhibition of Nitrite Oxidizing Bacteria by Free Ammonia in Continuous Flow Bioreactors Treating** Timothy Kent, *AECOM*; Yewei Sun, Zhaohui An, Charles Bott, Zhi-Wu Wang
Session 23: Design and Construction II **Meeting Room 2A**		**"The Land Down Under" – A Guided Bore in a Congested Downtown Business District** Selo Qejvani, *City of Norfolk, Department of Utilities*; Scott Smith
Session 24: Condition Assessment **Meeting Room 2B**		**Scotts Run Sewer – Failure of a Concrete Cylinder Pipe in a Gravity Sewer Application** Jennifer Howells, *Arcadis*; Tom Grala, Paul Batman
Session 25: Wastewater Treatment II **Meeting Room 2CD**		**Peak Flow Dual-Use Filters Also Help Meet Dry-Weather Goals** Jim Fitzpatrick, *Black & Veatch*; Mike Hundley, Bob O'Bryan, Bently Green
Session 26: Stormwater I **Meeting Room 3AB**		**Coordinating Efforts to Collect Stormwater Management Facilities Data with New As-Built Charts** Nikki Comber, *AECOM*; Alexander Tiedemann
Session 27: Distribution and Operations **Meeting Room 3C**		**Evaluation of Mean Hydraulic Residence Time and DBP Formation Using Modeling and Lab Simulated SDS** Stephen Steele, *CHA Consulting*; Lindsay Swain, Brian McNinney, Caleb Taylor
Session 28: Sustainability and Resiliency I **Meeting Room 3DE**		**Envision: The Missing Puzzle Piece to a Sustainable Utility** Evan Bowles, *Hazen and Sawyer*; Bruce Husselbee, Lauren Zuravnsky
Session 29: Student Water Challenge **Meeting Room 4AB**		At 1:30 pm, the winning teams of the Wastewater and Environmental categories of the 2019 VWEA Student Design Competition will give their presentations in preparation for representing Virginia at WEFTEC 2019. Immediately following, the teams in the 2019 VA AWWA Student Water Challenge will present the findings from their day's work on a water quality, treatment, or distribution problem. Winners will be announced at the Awards Banquet.
Session 30: Small Utilities **Meeting Room 4C**		**Getting the Most Out of Your Limited CIP Dollars – Wet Weather Storage Solution to Reduce CIP Spending While Improving Performance** Carlos Toro-Escobar, *Brown and Caldwell*; Ashley Yeh, Gabriel Retana

Thursday, September 12 — Time: 8:30 - 9:00 AM

Session Name & Number Location	Credits	Presentation Title Presenter
Session 31: Regulatory Issues **Meeting Room 1C**		**Negotiating An Uncertain Landscape: Health and Regulatory Considerations for Potable Reuse** David MacNevin, *Tetra Tech*
Session 32: Utility Management II **Meeting Room 1D**		**What is a Smart Utility and How Do I Implement It?** John Abrera, *Brown and Caldwell*; Kevin Stively, George Bunimovich, Michael Karl
Session 33: Asset Management II **Meeting Room 2A**		**Optimizing Scarce Resources: Using Pipeline Renewal Models to Develop Focused CIP** Eric Harold, *Carollo Engineers*; Laura Khouvilay, David Baranowski
Session 34: Sustainability and Resiliency II **Meeting Room 2B**		**Why Participate in Voluntary Programs?** Meghann Quinn, *Virginia Department of Environmental Quality*
Session 35: Stormwater II **Meeting Room 2CD**		**Stop the Tide, Save the Storage: Solutions for Flooding in Windsor Woods and Beyond** Nicole Dane, *Michael Baker International*; Michael Mundy, Ian Kaliakin
Session 36: Water Treatment II **Meeting Room 3AB**		**Coagulant Changeover for Treatment Process Optimization – Balancing Water Quality and Operational Objectives** Farrell Owens, *City of Winchester*; Roger Arnold, Glenn Rogers Erik Rosenfeldt
Session 37: Design and Construction III **Meeting Room 3C**		**Where Art Meets Infrastructure: DC Water's Coordination with the Kennedy Center Expansion Project** Brandon Flora, *Greeley and Hansen*; Carlton Ray, Moussa Wone, Amanda Morgan, Ryan Payne, John Cassidy
Session 38: Planning and Modeling II **Meeting Room 3DE**		**Developing a Refined Hydrologic Event Model for the Occoquan Reservoir** Niffy Saji, *Fairfax Water*
Session 39: Biosolids Management and Solids Handling II **Meeting Room 4AB**		**How Much Digestion Volume Do You Really Need for a THP Facility?** Amy Hanna, *Hazen and Sawyer*; Mike Bullard, Joe Uglevich, Kevin Selock, Stanley Dabek, Andy Seaton
Session 40: Collection and Interceptor Systems II **Meeting Room 4C**		**Rethinking Collection & Treatment Schemes: Where Regional Approach Over Satellite Approach Provided Significant Savings** Aziz Ahmed, *Draper Aden Associates*; Mike Haggerty

Thursday, September 12 — Time: 9:00 - 9:30 AM

Session Name & Number Location	Credits	Presentation Title Presenter
Session 31: Regulatory Issues **Meeting Room 1C**		**Cyanotoxin Assessment and Management Plan for a Mid-Atlantic Water Supply**
		Yann Le Gouellec, *Newport News Waterworks*; Ron Harris, Mike Hotaling, Louis Martinez
Session 32: Utility Management II **Meeting Room 1D**		**It's Money for Nothing, So What Could Go Wrong?** **An Analysis of Issues with the Installation of Cell Phone Equipment on Water Tanks**
		Dean Westman, *Whitman, Requardt & Associates*
Session 33: Asset Management II **Meeting Room 2A**		**Western Branch Denite Process Optimization –** **A Step Beyond a Business Case Evaluation**
		Ann McPherson, *Black & Veatch*; Adebola Fashokun, Mike Hanna
Session 34: Sustainability and Resiliency II **Meeting Room 2B**		**Making Climate Change Projections Actionable** **for Urban Engineering Applications in Philadelphia**
		Mark Maimone, *CDM Smith*; Julia Rockwell, Sebastian Malter, Varsha Raj, Abby Sullivan
Session 35: Stormwater II **Meeting Room 2CD**		**Utilizing Data Visualizations for Holistic Stormwater Decision-Making**
		Alysondria Eason, *Hazen and Sawyer*; Matthew Jones, Lisa Jeffrey
Session 36: Water Treatment II **Meeting Room 3AB**		**Clear as Mud: How to Optimize Residuals Handling During a Record Rainfall Year**
		Rodney Mutter, *CDM Smith*; Brandon Flint, Gerardo Castaneda, Ray Braithwaite, Tom Barrack
Session 37: Design and Construction III **Meeting Room 3C**		**Using Virtual Reality to Ensure Operator-Friendly Designs**
		Jeff Scarano, *HRSD*; Frank Pesce, Laura Kirkwood
Session 38: Planning and Modeling II **Meeting Room 3DE**		**I Have Recent SCADA Data, So What? –** **A Resourceful Use of Collected Data to Estimate My Sewered Area Flows**
		Angel Retana, *Brown and Caldwell*; Keith Havron, Katherine Nixon, Carlos Toro Escobar
Session 39: Biosolids Management and Solids Handling II **Meeting Room 4AB**		**Conversion of Conventional Aerobic Digesters to an Autothermal Thermophilic Aerobic Digestion (ATAD) Process for Class A Biosolids**
		John Cannon, *GHD*; Thor Young, Tim Fristoe
Session 40: Collection and Interceptor Systems II **Meeting Room 4C**		**Relining the Four Mile Run Relief Sewer: Construction Management Challenges**
		Hisham Wahdan, *Arlington County*; Carla Alayon

Thursday, September 12 — Time: 9:30 - 10:00 AM

Session Name & Number Location	Credits	Presentation Title Presenter
Session 31: Regulatory Issues **Meeting Room 1C**		**Surviving Ammonia – Both Aquatic Life and Your Utility**
		Richard Sedgley, *AquaLaw PLC*
Session 32: Utility Management II **Meeting Room 1D**		**How Suspicious is REALLY Suspicious?**
		Peter Ceo, *Arlington County Water Pollution Control Plant*
Session 33: Asset Management II **Meeting Room 2A**		**DC Water's Green Infrastructure Asset Management Program**
		Ramakrishna Jeedigunta, *Greeley and Hansen*; Monica Outland, Seth Charde
Session 34: Sustainability and Resiliency II **Meeting Room 2B**		**Designing for Resiliency in Urban Environments**
		Margaret Hopkins, *AKRF*
Session 35: Stormwater II **Meeting Room 2CD**		**Rising Waters: Protecting Fairfax County's Huntington Neighborhood**
		James O'Shaughnessy, *Arcadis*
Session 36: Water Treatment II **Meeting Room 3AB**		**Managing Manganese Removal and DBP Formation Minimization at a Large WTP**
		Meric Selbes, *Hazen and Sawyer*; Paul Le Bel, Aaron Duke, William Becker
Session 37: Design and Construction III **Meeting Room 3C**		**Designed. Bid. Built: Considerations from the Contractor and Consultant on the Clinton Zone Transmission Main**
		Nick Lewis, *Gannett Fleming*; Clay Greene
Session 38: Planning and Modeling II **Meeting Room 3DE**		**How Much Flow? Determining Wastewater Flow Factors From Water Billing and Land Use Data**
		Charles Moore, *CDM Smith*; Anna Neugebauer, Kenneth Dixon
Session 39: Biosolids Management and Solids Handling II **Meeting Room 4AB**		**The State of the Biogas Washwater Treatment and Upgrading Market**
		Chengyan Zhang, *Stantec*; Dru Whitlock, Nick Szoke, David Socha, Michael McWhirter
Session 40: Collection and Interceptor Systems II **Meeting Room 4C**		**Utility Develops Triple-Bottom-Line Decision Matrix to Select Highest-Scoring Solution to Critical Sewer System Improvement Needs**
		Tim Marsh, *HRSD*; William Gibson, Jeff Scarano

Thursday, September 12 — Time: 10:30 - 11:00 AM

Session Name & Number Location	Credits	Presentation Title Presenter
Session 31: Regulatory Issues Meeting Room 1C		**Don't Build it Yet! Permitting Alternatives for Complying with the New Freshwater Ammonia Criteria** Lawrence Hoffman, *CHA Consulting*
Session 32: Utility Management II Meeting Room 1D		**How Intelligent Do We Really Want Our Water to Be?** Luis Casado, *Gannett Fleming*; Gene Koontz, Jessica Hou
Session 33: Asset Management II Meeting Room 2A		**The Evolution of Meter Asset Management: Prioritized Meter Testing, Replacement and Revenue Recovery** Carl Sharkey, *Valor Water Analytics*
Session 34: Sustainability and Resiliency II Meeting Room 2B		**Integrating Stormwater Pump Stations into Neighborhood Resiliency** John Millspaugh, *Arcadis*
Session 35: Stormwater II Meeting Room 2CD		**Herring Run Emergency Bank Stabilization – Protecting the Trail** Jeffrey Stamm, *Gannett Fleming*
Session 36: Water Treatment II Meeting Room 3AB		**Operation and Optimization of HRSD's 1-MGD SWIFT Research Center for Advanced Water Treatment and Aquifer Recharge** Samantha Hogard, *Virginia Tech*; Germano Salazar-Benites, Tyler Nading, Chris Wilson, Charles Bott
Session 37: Design and Construction III Meeting Room 3C		**Leveraging Partnerships – Collaborative Response to Emergency Repair and Rehabilitation of Failing Outfall Pipes** Guiying (Laurel) Xiao, *Fairfax County*; Jennifer Walsh, Laurel Xiao, Sajana Chitrakar, Matt Van Horne, Josh Pavlus
Session 38: Planning and Modeling II Meeting Room 3DE		**Streamlining System Analysis Through Optimization** Aman Tuteja, *Arcadis*; Kimberly Six, Patrick Parault
Session 39: Biosolids Management and Solids Handling II Meeting Room 4AB		**It Takes a Village: Collaboration to Import Technology to Virginia for a Cost-Effective Solids Handling Solution** Stephanie Spalding, *HDR*; Chad Link, Katherine Linares, Paul Christy
Session 40: Collection and Interceptor Systems II Meeting Room 4C		**Pressure Sewers Providing A Cost Effective Solution For Modern Day Infrastructure** W. Ben Burton, *Bay Design Group*; Keith McHale

Thursday, September 12 — Time: 11:00 - 11:30 AM

Session Name & Number Location	Credits	Presentation Title Presenter
Session 31: Regulatory Issues Meeting Room 1C		**Preparing for Challenges to Permitting New Water, Wastewater, and Stormwater Projects in a Demanding Public and Regulatory Climate** Justin Curtis, *AquaLaw PLC*
Session 32: Utility Management II Meeting Room 1D		**Achieving Utility Success Through Business Process Flow Charts and Standard Operating Procedures** Maura Carroll, *Arcadis*; Bhaumik Hotha, Debbie Maxwell
Session 33: Asset Management II Meeting Room 2A		**Getting Down and Dirty: How Sewer Pump Station Risk Assessment Can Be Used to Advance a Utility's Asset Management Culture** Jamie Bondurant, *Hazen and Sawyer*; H. Lenny Matthews, Francis Malik, Ryan Nagel
Session 34: Sustainability and Resiliency II Meeting Room 2B		**10 Years of Progress – WSSC's GHG Inventory Report Card** Miranda Santucci, *Jacobs*; Robert Taylor, Paula Sanjines, Carolyn Meisner
Session 35: Stormwater II Meeting Room 2CD		**Current and Future Directions in Stream Restoration as an Effective BMP** Robert Siegfried, *RES*; Pat Bradley
Session 36: Water Treatment II Meeting Room 3AB		**Water Utility Increases Recovery Rate from 75% to More Than 90% Using Novel Flow Reversal Reverse Osmosis Technology** Richard Cavagnaro, *AdEdge Water Technologies*
Session 37: Design and Construction III Meeting Room 3C		**Rehoboth Beach Ocean Outfall Case History** Craig Camp, *GHD*; Brandon Gott
Session 38: Planning and Modeling II Meeting Room 3DE		**It Takes Two to Model Build: Combining SCADA Data with Operations Staff Knowledge To Efficiently Develop a Complex Hydraulic Model** Katherine Sager, *Carollo Engineers*; Laura Khouvilay
Session 39: Biosolids Management and Solids Handling II Meeting Room 4AB		**A Synergistic Approach to Net Zero Resource Recovery Facilities – Hermitage Municipal Authority Success Story** Sudhakar Viswanathan, *Veolia Water Technologies*; Thomas Darby, Jason Wert, Richard DiMassimo, Meg Hollowed
Session 40: Collection and Interceptor Systems II Meeting Room 4C		**The Journey to Upgrade a Sewage Pumping Station for a Small Customer Service Area – How Much Is Too Much?** Steven Carter, *GHD*; Samantha Keulmann, Vince Maillard, Nyika Roberson-Ramos

Thursday, September 12

Time: 11:30 AM - Noon

Session Name & Number Location	Credits	Presentation Title Presenter
Session 31: Regulatory Issues **Meeting Room 1C**		**Addressing Emerging Contaminants with Competing Goals**
		David Briley, *Hazen and Sawyer*; Erik Rosenfeldt, Cory Hopkins
Session 32: Utility Management II **Meeting Room 1D**		**Of the People, by the People, for the People – Data Democratization at Newport News Waterworks**
		Adrianna Dimperio, *Newport News Waterworks*; Aditya Ramamurthy
Session 33: Asset Management II **Meeting Room 2A**		**Rivanna Water and Sewer Authority (RWSA) Asset Management Program**
		Gage Muckleroy, *GHD*; Scott Schiller, Charlie Card
Session 34: Sustainability and Resiliency II **Meeting Room 2B**		**A Utility-Wide Approach to Water Resiliency**
		Kathleen Whitten, *Loudoun Water*
Session 35: Stormwater II **Meeting Room 2CD**		**A New Tool for Stormwater BMP Selection**
		Shelly Frie, *Jacobs*
Session 36: Water Treatment II **Meeting Room 3AB**		**Comprehensive Piloting of Innovative Process Combinations to Control Disinfection By-Products and Manganese**
		PJ Crow, *OBG*; Narayan Venkatesan, George Rest
Session 37: Design and Construction III **Meeting Room 3C**		**Future is Digital – How 3D Scanning is Making Design and Construction of Upgrades to Existing Infrastructure More Efficient**
		Tung Nguyen, *Arcadis*; Andrew Freitas, John Royse
Session 38: Planning and Modeling II **Meeting Room 3DE**		**Lower Cape Fear Water & Sewer Authority 54-Inch Parallel Raw Water Main: A Regional Approach to Raw Water Reliability & Capacity**
		Tony Boahn, *McKim & Creed*
Session 39: Biosolids Management and Solids Handling II **Meeting Room 4AB**		**Incidental ATAD at the Largest Wastewater Reclamation Plant in the World**
		Ersin Kasirga, *GHD*; Ahamed Ifthikar
Session 40: Collection and Interceptor Systems II **Meeting Room 4C**		**City of Richmond Marshall Street 60" Brick Sewer Geopolymer Rehabilitation**
		Scott Naiva, *Milliken Infrastructure*; Scott Naiva, Tim Bako, Bob Bell



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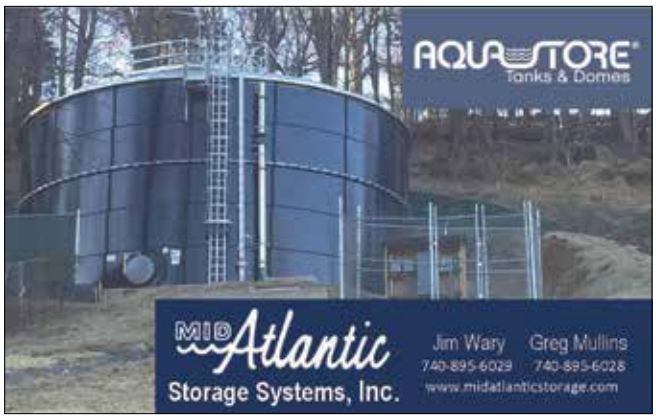
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technical session alternates

The WaterJAM committee would like to thank the individuals identified below, who have agreed to present in the event a slated speaker is unable to attend.

Session Name	Credits	Presentation Title & Presenter
Alternative Project Delivery		**The Olympic Cat Herding Final**
		Eric Rawdon, *Stantec*; Laura Simmers
Asset Management		**Where to Open-Cut & Where to Line: Asset Management for Force Main Replacement**
		Zachary Swartzbaugh, *HDR*; Marchelle Sossong, Ralph Claytor, Laurissa Hoyle
Biosolids Management & Solids Handling		**What Are My Options When I Need a Solids System Upgrade Focused on Maximizing Biogas Production and Use?**
		Lauren Glose, *Wendel*; John Revette
Condition Assessment		**Impact of pH and Alkalinity on Concrete Corrosion in a Two-Sludge Nitrification/Denitrification Process**
		Ian Camper, *AECOM*; Ed Locke, Timothy Kent, Kathleen Tamborrino, Salil Kharkar, Nicholas Passarelli
Design and Construction I		**Innovation, Collaboration, and Miles of Piles Result in the Successful Completion of a Treatment Plant Expansion on Landfill Site**
		Stephen Henning, *HDR*; Jason Kerns, Tim Griffin, Katherine Linares, Kelly Lamp, Bob Kincaid
Design and Construction II		**Sixty-Three-Year-old 5.0 MG Water Tank Replacement in a City Old and Historic District**
		Thomas DiLego, *Greeley and Hansen*; Robert Stone, Janice Bailey
Distribution and Operations		**Promoting Economic Development within a Targeted Growth Area with Phased Infrastructure "Build It (…in Phases) and They Will Come"**
		Dan Villhauer, *Dewberry Engineers*; Steven Herzog
Emerging Technology		**A Distributed Sensor Deployment for Leak and Transience Detection for Howard County, MD**
		Brian Ellis, *Pure Technologies*; Zachary Baker
Nutrient Removal and Recovery		**Balancing Act: Optimizing Primary Effluent Equalization to Reduce Nutrient Load Variability to Secondary Treatment**
		Paula Sanjines, *Jacobs*; Kacey King-McCrae, Marialena Hatzigeorgiou, Tim Constantine
One Water		**Strategies for Integrated Nutrient and Water Resource Management at Loudoun Water**
		Phill Yi, *Hazen and Sawyer*; Thom Lipinski, Sarah Lothman, Andrew Beatty, Janice Carroll, Stephanie Ishii, Wendell Khunjar
Planning and Modeling		**Water and Sewer Infrastructure Improvement Plan for the Irving Street Corridor (Washington, D.C.)**
		Teresa Wong, *Mott MacDonald*; Sam Ofori, Sonia Oton, Gary Geck
Public Outreach and Education		**Half Efforts Made Whole: How Grant Funding Facilitated Full Lead Service Water Line Replacements**
		Rosemary Green, *City of Richmond Department of Public Utilities*; Jonathan Cosby; Bob Stone
Regulatory Issues		**PFAS... Planning For Additional Statutes? Treatability In Review**
		Bill Meinert, *OBG*
Small Utilities		**Fast-Tracked Chemical System Upgrade to Meet Critical Regulatory Compliance**
		Brett Heim, *Dewberry Engineers*; Brenton Payne
Stormwater I		**Implementation of a Large-Scale BMP Retrofit for Cost-Effective TMDL Compliance**
		Michael Wooden, *Arcadis*; Scott Smedley, Fernando Pasquel
Sustainability and Resiliency I		**Innovative Pipeline Inspection Technology Supports Resiliency for Coastal Systems Affected by Sea Level Rise, with Case Studies**
		Michael Condran, *Electro Scan*
Utility Management I		**Challenge and Opportunity: One Owner's Tale of Bringing Facility Records into the Digital Age**
		Amanda Lothes, *Newport News Waterworks*; Christiana Tambone
Wastewater Forum		**Exploration of Electrocoagulation and Electrochemical Oxidation for Treatment of Landfill Leachate**
		Xingjian Liu, *Virginia Tech*; Zhen He
Wastewater Treatment		**Design of an Upflow Anaerobic Sludge Blanket (UASB) Reactor in Niamey Niger**
		J. Stuart Hughes, *Independent Consultant*
Water Forum		**Crushed Glass Filtration versus Sand Filtration**
		Anna Close, *George Mason University*; Stephanie Thomson
Water Resources		**Mile-Long Monitoring: Geotechnical Instrumentation System Design for the Cobbs Creek Regional Water Supply Reservoir Project**
		Corey Schaal, *Schnabel Engineering*; Mark Landis, Brian Toombs
Water Treatment		**When Algaecides Can't Cut It: Algae Treatment by Air and Sonication**
		Kelsey Kenel, *HDR*; Christina Alito, Pete D'Adamo
Young Professionals Paper Session		**Microorganism Can Take Fast-Growing Strategy to Survive the Extreme Settling Velocity Selection in Aerobic Granulation Reactors**
		Yewei Sun, *Virginia Tech*; Bob Angelotti, Zhi-Wu Wang



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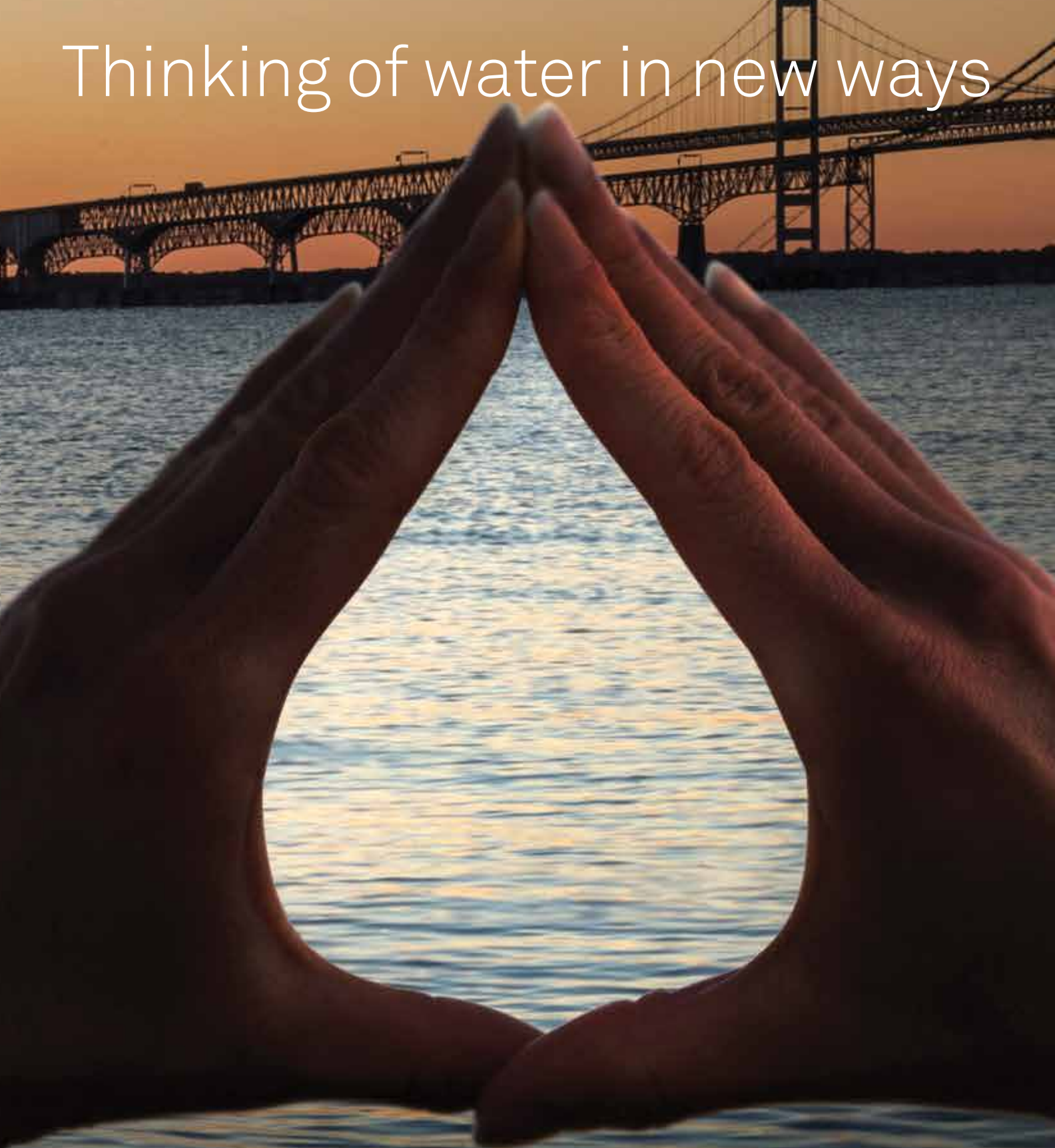
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Lakeside Equipment Corporation	4	630-837-5640	www.lakeside-equipment.com
LimnoTech	64	202-833-9140	www.limno.com
Michael Baker International, Inc.	64	757-631-5442	www.mbakerintl.com
Mid Atlantic Storage Systems, Inc.	79	740-335-2019	www.midatlanticstorage.com
Miller Pipeline	48	317-293-0278	www.millerpipeline.com
Mobile Dredging and Video Pipe, Inc., A Carylon Water Group Company	79	844-348-0772	www.carylonwatergroup.com
MWH Constructors	18	617-314-7128	www.mwhconstructors.com
OBG	55	757-285-8116	www.obg.com
Pace Analytical Services	38	800-999-0105	www.pacelabs.com
ParkProcess	36	855-511-PARK	www.parkprocess.com
Pittsburg Tank & Tower Group Inc.	77	270-826-9000	www.pttg.com
Pollardwater	26	800-437-1146	www.pollardwater.com
RELINER/Duran Inc.	11	800-508-6001	www.reliner.com
RK&K	24	800-787-3755	www.rkk.com
Sherwood-Logan & Associates	21	804-560-5410	www.sherwoodlogan.com
Smith & Loveless, Inc.	24	800-898-9122	www.smithandloveless.com
Smith-Midland Corporation	50	540-439-3266	www.smithmidland.com
Tencarva Machinery Company	57	336-665-1435	www.tencarva.com
Timmons Group	77	804-200-6500	www.timmons.com
Tri-State Utilities	51	757-366-9505	www.tristateutilities.com
USALCO, LLC	83	410-918-2230	www.usalco.com
VEGA Americas, Inc.	10	513-272-0131	www.vega.com
Wendel	59	703-299-8718	www.wendelcompanies.com
Wetland Studies and Solutions, Inc. (WSSI)	62	703-679-5600	www.wetlands.com
Whitman, Requardt & Associates, LLP	65	804-272-8700	www.wrallp.com
WileyWilson	23	434-947-1901	www.wileywilson.com
WW Associates	35	434-984-2700	www.wwassociates.net

Racing Toward Phosphorus Compliance?



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USALCO has established a proven track record in helping wastewater treatment plants effectively achieve NPDES permit limits for total phosphorus. Our products also reduce/ eliminate the need for pH adjustment chemicals, enhance solids settling in final clarifiers where needed, and improve ammonia removal in alkalinity deficient systems.

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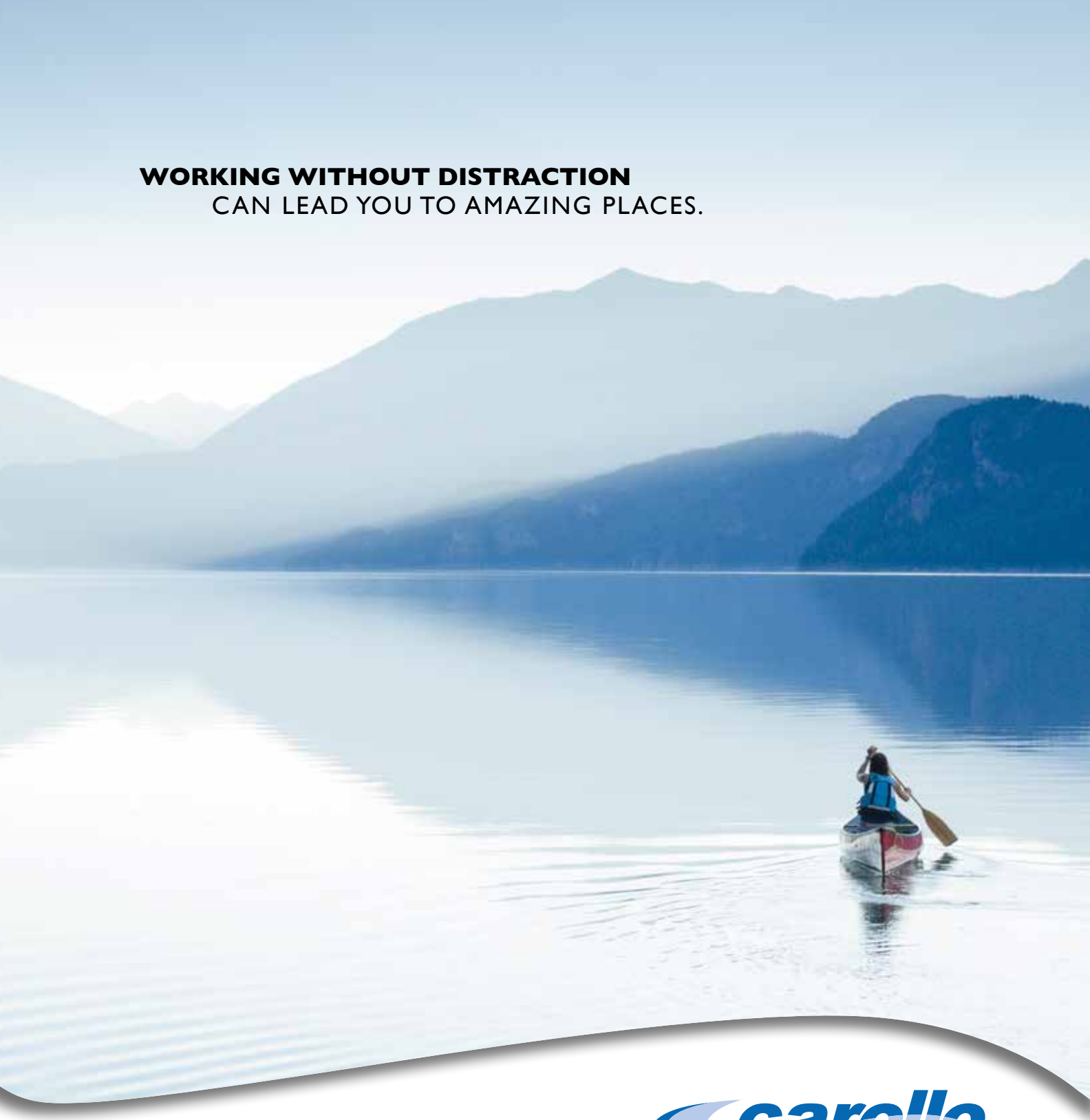
- Aluminum Sulfate
- Sodium Aluminate
- Polyaluminum Chloride (DelPAC & Delta-Floc)
- Aluminum Chlorohydrate (DelPAC XG)
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