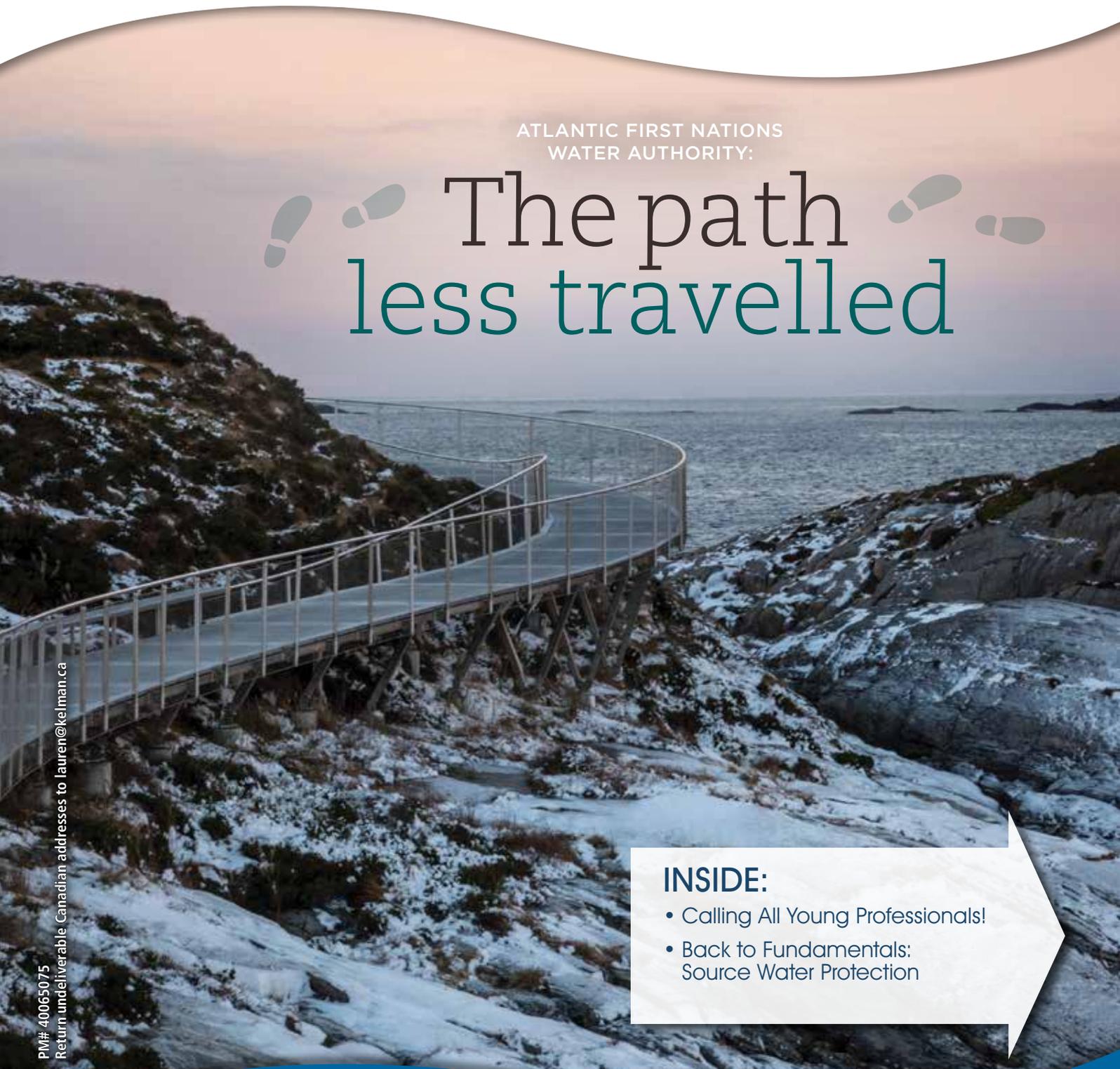


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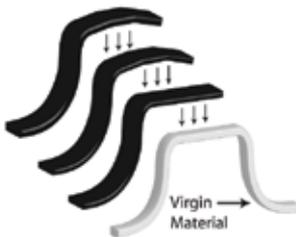
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On the cover: Hiking path along an Atlantic Ocean road. | dreamstime.com





A 2020 virtual conference and thanks

As each of you have experienced, the COVID-19 pandemic has had a remarkable impact on our communities and on our operations; this caused us to pivot and find new ways of doing business, operating infrastructure, and hosting the 2020 conference.

2020 – *A Virtual Vision* was just held as ACWWA's first-ever virtual conference. I must say I was impressed by the turnout and the success of new venue style. The strong technical program combined with the tradeshow, the roundtable discussion, and the YP sessions provided for a well-rounded conference.

I wish to extend my sincere thanks and congratulations to the ACWWA Board of Directors, its Executive Director – Clara Shea, to the many volunteers, presenters, tradeshow hosts, and to each attendee for embracing the opportunity to pivot and make the virtual conference a reality. My sincere thanks and

MESSAGE from THE INCOMING CHAIR

Catherine Cameron (Scotia Tech Fluid Services)



The tides of change

“Embrace the tides of change.” –Judy Belmont

Let me begin by thanking you for allowing me the opportunity of being your Chair of ACWWA for 2020/21. It is both an honour and privilege to serve such a well-respected association. I have been involved with the ACWWA and ABEA for a number of years, and continue to serve two masters. I am the co-owner/operator of two family-owned businesses, located in Dartmouth, NS, that have been involved in the industry since 1992, which has allowed me to see the many changes we have undergone.

2020 has proven to be a year of change beyond anything we have

ever undertaken or expected. Who knew the pandemic plans that were in the protocol binders would ever be put into action, or if they even made sense. Here we are, seven months in, and no real end in sight but yet we must move forward and continue to provide services and value to our membership, and assist, when and where we can, in their struggle to evolve and deliver safe and effective services to their customers.

We have just concluded our first virtual conference. The preparation for the event was both scary and exciting but our fearless leader, Executive Director Clara Shea, led the charge

with her positive attitude and made it happen. Her support/production team at Trihedral deserve a huge thank you for staying the course and providing a product we can be proud to call a product others can be judged against. This all came about as we started to look at how we would deliver our AGM – and look at what it became.

A big round of applause should be shared with our many sponsors, tradeshow vendors, technical paper presenters, dignitaries, roundtable guests, and attendees. Our ACWWA family has once again gone above and beyond to support not only the Association but each other.

appreciation also goes out to our conference sponsors, without whom we would not have been able to make this conference a reality. It never ceases to amaze me how many great people we have in our industry.

I would like to once again extend my thanks to the Board and to the membership for the opportunity to serve as Chair of ACWWA. As I have said before, this Association exists because of the many tireless volunteers we have, and if you would like to know more about becoming a volunteer, please reach out to Clara – our awesome Executive Director. Please keep well. 



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With the conference concluded for 2020, we turn our eye toward 2021 – and plan for the many eventualities, as COVID-19 continues to rule the day. It has become the invisible leader whom we must respect as we plan for education sessions, strategic planning activities, young professional gatherings, and the many other initiatives undertaken by the ACWWA to continue to bring value to its membership.

In closing, I would like to thank Brent for his service over the past year(s) and look forward to our continued relationship as he serves in other areas as Past Chair. I encourage new volunteers to step forward – COVID-19 has not changed the need for volunteers in our association – raise your hand, and say you want to be included.

I wish you all good health at this very precarious time. Stay safe, remember to wear your mask, and social distance – this is our new normal, for now!

“Change is inevitable, change is constant.” –Benjamin Disraeli 



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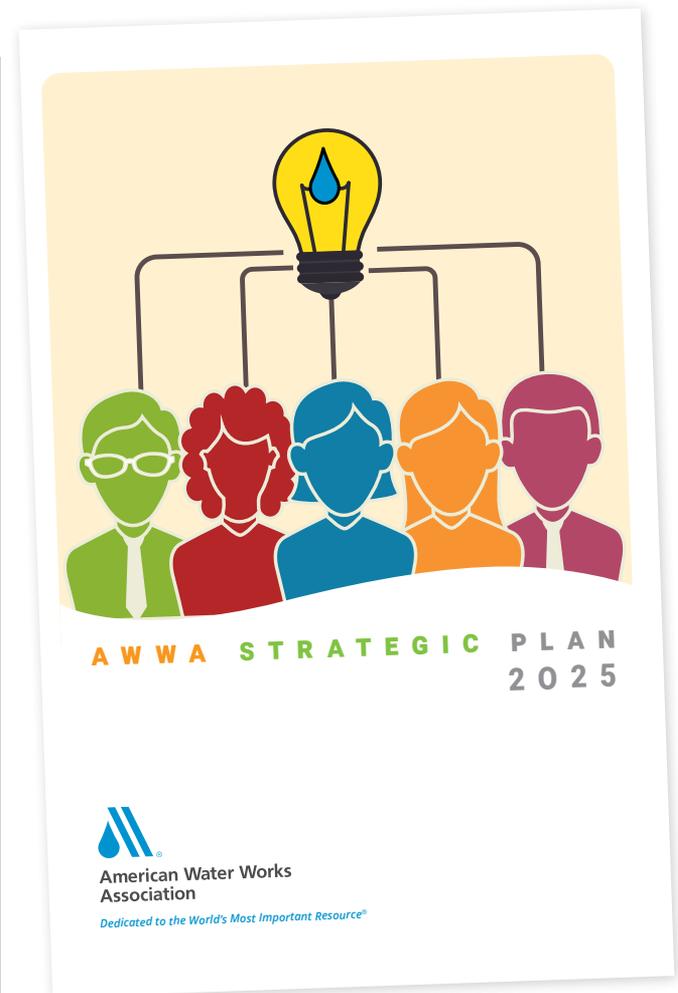


Supporting diversity in the water industry

Welcome to the Winter 2020/21 issue of ACWWA's *Go With the Flow* magazine. As we move into the winter months, I hope everyone has made some time for enjoyment, reflection, and renewal as we all adjust to the new normal of safely navigating through the pandemic while still meeting the needs of our customers, whether as a utility, a supplier, consultant, or working in the academic community.

I mentioned in a previous article that at a special virtual meeting this past August, the AWWA Board of Directors unanimously approved the adoption of AWWA's renewed Strategic Plan, designed to guide the Association's path over the next five years.

While the 2025 version of the AWWA Strategic Plan shares many common core principles of the previous iteration, I would like to put some focus on one of the core principles, which is to *advance diversity and inclusion*. These terms can mean many things to a lot of people, but in our industry, especially in Atlantic Canada, we need to continue to advance the idea of welcoming a diverse workforce. Diversity of appearance and physical traits is one element of this, but diversity of thought – soliciting input from those of different backgrounds, fostering a welcoming and supportive environment and inclusive workplace culture – are key elements of recruiting, retaining, and nurturing the water leaders of tomorrow. Our own Section has been a leader in the promotion of a diverse water industry, with the creation of an Inclusion, Diversity, and Equity committee within the Board structure. Special thanks to our Past Chair, Dr. Jennie Rand, for fostering this initiative during her term as Board Chair.



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STRATEGIC GOALS

MEMBER ENGAGEMENT AND DEVELOPMENT

AWWA will be the association of choice for the water community

Strategic Objectives

- Enhance the value experience for members
- Retain and grow membership across all member categories
- Advance a culture of diversity and inclusion that is reflected in AWWA leadership and member experience
- Work in partnership with Sections to enhance member engagement
- Strategically focus resources for member value and growth

ORGANIZATIONAL STEWARDSHIP

AWWA will effectively use its resources to serve its members and the global water community

Strategic Objectives

- Ensure the long-term financial health of AWWA
- Enhance the effectiveness of the business relationship between the Association and its Sections
- Continually evaluate the Association's programs for relevance, value, and investment in the future
- Leverage technology to provide greater value to the Sections and AWWA members
- Continue to develop the volunteer leadership's ability to guide and oversee AWWA

KNOWLEDGE CREATION AND EXCHANGE

AWWA will be the trusted, authoritative resource on water

Strategic Objectives

- Advance and expand AWWA's Total Water Solutions™ resources for the water community
- Provide educational programs and knowledge resources through increased collaboration between the Association and its Sections
- Increase the use of technology through which AWWA and its members create and share knowledge resources
- Enhance opportunities for global water professionals to connect and exchange knowledge and experiences

WATER POLICY AND LEADERSHIP

AWWA will be recognized as the valued and credible voice for water

Strategic Objectives

- Leverage AWWA's credibility with decision makers
- Strengthen public trust in water services and support for the value of water
- Enhance member and Section capabilities to advance AWWA's policies and leadership at the state and provincial level
- Strategically collaborate to advance AWWA's water policy
- Identify priority risks to safe water and advance policies to address them

Dr. Rand and her colleagues at Acadia University have undertaken, in collaboration with ACWWA, a study of the diversity of our industry in Atlantic Canada. One element of this study was a member survey, which many of you will recall participating in. I look forward to their final report, which could be instructive to learning how we can continue to strive towards having an industry that is more reflective of the communities we serve. Thank you to Jennie and her colleagues for all their work on this file.

AWWA continues to adjust its service delivery model to meet members' needs while foregoing almost all in-person events and meetings. I am pleased to report that AWWA held its first Virtual Summit in September, and while there were some technical challenges associated with some of the presentations, I think the Summit was of great value to those who attended, and represented a means of continuing to engage members while the world works through the pandemic. Please check the AWWA and ACWWA websites often for news of forthcoming virtual training opportunities.

As I write this, planning is well underway, and registration is open, for our Section's first virtual conference, scheduled for December 8 to 10. Thanks to our Executive Director, Clara Shea, and with the support of the Board, 'A Virtual Vision 2020' promises to be an event of great value to our members. I hope you were able to make some time to support this effort to connect with all our members. A roundtable discussion featuring leaders of our region's utilities, technical sessions, a virtual tradeshow, and the ACWWA Annual General Meeting are but a few of the virtual conference highlights.

Thank you for the opportunity to serve our Section. Please feel free to contact me with any AWWA-related questions or concerns at scott.grasman@fredericton.ca. 🌊

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Let's get creative

We are in interesting times... the pandemic has created challenges and opportunities. As you know, we have seen a halt with all in-person training, conferences, and tradeshow events. WEFTEC went virtual in October with WEFTEC Connect. Thousands of people worldwide participated in WEFTEC Connect and this format will likely be at least part of any future WEFTEC events and WEF conferences. I think the reality of the global issues regarding international travel, social/public gatherings, and the actual costs will be on everyone's mind going forward for the next near foreseeable future until the COVID-19 pandemic gets under control.

WEF has announced that there will not be any in-person conferences until at least April 2021. All the four WEFMAX events are being held as virtual in 2021... which means that the ACWWA will not be offering an in-person WEFMAX in Charlottetown, PEI in May 2021. We will, however, be offering a WEFMAX in Charlottetown in 2023. Stay tuned for details on the virtual WEFMAX in 2021.

We need to be creative as to how we can stay connected with each other and still be able to continue to do our jobs safely. We need to keep up with our training and certifications; we still need to maintain equipment and facilities; we still need to upgrade pumping and treatment systems; we still need to supply clean water; we still need to treat wastewater; we still need to think of ways to utilize the resources made available from the biosolids; we all need to do our part to take care of our most important thing on the planet – WATER. With your



WEF/ACWWA membership, access to obtaining these resources is available.

By the time you read this we will have had a very successful ACWWA Virtual Conference. I would like to commend all the hard work of the ACWWA volunteers, sponsors, and suppliers – led by Clara Shea and her team – to pull this virtual conference together and keep our members connected.

I would also like to commend Julie Stokes for leading the annual ACWWA Membership Calendar Contest again. There were a lot of great submissions. I always look forward to seeing the variety of our members and recognize many faces. Speaking of membership: I would like to welcome all the new WEF members that signed up with the ACWWA, especially the YPs (Young Professionals). It is the new, young members that will help this organization grow.

As I mentioned in the previous issue of this magazine, WEF was heavily involved with the development of the documentary Brave Blue World. www.braveblue.world

This film is now available on NETFLIX. I encourage you to watch it. This is a great film to share with everyone – especially with our youth. Our young people will be instrumental in our future and how we use the resources related to water.

Brave Blue World's MISSION

- We are here to challenge many of the commonly held assumptions about our water systems and change how people think about water.
- Our goal is to bust the global sense of impending doom by painting an alternative, optimistic water future and mapping out 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.

I hope that everyone practices proper safe working habits in addition to “wearing a mask,” “practicing social distancing,” “washing your hands,” and most importantly... take care of your mental health. 🧘



CWWA busy at the federal level

While the COVID-19 pandemic may seem to be overwhelming every level of government, there is still a lot going on at the federal level to keep your Canadian Water and Wastewater Association busy.

2020 was to be a big milestone year for the Wastewater Systems Effluent Regulations (WSER). With reporting requirements coming into effect in 2015, utilities identified as highest risk were given a deadline of 2020 to complete upgrades – some with major upgrades. Many of these projects faced technical challenges, zoning challenges and, of course, financing challenges, but this year faced pandemic-related delays. There is almost no flexibility within the legislation, but the Ministry of Environment and Climate Change Canada (ECCC) has stated that its Enforcement Branch is exercising maximum leniency with those who are working diligently to make the upgrades. While they are not launching a full out ‘review’ of the WSER, ECCC did announce a number of administrative amendments they are proposing. Senior ECCC staff presented these proposals on CWWA’s national Window on Water webinar series. One major amendment allowed for an extended round of offering Transitional Authority Agreements with communities. This is to address some 230 wastewater systems in 130 communities across Canada that did not apply for this authority back in 2014. These communities will need to start monitoring their effluent and reporting to the ECCC to be

in compliance. They will then be prioritized to either the 2030 or 2040 deadlines, unless a more urgent concern is identified. Two other proposed amendments address temporary authority for un-ionized ammonia and for by-passes during planned construction or infrastructure work. You are encouraged to review and comment on these amendments on the ECCC’s consultation site.

Meanwhile, Health Canada staff continue their review schedule of the Canada Drinking Water Guidelines. On the CWWA Window on Water webinar in July, they noted the completion of their reviews of E.coli, Aluminum, and Boron, while they continue public consultation on Metribuzin, Diquat, recreational water quality, and the monitoring of microbial water quality in distribution systems.

In the last federal election, the Prime Minister committed to establishing a new Canada Water Agency and this commitment was renewed in the most recent budget. Jonathan Wilkinson, Minister of ECCC, has taken the lead in this effort and has reached out to the wider water community for input. CWWA and our Climate Change Committee made initial submissions to the Minister supporting this agency in a hope it will better focus the many federal departments dealing with water toward a national strategy. We also wanted to ensure that CWWA is recognized as the voice of the municipal water and wastewater sector. CWWA was subsequently invited to join a coalition of national water organizations advising the

Minister on what the mandate and scope of this new agency could be. This task is far from over and we encourage input from all of our members on what value they might see in such an agency.

I suppose I do have to write a bit about COVID-19. Prior to the pandemic, we were facing railroad blockades that were threatening supply chains across Canada. CWWA was speaking for the utility sector to ensure we were recognized as a critical service to be given priority to receive critical supplies. As the pandemic hit, our advocacy continued and included recognizing water and wastewater workers as essential frontline workers requiring priority for PPE and other support services. CWWA’s website hosts pandemic resources from the federal government, WEF, AWWA, IWA, WHO, and our own Pandemic Action Plans for utilities. CWWA also developed national guidance for the re-opening of buildings after prolonged closure. Our documents provided direct guidance to building owners as well as advice to municipalities on how they can best assist their communities. CWWA has also been advocating for water and wastewater to be recognized as priorities for federal stimulus funding as our systems are essential for the health and economy of every community.

Despite COVID-19 cancelling all of our live conferences, CWWA continues its primary goal of representing the Canadian water and wastewater sector to the federal government. 🌊



An update on our membership

Welcome new members

Name	Organization	Membership
Julia Cantelon	Dalhousie University	WEF
Sarah Borden	NSCC	WEF
Matt Carroll	Sansom Equipment	WEF
Jessica Stutt	Luminultra Technologies Ltd.	AWWA
Shon Karolic	Port City Waterservices	AWWA
Quentin Crouse		AWWA
Troy Poirier	Gemtec	AWWA
Justin Cormier	Eastwind	AWWA
Stephen Lewis	Capreit	AWWA

As of October 29, 2020

Total AWWA active members: **412**

Total AWWA late members: **19**

Total active WEF members: **108**

Total WEF late members: **28**

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Winner of the **Silent Hero Award**, Jason Leclerc, P.Eng.



1. **Job title:** Operations Manager – Water and Sanitary Systems.
2. **Who do you work for?** Saint John Water.
3. **Where did you grow up?** Northern New Brunswick.
4. **When I’m not working, I’m...** spending time with my family and friends.
5. **The accomplishment I’m most proud of is...** becoming a father.
6. **If you could go on a road trip with any one person (living or dead), who would it be and where would you go?** Elon Musk – to the International Space Station.
7. **What is your philosophy on life?** Work hard, play harder.
8. **Toughest thing about your job?** Flushable wipes.
9. **When you were a kid, what did you want to be when you grew up?** A firefighter, perhaps because of fire hydrants!
10. **Last book you read?** A children’s book about tractors.
11. **Last movie you saw?** Zootopia with my two-year-old.
12. **What music did you listen to this morning?** Billy Joel.
13. **Favourite TV show?** Peaky Blinders.
14. **What’s your favourite famous quote?** “You miss 100% of the shots you don’t take.” – Wayne Gretzky
15. **What three objects would you rescue from your burning house?** Wallet, keys, and softball glove,
16. **What AWWA/WEF Section would you most like to visit, and why?** The section in Mumbai, India in order to understand the challenges that professionals in that area are faced with.
17. **What is your ideal vehicle?** One that drives itself and can bypass all traffic.
18. **How long have you been a member of ACWWA?** Since 2016 

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2020 – Post-conference/COVID check-in

So, here we are, eight months since our world was turned upside-down... How are you doing? What does your new normal look like? Can we help? www.abea.biz Let us support you – we may have the tools in our toolbox – let’s have a conversation.

Normal is now attending a virtual conference. ACWWA just recently held their first virtual conference. Did you attend? How did you find it? Did you complete a survey? If not, feel free to share your feedback in the Contact section of www.abea.biz, or by sharing directly by email at scotiatech.main@ns.sympatico.ca.

We would like to thank the sponsors and Trade Show presenters. Your participation was greatly appreciated.

It has been a challenge to find ways to continue to add value for our membership in times of masks and social distancing. The Conference, in its virtual format, appears to be the way we connect these days.

ACWWA Conference 2021 is a work in progress, and want to thank our suppliers in advance for their patience and continued support! We will keep you posted as things evolve around us.

But business in the background continues. We still have children attending school and preparing for their futures – remember to review our scholarship program. It is never too early to start planning.

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

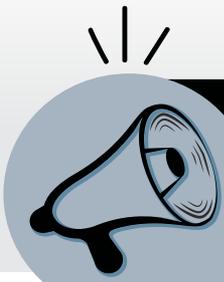
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- Vice-President – vacant
- Sr. Director – Andrew Duguay, aduguay@solen.com
- Jr. Director – Matthew Manning, matthew.manning@ipexna.com
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- Liaison/Director – Catherine Cameron, scotiatech.main@ns.sympatico.ca 



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CALLING ALL



YOUNG PROFESSIONALS!

At our 2020 virtual ACWWA Conference, we hosted a virtual Young Professionals (YPs) session where six YPs gave short (~5 minutes) presentations in a style like that of a Three Minute Thesis competition. Given the demand to present at this event, the ACWWA YP Committee is pleased to offer similar YP webinar presentations on a more regular basis. We plan to host our second series of YP webinar presentations in Winter 2021. We welcome a variety of presentation content including but not limited to:

- Applied drinking water and wastewater research;
- Consulting project updates;

- Regulation of drinking water and wastewater;
- Operations and treatment; and,
- Laboratory/analytical presentations.

This is an opportunity for YPs to practice and improve on their oral presentation skills, and it will also create a virtual environment for YPs to engage with each other during the COVID-19 pandemic. If you are a YP and are interested in giving a short presentation at an upcoming webinar, please reach out to the YP Committee by contacting Lindsay Anderson (lindsay.anderson@dal.ca) or Isobel DeMont (idemont@dal.ca). We hope to see you at our next webinar!

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The path less travelled

By James MacKinnon, MPA, B.Sc., interim COO and Carl Yates, M.A.Sc., P.Eng., interim CEO

Every now and then a utility emerges to try something different and adopts the adage “do not follow where the path may lead, go instead where there is no path and blaze a trail.” Such is the case for the Atlantic First Nation Water Authority (AFNWA) that has been formed to own and operate water and wastewater systems in First Nation communities in Atlantic Canada. The AFNWA will be owned by Atlantic First Nations and governed by a geographically represented Board of Directors, the majority of whom will be First Nations. The Board of Directors for the AFNWA will consist of 15 members with 12 representatives from First Nation communities and three technical experts. The Board of Directors will also receive guidance from a permanent Council of Elders. It has been a ten-year journey spearheaded by leaders to create a utility by First Nations, for First Nations.

Within the Atlantic region, many First Nations communities are individually responsible to operate their own water and wastewater services, which are often constrained due to lack of financial and organizational



capacity. The Government of Canada has recognized the need to improve the quality and safety of water and wastewater services to Canadians, and has recognized the need to introduce regulations, modernize institutions, and provide funding for critical infrastructure to support a First Nations vision of self-determination. Despite the ongoing challenge for Atlantic First Nations to deliver safe drinking water and wastewater services, the pursuit to deliver these services has strengthened existing partnerships and led to the formation of new opportunities.

Working with the Government of Canada, specifically Indigenous Services Canada (ISC), First Nation communities have established the AFNWA as a crucial element in their desires towards self-determination and a nation-to-nation solution to rectify water issues facing their communities. Incorporated on July 18, 2018 as a non-profit organization under the Canada Not-for-profit Corporations Act, the AFNWA is a groundbreaking organization that will provide water and wastewater services to Atlantic First Nations. This approach will ensure a culturally appropriate, service-oriented, and technically strong First Nations water utility that will own, operate, and maintain water and wastewater facilities on their reserves.

As of April 2020, 15 First Nations communities have confirmed their commitment to the AFNWA by signing Band Council Resolutions (BCRs) indicating their desire to formally participate. These communities, located within Nova Scotia, New Brunswick, and Prince Edward Island represent 61% of the total Atlantic First Nations by population. An additional seven Atlantic First Nations communities have declared their interest, with others in the region being potential future candidates. Using a scalable delivery model, the AFNWA governance and organizational structure shows promise for a model which can be utilized by First Nations in communities across Canada.

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With the careful consideration by the Atlantic First Nations communities, four potential organizational structures were considered to achieve the AFNWA's mandate, namely:

- Full Service Centralized
- Full Service Decentralized
- Full Outsource
- Technical Services

Based on the options analysis conducted as part of the AFNWA business case, the Full Service Decentralized (FSD) corporate structure was approved by the AFNWA Board as recommended by Atlantic First Nations communities, the Chiefs, and their Band Councils. The FSD model has been identified as being the most aligned to First Nation cultural and spiritual considerations and having the potential to provide the highest level of service and direct benefits to the communities served.

The proposed AFNWA operational model recommends an appropriately sized management and operational baseline to deliver the required services to communities with the flexibility to scale-up to accommodate communities who wish to join later. The proposed AFNWA corporate structure is a radical departure from the status quo to strengthen Atlantic First Nation communities' desire for self-determination, while providing a sustainable approach to service delivery.

With the transition to autonomous operations in Spring 2022, the AFNWA will be led by a management team

experienced in the operation of water and wastewater systems. To ensure participating Atlantic First Nations communities receive the level of service required to meet the water utility objectives, the AFNWA operations will be structured as a 'hub and spoke' model. Under this organizational design, service delivery is arranged into a network consisting of several geographic hubs which offer an array of services to the communities (spokes).

The hub and spoke model can accommodate varying circumstances such as growing or declining populations or changing (geographic) groupings of participating communities as further commitments are finalized. Additionally, the hub and spoke will allow the AFNWA to recognize First Nations traditional territory and Atlantic Canada's geographic challenges by optimizing service delivery with communities being no more than a 2.5-hour drive away from a service hub. Locating hub offices within the communities will further allow the AFNWA to position expertise and operational knowledge close to water and wastewater systems while providing support from the main office and other regional hubs.

Structuring the AFNWA under the FSD model will further allow for the most effective and efficient operation coupled with the best opportunity to establish relationships with the communities. This relationship is important to ensure traditional

knowledge and values are integrated into how the water utility operates and to educate communities on long-term sustainability.

On June 23, 2020, the Honourable Marc Miller, Minister of Indigenous Services Canada, and the Atlantic First Nations Water Authority announced the signing of a framework agreement that will facilitate the transfer of First Nations water and wastewater services in Atlantic Canada from Indigenous Services Canada (ISC) to the AFNWA.

ISC, the AFNWA, and its member First Nations are working in collaboration on the transfer of responsibility for the design and delivery of water and wastewater services in the communities from ISC to the AFNWA. The Framework Agreement outlines the negotiation process and the roles and responsibilities for all parties to transfer responsibility and liability for the care, control, and management of water and wastewater services. The agreement defines the relationship between ISC and the AFNWA going forward to advance this new First Nations-led service delivery model.

There is a strong desire for change among Atlantic First Nations and the Government of Canada. Maintaining the current approach and status quo does not meet the needs or aspirations of First Nation communities or the Government of Canada and perpetuates the issues of the past. The creation of the AFNWA provides an opportunity to take a different path. 



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Halton Region first municipality in Canada to receive prestigious award for drinking water quality

Source: AWWA.org

On September 16, 2020, the American Water Works Association presented Halton Region with the Directors Award, recognizing an outstanding commitment to high drinking water quality and treatment. Of the 250 water service providers and 400 treatment plants that belong to the international Partnership for Safe Water program, Halton Region is the first municipality in Canada to receive this prestigious award.

“Halton Region continually meets and exceeds provincial drinking water standards and this achievement is a testament to our track record,” said Halton Regional Chair Gary Carr. “The Partnership for Safe Water is an important part of our commitment to ensuring we continue to provide residents and businesses with reliable access to the best possible drinking water. I would like to commend our water treatment team for this important accomplishment and thank them for their dedication to quality, continuous improvement and for

delivering this critical service each and every day.”

AWWA’s Partnership for Safe Water is a collaboration of six drinking water organizations with a mission to improve water quality through the optimization of water system operations. Since Halton Region joined the Partnership in 2016, Region staff has used processes and tools provided by the program to optimize plant performance and deliver high-quality drinking water beyond regulatory requirements. The award specifically recognizes the achievements of the Burlington, Burloak, and Oakville Water Treatment Plants.

“The Ontario Water Works Association commends the Region and its staff for their commitment to the Partnership, to its ongoing optimization efforts, and to providing customers with the highest quality drinking water possible,” said Michele Grenier, Executive Director of the Ontario Water Works Association, the Ontario section of the AWWA.

Halton Region operates 12 water treatment facilities and delivers more than 65 million cubic meters of drinking water to residents and business every

day. To learn more about Halton Region water quality and service, please visit halton.ca.

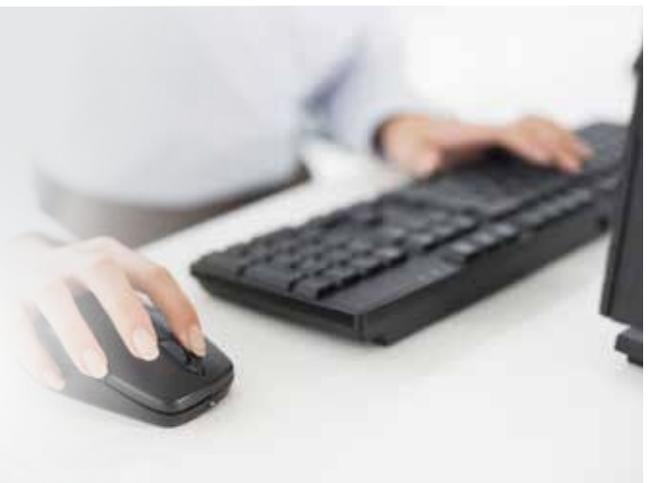
The Regional Municipality of Halton serves 580,000 residents in the City of Burlington, the Town of Halton Hills, the Town of Milton, and the Town of Oakville. Halton Region is committed to meeting the needs of its residents through the delivery of cost-effective, quality programs and services, including water and wastewater; regional roads and planning; paramedic services; waste management; public health; social assistance; children’s and seniors’ services; housing services; heritage programs; emergency management and economic development.

The Partnership for Safe Water is a voluntary self-assessment and optimization program for water treatment plant and distribution system operation. More than 250 utility subscribers, collectively serving more than 100 million people, are committed to the Partnership’s goals of providing safe, high-quality drinking water through achieving operational excellence in water treatment. 

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Julie DiCicco,
ACWWA Magazine Chair

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N.B. company says its rapid-test technology for sewage can help detect COVID-19 early

Source: The Canadian Press

A Fredericton-based company has filed a patent for a technology it says can help provide rapid, early detection of COVID-19 in a community by testing its sewage.

LuminUltra and researchers at Dalhousie University have developed a system they say is portable and less costly than traditional laboratory testing. Company CEO Pat Whalen said his 4.5-kilogram device can make testing accessible to communities with limited or no access to lab facilities.

"It's all about giving us an earlier warning," Whalen said in a recent interview. "This is a lower-cost solution that is far more deployable and portable and is able to be used in far more places."

Whalen said while a traditional COVID-19 lab test takes about eight hours to complete, his company's device can produce on-site results within 90 minutes to two hours. The company's technology is simpler to use than traditional tests, he said, adding that tests can be conducted by "any kind of lab technician" as opposed to a highly trained chemist.

Whalen said the technology can be used by sewage treatment plants to detect COVID-19 in wastewater. But it can be used more widely, he explained, to test the waste of individual buildings located on university campuses, or of hospitals and seniors residences.

"There's a tremendous amount of flexibility with something that can be picked up and taken to where it needs to be," he said.

Several countries have tested wastewater for early signs of a COVID-19 outbreak. The Netherlands and France, for example, used such testing in the early days of the pandemic, and according to non-peer reviewed studies, both were able to detect traces of the virus in wastewater before widespread outbreaks were confirmed.

Parts of the United States, Australia and Israel have done the same, and earlier this month, the University of Guelph tested wastewater from campus residences for early signs of the novel coronavirus.

Amina Stoddart, an assistant engineering professor at Dalhousie

University, said LuminUltra's system was refined by testing wastewater samples supplied by Halifax's water utility.

Stoddart described sewage as a "biological matrix" that can change over time. The key to accurate results, she said, is to analyze fresh wastewater as quickly as possible before its microbial composition changes.

She said the focus of her research was in "cleaning up" wastewater samples in order to extract RNA – a molecule similar to DNA – and in accurately quantify the presence of the virus. Stoddart said it was exciting to help develop testing that can be "done really anywhere."

"You can imagine that there are communities within Canada that are challenged logistically in terms of sending a viable sample to a lab to be analyzed, so I think that's a huge advantage of this method," she said.

To read the full article, go to <https://atlantic.ctvnews.ca/n-b-company-says-its-rapid-test-technology-for-sewage-can-help-detect-covid-19-early-1.5161508>.



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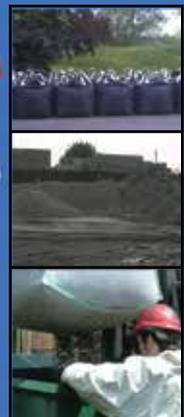
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Source water protection – a primer

By Michael Allen, Sustainability and Applied Science Division at the Nova Scotia Environment (mike.allen@novascotia.ca)

“Where does your water come from?” I opened with this question in a lecture room of college students a few years ago. “From a well,” “From the tap!” were the two prominent responses. I, myself, grew up on an old dug well directly behind our homestead as do a number rural Nova Scotians. I remember the foot valve replacements, dire warnings of the well going dry in summer during our showers, the ongoing conflict with the old piston pump when the well did go dry, frozen pipes, and of course the seasonal water discoloration and ritual “dumping of the Javex” into the well every spring.

I, like many rural dwellers, witnessed my parents’ in-tune, if not at times tumultuous, relationship with our water source while growing up and recall the efforts it took to pipe it into the home.

I also recall the “Town water” at my grandparents’ place, which for all I knew at the time just came through a pipe from the street and tasted a bit like chlorine. How often do members of the population serviced via a water utility actually think of the source of their municipal water supply, and the tremendous amount of effort it takes to get it “from the tap”? It is likely an out-of-sight, out-of-mind scenario in most cases.

The safety of drinking water is essential for the health and wellbeing of our communities, and it is important that it is kept clean, safe, and reliable. In Nova Scotia, the Department of Environment regulates municipal drinking water, and there are currently 83 municipal water supplies (surface and groundwater) operating in the province. As part of the 2002 Drinking Water Strategy, a multiple barrier approach was adopted in managing drinking water. The multiple barrier approach has been demonstrated to be a very effective way to manage drinking water systems. Essentially, it is an integrated system that prevents or reduces the contamination of drinking water, from the actual source to the tap, as follows:

- Keeping Source Waters Clean
 - Source Water Protection Planning
- Making Sure Water Is Safe
 - Water Treatment
 - Operator Certification
- Proving Water Is Safe
 - Monitoring

The initial premise of this process is to keep clean water clean, whether it be surface water (lake, reservoir, or stream) or groundwater (well supplies). Hence, the first of these three barriers is source water protection. This can be also be a cost-effective method of helping to ensure the safety of the supply. An “ounce of prevention is worth a pound of cure,” as the saying goes.

As part of the Approvals issued by the Nova Scotia Department of Environment to treat and distribute municipal drinking water, the Water Utility Operator requires a Source Water Protection Plan (SWPP). An individual SWPP is required for each water supply. The Department provides assistance to water utilities in developing and implementing their SWPP and other stakeholders are often asked to

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participate (including but not limited to municipal, provincial, federal, industry, interest groups and private individual landowners).

Essentially, the SWPP is a living document developed by the water utility and stakeholders, outlining the land area or watershed that contributes to the water supply, and the potential or realized environmental risks to the supply. The options are then defined for managing the identified risks, and are often based on a combination of the most appropriate management practices for the particular water supply area in question, based on associated land-use patterns and activities. The SWPP also includes aspects such as a monitoring and reporting process, and a contingency planning component. Stakeholder and landowner engagement and partnerships are critical to the process.

As outlined in NS Environment's guidance information, the basic steps in developing a source water protection plan are the following:

- Step 1 – Form a Source Water Protection Advisory Committee
- Step 2 – Delineate Source Water Protection Area Boundary
- Step 3 – Identify Potential Contaminants & Assess Risks
- Step 4 – Develop and Adopt a Source Water Protection Plan
 - Step 4 – The ABC's of Source Water Protection:
 - Acquisition of Land
 - Municipal land-use Bylaws
 - Best Management Practices
 - Contingency Planning
 - Designation
 - Education and Stewardship
- Step 5 – Monitor & Evaluate the Plan

Though there can be competing interests at times, a consensus-based approach is advised, while maintaining source water protection as the focus and priority for all of those involved. Everyone has their own reasons as to why a water resource is important to them, and as individuals, stakeholders, or other

interest groups there is a need to realize (although one may not agree at the time) that there are different perspectives. For example, a community may be on individual private wells and not serviced by an adjacent municipal water supply watershed. However, there are most likely services and institutions in the neighbouring urban centre on which they depend (schools, recreation facilities, hospitals and other medical facilities, to name a few). Through this lens, that particular town, village, or municipality is providing water services on which the broader community may depend on and have an interest.

Source water protection, looking forward

Looking forward, with recent drought conditions throughout

much of the province, source water quantity is becoming a significant concern for some water utilities, and climate change considerations are becoming an important aspect in source water protection plan development. 

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.



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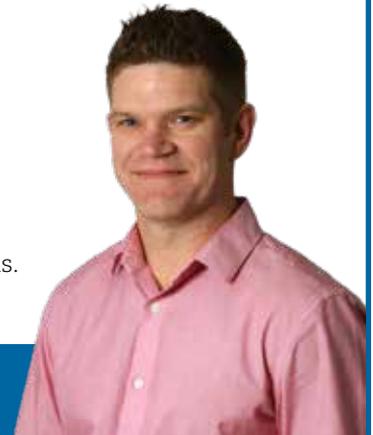
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