



American Water Works Association  
**Pacific Northwest** Section

WINTER 2020

# **WATER** *matters*

The Official Magazine of the  
Pacific Northwest Section – AWWA

## **2021 PNWS-AWWA DIRECTORY & BUYERS' GUIDE**

- ▶ **Gray Matters**
- ▶ **Tackle Taste and Odor with Proactive Water Quality Monitoring**
- ▶ **Fusible PVC Piping Makes a Difference**

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Message from the Chair • PNWS Association Director Report



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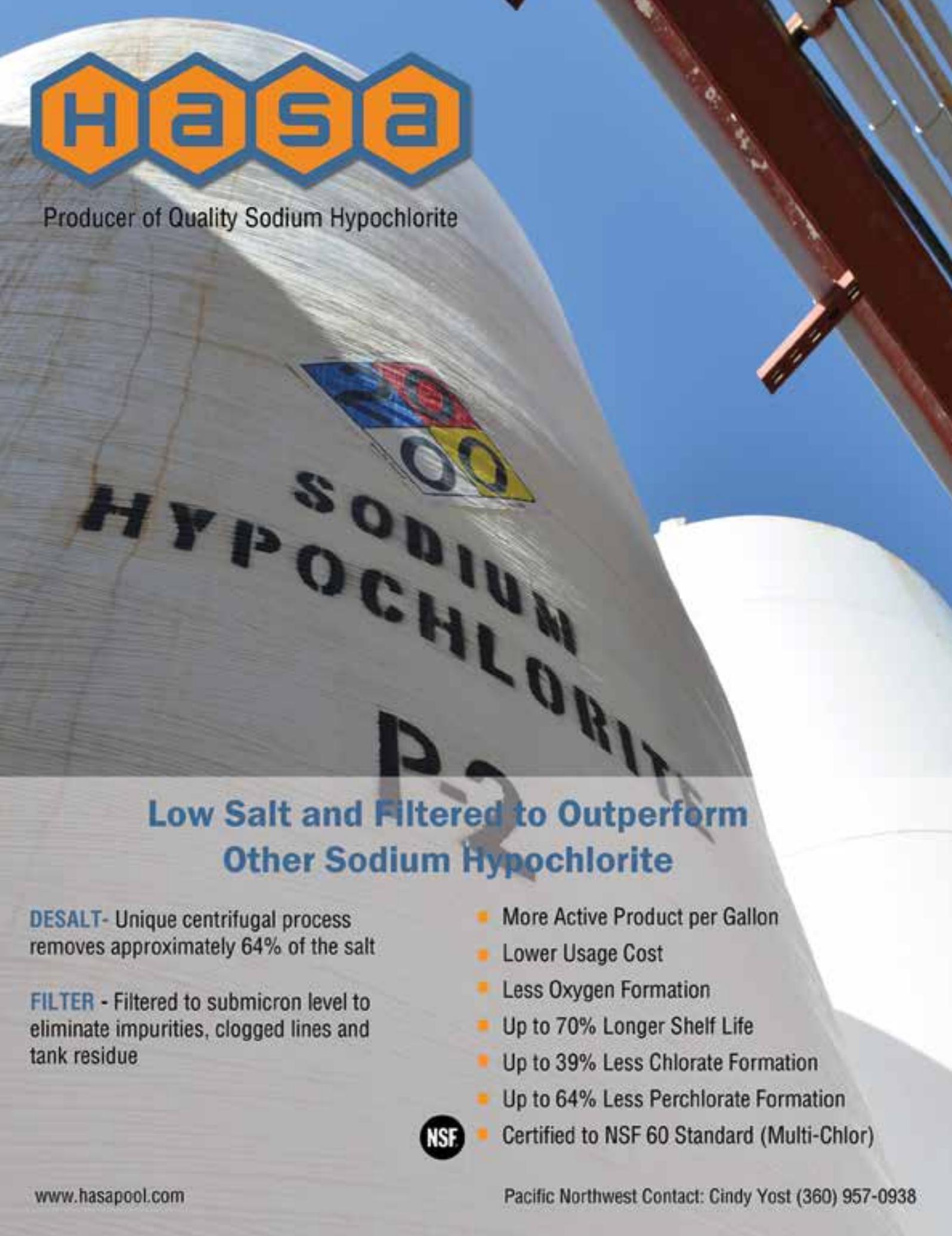
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## Adapting With Meaning

**D**ay 269 of lowered expectations. I really thought that my apocalypse outfit would be way cooler than sweat pants and a messy bun. I have developed an unhealthy TikTok addiction. Who knew that my new favorite song would be a little ditty that goes chicken wing, chicken wing, hot dog and bologna?

Seriously though, as 2020 comes to a close, I am sure many of you are feeling a sense of relief that it is almost over and that maybe 2021 will bring renewed hope of 'getting back to normal,' whatever that might mean. I think that 2020 has taught us some valuable lessons. The first is not to take face-to-face interaction with people for granted. Who knew that we would miss handshakes and hugs so much? We have all learned the value of patience and how far it can be tested. We have seen a renewed sense of compassion for our fellow human beings and what they have to go through on a daily basis. I hope we have learned how to self-reflect on our own personal unconscious biases and make a change for the positive.

We have seen great perseverance and adaptability within our Section. I am always amazed at how quickly we adapt and change to meet our memberships needs. Having to cancel our conference and other social events was a huge blow to our Section; however, with the introduction of our virtual conference in 2021 and many virtual trainings throughout the year, we are striving to adapt and still provide value to members. Our members continue to innovate and will not be satisfied with the status quo.

Along those lines, as I move to the halfway point of my term as Chair, I am looking back to what has been accomplished so far. One of my greatest passions has been to ensure that our

I can't thank you all enough for all you do on a daily basis.

Section is truly welcoming to members by being diverse and inclusive. With the start of our new Diversity and Inclusion (D&I) Subcommittee, we are on that path. To further support this mission, we are updating our bylaws to ensure that from the top down we are an inclusive Section.

We have passed a balanced budget that will help to protect our Section's finances and leave room for growth and rebuilding of our reserves. This year was an example of why we need to maintain a healthy reserve. It is those reserves that have helped keep our Section going this year. We sincerely thank all of you for your continued patience and understanding when it comes to Section spending (or lack thereof).

As we look ahead to 2021, we have finalized our four virtual conference topics and registration is open for the first one, scheduled on February 25, 2021. We have offered this as a half- or full-day, depending on your needs for training. We also have sponsorships available to include our vendors. I encourage you all to take part in this event and check out our website for more details. Our committees and subsections are also working diligently on providing training for our operators. Lastly, don't forget to vote in our Section election if you have not already done so. If you have questions pertaining to the election, please contact our Section office.

All in all, I would say that 2020 has had some positive outcomes due largely in part to the dedication of our volunteers. I can't thank you all enough for all you do on a daily basis. You are all an inspiration. With that, I hope you are all doing well and I wish you all a joyous holiday season and a Happy New Year.

Stay safe and wash your hands! 🧼

Ronda Farmer  
PNWS Section Chair

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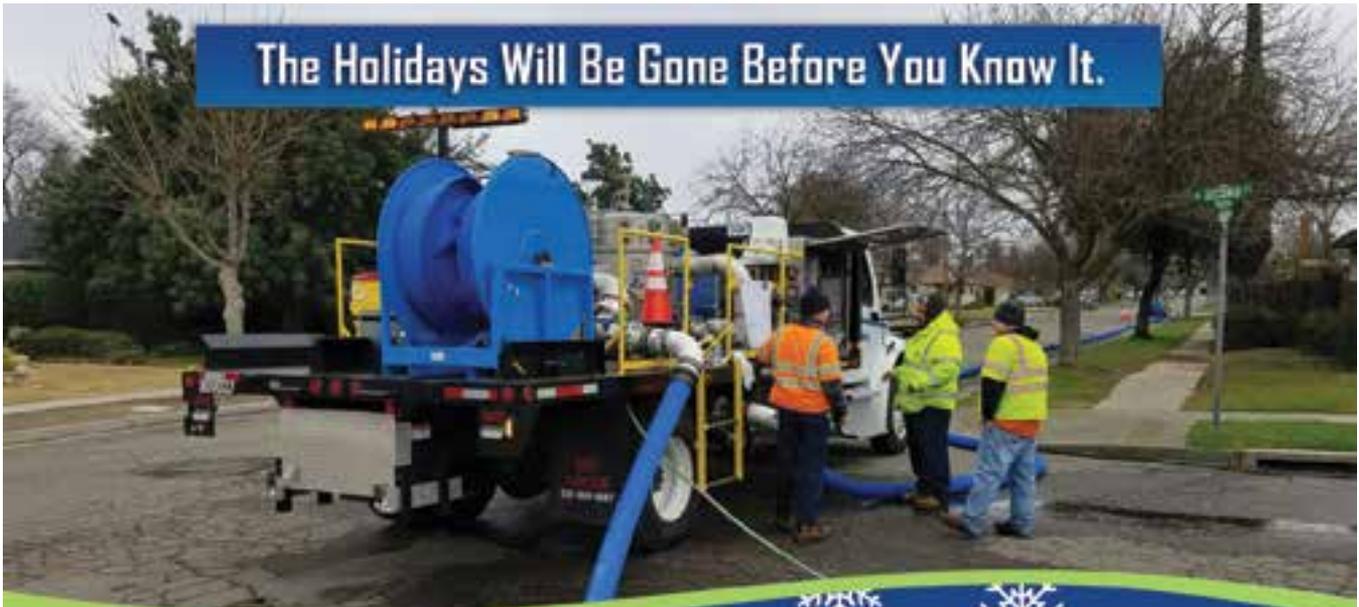
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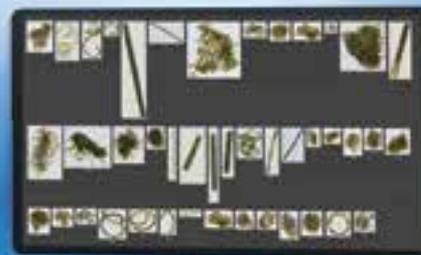
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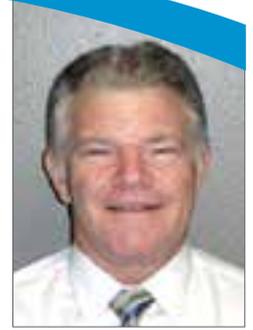


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# Diversity and Inclusion

I am proud to be a part of an Association that reflects and analyzes its core values, mission statement, and strategic plan and adjusts and refocuses them (as needed) to ensure it stays ahead of the curve and meets the needs of its members.

There has never been a more important time to advance diversity and inclusion in our world of water. It is personally important to me that we as an industry are attracting, welcoming, and nurturing talent in every color and from every origin and walk of life.

I am proud of the large strides of progress the Association has made in providing information and promoting diversity and inclusion. Next steps include making diversity and inclusion an integral part of every Section/organization and thoughtfully thinking about our message and how we can promote, invite, and welcome people to be a part of this industry.

Today, the national conversation has turned to issues of systemic racism and the oppression of people of color in our society. We have been challenged to think about what it means to build welcoming workplaces where Black, Indigenous, and other employees of color are safe, seen, and valued. As an industry, we must foster greater diversity in the workplace and institute and manifest greater and more open inclusion and equity practices that are mindful and demonstrative of the equal value to all.

We at the AWWA and the Pacific Northwest Section are doing all we can to dismantle something so destructive to American liberties, rights, privileges, and the pursuit of happiness for us all. The AWWA is committed to doing its part to achieve that goal and helping Sections at the local level.

As an industry, we must foster greater diversity in the workplace and institute and manifest greater and more open inclusion and equity practices that are mindful and demonstrative of the equal value to all.

This past Summer, the PNWS Board officially formed the PNWS Diversity and Inclusion (D&I) Subcommittee as part of the Membership Engagement and Development Committee (MEDC). This Committee came to be with the support of our Chair Ronda Farmer, as part of her goals for 2020, and Chair-Elect John Roth. The Subcommittee is supported by the National AWWA Diversity & Inclusion Committee that provides support nationally for Sections ([www.awwa.org/Membership-Volunteering/Diversity-Center](http://www.awwa.org/Membership-Volunteering/Diversity-Center)). The strategic objective of this Subcommittee is 'Shaping a More Diverse and Inclusive Section.'

The Mission Statement of the PNWS D&I is as follows:

*To foster a welcoming and inclusive AWWA culture that champions meaningful institutional and individual change regarding diversity, PNWS, and equity in the water industry.*

The D&I Committee will be focusing on two main areas for the Section:

- Generate institutional change, and
- Provide networking opportunities to raise awareness, educate, and connect members.

Over the course of the next year, the Subcommittee's goals will be to:

**1. Represent:** Generate institutionalized change and develop programming to increase representation in the PNWS with a focus on providing a welcoming

organization that attracts and promotes a diverse membership and richly affords opportunities for people of every color in the water industry.

**2. Engage:** Engage members in active conversation around D&I-related topics and offer programming to connect current and prospective members. This will include supporting the engagement of students and increasing access to education about the water industry.

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**3. Listen:** Provide space through monthly subcommittee meetings and sponsored events for members to openly discuss D&I-related topics. Planning is underway for an event as part of the next Winter Training.

**4. Evolve:** Devise a process for running this committee based on the continuous evolution of diversity and inclusion in our AWWA membership. If you would like to learn more about the D&I Subcommittee or wish to take part in the next monthly conversation, please contact MEDC Chair Chris

Young at [chris.young@muraysmith.us](mailto:chris.young@muraysmith.us).

As you might have expected, the Association is advancing its new strategic and core values with the Diversity Member Inclusion Committee. The AWWA strongly recommends the adoption of diversity policies by all members and water profession organizations that reflect the demographics of those we serve. These policies should promote volunteerism and provide employment opportunities encouraging the diversity of staff, membership, and leadership.

Policies should make it clear that discrimination on the basis of race, color, religion, sex, national origin, sexual orientation, age, veteran status, or disability and harassment of any type are not acceptable and will not be tolerated. Further, these policies should reflect specific and results-oriented procedures to which good-faith efforts are applied. The success of AWWA depends upon the full utilization of all its members. To this end, AWWA is committed to proactively engaging a workforce that reflects the demographics of those we serve.

The Association has put forward a new strategic plan, core values, and strategic objective: to advance diversity and inclusion, continue to move forward with membership engagement and the development of the strategic objective, and advance a culture of diversity and inclusion that is reflected in the AWWA leadership and member experience.

To move forward, the AWWA has put forth its next steps for the coming year with a focus on increasing the coordination and collaboration between the Association and its Sections.

- Quantify AWWA's efforts in diversity & inclusion, identify opportunities and develop plans for improvement at the operational, volunteer, and leadership levels,
- Advance the Diversity Member Inclusion Committee Strategic Plan, and
- Enhance experience for all members in communicating the importance and value of diversity & inclusion.

I believe the AWWA has the opportunity to help pioneer the way for members to identify and/or recognize examples of bias or racism in their organizations so they can address issues at the ground level. Together, we need to build a culture where we can learn and grow together on matters of inclusion by being open, vulnerable, willing to question, learn, and faithfully engage. We should be excited at the possibilities and opportunities to address this important issue in changing our culture.

Wishing you and yours the very best in the new year ahead! 🎉

Randy Black  
PNWS-AWWA Director

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## Membership Engagement and Development Committee (MEDC) and 2020 Vision Committee

The Membership Engagement and Development Committee's (MEDC) goal is to promote the value of membership and be a resource to all our members. Our Committee is excited to kick-off the Winter season with our Mentorship Program – alongside the new Diversity and Inclusions Committee that is working to create a welcoming Section for all!

The value of AWWA membership means something different to everyone. In a world where majority of our members are working from home, we are continuing to brainstorm ways to support the membership virtually.

### MEDC's Areas of Focus

- Recruiting new members for the MEDC to **support membership initiatives** and ensure we continue to be a thriving Section,
- Reaching out to **first year members** and connecting them with resources,
- Planning the fourth annual **Mentorship Program**,
- Providing subsection leadership with tools to engage their members, including **Welcome Wagon** materials, and
- **Creating and maintaining resources** for our members.

### Want to be Part of a Better Future? Join the PNWS Mentorship Program

The fourth year of the Mentorship Program is now in motion: the application form is available online and mentor/protégé pairs will be matched by the end of the year. The Program involves a commitment of five to six meetings, over the course of six months, to meet with your mentor/protégé, build your network and gain invaluable leadership skills.

**Apply here** at [pnws-awwa.org/membership\\_committee/2020-subcommittee/mentorship-program](https://pnws-awwa.org/membership_committee/2020-subcommittee/mentorship-program) or take a picture of the **QR Code** with your smartphone to be directed to the website. If you have questions or wish to learn more about the Program, please reach out to our



## The MEDC is actively recruiting for new Committee members and roles.

Mentorship Program Coordinator Erica Rodriguez at [erica.rodriguez@murraysmith.us](mailto:erica.rodriguez@murraysmith.us).

### Diversity & Inclusion Committee

Our local communities, along with our industry, are facing extraordinary challenges. This past Summer, the PNWS-AWWA Board officially created a Diversity and Inclusion (D&I) Subcommittee, as part of the MEDC. Over the past several months, the Subcommittee created a mission statement and goals, which were posted in the October E-Newsletter and available for viewing on the MEDC website: [https://sites.google.com/alpnws-awwa.org/membership\\_committee](https://sites.google.com/alpnws-awwa.org/membership_committee).

The mission statement of the PNWS D&I is as follows:

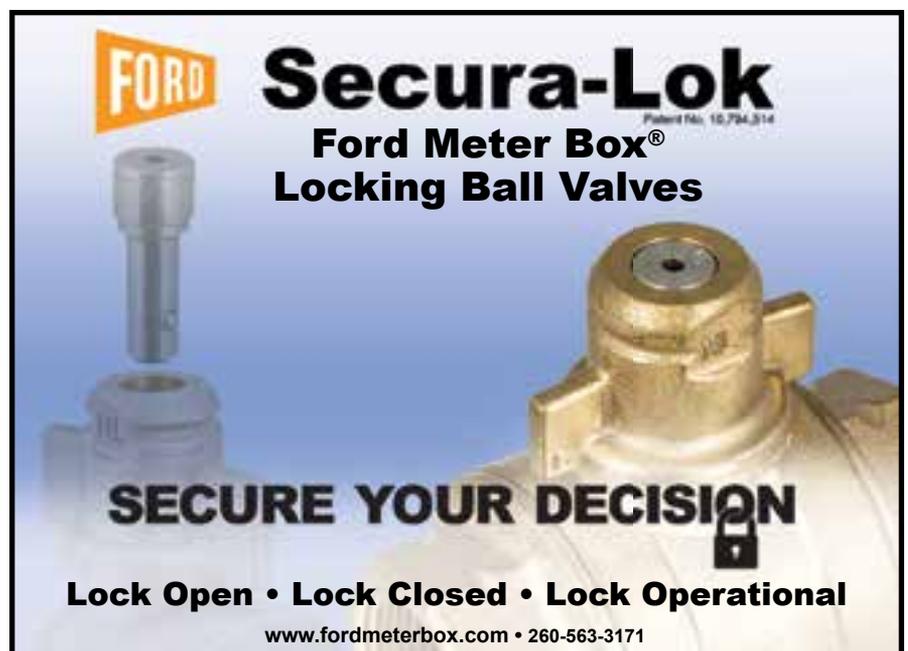
*To foster a welcoming and inclusive AWWA culture that champions*

*meaningful institutional and individual change regarding diversity and equity in the water industry.*

The Subcommittee meets monthly to shape D&I goals, define our focus areas, and develop an action plan for our Association; we need your voice! If you are interested in participating or just listening in on the conversation, please contact to Chris Young at [chris.young@murraysmith.us](mailto:chris.young@murraysmith.us).

### Want to Promote AWWA and Develop Membership? Join MEDC!

The MEDC is actively recruiting for new Committee members and roles. The time required may be varied to fit your ability and is a great opportunity to gain leadership skills. We hold monthly calls on the first Friday of each month. Email [chris.young@murraysmith.us](mailto:chris.young@murraysmith.us) to get on the listserv. 



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# Oregon Water/Wastewater Agency Response Network (ORWARN) Committee

### Announcing New Members

ORWARN continues to gain members and has been particularly focusing on smaller water and wastewater systems and tribal outreach.

### COVID-19 and ORWARN

ORWARN had the opportunity, from AWWA and FEMA, to obtain face coverings for water and wastewater utilities throughout all of Oregon. ORWARN, with the help of the Oregon Association of Water Utilities (OAWU), has just completed its second round distributing faces coverings (totaling over 20,000).

### ORWARN Website

The ORWARN website is up and running. A user's training was given at the functional exercise that was held at the Eugene Water & Electric Board (EWEB) in November of 2019, and a user's guide was created to onboard and aid new members.

If you have not logged into the ORWARN website recently, please do so and update your organization's information. If you need help logging in, please contact ORWARN Board Secretary Gina Johnson at [gmjohnson@klamathfalls.city](mailto:gmjohnson@klamathfalls.city). She will help you regain access to the website.

### ORWARN Annual Meeting and Board Elections

ORWARN held its annual meeting on October 15, 2020, and new Board Members were elected. Please welcome Jeremiah Hunt as the new Board Chair, Dwayne Barnes as Vice-Chair, and Robert Whitham and Heather Knapp as Members-at-Large.

### 2021 ORWARN Conference

Early bird announcement: ORWARN is planning a 2021 Conference in Newport. Watch for more information in the upcoming months. [!\[\]\(d3b4f22af99c507f55d7924c8d6d7349\_img.jpg\)](#)

## Distribution System Committee

In light of the numerous wildfires in the northwest this last fall, the Distribution System Committee wanted to share some of the water distribution staff's experiences during and after the events.

On September 9, the Alameda Fire in southern Oregon destroyed approximately 2,500 homes and 100 business in the small communities of Talent and Phoenix. Thanks to the exceptional response from our emergency responders, only two fatalities occurred out of thousands that evacuated within hours of the quickly-moving fire. In the later hours of the fire, both the Phoenix and Talent water systems were fully drained and hydrants were unable to provide the fire crews with the needed water supply. This was no fault of the water systems – the combination of fighting multiple extreme fires and numerous melted water service laterals was enough to drain each city's storage volumes of water. Storage volumes

for each city were typical – with adequate stored volume for the largest fire expected at a single building, emergency volume, and operational volume; however, the performance of the water systems was questioned.

The public works crews from each city performed heroically as the fire threatened their water systems. Rather than immediately evacuating, the crew (total of five staff) fought the fire approaching their operations center and the Talent Booster Pump Station – the sole source of supply for the entire city. The fire surrounded the site but they were successful in protecting their critical infrastructure. In Phoenix, even as staff members lost their own homes to the flames, the crew (also very small) had the foresight to maximize water production out of the Regional Booster Pump Station that supplies both cities to increase available water for firefighting.

With the help from neighboring Ashland and Medford Water



*The public works crews from both Talent and Phoenix performed heroically as the fire threatened their water systems.*

Commission, the two cities were able to isolate leaking pipes, re-pressurize their systems, perform flushing and water quality sampling, and eliminate the boil water notice in a matter of days and long before evacuation orders were lifted. As the communities recover, the two cities are seeking FEMA public assistance grants to help replace damaged water meters and other city infrastructure. [!\[\]\(c62fd5e60374435f1042392f36bb95e1\_img.jpg\)](#)

### Young Professionals Committee

The Pacific Northwest Young Professionals (YPs) are a subgroup of AWWA, consisting of a dedicated cohort of young professionals and students. The YP Committee coordinates and hosts events that provide leadership skills and technical information to enhance your career, and opportunities to network with professionals and students in the water industry.

#### In the Works

The YP Committee continues to create new ways to provide virtual networking and training opportunities. Our Events Coordinator Alex Puryear is working hard to put together a series of interactive webinars and social events for students and YPs. Our new Student Chapter Coordinator Christopher Jones, with Brown&Caldwell, is working closely with local universities to establish a strong student presence there.

#### PNWS YP Events

##### Virtual Event Series

The YP Committee is putting together a virtual event series for all the PNWS YP Subsections. This is a great opportunity to provide networking and training opportunities. We have outlined the webinar subject matter for the first three months of 2021. Each webinar will take place during the lunch hour and will contain a 30-minute presentation followed by a Q&A and networking session. Stay tuned and visit our website for updates: <https://sites.google.com/a/pnws-awwa.org/young-professionals>.

##### Scholarships and Poster Competition Webinar

On November 5, 2020, the Student Outreach Subcommittee hosted a free Scholarships and Fresh Ideas Poster Competition webinar. The event covered topics including what scholarships are available, tips on successful scholarship applications, and the benefits of applying for scholarships and participation in the Poster Competition. Featured speakers included AWWA's Senior Manager of Donor Relations and Development Michelle Hektor and the Coordinator of Development and Stewardship David Henderson.

##### Student and YP Water Tower Building Competition

The Water Tower Building Competition has become a great opportunity for students and YPs to apply their creativity, engineering skills and knowledge and have fun and network. The goal of the competition is to build a functional, original, and innovative water tower individually or within a three-person team. The winner – announced on December 8 at the Water Quality & Infrastructure Virtual Conference – gets a scholarship to the 2021 YP Summit in Atlanta, Georgia. Additionally, any student who participated in the competition will receive a free AWWA student membership for an entire year.

### A Water Tower Building Competition for Student and YPs



[we.awwa.org/webuild](http://we.awwa.org/webuild)

#### PNWS Student Outreach, Career Fairs, and Mentorship

Planning a career fair event or student outreach? Interested in connecting with other industry professionals through the PNWS Mentorship Program? See the MEDC and 2020 Vision Committee website for more details: [https://sites.google.com/a/pnws-awwa.org/membership\\_committee](https://sites.google.com/a/pnws-awwa.org/membership_committee).

#### Participate and Stay Connected

Interested in getting involved with our YP group or need additional information? Email our Communications Coordinator Annabel Warnell at [awarnell@landauinc.com](mailto:awarnell@landauinc.com).

#### Follow us on Social Media



### Water Conservation

Water consumption looked quite a bit different in 2020. In Spokane, our MDD reached a new peak where above ground pools were sold out, we no longer shut off services, and home projects gained such popularity that it was nearly impossible to find an available contractor. Conservation messaging was delicate and positive in order to prevent our customers from feeling any additional anxiety. The need for water conservation continues and during this pandemic season many of the traditional methods

for water conservation outreach has needed to be retooled.

We are very appreciative of those who submitted abstracts for the 2020 and 2021 Conferences. The PNWS has worked diligently to pivot the 2021 Conference into quarterly digital trainings that focus on four subject areas. Though conservation is not one of those topics, we have our 2020 track approved for CEUs and thank those who submitted abstracts and our Committee members for providing a training opportunity in Spring 2021.

The need for our water conservation community to gather and share experiences is long overdue. Stay tuned for an invite to a virtual committee gathering and training.

If you are interested in becoming involved with the Conversation Committee, please contact one of the Co-Chairs Kristen Zimmer, [kzimmer@spokanecity.org](mailto:kzimmer@spokanecity.org), or Doug Greenlund, [dgreenlund@spokanecity.org](mailto:dgreenlund@spokanecity.org).

P.S. Congratulations to David Searcy on his retirement from the Medford Water Commission! 🎉

### Scholarship Committee

Coming up 50 years, the Pacific Northwest Section has helped nearly 300 students further their college education. This effort is supported by contributions to the Education & Training (E&T) fund, scholarships, support from Craig Kelman and Associates and our fantastic Subsections.

In January, letters go out to educational institutions in the Pacific Northwest. Applications for the 2020-2021 academic year scholarships will be available on the Section website in early January and are due in March 2021.

The Section has 18 perpetual scholarships honoring members of the Pacific Northwest Section. These are:

- Archie Rice Memorial,
- Cynthia Driscoll Memorial,
- Legacy Scholarship (honoring those individuals yet to meet endowed status),
- Ray Pettie/Bob Stiles Memorial,
- Alan Jones Memorial,
- Jim Doane family,
- Bob Wubben family,
- NW Washington Subsection,
- Ron Heinke Memorial,
- Past Chairs,
- Southern Oregon Subsection,
- Allen A. Alsing Memorial,
- Chris Uber Memorial,
- SW Idaho Subsection,
- Inland Empire Subsection,
- Bill and Teddy Beckman,

- Kathy Merry, and
- John Oho.

In addition, the Section is offering the *One AWWA Operator Scholarship* in concert with AWWA. This \$2,000-4,000 in scholarships is for applicants who are current water operators or seeking to enter the operator profession. Applicants must be pursuing an Operator's License or Certification, a two- or four-year degree related to the water operator profession, or professional development.

Let's celebrate 50 years of scholarships! What can you do to help our industry now? First, find an eligible student and make sure they are aware of this opportunity for help with their education ([www.pnws-awwa.org/careers/scholarship-application](http://www.pnws-awwa.org/careers/scholarship-application)). Second, consider making a tax-free donation to the Education & Training Endowment Fund. Finally, watch for young professionals, ready to enter our profession, and give them a chance. As an industry, we need them as much as they need a start in their career. If you would like to contribute, check out the E&T Fund web page, [www.pnws-awwa.org/store/donate](http://www.pnws-awwa.org/store/donate), or email the Scholarship Committee at [scholarship@pnws-awwa.org](mailto:scholarship@pnws-awwa.org). 🎉



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## Program Committee

Over the past few months, the Program Committee has been working with committee division leaders, to transform the 2021 Section Conference into four quarterly online training sessions, and registration is now open! You'll find the registration form, conference program and CEU details on the Section website.

**February 25 – Resilience Strategies** will cover the American Water Infrastructure Act (AWIA) risk assessment and emergency response plan tools and a case study on a small utility, incorporating their 2004 vulnerability assessment into the 2018 requirements. Other presentations will cover resiliency in water resources, treatment, the distribution system, energy use, and a look at consolidation of water utilities.

**May 20 – Regulatory Rodeo** will include a five-year look at RTCR assessments; updates to the NSF 61 standards that impact coating systems; updates to the Lead and Copper Rule and routine monitoring; corrosion control treatment and required monitoring; PFAS technologies; cross connection control regulations and a case study of response to a system contamination; and the use of data and machine learning to improve regulatory compliance.

**August 12 – Bull Run Projects and Willamette Water Supply Projects** will cover several sub-projects of two major water supply projects. Portland's Bull Run presentations will include a project overview; communications strategies; pilot treatment plant findings; a preliminary plant design update; and preparing the distribution system for the conversion to a filtered supply. Topics from the Willamette Water Supply project include a six-years-in update on the project; how lessons from the Tohoku earthquake were applied; and an evaluation of risk factors for integrating a new supply. There will also be a piece on applying lessons from mega-projects to midi-, mini- and micro-projects.



PNWS-AWWA  
Water 2021  
Virtual

**October 28 – Asset and Data Management** will cover **asset management**, using analytics to make maintenance decisions, and developing an asset management system for a new water supply system; maintaining distribution system piping; and updating pressure zones. The data management topics include building a data strategy for a utility; preparing an organization to move to digital water; managing and optimizing data and machine learning to improve system operation; and planning for the future.

We look forward to seeing you at the virtual sessions, and our thanks go to the Section committees – they worked with their trustees to come up with abstracts that would appeal to broad a spectrum of our membership. Please watch for committee-sponsored webinar announcements throughout the year as committees continue to develop training opportunities for our members. 📄

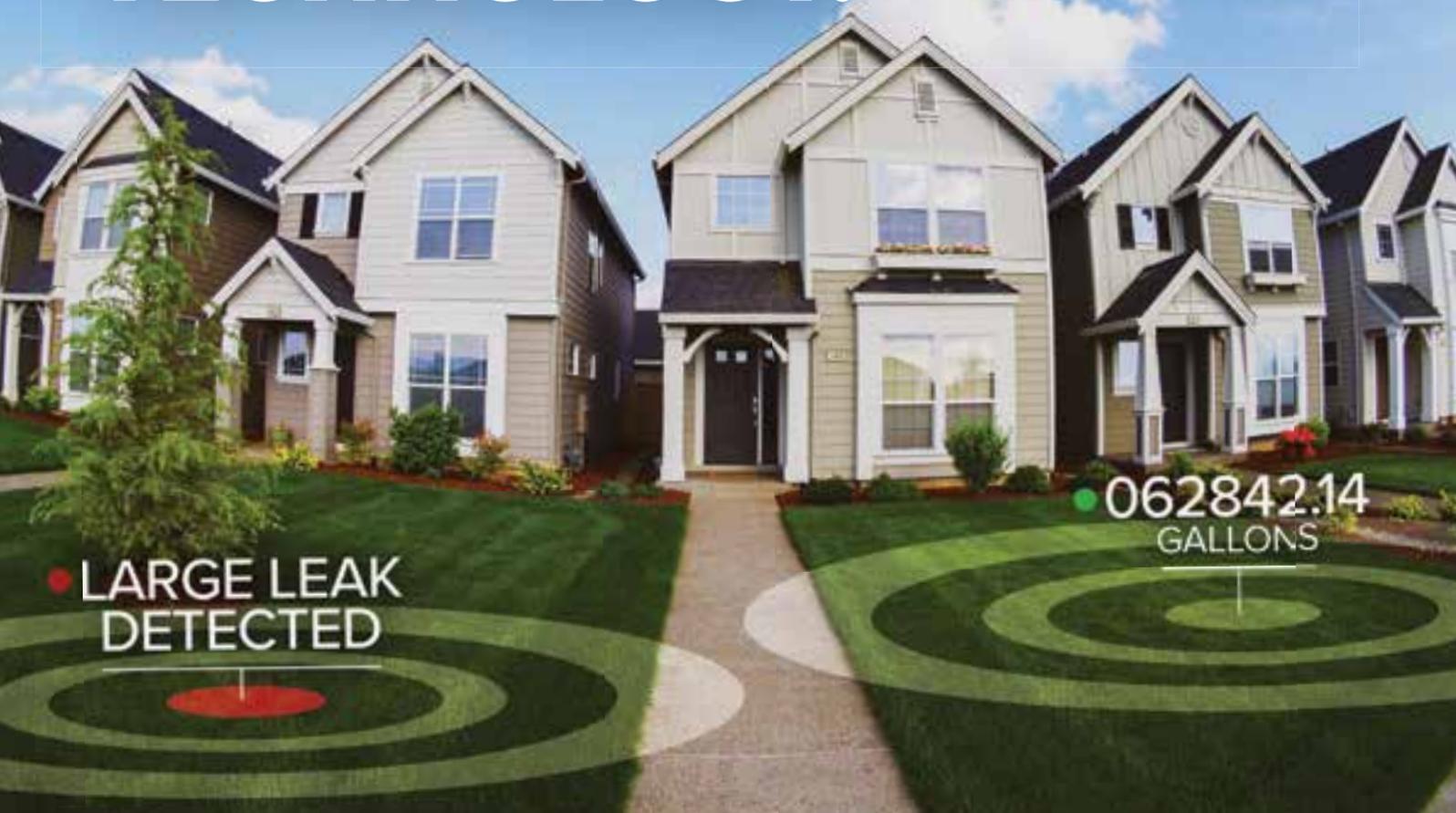
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## What Have I Learned as a Hiring Manger?

Who would have imagined when we started 2020 that we would find ourselves in the middle of a global pandemic? An event that has changed everything we thought we knew about providing essential services our citizens need in today's changing environment. While most businesses were shuttering their doors, we were donning our masks and disinfecting our workplaces so we could continue providing services that are not only expected but required to ensure public safety is maintained.

Our dedicated public works staff has reported for duty each day, continuing to install water services, repairing broken mains and providing the exceptional customer service that has been a hallmark of our industry for decades. They have done their job without complaint nor missing a beat throughout. I am exceptionally proud of all of the men and women that call my utility home and I am eternally grateful for their dedication to providing public works services to over 30,000 residents, who rely on them each and every day – regardless of what is happening on the global stage.

Alas employees do retire and some move on to greener pastures – even during a pandemic. This leaves hiring managers trying to hire skilled replacements in a highly competitive market. This article will present some of the lessons I have learned while applying for positions and hiring over the last 25 years. I will highlight some of the key mistakes I have seen applicants make, as they navigate the hiring process, and strategies I have seen help those looking to make a change and apply for a new position.

A great application package will likely get you an interview. A poor one will be passed over even if you have the best qualifications to perform the work. **An application is your first interview; treat it as you would an in-person interview.** Prepare, practice, and prepare some more.

A typical application packet will consist of a cover letter, resume, possibly some supplemental questions and, of course, the application. Each of these is an opportunity to excel or to be excluded from a recruitment process. The application might be tedious but it is critical. Most HR departments will use your application as a screening tool to eliminate those that do not meet the minimum qualifications for the position.

**Document all relevant experience.** Be detailed when you talk about the duties you performed in each job and, if possible, tie your experience to the keywords that appear in the job description you are applying for. This shows the hiring manager that you have the exact experience that they are looking for in a candidate.

**Document all your education.** Most hiring managers will often substitute education for experience; even if you did not graduate, your time spent learning may

count towards your experience. Be sure to include any certifications that apply to the position – this includes your water or wastewater certifications and other special certifications, such as forklift operator, confined space training, or other applicable programs.

As hiring managers review your application, they will focus on key items, including gaps in your employment history, reasons for changing jobs and details you provide regarding the duties performed. If you are offered an interview, be prepared to answer questions relating to these items. Most can easily be explained and should not be a concern to an applicant.

To demonstrate that you are a strong candidate, employers are looking for a strong work history with limited gaps and explanation how each change in position provided for professional growth.

Next is your resume. The biggest mistake that I have seen is a resume that is too long, too detailed and does not match the work history on your application. A resume is often one of the first document that a hiring manager will review to determine if you are the 'right' candidate. If your resume reads like a novel, it will likely not be read.

Leave the details for your application. Use your resume to take a snapshot of your experience and skills, get their attention and lead them to your application for more information. One page is good, two is okay – any more than that and most managers will stop reading.

The most important piece is your cover letter: your introduction to a potential hiring employer. Make sure you are sincere and genuine; avoid using a canned cover letter



## Use your resume to take a snapshot of your experience and skills, get their attention and lead them to your application for more information.

from the Internet – hiring managers have seen hundreds of these and will spot them immediately. A good cover letter will introduce you to the manager, provide the relevant experience that shows that your skillset matches the position and confirms that you would be a good fit to the organization.

Be sure to mention the utility or position that you are applying for and demonstrate your understanding of what the hiring manager is looking for. Keep your cover letter to one page, similar to a resume – if you write a novel, hiring managers will likely not read the full document. Hiring managers are often reviewing 20 to 50 applications; a one-page cover letter shows that you are considerate of their time.

Many agencies also include supplemental questions in their application packet: these are your first interview

questions. Treat them as such. If a supplemental question asks you to describe a time, when you were unable to build a rapport with a co-worker and you have never experienced that in your career you should not write, “I have been able to get along with everyone.” Take a few minutes and think about your answer. How would you respond if you were unable to build a rapport based on a similar experience? Be genuine, truthful and real – most of us have faced conflict in our life and that experience can be translated to the workplace.

Lastly, and it should go without saying that spelling and punctuation count. Be sure you proofread your submission – I strongly recommend you get a friend to read it for you, too. A second set of eyes can make the difference between a good application and an exceptional one. If an application packet is full of spelling errors, it shows a potential employer that you may lack an attention to detail that they are looking for. This is your chance to shine and spelling errors will diminish your hard work.

Even in this trying time, hiring managers are looking for the best of the best: Candidates that fit their organization with the basic skills and the aptitude to learn. By following the guidelines above, your application will rise to the top of the pile and you will be granted an interview, where your personality and aptitude will shine.

Happy job hunting and stay safe! 🙏

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Microscopes can do only so much when it comes to monitoring raw water and managing potential hazards, such as algal blooms. Technological advances are opening new frontiers in understanding cyanobacteria, leading to improved monitoring and forecasting at levels of efficiency and effectiveness unheard of until now.

By Frances Buerkens, Stephanie A. Smith, Greg Ford and Hunter Adams

# TACKLE TASTE AND ODOR WITH PROACTIVE WATER QUALITY MONITORING

**W**ater utilities face increasing frequency and duration of taste-and-odor (T&O) events and cyanotoxin issues. Expedited analysis is critical for reservoir management, requiring utilities to revamp operations and conduct in-house testing. The COVID-19 pandemic may inspire permanent changes to some operations, requiring traditionally lab-based technicians to rely more on technologies that enable them to gather and analyze data remotely. Utilities must adapt to these dynamic environmental and social conditions, leading many to explore how technology can facilitate affordable, scalable, repeatable monitoring programs.

Many biological monitoring programs still depend on the same technology that Dutch scientist Antonie van Leeuwenhoek used in 1676 to discover the first bacteria observed by humankind: the microscope. Although microscopes are a key fixture in every microbiology lab, their development has slowed because optical limits have been largely reached. Advancement potential exists, with higher magnification to better observe individual cells, but this is unlikely to change how utilities monitor raw water. Utilities can look to new technologies to bring a broad environmental picture into focus.

## Comprehensive Monitoring

From the field to the lab, a water utility's goal is to seek information about one variable: change. Dynamic environmental conditions require responsive tools to reveal potential problems. Cyanobacteria and algae populations can bloom within hours. Blooms that remain unchecked can attract unwanted attention, undermining confidence in public water systems; however, there is no single solution to track change. Biology is elusive, and complex problems evade simple answers. Utilities can respond in two ways: (1) increase sampling frequency and number of locations, and (2) integrate multiple tools that expand an analyst's field of view.

It's impossible to detect change fast enough to make effective decisions without ample data across multiple locations and time scales. If data are limited in frequency or location, accurately tracking cyanobacteria and algae populations turns into a wild goose chase. Cyanobacteria were the first group of living organisms on Earth. Outlasting dinosaurs gives credence to their evolutionary capabilities.

Cyanobacteria benefit from diurnal variations, enabling them to outcompete algae. Propelled by buoyant cells, cyanobacteria rise to the surface at night

to absorb more light and sink during the day to enhance nutrient absorption. Because we can't assume that cyanobacteria are evenly distributed across a body of water, monitoring programs must encompass a broad spatial and temporal view that accounts for changes throughout day to night, spring to summer, and pre- to post-treatment. A 1-mL sample – concentrated or not – analyzed once a week can't provide a comprehensive view.

## New Technologies

Increasing sampling frequency and locations is often difficult, as labs are frequently understaffed and overloaded. Fortunately, remarkable technological progress has taken place in recent years, making it possible to expand monitoring programs with a limited team. Three relatively new technologies – multiparameter sondes, semiautomated flow-imaging microscopes, and DNA-based assays – can be integrated from the field to the lab to form the foundation of a comprehensive screening program for cyanobacteria and address concerns about the production of T&O compounds as well as toxins.

**Collecting and Understanding Data.** Used in the field, multiparameter sondes, such as the EXO series from YSI Xylem ([www.ysi.com](http://www.ysi.com)), are

Multiparameter sondes with a dynamic range of smart sensors are available to collect water quality data day and night, providing early detection for algal blooms and bloom dynamics.



remotely deployed, collecting data day and night. Sondes serve as 'first responders,' providing early detection for blooms and bloom dynamics. By collecting statistically significant data sets, sondes establish a baseline to determine what's normal for a particular location. Every location has a unique profile, much like a fingerprint; sondes show what that fingerprint looks like so when something changes – such as temperature, pH, dissolved oxygen (DO), chlorophyll, or phycocyanin levels – utilities can determine if that change is a precondition to a bloom.

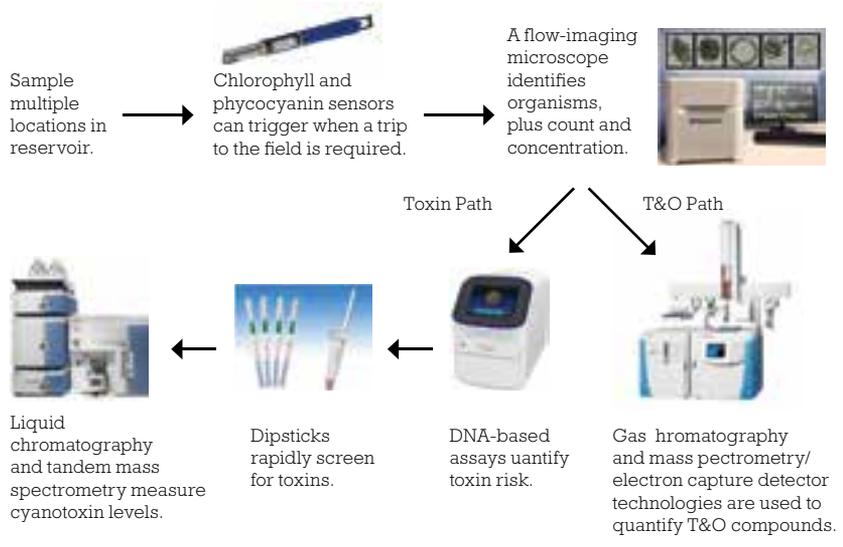
Chlorophyll and phycocyanin monitoring provide early indication of a potential bloom, but a thorough understanding of bloom patterns is gained by adding additional parameters. Monitoring temperature reveals what temperature range supports harmful algal bloom (HAB) formation in each reservoir. Water treatment plant operators and managers should learn how temperature aligns with seasonal, spatial, and temporal bloom patterns. Reservoirs in temperate climates may host spring or fall blooms that result from different populations of algae and cyanobacteria.

DO refers to the equilibrium in which gases naturally dissolve into water. DO patterns change with HABs. During the early and peak growth phases of an HAB, DO can increase significantly in the vicinity of the bloom as a result of exceedingly high photosynthetic activity. More oxygen is generated than can be consumed by either the cyanobacteria or other organisms, leading to supersaturation in which DO levels exceed 100%. As blooms fade, algae become food for bacteria and other organisms that consume oxygen, at which point DO levels can drop precipitously. The result is hypoxia.

It's a common misperception that cyanotoxins kill fish in surface water reservoirs, but the culprit is most often hypoxia. The size of the bloom relative to the size of the water body and the proximity of a DO sensor to the bloom or oxygen-consuming bacteria affect one's ability to observe these patterns for managing a reservoir. In addition, DO monitoring aids in understanding the efficacy of aerators used to prevent stratification.

### Integrated Toolkit for T&O and Toxin Monitoring Pathways

Relatively new technologies can be integrated to form a screening program for cyanobacteria and algae as well as address concerns about T&O compounds and toxins.



Fluorescence-based pigment detection is another powerful tool to monitor cyanobacteria and algae populations from afar. Two individual pigments, chlorophyll and phycocyanin, warn whether the growth might be an algal bloom or a cyanoHAB. Chlorophylls a and b are found in all eukaryotic algae. Cyanobacteria contain chlorophyll a and phycocyanin. Every reservoir has a unique baseline, ideally monitored in relative fluorescence units. Deviations from that baseline can alert analysts of a bloom in its early stages. Phycocyanin levels make the distinction of a cyanoHAB possible when both pigments are monitored. When used with a logging instrument and telemetry, pigment detection can reduce trips to the field, optimizing when to collect samples or perform other analyses.

**Simplifying Identification.** Once a sonde has validated that a bloom may be forming and a trip to the field is deemed essential, the second line of defense is to identify what organisms are in the raw water and quantify how many are present. A semiautomated flow-imaging microscope, such as the FlowCam Cyano from Yokogawa Fluid Imaging Technologies ([www.fluidimaging.com](http://www.fluidimaging.com)), identifies and enumerates cyanobacteria and nuisance algae. Although the traditional microscope is a superior

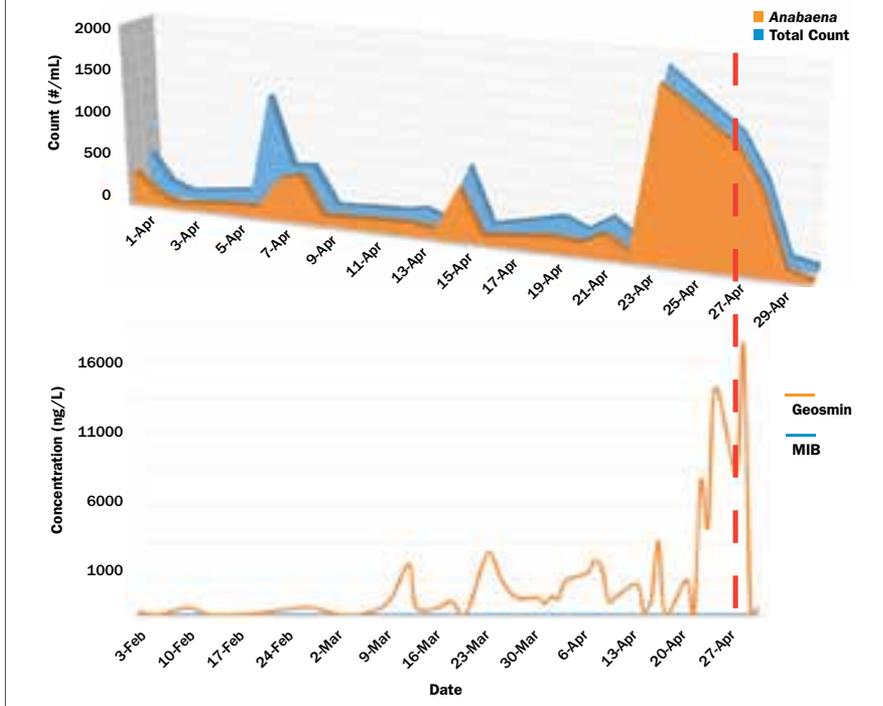
tool for species-level identification, most utilities limit identification to the genus level or functional group. The FlowCam Cyano speeds up this time-consuming process by presorting data into three functional groups: cyanobacteria, diatoms and other algae, and detritus and decomposing organisms. Technicians sort the remaining data by morphology through the use of image-recognition software, taking care to identify the most prolific genera and grouping the remaining low counts into more general categories. This strategy deviates from traditional approaches, but it's a simplified methodology with a turnaround time of five to 30 minutes in most samples, including sample preparation and data collection.

Species-level identification requires an investment in time and considerable taxonomic skill, preventing many utilities from taking this approach. Some utilities have developed long-term species-level data sets by partnering with expert taxonomists. These incredible resources are difficult to seamlessly merge with a flow-imaging microscope because the data acquisition and data analysis methods are different.

Correlating microscope results with a flow-imaging system requires patience, but the result is a statistically significant data set with a same-day turnaround time.

## T&O in Lake Arrowhead Near Wichita Falls, Texas

Algae counts measured by a flow-imaging microscope in late April 2020 revealed elevated levels of *Anabaena* (top), which often correlates with a geosmin spike (bottom).



This topic isn't straightforward and is sometimes considered controversial by utilities that appreciate the value of speciation; however, treatment decisions are rarely affected by determining the exact species. The move from species- to genus-level identification with a flow-imaging microscope offers speed and repeatability in a time-constrained environment.

Samples identified to species level using traditional microscopy are rarely analyzed more than once a week and often have a turnaround time of three days to three months, at which point conditions have changed and the data become useful only as a historical snapshot. Although microscopic records must be transcribed and digitized, a flow-imaging microscope automatically saves a digital image of all organisms in the sample, along with a comma-separated values report of the count, concentration, and size of the organisms. Reports are customized by the operator to highlight populations more likely to cause a problem, allowing technicians to spot organisms posing higher risk in each day's samples.

What can take hours by microscope

takes minutes with a flow-imaging microscope, creating an opportunity for utilities to commit to a treatment plan within a matter of hours instead of days or weeks. The transition to decreasing turnaround time, increasing sampling frequency, and increasing sample locations provides the statistically significant understanding utilities need to make qualified treatment decisions.

The number of cyanobacteria and algae genera can feel overwhelming in light of the discovery of new species and reclassification of known species. Fortunately, there's a relatively short list of nuisance organisms, aptly named the Dirty Dozen. The organisms that wreak havoc are often repeat offenders, with *Dolichospermum* (aka *Anabaena*), *Microcystis*, and *Aphanizomenon* earning a place at the top of the global 'most-wanted' list. Although cyanobacteria regularly make headlines, green algae, golden algae, and diatoms create T&O trouble as well. Almost any type of algae can induce a T&O event at a high enough density, so it's critical to know if any one genus

is flourishing. Upon detection, spot treatment in reservoirs can address problems as they arise. This methodology ensures that algae and cyanobacteria don't form significant blooms, dodging a problem that's difficult and expensive to treat.

### Detection and Quantification.

The traditional metric for measuring cyanobacteria concentration is a cell count. Sondes track an increase or decrease in concentration, and a flow-imaging microscope determines the cell count for each genus. A molecular-based technology, such as the CyanoDTec Total Cyanobacteria Assay from Phytogigene ([www.phytogigene.com](http://www.phytogigene.com)), measures the 16S rRNA gene common to all cyanobacteria, thereby quantitatively measuring the number of cyanobacteria present. Because of variations across genera, there's no correlation between cell count and gene copy numbers; however, increases in either are indicative of bloom growth. Should a *Microcystis* bloom take place, counting cells per milliliter or running the Total Cyano Assay will indicate the concentration of the bloom, but it won't confirm toxicity. The scientific community hasn't yet determined what triggers a bloom to become toxic, but there are tools available to rapidly predict whether toxin production is possible.

Cyanotoxins are produced by many strains of cyanobacteria spanning multiple genera; however, because toxicity isn't uniform among strains, conventional bacteriological classification methods are unable to accurately predict toxicity. Analytical methods for detecting toxins often take days to perform and aren't predictive. Thanks to recent advances in understanding the biosynthetic pathways of toxin production, analysts can detect target genes that are critical to the production of cyanobacterial toxins in environmental samples.

Many cyanobacteria can produce toxins, and many can produce more than one type of toxin; however, not all algal blooms are toxic. Because a DNA-based assay such as CyanoDTec detects and quantifies the presence of cyanobacteria and their toxin-producing genes in environmental samples, it can be used to answer two questions: When should a water body be tested for toxins,

and which specific toxin should be tested? In less than three hours, laboratory technicians can know if cyanobacteria are present and which toxin poses a risk. Technicians can identify and quantify the presence of total cyanobacteria, along with four genes responsible for producing toxins: microcystin, nodularin, cylindrospermopsin, and saxitoxin. The state of Ohio recently ran paired samples of the CyanoDTec Toxin Gene Assay and microcystin measurement by enzyme-linked immunosorbent assay and had a 100% correlation of gene detection, with toxin measurement below the U.S. Environmental Protection Agency's threshold of 1.6 µg/L.

Treatment solutions are like goalies – they're a key team member but should be the last line of defense against 2-methylisoborneol (MIB), geosmin, and cyanotoxins. Treatments should be used strategically as a last resort; otherwise, utilities could inadvertently inflate a problem. It's important for operators to know if they're treating potentially toxic cyanobacteria. Identifying organisms to genus level

can be critical in determining whether a human health event could be at hand, and toxin gene measurement quantifies the associated risk level. Adsorptive treatment, such as powdered activated carbon, can only do so much for a toxin event. Copper sulfate will lyse cells; if those cells contain toxins, those toxins become considerably more difficult to remove from treated water.

T&O management follows a similar pattern. Lysing a small number of cells can prevent a large T&O event, and preventing further cyanobacterial growth minimizes the event's scale. Rather than waiting for a bloom, proactive utilities can spot treatments and address a problem in its nascent stages.

If cells from a bloom lyse, MIB and geosmin can linger for days or weeks.

#### A Bright Future

Water utilities depend on scientists and technicians to interpret results and determine how to mitigate problems. Although technological advancements have transformed monitoring methods, these approaches fail to produce simple answers.

Despite this challenge, the future is bright. Scientists have a culture of sharing information, and talented leaders have turned a weakness into an opportunity for advancement. A follow-up article, published in AWWA's *Opflow* magazine, features thought leaders across the United States who have proved through critical thinking, strategic scientific analysis, and hard work that cyanobacteria and algal blooms can be managed effectively and affordably. To learn more, visit [www.awwa.org/opflow](http://www.awwa.org/opflow). 

**Frances Buerkens** is sales director for water quality markets, Yokogawa Fluid Imaging Technologies ([www.fluidimaging.com](http://www.fluidimaging.com)), Scarborough, Maine. **Stephanie A. Smith** is product segment manager for YSI Xylem ([www.ysi.com](http://www.ysi.com)), Yellow Springs, Ohio. **Greg Ford** is director of development for Phyto-xigene ([www.phytoxigene.com](http://www.phytoxigene.com)), Akron, Ohio. **Hunter Adams** is environmental laboratory supervisor for the city of Wichita Falls, Texas ([www.wichitafallstx.gov](http://www.wichitafallstx.gov)).

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# FUSIBLE PVC PIPING

## Makes a Difference

By June Patton, UGS Engineer

In 2003, Fusible PVC® pipe was first introduced and today, there have been over 12,000 projects involving Fusible PVC® (FPVC) pipe installation. A total of over 16 million feet of pipe has been installed worldwide. Fusible PVC® pipe is assembled using a thermal butt fusion process that results in monolithic, leak-free, fully restrained lengths of PVC pipe. Butt fusion of other thermoplastic pipe has existed for years. The fusion process for FPVC pipe is no easier or harder, but it is different. Using uniquely patented technology, the fusion process involves a combination of heat, pressure, and time to produce high strength joints.

Over 150 contractors and technicians have been trained and qualified to fuse Fusible PVC® pipe. Licensed and trained fusion technicians must pass specific qualification requirements provided by Underground Solutions in order to fuse FPVC pipe. The fusion training process is a three-day class that includes classroom and hands-on learning where each trainee fuses at least 16 joints (four joints – each of 4-inch, 6-inch, 8-inch, and 12-inch) and cuts them out for testing.

Additional training is available for technicians for pipe sizes up

to 36 inches once trainees have completed the initial round.

Qualified technicians are re-qualified every year by Underground Solutions.

In order to accomplish the fusion process accurately and efficiently, technicians must be supported with top-quality equipment. As the industry's leading fusion machine company, McElroy provides premium quality fusion machines that produce consistent joint quality. In addition, Fusible PVC® requires that all fusion joints are datalogged. The McElroy Datalogger® 6 records key parameters of each fusion joint including heating times, heating pressure, shift time, fusion time, and fusion pressure. It also ensures that each joint has been fused correctly according to the UGSI fusion procedure, providing real-time graphs for visual information on each joint. This also provides joint data that is directly transferred to the UGSI fusion joint data base for review by UGSI Quality Control.

Since the introduction into the water and wastewater industry in 2003, Fusible PVC® has quickly established the basis as a cost-effective

material for trenchless applications through thousands of projects involving competitive municipal and industrial pipe, namely horizontal directional drilling (HDD). Trenchless installations, including HDD, provide a benefit by minimizing disruption to the public and reducing overall project costs. In addition, the use of FPVC pipe over other thermoplastic pipe materials results in downsized boreholes and simplified connections that can be installed immediately due to no relaxation period required. The high tensile strength of FPVC provides significant benefit for long HDDs. It has been installed on more than 40 projects involving HDDs of over 3,000 feet including the longest single continuous pull-in measuring over 7,000 feet utilizing 30-inch Fusible PVC® pipe.

When looking at how FPVC is fused in the field there are two main methods.

1. **Pre-fusing long strings of pipe prior to installation.** This method requires the space to assemble the pipe ahead of time with the benefit being that fusion is not a part of the pull-in process. It is preferred for HDDs and pipeburst applications where the success of the install can be time dependent.



Fusion technician completes new fused joint on pipe.



Two pipe strings are arranged in position to complete first Intermediate fusion joint.



Pipe staged side-by-side for intermediate fusion.



Pipe fusion and layout.



Pipe being lowered into pit to prepare for fusion.



Fusion machine and pipe setup inside pit.



In-pit fusion of pipe.

**2. Fuse and Pull.** Allows the pipe to be fused in a very small footprint and is applicable for slipline installations with limited layout. The process consists of fusing on a stick of pipe, advancing the string into the installation and then repeating as many times as necessary.

In June 2018, the Bay County (Florida) Public Utilities Department approved the construction of a subaqueous water main in the St. Andrews Bay in Panama City. The existing 24-inch concrete encased Ductile Iron water main that was installed inside the bridge in 2003 had experienced intermittent leaking. Since the water main supplied water to the eastern part of Panama City Beach, action need to be taken to immediately replace the water main. Bay County selected a Design-Build team led by Marshall Brothers Construction & Engineering, Inc and nationwide consulting engineer, Dewberry, to

design the proposed water main alignment. A new FPVC water main was installed via horizontal directional drilling (HDD). The HDD (performed by the Mears Group) measured 5400 LF reaching a depth of 113 feet. A total of three pipe lengths of 1800 LF each were preassembled using a McElroy T900, and laid out side-by-side. Each of the pipe lengths were fused together during the insertion process with intermediate joints. The pipe was ballasted with water during the pull-in.

The I-5 is a major 10-lane interstate highway that extends along the coast of California, Oregon and Washington. In Orange County, CA, new potable water and recycled water mains needed to be installed underneath the I-5 near Oso Creek. Two carrier pipelines, 20-inch and 30-inch FPVC pipe, were installed inside 24-inch and 36-inch secondary FPVC casings,

respectively, which were both installed inside the steel casing. The secondary casings were used for additional protection for pipeline separation and were fused first. Because the existing steel pipe was fixed and too deep for above ground fusion, the new FPVC pipe was fused in the 30' deep pit.

A McElroy 1648 fusion machine was lowered into the 30' deep pit where the pipe was joined. A gravel floor at the bottom of the pit was used to provide a stable platform for the fusion machine at the correct height so the FPVC could slide directly into the casing. Because of the space constraints within the pit, 40 and 45-ft pipe sticks were cut in half, then lowered into the pit and onto the machine, fused, and forwarded into the steel casing. This process was repeated until the new pipe successfully reached the other side of the freeway, reaching over 400 LF in length. 

# Northwest Oregon Subsection Update

### Website Updates

Take a minute to visit the newly-improved Northwest Oregon Subsection website: <https://sites.google.com/la/pnws-awwa.org/northwest-oregon/home>. The home page includes an overview of the Subsection, list of upcoming events, and links to become a member and view our Instagram, Facebook, and calendar.

Other website additions include Subsection announcements and downloadable copies of the Subsection bylaws, policies, procedures and monthly meeting minutes.

The Committee page has been updated to include Committee lead pictures, contact information, descriptions, and volunteer needs. Contact the Committee lead if you are interested in volunteering!

### NWOR Committee Leads

#### Activities Committee



#### Gerald Arredondo

City of Salem  
[garredondo@cityofsalem.net](mailto:garredondo@cityofsalem.net)  
503-540-2490

#### Committee Description

The Activities Committee organizes, promotes, and recruits participants where necessary for Subsection competitive events such as Meter Madness, Best Tasting Water, Hydrant Hysteria, Gimmicks and Gadgets.

#### Volunteer Needs

If anyone is interested in helping with events, please contact Gerald. Various events throughout the years include Meter Madness, Best Tasting Water, Hydrant Hysteria, Gimmicks and Gadgets.

### Education & Safety Committee

#### Don Lovas

City of Salem  
[dlovas@cityofsalem.net](mailto:dlovas@cityofsalem.net)  
503-932-7044

#### Committee Description

Our Committee helps provide and assist all members of our subsection with educational and safety opportunities, resources, and training to help further their knowledge of waterworks systems and applications. Our Committee has put on trainings for Water Meter installation and Repair, Pump Hydraulics Trainings, Safety Training for Arc Flash, Asbestos Cement Pipe Training and Excavation Safety.

#### Volunteer Needs

If anyone is interested in joining our Committee or would like more information on getting involved, please contact Don.

### Scholarship Committee

#### Jason Branstetter

City of Gresham  
[jason.branstetter@greshamoregon.gov](mailto:jason.branstetter@greshamoregon.gov)  
503-618-2516

#### Committee Description

The Scholarship Committee provides, solicits, accepts, reviews, awards and announces the recipients of the Subsection's scholarship(s).

#### Volunteer Needs

None currently.

### Water For People Committee



#### Justin Ford

Murraysmith  
[justin.ford@murraysmith.us](mailto:justin.ford@murraysmith.us)  
503-310-9671

#### Committee Description

The NW Oregon Subsection of the PNWS-AWWA Water For People (WFP) Committee is a group of volunteers dedicated to fundraising and providing networking and awareness of WFP's mission worldwide. WFP is an agency that was originally founded by AWWA volunteers that delivers clean water, sanitation, and hygiene education to rural communities across the globe. The WFP Committee typically runs two events annually, including a networking dinner and a golf tournament, and assists with other Committees' work when aimed at providing funding assistance to WFP's charter. The Committee thanks all those who have assisted with our events in the past and looks forward to many more successful events for the water/wastewater professionals in our region.

#### Volunteer Needs

None currently.

### Waterworks School Committee



#### Christine Hollenbeck

Clackamas River Water Providers  
[christine@clackamasproviders.org](mailto:christine@clackamasproviders.org)  
503-723-3511

### Committee Description

Our Committee organizes the annual three-day waterworks school that is normally held at Clackamas Community College. The Committee is responsible for soliciting speakers and vendors, working with the college regarding logistics, classroom monitoring and other functions during the waterworks school.

### Volunteer Needs

Our Organization Committee is always looking for speakers and people to volunteer their time to be a part of our committee.

### Website Committee

#### Andrew Nishihara

Stantec  
[andrew.nishihara@stantec.com](mailto:andrew.nishihara@stantec.com)

### Committee Description

The Website Committee works with the Board and Standing Committee Chairpersons to update the Subsection website in a timely manner with accurate information regarding the Subsection's meetings, activities, and trainings.

### Volunteer Needs

None currently.

### Young Professionals Committee



#### Brooke Barry

West Yost Associates  
[bbarry@westyost.com](mailto:bbarry@westyost.com)  
541-591-8405

### Committee Description

The NWOR Subsection Young Professionals Committee organizes events to provide new and young professionals and students with opportunities to network and learn about the water industry. Examples of past events include

tours of facility construction or operating facilities, educational presentations, networking events, and informal happy hours. A new/young professional is defined by AWWA as anyone under the age of 35 and/or who has less than 10 years of experience in the water industry. All who are employed in the water industry are considered professionals.

### Volunteer Needs

We are looking for a new YP Chair. Our Organization Committee is always looking for volunteers to be a part of our committee.

### Holiday Party Update



We are sad to announce the 2020 Holiday Party is canceled due to the continuing pandemic. We will be having a networking event with a holiday theme, so keep your eye out for an invitation to a virtual event. Details for this event are being developed.

The 2021 Holiday Party is scheduled for December 17, 2021. It will be held at a new venue, The Oregon Zoo.

### Opportunities

#### Young Professionals Chair

We're looking for an energetic Young Professional Chair.

The NWOR Subsection Young Professionals Committee organizes events to provide new and young professionals and students with opportunities to network and learn about the water industry. Examples of past events include tours of facility construction or operating facilities, educational presentations, networking events, and informal happy hours. A new/young professional is defined by AWWA as anyone under the age of 35 and/or who has less than 10 years of experience in the water industry. All who are employed in the water industry are considered professionals.

### Incoming Subsection Officer – Secretary

We're looking for the next incoming NWOR Subsection Officer.

The Secretary prepares monthly meeting minutes and submits them to the appropriate person to be included in the announcements for upcoming meetings. Takes meeting minutes at Subsection Board meetings and compiles them for occasional submittal to the bank. Assists the Treasurer with the collection of money at regular monthly meetings and may also assist the other officers with the preparation of the Subsection's annual report.

Please contact Brooke Barry at [bbarry@westyost.com](mailto:bbarry@westyost.com) if you're interested in either of these opportunities.

### Stay Connected

#### Virtual Events

Don't miss our available online events being offered throughout the Pacific Northwest Section. In November, the Northwest Oregon Subsection had over 50 people join our Oregon Health Regulatory Update via Zoom. See a listing of all upcoming events with dates, times, topics, and more on the Section website: [www.pnws-awwa.org/training/training-opportunities](http://www.pnws-awwa.org/training/training-opportunities).

Join us for 30 minutes of coffee and networking. Invitations for this recurring event will be sent through the Subsection. Contact our Subsection Vice President Laura Oxsen at [laura.oxsen@3j-consulting.com](mailto:laura.oxsen@3j-consulting.com) or 503-946-9565 ext. 225 to learn more and get involved.

### Social Media

Visit us on our social media accounts and send us your photos – we'd love to see what your city or company is doing. 📷



### King County Subsection

Throughout 2020, the King County Subsection (KCSS) has responded to our new reality due to the COVID-19 restrictions. We've had a quieter year than usual – we moved our monthly KCSS Board meetings to a virtual call, canceled our September Charity Golf Tournament, and hosted less in-person events – but we've been busy moving trainings and events to a virtual setting and look forward to the time when we can all gather in-person again. As we said back in March, its times like these that remind us of how amazing the people in our industry are and how grateful we are to our essential workers for keeping the pipes flowing to our communities.

#### New Members

If you are a new member to the King County Subsection, we would love to get you connected and learn more about your interests. Reach out to Joanie, our Board Membership Committee liaison, to get you connected to the right resources at [jstultz@brwnncald.com](mailto:jstultz@brwnncald.com).

#### Training

The Subsection is committed to offer classes that will our members meet their CEU requirements. After a readjustment of our training calendar – in light of moving events to a virtual setting – we developed

the Subsection's first virtual training, scheduled on December 7, on control valves – presented by GC Systems.

Looking forward into 2021, we are planning to host at least three additional virtual trainings including the following courses:

- Basic Water Works
- Math for Operators
- How to Read Process and Instrumentation Diagrams (P&IDs)

Look out for further announcements and registration information. For questions related to classes, please contact our Program Director Jim Konigsfeld at 425-295-3217 or [jim.konigsfeld@spwater.org](mailto:jim.konigsfeld@spwater.org).

#### Water For People World Water Classic 6/60K Event

KCSS participated in the World Water Classic 6/60K event. Participants ran 6K or biked 60k on their own as part of the collective event to raise funds for Water For People (WFP) and raise awareness of water security challenges facing millions of people around the globe – directly impacting women and girls, who on average walk 6K a day to get water. If you have ideas of additional events to support WFP or the Section's philanthropic endeavors, reach out to the KCSS Philanthropic Activity Committee (PAC) Liaison Beth at [elizabeth.mende@hdrinc.com](mailto:elizabeth.mende@hdrinc.com).

#### Want to Get Involved With KCSS?

Have you ever attended a King County education or social event and wondered how you could become involved? Or are you interested in getting to know more of the industry folks in our area? The King County PNWS-AWWA Subsection holds monthly officer meetings and encourages interested people to call in, meet the officers and learn more about the work we do to support the membership. If you are interested in attending a meeting, reach out to the Subsection's Secretary Jon at [jon.miner@murraysmith.us](mailto:jon.miner@murraysmith.us).

#### Board Recruitment

In May, Board positions turn over with the timing of the annual conference. The Subsection is still looking for a new Webmaster to join the Board. We are looking for a KCSS Webmaster to keep the Subsection website up-to-date and help get information out to members. The role is a one-year term with the option to extend for more terms. We are looking for someone who has a passion for communications and an interest in helping the Subsection improve our online resources. If you are interested in the position, please contact the Subsection President Charlie at [charlie.sovacool@consolidatedsupply.com](mailto:charlie.sovacool@consolidatedsupply.com). 

### Women in Leadership Subcommittee

Women in Leadership is planning ahead: save the date for a virtual networking event on Wednesday, February 10, 2021.

While we can't meet together in-person, we still would love to connect virtually.

Details to follow. 



### South Sound Subsection

We hope you are all healthy and doing well during these unprecedented times. While we are all shifting to different ways to do our work, we also are shifting ways in which we stay connected. The South Sound Subsection has continued to meet monthly and continue to do our best to support you.

#### Upcoming Trainings

We are excited to host our first virtual training in November on

*Risk Resilience Assessment* and *Emergency Response Plan*. Watch our website for information on future trainings – we are working hard to host more virtual trainings in 2021.

#### Upcoming Events

While we don't have any planned events lined up, we are hoping to put something together soon. Watch our website for more formation.

#### Monthly Board Meetings

Join our monthly Board meetings scheduled on the third Wednesday of every month. We are currently meeting virtually, so it's easy to join us! We welcome everyone and are excited to help you get involved and grow in our industry. 

### Inland Empire Subsection

The Inland Empire Subsection (IESS) is continuing to hold meetings virtually during this pandemic. Discussions have primarily focused on how to operate as a Subsection during COVID-19 and provide continuing education for our water operators and professionals. The IESS is planning to host the 17th Annual Truck Rodeo

in a virtual format on Wednesday, February 24 and Wednesday, March 3, 2021 from 7:00 a.m. to 12:00 p.m. Although the competitions cannot be held, we are planning video submissions for service trucks, Best Tasting Water Competition (pre-recorded), Gimmicks and Gadgets, education, and vendor information.

Topics include backflow, landscape irrigation design standards, assets and water quality, state agency updates, and water reuse.

Save the Date for the IESS 17th Annual Truck Rodeo on February 24 and March 3 and please contact Bijay Adams at [bijay@libertylake.org](mailto:bijay@libertylake.org) to connect with IESS.

### Northwest Washington Subsection

#### Training Resumed

The Northwest Washington (NWWA) Subsection resumed online training in October, utilizing the Section's Zoom platform. These half-day sessions covered Reading Process and Instrumentation Diagrams and Math for Operators. Almost 30 people attended each session, representing 18 utilities and four Subsections. 0.3 CEUs were awarded to water and wastewater operators for both workshops. For our first attempt at online workshops went very well and attendees – while missing the in-person networking, coffee and bagels – indicated that they got a lot out of the sessions.

In early November, the Emergency Preparedness training-in-a-box workshop was presented in two half-day sessions. Each session had 60 attendees, representing over 30 utilities and five

of the six Subsections in Washington. Each segment was awarded 0.3 CEUs for water and wastewater operators. The Central Washington Subsection partnered with the NWWA for the Math and Emergency Preparedness workshops to expand the reach and share the load as presenters.

The final 2020 online workshop took place on December 1 and 15 and was a two-part training-in-a-box presentation on Water Storage Basics.

#### Training in 2021

Several online workshops are planned for early 2021, including:

- **Math for Operators** – Wednesday January 27, from noon to 4 p.m.
- **Reading Process and Instrumentation Diagrams** – Wednesday, February 10 from 8 a.m. to noon
- **Basic Waterworks Part 1** –

Wednesday, March 10 from 8 a.m. to noon

- **Basic Waterworks Part 2** – Wednesday, March 24, from 8 a.m. to noon

Watch your email for registration links, check out our web page in the Subsection portion of the PNWS website, or contact Jeff Lundt at [jeff.lundt@kingcounty.gov](mailto:jeff.lundt@kingcounty.gov).

#### Officer Changes

Jeff Marrs, City of Everett, will take the reins as the NWWA Subsection President – filling in for Ben Scrace, who recently resigned for family reasons. Director Kenny Packard, HDR Engineers, will fill in as the Vice President. Bridget August (a past-president), GeoEngineers, will return to the NWWA Board and serve as Secretary. Contact any Board member for further information. 

## SECTION DIRECTORY

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2020 - 2021 PNWS-AWWA  
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## CATEGORIES

### Welcome to the annual *Water Matters* Buyers' Guide.

When making purchasing decisions about products and services in the water industry throughout Washington, Oregon, Idaho and beyond, please support the companies whose advertising makes *Water Matters* possible.

You will find them quickly with our convenient, easy to use Buyers' Guide

On these pages, you will find information that will help you meet your purchasing requirements throughout the year ahead. The initial section of this Guide lists categories of products and services along with the various companies that can provide them to you. The following section provides an alphabetical listing of those companies as well as the contact information you will need to reach them.

#### ACTIVATED CARBON

CEI – Carbon Enterprises, Inc.  
TIGG, LLC

#### ADSORPTION EQUIPMENT

TIGG, LLC

#### AMR SYSTEMS AND METERS/ AMI SOLUTIONS

SUEZ Advanced Solutions  
(Utility Service Co.)

#### AMI COMMUNICATIONS

Neptune Technology Group, Inc.

#### AMR

Neptune Technology Group, Inc.

#### ANAEROBIC GAS SAFETY EQUIPMENT

Force Flow/  
Halogen Valve Systems

#### ASSET MANAGEMENT & REHABILITATION

SYBIS LLC  
SUEZ Advanced Solutions  
(Utility Service Co.)

#### AUTOMATIC METER READING SYSTEMS

Neptune Technology Group, Inc.

#### CHEMICAL DOSING PUMPS

Blue-White Industries

#### CHEMICAL PROCESSING & FEED SYSTEMS

Blue-White Industries  
Hasa, Inc.

#### CHLORINE AND CHEMICAL TANK SCALES

Force Flow/  
Halogen Valve Systems

#### COATINGS, LININGS AND CORROSION CONTROL

SUEZ Advanced Solutions  
(Utility Service Co.)

#### CONTRACTORS

Owen Equipment Company  
SYBIS LLC

#### CSO/SSO CONTROLS, WATER RESOURCES, DISTRIBUTION & COLLECTION

Brown and Caldwell

#### DECHLORINATION

Blue-White Industries

#### DESIGN-BUILD CONTRACTOR

Tesco Controls, Inc.

#### DISINFECTION

Blue-White Industries  
Hasa, Inc.

#### ELECTRICAL INSTRUMENTATION/ CONTROLS/GENERATORS

Tesco Controls, Inc.

#### ENCLOSURES

Tesco Controls, Inc.

#### ENERGY EFFICIENCY & CONSERVATION

Canyon Hydro  
NO-DES, Inc.

#### ENERGY RECOVERY HYDROPOWER

Canyon Hydro

#### ENGINEERS/CONSULTANTS

Brown and Caldwell  
Carollo Engineers  
Gray & Osborne, Inc.  
GSI Water Solutions, Inc.  
PACE Engineers, Inc.  
Tesco Controls, Inc.  
Wilson Engineering

#### FILTER MEDIA

CEI – Carbon Enterprises, Inc.

#### FILTRATION

CEI – Carbon Enterprises, Inc.  
Orthos Liquid Systems, Inc.

#### FLOWMETERS, VARIABLE AREA

Blue-White Industries  
Neptune Technology Group, Inc.

#### GENERAL INDUSTRIAL

Wachs Utility Products

#### GIS SERVICES

GSI Water Solutions, Inc.

#### HYDROELECTRIC SYSTEMS

Canyon Hydro

#### HYDROELECTRIC TURBINES

Canyon Hydro

#### INSPECTORS/LOCATORS

Owen Equipment Company

#### LABORATORIES/SUPPLIES

Yokogawa Fluid  
Imaging Technologies

#### LAND SURVEYING

PACE Engineers, Inc.  
Wilson Engineering

#### LEAK DETECTION/ CORRELATOR SERVICES

American Leak Detection  
Neptune Technology Group,  
Inc.

#### METERS/METER TESTING

Neptune Technology Group,  
Inc.

#### ODOR CONTROL

CEI – Carbon Enterprises, Inc.  
Owen Equipment Company  
TIGG, LLC

#### OPERATION SERVICES

NO-DES, Inc.  
SYBIS LLC

#### PIPE & APPURTENANCES

American Ductile  
Iron Pipe Company

#### PIPE RESTRAINT

The Ford Meter Box  
Company, Inc.

#### PIPELINE COUPLINGS & CLAMPS

The Ford Meter Box  
Company, Inc.

#### PIPELINE PRODUCTS

American Ductile  
Iron Pipe Company

#### PUMPS/PUMP SYSTEMS

Blue-White Industries  
Wachs Utility Products

#### RENEWABLE ENERGY SYSTEMS

Canyon Hydro

#### REPAIR CLAMPS

The Ford Meter Box  
Company, Inc.

#### SCADA – CONTROL SYSTEM DESIGN

Brown and Caldwell  
Parametrix  
Tesco Controls, Inc.

#### SEWER CLEANING EQUIPMENT & ACCESSORIES

Owen Equipment Company

#### STORAGE TANKS/ RESERVOIR SYSTEMS

Gray & Osborne, Inc.  
Pittsburgh Tank & Tower  
Maintenance Co.  
SUEZ Advanced Solutions  
(Utility Service Co.)

#### STORMWATER MANAGEMENT

Gray & Osborne, Inc.  
GSI Water Solutions, Inc.  
Parametrix

## TANK INSPECTION & MAINTENANCE

Pittsburgh Tank & Tower Maintenance Co.

## ULTRASONIC FLOWMETERS

Blue-White Industries

## VALVE EXERCISING EQUIPMENT

Wachs Utility Products

## VALVE MAINTENANCE SYSTEMS

Wachs Utility Products

## VALVES

The Ford Meter Box Company, Inc.  
Wachs Utility Products

## WATER QUALITY

NO-DES, Inc.  
SUEZ Advanced Solutions (Utility Service Co.)  
Wilson Engineering  
Yokogawa Fluid Imaging Technologies

## WATER TREATMENT INSTRUMENTATION

Blue-White Industries

## WATER/STORMWATER PLANNING

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Gray & Osborne, Inc.  
GSI Water Solutions, Inc.  
PACE Engineers, Inc.  
Parametrix  
Wilson Engineering

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Gray & Osborne, Inc.  
Hasa, Inc.

NO-DES, Inc.  
Orthos Liquid Systems, Inc.  
Parametrix  
TIGG, LLC  
Wilson Engineering

## WATER WELLS & INTAKES

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Creating sustainable water supplies for the future requires collaboratively reimagining the water cycle.



[BrownandCaldwell.com](http://BrownandCaldwell.com)



Thinking  
 of water  
 in new ways



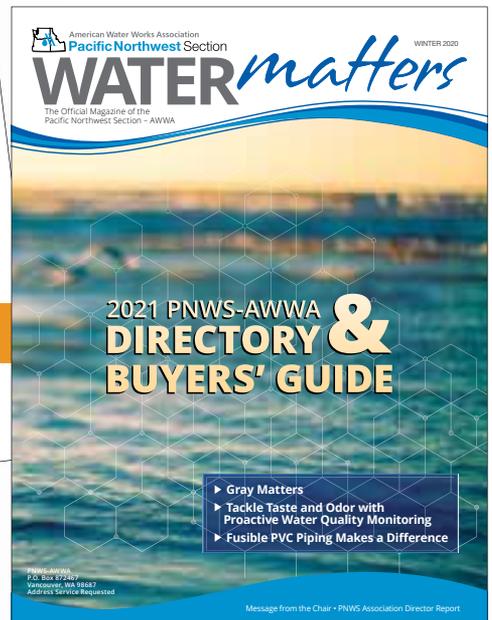
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# WATER *matters*

The Official Magazine of the  
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# ADS® Announces the Powerful Updated PRISM™ 2.0 Solution Platform for Delivering Actionable, Data-Driven Answers for Critical Wastewater Collection System Problems

PRISM by ADS transforms critical wastewater data into actionable insight, empowering users to See, Understand, and Act™.



On October 20, 2020, ADS Environmental Services®, the leader in intelligent flow, level, and rainfall monitoring solutions, announced the release of their **PRISM Version 2.0 solution platform**. This new version of PRISM empowers users with rich, new, industry leading data tools that make it the easiest, quickest, most intelligent and insightful platform available to visualize, evaluate, and communicate the performance of your collection system. PRISM equips you with the necessary tools to capture, cleanse, analyze, store, report, and visualize actionable answers to the industry's most critical wastewater collection system problems - prioritizing sewer cleaning and preventing SSOs, assessing your RDII, and measuring and managing your CSOs.

"ADS delivers solutions differently than all others in the collection system monitoring market segment – they provide near real-time, data-driven answers through accurate flow data and ADS PRISM, a complete suite of information tools

and services that allow us to continuously evaluate the performance of our entire system," said Terry Peters, P.E., Deputy Director for Technical Services for the Fulton County Department of Public Works. For more information on PRISM, visit [www.adsenv.com/prism](http://www.adsenv.com/prism).

#### About ADS LLC

ADS LLC is a leading technology and service provider and has been a trusted source of knowledge to the global wastewater collection system industry for over 45 years.

Solutions provided by ADS manage over 30 million data points per day, measuring over five billion gallons of flow daily across the globe. ADS brings the most comprehensive and integrated platform of technology, support services, experience, and expertise to customers for understanding their collection system behavior. ADS is an *IDEX Fluid & Metering Business*. 



Contact ADS for more information about wastewater flow monitoring, sewer level monitoring, rainfall monitoring, and advanced flow data visualization and management. Call 800-633-7246 or visit [www.adsenv.com](http://www.adsenv.com).

# WE UNDERSTAND BUSINESS HAS CHANGED...



- ? Is it difficult getting to meet your customers and potential customers in person?
- ? Are your important industry conferences and trade shows being cancelled or going virtual?
- ? Are your customers being flooded with digital messages?
- ? Are you and your customers craving some sense of normalcy?

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OF REACHING YOUR EXISTING  
& POTENTIAL CUSTOMERS**

## HERE'S A NO-BRAINER!

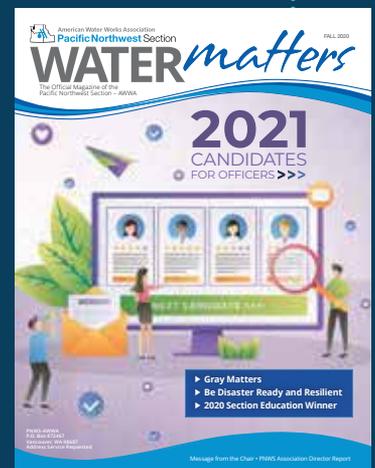


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- ➔ It is mailed individually to all association members as well as other industry stakeholders in this targeted geographic region
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