

GO with THE FLOW

THE OFFICIAL PUBLICATION OF THE ATLANTIC CANADA WATER AND WASTEWATER ASSOCIATION



Focusing on **Diversity and Inclusion**

INSIDE:

- Update from the YP and WFP Committees
- Top 5 Myths about Benchmarking
- Lagoons – How They Work

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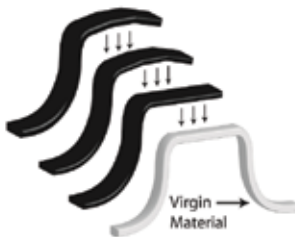
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Our recent activities

Welcome to the spring issue of *Go With the Flow!* I want to provide you with a quick update on some ACWWA activity over the past few months, starting with the Strategic Planning Session in December. A goal of this session was to develop a new Strategic Plan for the ACWWA and I am happy to report we were successful – the plan can be found on the ACWWA website (www.acwwa.ca/strategic-plan.html). Thanks to Jake Fulton at Halifax Water for helping with its design. Another focus for the planning session was to establish the Inclusion, Diversity and Equity (IDE)

Committee for the ACWWA. The work done resulted in Terms of Reference for the IDE Committee and its Chair, a new statement for all ACWWA TOR documents to indicate support for inclusion, diversity and equity, and a new IDE policy statement. Once officially adopted at the March Board Meeting, the policy statement will be posted on the website and please feel free to let us know what you think.

Julie Stokes (Membership Director) and I attended the AWWA Membership Summit in Denver where survey data was presented for the AWWA overall and for the ACWWA. The ACWWA generally trended

higher than the AWWA for member satisfaction, which was great to see. Statistics related to diversity in the ACWWA showed an area we could work on in our membership, with 84% of respondents identifying as Caucasian/White and 63% identifying as male. Julie was part of a Veteran Section Leaders panel at the summit, while I co-presented with Kevin Bergschneider on ‘Building a Grahampire’ – the value of University Champions in AWWA sections. This presentation was based on an article in the July 2018 *Journal AWWA* which described Dr. Graham Gagnon’s (Dalhousie University) influence on the ACWWA. I will also be attending the upcoming WEF *Partnering for Mutual Success Workshop*.

Plans are well underway for the 2019 ACWWA Conference, *Uncharted Waters: Preparing for the Unknown*, in Halifax from October 6 to 8 at the Harbourfront Marriott. It is certain to be a great event, and we look forward to welcoming WEF President Tom Kunetz to the conference. The ACWWA will also be hosting the AWWA Regional Meeting of Section Officers in Halifax in early September.

A reminder that the One AWWA Operator Fund is available to operators and operators-in-training for courses, conferences, books, and other professional development initiatives. You can apply any time on the ACWWA website.

Please feel free to reach out if you have any ideas for the ACWWA (jennie.rand@acadiu.ca). As always, I would like to thank our volunteers, members, and Clara and Danny for keeping the ACWWA running. Until next time! ☺



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Welcome 2019!

Last year, I celebrated being an AWWA member for 25 years and reflected on the many benefits that AWWA membership has given me. Most importantly, an AWWA membership has allowed me to connect with members internationally and across the water profession. The broad range of diverse careers in the water profession is highly attractive to young professionals and continues to be embraced by AWWA.


I am very pleased that our Section Chair, Dr. Jennie Rand, has initiated a

Diversity and Inclusion Committee for our AWWA Section, as this will help to attract and retain many water professionals who may not traditionally identify with AWWA. At the 2019 AWWA Winter Board meeting, I had the honour to lead a Diversity Moment for the Board. As the meeting was in beautiful Vancouver, I reflected on the importance of women in engineering in Canada and the leadership of women in the water community. In particular, I highlighted Jennie's leadership

and the formation the Diversity and Inclusion committee in the Atlantic Section.

At the Winter Board meeting, we had held elections for AWWA President-Elect and Vice-Presidents. I am very pleased to congratulate Melissa Elliott of the Rocky Mountain Section as AWWA President-Elect! I am also pleased to congratulate Lee-Anne Jones of the Ontario Water Works Associate as Vice-President. Lee-Anne is the currently the only Canadian VP of AWWA and the Canadian Directors are extremely proud of her accomplishments in the industry and her overall leadership.

At the Board meeting, there was a significant focus on ensuring AWWA and its sections worked together to ensure member value. I would certainly welcome feedback on this issue as I prepare ideas for our next AWWA Board meeting at ACE19 in Denver, CO. Speaking of ACE19 – plans are already well underway. The Canadian Affairs committee has secured an amazing location for the Canadian Water Forum with special thanks to Clara Shea and Cody Finan for their amazing help. The AWWA Annual Conference & Exhibition (ACE) is the premiere drinking water conference that is well worth your time in attending and if you are not able to attend there are always many online options that enable you opportunities to learn.

So again – welcome 2019 and I am personally looking forward to another 25 years of AWWA membership finding ways to continue my growth as a water professional. 

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Focusing on diversity and inclusion

We made it through another winter... now that spring is just around the corner, I start thinking about what projects I can work on when the weather starts to improve. Snow is melting away and soon “April showers will bring May flowers.” Time to start spring cleaning and turning everything green and getting rid of the winter blues.

In my last article, I mentioned in part about diversity and inclusion. This is an important topic that is a strong focus of WEF as well as the ACWWA. We are all doing our part to put diversity and inclusion in the spotlight. I have been actively involved with the WEF Diversity and Inclusion Working Group and we are making progress in helping WEF to become a more diverse organization. Stay tuned for more information.

I am inspired when looking at the 2018–2019 Board of Trustees picture below. We have a great cross section of backgrounds represented here. Truly diverse... I have met and know many of these people and several have been at our annual ACWWA Conference. Tom Kunetz, WEF President, will be at our annual Conference in Halifax, NS from October 6–9, 2019.



WEF 2018–19 Board of Trustees

Standing, left to right: Tom Kunetz – President, Eileen O’Neill – Executive Director, Jenny Hartfelder – Immediate Past President, Peter Vanrolleghem – Trustee, Joan Hawley – Trustee, Jackie Jarrell – President-Elect, Lynn Broaddus – Vice President
Seated, left to right: Mark Poling – Trustee, Ifetayo Venner – Trustee, Aimeé Killeen – Trustee, Jamie Eichenberger – Treasurer, Rajendra Bhattarai

2018–19 BOARD OF TRUSTEES

The Board of Trustees serves as the governing body of WEF and holds legal authority and fiduciary responsibilities on behalf of the federation and its membership. The Board of Trustees also provide guidance and direction to implement the WEF Strategic Plan.

The Board consists of the President, President-Elect, Vice President, latest living Past President, Treasurer, and six WEF members recommended by the WEF Nominating Committee and confirmed by the House of Delegates – the member advisory body of the Board. The WEF Executive Director serves as Secretary of the Board.

Since 1928, the Water Environment Federation and its members have protected public health and the environment. As a global water-sector leader, our mission is to:

- Connect water professionals;
- Enrich the expertise of water professionals;
- Increase the awareness of the impact and value of water and;
- Provide a platform for water-sector innovation.

The Water Environment Federation (WEF) is incorporated as a not-for-profit organization under the U. S. Internal Revenue Service Code, §501(c)3 in the State of Illinois.

In the January 2019 edition of **WET** (Water Environment & Technology), the magazine cover focus is “Workforce diversity and sustainability.” All WEF members would have received a copy of this magazine in the mail. I encourage you to read it. I am paraphrasing some of the material covered in article below for those who may not have received a copy of the magazine.

“State of the Industry” – it begins by talking about the aging population of water utilities workers and mentions that many of them are getting ready for retirement. This is creating an opportunity to recruit and train a more diverse population and provide good above average wages for many people. To quote the article: “An Engineer. An Operator. A Treatment Plant Superintendent. Are you picturing a Male? White? Middle Aged?” I know when I read this, I asked myself, what do I need to do to change my perceptions and unconscious bias?

Unconscious bias is something we are generally taught by association. If our grandparents use a certain brand of vehicle, and our parents use the same brand, we are likely to use the same brand ourselves when we purchase a vehicle. As we grow older, we are influenced by family, friends, teachers, public figures, and employers.

We often unconsciously make decisions based on our past experiences and influences shared by others... unfortunately, right or wrong.

I often ask myself, what can I do to change my unconscious bias and look at people as people and not fall into stereotypes of seeing just gender, race, personal appearance, age, etc.? It is important to not judge a book by its cover. I know as I get older and the grey hair is getting to know me better, I am looking for ways to impart my little bit of knowledge to the next generation. We need someone to look after our most valuable resource... water!

One way to attain this knowledge is to attend WEFTEC. Read on to learn more about WEFTEC.

Spotlight on WEFTEC – resources from <https://weftec.org> WEFTEC, the Water Environment Federation's Technical Exhibition and Conference, is the largest annual water quality event in the world.

WEFTEC is the largest conference of its kind in North America and offers water quality professionals from around the world with the best water quality education and training available today.

Also recognized as the largest annual water quality exhibition in the world, the expansive show floor provides unparalleled access to the most cutting-edge technologies in the field; serves as a forum for domestic and international business opportunities; and promotes invaluable peer-to-peer networking among registrants. WEFTEC has shown continual growth for both the technical program and exhibition. WEFTEC 2015, which was held in Chicago, set a new exhibition record and was the largest showing for WEF in the Windy City.

WHAT MAKES WEFTEC A LEADING SOURCE IN WATER QUALITY?

A wide range of topics and focus areas allow registrants to design their own, unique learning experience while earning up to 16.5 Professional Development Hours (PDHs) for continuing education units and eight general Contacts Hours per day visiting the Exhibition. An increasing number of abstract submittals from experts in the water quality field results in a world-class technical program of technical sessions and workshops that addresses a diverse and comprehensive list of contemporary water and wastewater issues and solutions including:

- **Collection systems** – Management, operations and maintenance, infrastructure, overflow reduction, wet weather planning, watershed approaches, and regulations
- **Energy conservation and management** – Resource recovery, combined heat and power, biogas optimization

- **Membrane technologies** – Application in wastewater and water reuse, innovations, enhanced performance, regulatory compliance
- **Plant operations and treatment** – Innovations, technologies, processes, and proven solutions in water and wastewater treatment; including nutrient removal and odor control
- **Regulations** – CMOM/SSO Rules, TMDL/Watershed Rules, Nutrient Trading, and NPDES Phase II
- **Research** – Leading-edge process applications in water and wastewater treatment and recent developments
- **Residuals & biosolids** – Incineration, disposal, reuse through land application, research, regulations, politics, and public perception
- **Stormwater** – Treatment, green infrastructure, wet weather management, modeling
- **Utility management** – Asset management and financial planning for infrastructure, technology, regulatory compliance, and security; including environmental management systems (EMS)
- **Water reuse/recycling** – Research, regulations, emerging technologies, proven processes
- **Water quality & watershed management** – Stormwater, wet weather, and watershed issues

WHO COMES TO WEFTEC?

WEFTEC draws thousands of water and wastewater professionals from around the world each year, including:

- Collection Systems Managers
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- District Managers
- Environmental Engineers/Chemists/Scientists
- Equipment Manufacturers and Representatives
- Executive Managers
- Industrial Water and Wastewater Treatment Professionals
- Local, State, and Federal Regulators
- Private Industry and Academia Researchers
- Public Officials
- Students
- Suppliers
- Water and Wastewater Utility Managers
- Water and Wastewater Operators, and many more

FIVE REASONS TO ATTEND WEFTEC

1. **Stay competitive in and relevant to your profession.**
Attend the highest-quality, most comprehensive educational sessions available, featuring papers meticulously selected through a rigorous process that includes abstracts reviewed by an average of nine topic area experts.
2. **Discover the newest innovations and solutions.**
WEFTEC features the largest water quality exhibition in the world. With nearly 1,000 exhibiting companies,

the expansive show floor provides unparalleled access to the most cutting-edge technologies in the field. WEFTEC exhibitors bring their very best technical experts and the latest equipment.

3. **Access global business opportunities.** WEFTEC is your gateway to global water, wastewater, and resource recovery – and is the only water show selected to be a part of the U.S. Commercial Service International Buyer Program.
4. **Make valuable connections.** WEFTEC hosts more than 20,000 registrants from around the world and all sectors of water quality. Take advantage of opportunities to network with leaders in the field, as well as fellow registrants spanning all areas of the water quality sector. Additionally, more-focused events and sessions will help you connect with others seeking ideas and solutions in your topic area.
5. **Bring value to your company.** WEFTEC is priced lower than any other water quality conference of its kind and features anything and everything today's water professional needs to hear, learn, see, and experience in one location, at one event.

While WEFTEC is the largest annual event for water quality professionals, it is also a highly specialized event for you. **WEF offers 23 focus areas** for continuing education to meet your training needs:

1. Collection Systems
2. Disinfection and Public Health
3. Energy Production, Conservation, and Management
4. Facility Operations and Maintenance, and Wastewater Treatment
5. Global Perspectives
6. Industrial Issues, Including Mining and Petro-Chemical Industries
7. Leading Edge Research and Innovation
8. Membrane Technologies
9. Microconstituents
10. Modeling, GIS, Computer Applications, Instrumentation, and Automation
11. Nutrients
12. Odors and Air Emissions



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16. Small Communities and Decentralized Systems
17. Stormwater, Green Infrastructure, and Wet Weather
18. Sustainability, Climate Change, and Resource Recovery
19. Urban Systems
20. Utility Management, Leadership, and EMS
21. Water Reclamation and Reuse
22. Water Supply and Management
23. Water Quality, Groundwater, and Watershed Management

WEFTEC HISTORY

Since its formation in 1928, WEF has been holding annual meetings to provide a forum for knowledge and technology exchange within the water and wastewater fields. Since then, WEFTEC has not only grown in the size of exhibits and technical sessions, but has become one of the world's leading water quality conferences.

In 1941, the then-known Annual Conference featured five sessions, 13 technical papers, and an attendance of 556. By the 1970s, attendance had grown to 8,716 and featured 37 sessions with 146 technical papers. Growing steadily throughout the past four decades, the conference continues to set new technical program and exhibition records each year.

Renamed WEFTEC in 1994 to increase both domestic and international recognition, WEF's annual exhibition has been ranked in the top 1% of all trade shows in North America for the past five years and counting!

With all that WEFTEC has to offer it is the clear choice for anyone interested in learning and sharing more about the latest in water quality developments, research, regulations, solutions and cutting-edge technologies. Don't miss your opportunity to be a part of the WEFTEC Experience today!

FUTURE WEFTEC SCHEDULE


WEFTEC 2019

92nd Annual Technical Exhibition & Conference
 Conference: September 21–25, 2019
 Exhibition: September 23–25, 2019
 McCormick Place, Chicago, Illinois

WEFTEC 2020

93rd Annual Technical Exhibition & Conference
 Conference: October 3–7, 2020
 Exhibition: October 5–7, 2020
 New Orleans Morial Convention Center, New Orleans, Louisiana

WEFTEC 2021

94th Annual Technical Exhibition & Conference
 Conference: October 16–20, 2021
 Exhibition: October 18–20, 2021
 McCormick Place, Chicago, Illinois 

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CWWA adopts a position paper for lead in drinking water systems

"These lower levels will be the strictest targets in the world."

Greetings to all – I hope you had a great winter and by the time you receive this issue it will be spring and warmer.

The focus of this article is the topic of lead in drinking water systems. As you are most likely aware, important changes are coming to the Canadian National Drinking Water Guidelines concerning lead (Pb) levels in drinking water. In 2017, Health Canada published a Consultation Guide for a new Drinking Water Quality Guideline for Lead in Drinking Water (2017, Health Canada). It is expected that the changes will be introduced in the spring of 2019 to lower the permitted MACs (Maximum Acceptable Concentrations) in half. These lower levels will be the strictest targets in the world and could suddenly place many of our municipalities in 'non-compliance' overnight. While this is a topic of national concern it is one that needs to be closely monitored here in Atlantic Canada as well.

CWWA is concerned about the potential media coverage and the potential threat to public confidence in our drinking water systems, although nothing has changed in our water systems, just the lead levels targets. It is important to reduce lead as much as possible and commit to these new targets, but this will take a lot of time, money, and the involvement of municipalities including the



homeowners themselves, as most of the lead issues are in the private property lateral connection or the house plumbing.

CWWA is building a national network of water professionals including utilities, workers, health units, provincial regulators and others to develop and share a common message that is positive and accurate regarding the lead issue with the objective to maintain public confidence in our drinking water systems.

CWWA's Drinking Water Quality Committee has reviewed the documents related to lead in drinking water systems. Health Canada's Lead in Drinking Water document references a new proposed MAC of 5 µg/L (2017,

Health Canada). Scientific evidence is increasingly supporting the conclusion that lead levels should be maintained at the lowest level possible. CWWA supports the overall conclusion, and agrees that water utilities should aim to meet this objective through both lead service line replacement and active corrosion control programs.

During its most recent meeting in Montreal in November 2018, the CWWA Board adopted a "Position Paper for Lead in Drinking Water Systems" in advance of the new guidelines.

I believe it is important to provide you as members of ACWWA the actions recommended by CWWA related to the proposed new lead guidelines:

- That Provincial and Territorial Governments work with Municipal and Regional Governments within their jurisdiction to transition to the new regulatory limit through a phased-in and cooperative approach, recognizing that the new MAC of 5 µg/L will be difficult to achieve for some water systems and may take a number of years. Government agencies responsible for drinking water should work collaboratively with municipal water suppliers to understand the factors that affect lead levels and work to develop programs for reducing customer exposure to lead.
- That regulatory agencies confirm which sampling protocol will be used to determine compliance with the proposed MAC of 5 µg/L (i.e., sampling location, protocol, lab testing, statistical approach, etc.).
- That proper sampling protocols and testing methodologies be developed for member organizations along the lines of the US EPA and the UK. Both organizations have information on their websites about proper sampling protocols and those resources are identified below (2005, USEPA and 2010, UK).
- That Provincial and Territorial Governments provide guidance for water suppliers to determine what constitutes ALARA in relation to the proposed MAC of 5 µg/L and regulatory compliance. For example, if a water utility achieves lead concentrations below 5 µg/L, are they required to take further action to lower lead concentrations?

- That legislative developments such as those occurring in the United States (US), be closely followed and monitored (2017, USEPA).
- That only laboratories accredited in Canada to ISO 17025 for lead be used to undertake the analysis on behalf of the water utility.
- That documents be developed by Health Canada to provide guidance on how to sample homes, institutions, and commercial buildings. Recommendations should be made for sampling methodology as well as information on how to deliberately select homes and buildings in areas with known lead services.
- That Health Canada, Provinces, and Territories provide clarity on the limit of responsibility for water utilities with respect to the occurrence of lead in public buildings like schools and hospitals.
- That Health Canada's corrosion control guidance document, which is very useful and used by many water utilities, be revised to align with the new MAC of 5 µg/L, and updated to reflect lower action levels.
- That Provinces and Territories provide clarity about regulatory compliance for a utility when lead levels in a home or building are in part dependent on private plumbing and fixtures (including lead service lines) that are not under the direct control of the water utility.
- That Health Canada provide key messages and communication resources to help water utilities explain the new guideline to the public, including the potential

health impacts for systems that in the short-term cannot meet the proposed MAC of 5 µg/L.


Other CWWA collaborations

CWWA continues to facilitate cooperation amongst many national water organizations such as the Canadian Water Network, Canadian Association for Water Quality, Canadian Public Works Association, Canadian Water Resources Association, Canadian Network of Asset Managers, Public Sector Digest, the Federation of Canadian Municipalities and more. As CWWA addresses federal legislation and policies, CWWA also works to strengthen the collective voice from this municipal water sector.

Winter continues to be a busy time for the CWWA staff as they finalize the details for both signature events to be held in 2019 being the 'Window on Ottawa' event in June and the National Water & Wastewater Conference (NWWC) scheduled for Banff, Alberta in November.

**Please mark your calendars:
Window on Ottawa
June 3–4, 2019, Delta Ottawa
Ottawa, Ontario**

**National Water Wastewater
Conference – 2019
November 3–6, 2019, Fairmont
Banff Springs Hotel
Banff, Alberta**

Should any other information be required on CWWA activities or initiatives, please do not hesitate to contact me directly at roland.richard@nb.sympatico.ca or visit the CWWA website at www.cwwa.ca 

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Membership value

Once again this year, I had the opportunity to represent ACWWA at the AWWA Membership Summit February 6–8 in Denver, Colorado alongside Jennie Rand. The Summit is always a great learning opportunity as we meet with membership committee members from across North America and get to share ideas and knowledge to help us better serve our membership. McKinley Advisors presented us results of the membership value survey that was conducted in November 2018. Thank you to all our members who participated! The

results showed that even though we are a small section, we have engaged members and leaders in the water industry.

At the Summit, we also accepted an award on behalf of the ACWWA for having achieved first-year retention goals and a 2% increase in membership. This could not be possible without our membership committee, which is comprised of Gabriel Belliveau, Melissa Fraser, Sean Chillibeck as well as our members. Thank you!

This upcoming year, the membership committee will continue to expand on member networking

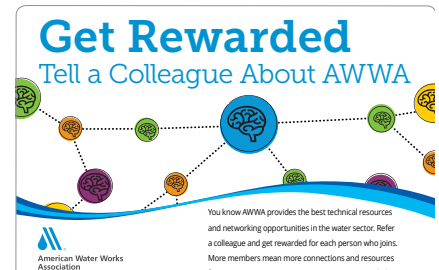
opportunities to help with member engagement, reach out to small communities and small systems who could benefit from the Association, as well as continue to help with social media within our Association.

Don't forget the "refer a member" contest for a chance to win a \$50 gift card of your choice.

\$50 gift card winner – Spring 2019
 Congratulations to Morley Foy from Government of Prince Edward Island, who was the lucky winner of a \$50 gift card of his choice for recruiting a new member. 🎉



As of February 15, 2019:
 Total AWWA members: 424
 Total WEF members: 101



Welcome new members!

| First name | Last name | Membership | Company |
|------------------|--------------|-----------------------------|---------|
| Sylvie | Morton | Government of New Brunswick | AWWA |
| Garry | Spencer | Town of Paradise | AWWA |
| Matthew | Theriault | City of Moncton | AWWA |
| Sebastian | Munoz | Dalhousie University | AWWA |
| Todd | Dupuis | PEI Government | AWWA |
| Walter | Leger | City of Moncton | AWWA |
| Isobel | Demont | Dalhousie University | AWWA |
| Julie | DiCicco | Dillon Consulting Limited | AWWA |
| Masih Messiah | Allahbakhshi | Memorial University | AWWA |
| Marco | Visentin | ABLE Engineering Services | AWWA |
| Catherine | Cameron | Scotia Tech | WEF |
| Brent | McGovern | City of Saint John | WEF |
| Jason | Karisallen | | WEF |
| Town of Paradise | | | AWWA |



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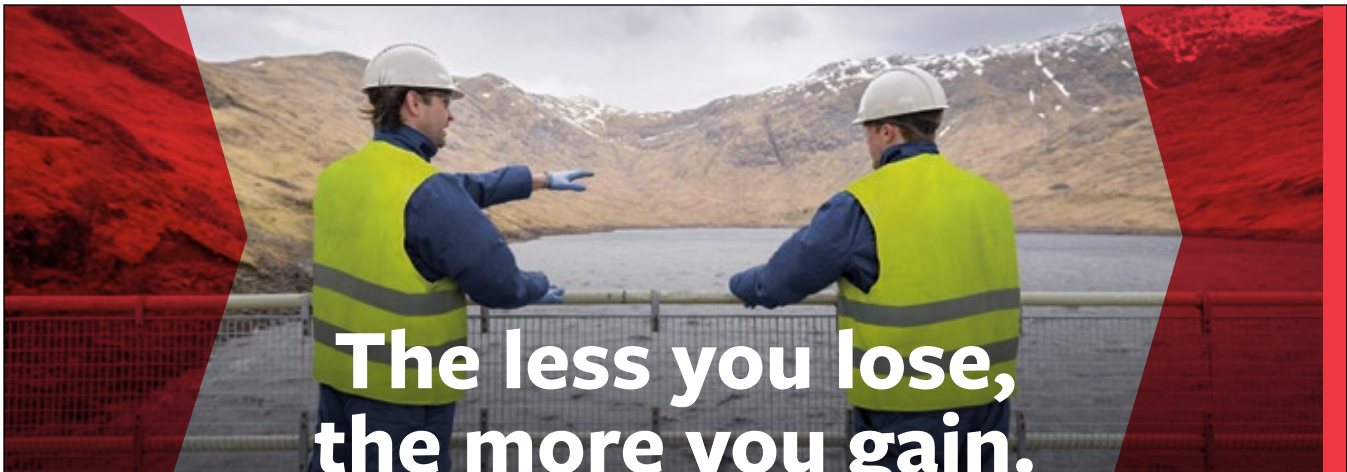
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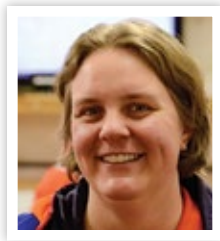
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Winner of the **Silent Hero Award**, Kara Baisley



- 1. Job title:** Water Treatment Plant Operator for the Lake Major Water Supply Plant.
- 2. Who do you work for?** Halifax Water.
- 3. Where do you currently live?** Halifax, NS.
- 4. Where did you grow up?** Miramichi, NB.
- 5. When I'm not working, I'm...** volunteering with Search and Rescue. Most of my free time is spent helping this organization as it has become a passion of mine. I love being in the woods, I love the relationships I've made there, and I love leading and planning searches to help people in need.
- 6. The accomplishment I'm most proud of is...** becoming the Chief Director for the Halifax Search and Rescue Team. Not only did I become Chief Director this past summer, I am also the first female to hold this position for this team.
- 7. When you were a kid, what did you want to be when you grew up?** An archeologist.
- 8. Last book you read?** Communicate Like a Leader, by Dianna Booher.
- 9. Last movie you saw?** Oceans' Eight.
- 10. Favourite TV show?** Game of Thrones.
- 11. Describe your perfect day.** To be able to sleep in, drink coffee on the deck with the sun on my face, go for a walk in the woods on a nice fall day, and end it with dinner and drinks at a pub with friends.
- 12. How long have you been a member of ACWWA?** Since 2012. 🌊



"I am also the first female to hold this position for this team."



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Branch Manager, The Panel Shop
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Spring checklist

As you prepare for upcoming activities and mark dates on the calendar, one of those should be the upcoming ACWWA Conference, October 6–8 in Halifax, NS.

If you are seeking financial assistance to attend the upcoming conference, investigate the ABEA “Annual ACWWA Conference” Attendance Grant. Details are available online at <http://abea.biz/abea-grant-program/>

Another activity may be a high school graduation – remind your graduate that the ABEA offers four x \$1,000 academic scholarships to deserving individuals. Details are available online at <http://abea.biz/scholarship-program/>

If you are interested in providing an abstract for the “Hands-On” Technical Demonstration to be held during the Trade Show on Tuesday,

October 8, even though the deadline of March 29 may be tight or have passed by, we are always open to latecomers. <http://acwwa.ca/conferences/2019-call-for-papers.html>

Take a moment to visit our website to see the full complement of our membership, without whose continued support our programs would not be possible: www.ABEA.biz

If you have any questions/ comments, or membership inquiries, feel free to reach out to any of our executive board members.

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mike@aps.ns.ca

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steve.philpott@canadapipe.com

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Update from the YP and WFP Committees

“Although we are very active in Halifax, we are looking to expand and improve upon our presence throughout the Atlantic provinces.”

The 2018 ACWWA Annual Conference was a success for both the Young Professionals (YP) and Water For People (WFP) Committees. The YP Committee held a technical session on Sunday of the conference which featured an open panel discussion on questions related to career development in the water and wastewater industry. Guest speakers included Jeremy White (Founder and Alesmith for Big Spruce Brewing), Krysta Montreuil (Drinking Water Management Analyst, Nova Scotia Environment), Stephanie Gora (Post Doctoral Fellow, Dalhousie University), James MacKinnon (Director of Housing & Infrastructure at Atlantic Policy Congress of First Nations Chiefs Secretariat), and John Eisnor (Operations Engineer with the Water Services Department at Halifax Water). The event was followed by the YP mixer, which was partially sponsored by Sansom Equipment Ltd. Due to the great response to the event, you can expect to see another YP technical session and mixer at the 2019 Annual Conference in Halifax (Halifax Marriott Harbourfront Hotel, October 6–8, 2019)!

In addition to the technical sessions, the YPs were busy volunteering, networking, and giving presentations. Overall, four YPs were Fresh Ideas presenters at the 2018 Annual Conference. It is my pleasure to announce that James MacKinnon, Director of Housing & Infrastructure at Atlantic Policy Congress of First Nations Chiefs Secretariat, won the Fresh Ideas competition with his talk on “Working Towards a First Nations Owned & Operated Water Utility in Atlantic Canada: Atlantic First Nations Water Authority.” James will be representing the YPs of ACWWA in the Fresh Ideas poster competition at the AWWA Annual Conference and Exposition in Denver, Colorado. Furthermore, The Young Professional of the Year Award, presented annually by ACWWA to recognize a Young Professional within ACWWA for outstanding contributions to the water & wastewater industry, was presented to Melissa Fraser from CBCL at the 2018 Annual Conference.

The YP Committee and WFP Committee have hosted successful events so far in 2019. In February, a water-themed trivia night was held in Halifax. The Water For People Committee has been busy this winter in hosting our annual Well Tapped night in Halifax. This year we collaborated with the Dalhousie Undergraduate Civil Engineering Society for Well Tapped as a way to keep

ACWWA members in touch and network with a fresh batch of YPs. Thanks to everyone who attended; we hope that you had fun! The Water For People Committee is also on the hunt for items for our silent auction that takes place during the annual conference in Halifax this year. Anyone who would like some more information or has items ready to be donated can contact Sean MacIsaac or Lindsay Anderson and we will be happy to help. We are also working on many other events for 2019, so please check our social media feeds for more details (Facebook: <https://www.facebook.com/TheACWWA/>, and Twitter: @ACWWA).

Although we are very active in Halifax, we are looking to expand and improve upon our presence throughout the Atlantic provinces. To make this happen, we are seeking volunteers to join our team as sub-committee chairs in New Brunswick, Prince Edward Island, and Newfoundland and Labrador. The positions are open to any YPs in these provinces. If you or one of your colleagues are interested, please reach out to Lindsay or Sean.

Lindsay Anderson

lindsay.anderson@dal.ca

YP Chair

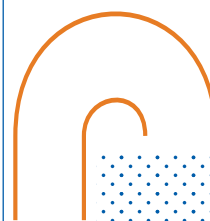
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Water For People Chair 

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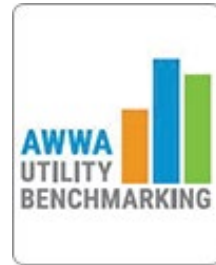
STRAIGHT from
the SOURCE



Top 5 Myths about Benchmarking Your Utility's Performance

By Frank Roth, senior policy manager, Albuquerque/Bernalillo County Water Utility Authority

Water utilities that benchmark their performance gain valuable insight into where they stand in the marketplace and what strategies can improve their success. However, those who hesitate to participate in [AWWA's Utility Benchmarking Program](#) lose this valuable advantage. These benchmarking myths were compiled at the 2018 Utility Management Conference to help utilities better understand the process.



Myth #1 – Benchmarking doesn't apply to us because we're unique.

Because every utility is unique, AWWA's Utility Benchmarking Program applies well-defined, time-tested performance indicators specific to the water sector. Your utility's practices are compared with others of similar size, geographic location, or treatment processes. The Benchmarking Program uses metric data definitions and calculation methods refined over 15 years for more than 40 performance indicators covering water and wastewater utility business areas.

Myth #2 – The survey results are not specific enough for us to use.

Your utility's performance indicators are compared against aggregate data for participating utilities in the same service group. Your customized report highlights specific areas where performance can be improved, and practices or policies can be established or revised. In addition, benchmarking comparisons can be an effective way to demonstrate your performance to stakeholders such as customers, boards, city councils, and regulators.

Myth #3 – The survey takes too much time to complete.

You have approximately 12 weeks between January and April 1st to compile your responses. Start by determining which measures are most relevant for your utility, then regularly track and evaluate the results and link them to improvement strategies. The process also can be used to report on customer and environmental targets, communicate with stakeholders, compare with other utilities, and link to industry-wide frameworks such as Effective Utility Management (EUM)

Myth #4 – Our utility is slow to change.

Benchmarking data supports change because it clearly shows where there are inefficiencies and what revised performance targets are possible. You can develop specific improvement plans and use benchmarking to measure outcomes. Utility decision-makers can link AWWA performance metrics to internal strategic plans, asset management, levels of service, maintenance programs, regulatory achievement, and overall performance management. Many of these performance assessment programs can be found in the EUM and the AWWA's partnership programs for Safe Water and Clean Water.

Myth #5 – The survey is more useful for larger, resource-rich utilities.

All sizes of utilities from the U.S., its territories, and Canada participate in the survey. Results are aggregated so they can be generalized for all utilities, regardless of size. AWWA also analyzes outliers to determine if unusually high or low values were intended as reported. All data and information exchanges are based on useful, predictable, and common definitions of data and practices.

Now that these benchmarking myths have been busted, sign up today for [AWWA's Utility Benchmarking Program](#).

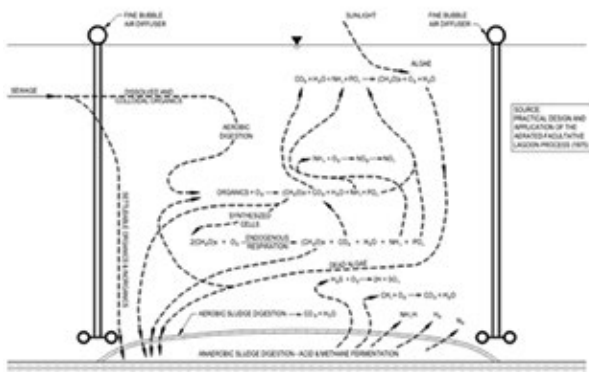
Lagoons – How they work

By John Lam

In many parts of the region, lagoons are used for treatment of wastewater. While lagoons can have different configurations and as a result favour the growth of specific microorganisms (e.g., aerobic, anaerobic, facultative, etc.), there are many similarities. The main parts of a lagoon include the following:

- **Berm:** Typically, lagoon contents are contained in earthen basins that are partially below surrounding grade.
- **Liner:** If the berm material is not adequate to prevent leakage, a liner would be used. These can be constructed of geosynthetic or clay material.
- **Underdrain:** If there is a potential for uplift of the liner due to high groundwater or migration of gas, the liner may need to be protected by an underdrain. This is not very common for new lagoons due to the current guidance for the lagoon bottom to be higher than groundwater level.
- **Piping:** Pipes are used to convey wastewater into and out of each cell of the lagoon. If there is an aeration system with a blower and diffusers, pipes are used to convey the supplied air from the blower to the diffusers.
- **Baffles:** Baffles are sometimes used for different purposes; (1) to prevent or alleviate short circuiting, (2) to increase the number of cells in the treatment process without the use of an intermediate berm, and/or (3) to capture floating materials.
- **Aeration equipment:** For aerated lagoons, aeration equipment is used to maintain aerobic conditions and for mixing of the cell contents.

While lagoons are relatively simple to operate, the treatment processes are somewhat complex, from the aerobic digestion of dissolved and colloidal organics to the benthic anaerobic digestion of settled material. A sketch showing the treatment processes in a lagoon is presented below.



Lagoons are inherently robust and resistant to upsets due to variations in hydraulic or organic loading. This is mainly due to the capacity of lagoons to provide dilution to the influent wastewater and the retention time offered by the ponds. Lagoons can be designed and operated to maintain relatively low organic (cBOD) concentrations in the effluent (typically < 25 mg/L or better). However, some lagoons struggle to meet effluent suspended solids concentrations of 25 mg/L. Sometimes, TSS in lagoon effluent may reach 40 mg/L or more depending on site conditions. This may be due to algae bloom or disturbance of settle solids when the lagoon content experiences a “turn over” as the water at the bottom of the lagoon reaches the same temperature as the surface layer. Another disadvantage of lagoons is the inability of lagoons to effectively and consistently nitrify (convert ammonia to nitrites-nitrates), especially during cold water temperatures. ☹️

The “Back to Fundamentals” department is published in each edition of *Go With the Flow* magazine. It is intended to cover a broad range of fundamental water and wastewater topics that will be driven by you, the readers of this magazine. If you find a topic particularly interesting or confusing, most likely others do as well. Please forward your ideas for future columns to Kyle MacIntyre, Dillon Consulting (kmacintyre@dillon.ca) or John Lam (john.lam@novascotia.ca) and we will respond in future publications to your queries.

Dear Atlantic Canada Water and Wastewater Association member:

I am writing to inform you that Health Canada has lowered the health-based drinking water guideline for lead from 0.010 mg/L to 0.005 mg/L. This new guideline is effective immediately. We have informed all public drinking water supplies about the guideline change.

Health effects and sources

There is no safe level of lead. It can affect brain development and behaviour in children and has been linked to high blood pressure and kidney problems in adults. Every effort should be made to minimize lead exposure throughout a person's life.

Although lead can occur naturally in geologic materials, the main source of lead in drinking water is through corrosion of plumbing materials with lead or brass components, such as pipes, solder, faucets, and fittings.

The National Plumbing Code allowed lead material in pipes until 1975, lead in solder until 1986, and lead in fittings/faucets until 2013.

New sampling procedures

The guideline includes new sampling protocols for lead. Health Canada



recommends lead samples be collected from inside homes and buildings at taps where water is used for drinking and food preparation. The procedures vary depending on the type of building (for example, homes, schools, daycares, multi-unit residential and large buildings, etc.).

While the guideline is effectively immediately, the new sampling protocols will take longer to implement. We are currently working with our public drinking water supplies to develop lead sampling requirements to comply with the guideline.

More information

- Health Canada's lead guideline – [www.canada.ca/en/health-canada/services/publications/healthy-living/guidelines-canadian-](http://www.canada.ca/en/health-canada/services/publications/healthy-living/guidelines-canadian)

drinking-water-quality-guideline-technical-document-lead.html

- Drop on Water factsheet – novascotia.ca/nse/water/docs/Drop_on_Water_English.pdf
- Health Canada's advice for the public – www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/water-quality/what-about-lead.html

Should you have any questions, please do not hesitate to contact me at angelina.polegato@novascotia.ca.

Yours truly,

Angelina Polegato

Angelina Polegato
Supervisor, Drinking Water Program
Nova Scotia Environment

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OZONE USED TO KILL ODORS AT LIFT STATION

An ozone-based odor control system at a City of Regina residential lift station has successfully mitigated odor complaints.

“Over the past five years, from April to October, we would get continuous complaints from the local neighbours about the odor leaving our lift station,” said City of Regina Project Manager Sean Hauglam.

“One neighbour repeatedly said on some evenings it was so bad they could not enjoy relaxing in their backyard.”

“Since we installed the ozone unit in Spring 2018, we have had no odor complaints from that lift station,” he said.

The odor control system required a simple retrofit to the ventilation system. Ozone is pumped into the ventilation system where it mixes with the odorous air. The ventilation system is otherwise operated normally without further



25th Avenue lift station

modifications. All equipment was contained in the existing building.

Ozone is a powerful oxidizer and is the fastest acting oxidizer that is commercially available. Ozone

is created by ozone generators that convert oxygen (O₂) into ozone (O₃). Ozone has been in use continually for over 150 years in industries such as water treatment, pollution control and others.

Murray P. Amirault, P.Eng.

We are pleased to announce that Murray Amirault has joined RVA to the position of Regional Branch Manager of our Moncton, New Brunswick office.

Murray has over 30 years of extensive cross-disciplinary senior management work experience in civil construction, municipal consulting engineering and project management.



Arthur Austin, P.Eng.

We are also pleased to announce that Arthur has joined RVA to the position of Project Manager.

Arthur is based out of RVA's Moncton office and has over 21 years of engineering and project leadership experience. His capabilities include project and team management with respect to urban development, transportation, sewers and watermains, water and wastewater treatment facilities, and industrial projects.



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MAINTENANCE ISSUES SOLVED

“System maintenance used to be the big problem with ozone generators for smaller systems like this,” said Allan Finney, General Manager, Environ Environmental Ltd.

With the advent of their fifth-generation systems, routine maintenance now amounts to flushing the ozone generating tubes annually with clean water. It takes about two hours to complete maintenance.

“Anyone with some basic plumbing skills can now maintain our ozone generators,” he said. “This is a huge advantage for small point-of-use ozone generating systems.”

As well, system maintenance can be scheduled, avoiding unscheduled

maintenance issues. Properly maintained ozone generating systems can last for decades in the field under normal operating conditions.

OPERATING COSTS

There are two parts to the ozone system – an Oxygen Concentrator and Ozone Generator. The Oxygen Concentrator produces 95% pure oxygen from ambient air which is fed into the Ozone Generator. The Ozone Generator produces ozone from the oxygen feed.

Since oxygen for the Ozone Generator is produced from ambient air the only input costs are electrical. The Oxygen Concentrator/Ozone Generator pair draw approximately 800 watts. At a nominal \$0.10/KWH, operating costs are approximately eight cents per hour.

Prior to installing the ozone system, the City looked at total lifetime ownership costs and decided on the Environ ozone system over competing technologies, said Hauglum.

GREEN TECHNOLOGY

There are no chemicals or other inputs into the ozone system other than electricity. This makes ozone one of the greenest technologies available for odor control. Scrubbing systems, for example, rely on caustic and chlorine to scrub odors. They are also unsuitable for small systems such as lift stations.

Carbon for odor control at lift stations requires ongoing replacement of the carbon and also presents disposal issues. As well, carbon requires modifications to the ventilation system and the introduction of a higher-pressure ventilation blower.

In their due diligence process, the City of Regina determined that Environ’s ozone system represented the best value for odor control over other technologies but it’s also a green solution as well, said Finney. “Not only that but it has proven itself to be the most effective as well.”



Installed system



Safety interlock

SCALABLE SYSTEMS

“Environ has installed ozone-based odor control systems at facilities with airflows up to 88,000 CFM (150,000 M3/hr) so the system can be used on a large or small scale,” Finney said.

“With the successful installation by the City of Regina, ozone has proven to be a viable option for pumping and lift stations.”

FOR FURTHER INFORMATION:

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Sean Hauglum, Project Manager, City of Regina

Ph: 306-535-6367, email: shauglum@regina.ca

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Brave Blue World documentary – A perfect storm for water

Press enquiries to:
Natasha Wiseman
E: natasha@wiseonwater.com

An engaging new documentary will showcase water like never before.

Called *Brave Blue World*, the feature-length documentary will provoke a fundamental rethink, revolution and paradigm shift in how people view the treatment and delivery of water, a vital element to life on Earth.

The circular economy, “one water,” sanitation and water reuse will all be covered in stunning 4K.

From the International Space Station, to developing and developed countries, *Brave Blue World* will take the audience on a thought-provoking ride to show how our relationship with water is being re-imagined.

Brave Blue World follows water technology expert Paul O’Callaghan as he explores and challenges some of the most commonly held assumptions about how people see, consume, and value water.

Innovative projects across four continents will be featured along with many of the world’s water visionaries and technology thought leaders. Expert contributors include: Dr. Michael Flynn, Scientist at NASA Ames Research Centre; Prof Mark Von Loostrecht, winner of the Stockholm Water and Lee Kuan Yew Water Prizes; Dr David Sedlak, author of *Water 4.0* and Dr Glen Daigger, former president of the International Water Association (IWA).

Paul O’Callaghan, CEO of BlueTech Research, said: “The *Brave Blue World* documentary is an industry collaboration and celebration of the scientific and

technology advancements that have been taking place, often behind the scenes, to deliver water services. This is the first time a documentary of this scale – bringing together global projects and partners – has been produced specifically on water.”

O’Callaghan added, “Often media coverage on water can be quite apocalyptic. Instead, *Brave Blue World* will be produced as a more hopeful, optimistic and solutions-oriented story about water. We’re proud of this collaboration and thankful to the partners for their support.”

Supporting partners assisting the development of the film include the Water Environment Federation (WEF), Dow Water Solutions, L’Oréal, and SUEZ.

“Too often the state of water is portrayed from perspectives of difficult challenges and desperate situations,” said Eileen O’Neill, Executive Director of WEF. “But we are also in the midst of an era of incredible progress with great possibilities for enhanced water security and WEF is excited that *Brave Blue World* will highlight this positive paradigm shift.”

Tom Kunez, President of WEF, added: “Innovation and technology are driving exciting solutions to many of the problems facing humanity, and the water sector is no exception. *Brave Blue World* will showcase the promising breakthroughs taking place in water science and engineering that will contribute to a sustainable future for the planet.”

“Stories about water are an incredibly powerful tool and resonate deeply with people, so *Brave Blue World* as a documentary film and

storytelling platform can spur vital support and action for the water sector,” said Travis Loop, Communications Director of WEF.

“The *Brave Blue World* story shares an exciting message of progress. It shines a light on the real-world solutions that are solving water scarcity issues today in cities, plants and homes,” said Kimberly Kupiecki, Global Leader for Sustainability, Advocacy and Communications at Dow Water Solutions. “Driven, knowledgeable people on the front lines are working to solve water challenges by applying innovative technologies and concepts. If there’s one thing we want viewers to come away with, it’s the confidence that water challenges can and are being solved today.”

Leading up to the documentary being released, *Brave Blue World* also included an impact campaign across dedicated social media channels to encourage people to question and positively interact with their water suppliers.

Ralph Exton, Chief Commercial Officer, SUEZ – Water Technologies & Solutions, said: “Growing populations, the effects of climate change, aging infrastructure and increased industrial activity are creating water-related challenges like long-term scarcity, decreasing water quality, and drought/flooding conditions. Tackling these very pressing water challenges will require a new way of thinking, not just by those in the water industry, but by the entire world.

“The *Brave Blue World* documentary is critical to spread

the message to a broader audience and show the world that, while there are challenges to overcome, there are solutions that will help us succeed in creating a secure water future. SUEZ is very proud to be part of this project and to help tell this story.”

A preview trailer of *Brave Blue World* will be shown at the BlueTech Forum taking place in Kew Gardens, London in June.

The North American premiere will be shown at the world water event WEFTEC 2019 in Chicago, with a subsequent European Premier at the Aquatech Amsterdam event in November 2019.

Brave Blue World Mission

- We are here to challenge some of the commonly held assumptions and change how people think about water.
- We aim to bust the global sense of impending doom and paint an alternative, optimistic water future. And the ways to get there.
- We believe that even one person with enough knowledge can make a difference and inspire a movement. We are here to provide that knowledge.

For more information, partnership opportunities, and general enquiries on Brave Blue World documentary, please visit www.braveblue.world/contact/.

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REHAU, a global supplier of polymer-based solutions and leading North American PEXa manufacturing company, is offering two additional crosslinked polyethylene PEXa pipes in their municipal piping program. In addition to MUNICIPEX water service line, the expanded product range now includes MUNICIPEX pre-insulated for cold-weather applications and MUNICIPEX force main for wastewater applications. From new construction to replacements and repairs, the MUNICIPEX line offers ease of installation, longevity and resiliency for municipal projects.

With more than one billion feet of REHAU PEXa pipe installed worldwide and many North American water service projects, municipalities have reason to trust MUNICIPEX to safely and efficiently transport potable water,” says Dale Gentry, REHAU MUNICIPEX national account manager. “Now, with our expanded line including pre-insulated and force main, we are building on this proven performance with cold-weather and wastewater solutions. These products offer the efficient installation and longevity that municipalities have come to expect from MUNICIPEX water service line.”

MUNICIPEX Water Service Line

MUNICIPEX water service line delivers potable water from the water main to any residential or commercial structure. This durable crosslinked polyethylene (PEXa) pipe is a clean, easy and cost-effective alternative to copper, HDPE and

other materials. It is available in diameters 3/4 to 2 in. and coils up to 1,000 ft (304.8 m). MUNICIPEX water service line is backed by a 25-year limited warranty and has been trusted by municipalities for more than 20 years. It is certified to AWWA C904, CSA B137.5 and ASTM F876.

MUNICIPEX Pre-Insulated

Specifically for water distribution in colder climates, MUNICIPEX pre-insulated provides an extra level of protection from freezing, particularly useful when laying pipe below the frost line is not possible. A MUNICIPEX carrier pipe is surrounded by a solid layer of CFC-free polyurethane foam insulation and a corrugated LDPE outer casing that provides superior durability. Next to the carrier pipe is

a conduit through which heat trace wires can be run. MUNICIPEX pre-insulated is available in diameters 1 and 2 in. and coils up to 300 ft (91.4 m). It is certified to AWWA C904, CSA B137.5 and ASTM F876, and is backed by a 25-year limited warranty.

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MUNICIPEX force main is used in publicly owned treatment works systems for conveying wastewater under pressure from the discharge side of a pump or pneumatic ejector to a discharge point. The pipe is color coded with a green coating that helps installers easily identify wastewater applications. It is available in diameters 1 1/4 to 2 in. and coils up to 1,000 ft (304.8 m). MUNICIPEX force main is certified to AWWA C904, CSA B137.5 and ASTM F876 and is backed by a five-year limited warranty.



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and safer to carry and uncoil.

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The Canadian Stockholm Junior Water Prize (CSJWP) is pleased to announce Jacobs, one of the largest and most diverse providers of technical, professional and construction services, as the 2019 sponsor and "Official Partner" of the Canadian competition.

"We are proud to welcome Jacobs as a sponsor and partner of the Canadian Stockholm Junior Water Prize," said Audrey Arisman, Executive Director of the Western Canada Water Environment Association and the National Organizer of the CSJWP.

Three finalists for the CSJWP will be selected at the Canada-Wide Science Fair in Fredericton May 15-17, 2019. The finalists will be tasked with preparing a paper for the final stage of the competition and the winner will represent Canada at the Stockholm Junior Water Prize in August 2019. 



"Three **finalists for the CSJWP** will be selected at the Canada-Wide Science Fair in Fredericton."

2018 Canadian Stockholm Junior Water Prize Winner

Holly Tetzlaff, "**Disappearance ≠ Disintegration: The Environmental Impact of Pseudo Flushables**"

"I cannot help but feel my trip to Stockholm was a top moment of 2018 for me. Meeting so many amazing, young, likeminded scientists from around the world and being given the opportunity to share my knowledge and passion for my project is what made the whole experience for me. It also reinforced the importance of my topic globally.

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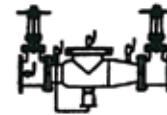
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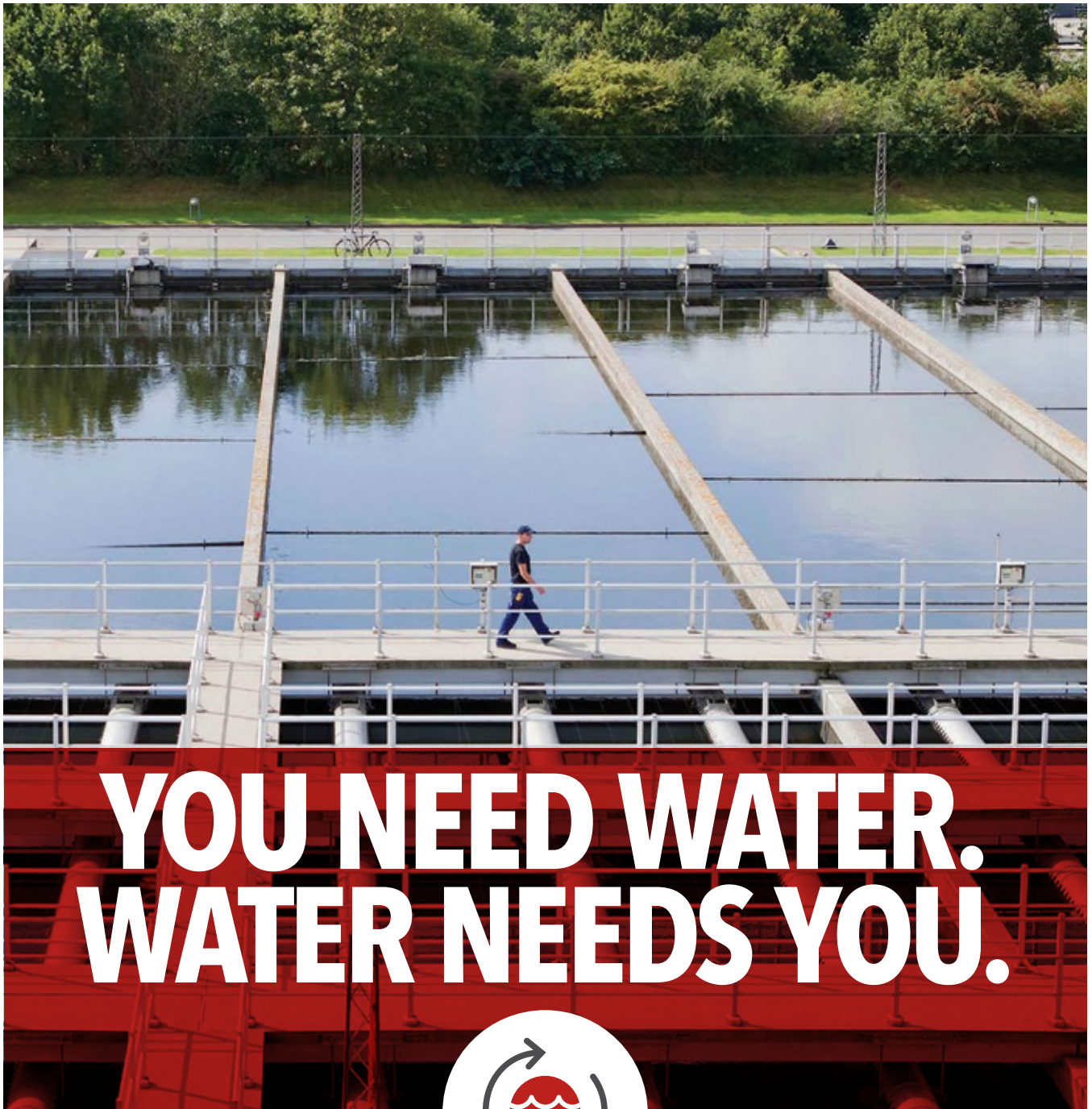
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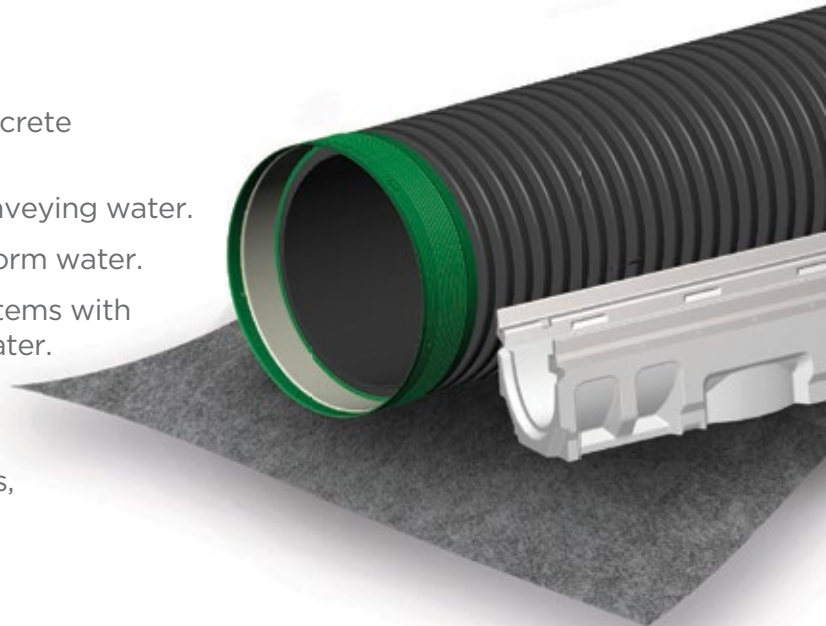
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