

GO with THE FLOW

THE OFFICIAL PUBLICATION OF THE ATLANTIC CANADA WATER AND WASTEWATER ASSOCIATION



5S – Select Society of Sanitary Sludge Shovelers

INSIDE:

- Canadian Water Forum in June
- ACWWA Conference Sponsorship Opportunities

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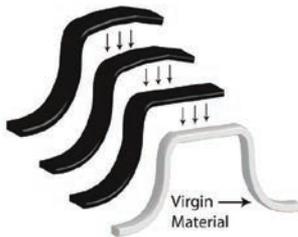
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On the cover: Hopewell Rocks in low tide in Hopewell Rocks Ocean Tidal Exploration Site, New Brunswick, Canada. | dreamstime.com





Association activities

I hope this new decade is off to a great start for all of our members. Please take some time to enjoy the Spring 2020 issue of our magazine – *Go With the Flow*, one of the many great benefits of being a member of the Atlantic Canada Water and Wastewater Association (ACWWA).

I would like to provide you with an update on some ACWWA activity over the past few months. In December we held the annual ACWWA strategic planning session. The board spent a couple of days meeting and a day dedicated to reviewing and updating the ACWWA Strategic Plan and our 2019–2020 Business Plan. The Strategic Plan can be found on the ACWWA website at <http://acwwa.ca/about-us>.

The Conference Committee, led by Conference Chair Greg McCann, are well underway with planning for this year’s conference in Fredericton. The theme of the 2020 ACWWA Conference is *Thirst for Resiliency* and the dates will be October 18–20, 2020 at the Fredericton Convention Centre. I am very much looking forward to the conference as it is sure to be a success in the beautiful capital city.

Our Technical Director Wendy Krkosek and other team members have been active in incorporating Climate Resilience for Municipal Infrastructure into the updates of the existing Atlantic Canada Water and Wastewater Design Guidelines. This is a significant undertaking that will build climate change/climate resilience into the Design Guidelines – an essential step for our industry. Many thanks to the entire team involved in this significant undertaking.

“The Conference Committee, led by Conference Chair Greg McCann, are well underway with planning for this year’s conference in Fredericton.”

Our Membership Director Julie Stokes and our AWWA Membership Chair Gabriel Belliveau were able to attend the 2020 annual Membership Summit held in Denver, Colorado, the location of AWWA’s headquarters.

We received some feedback from our members as it relates to the 5S Society and the WEF (Water Environment Federation) member-specific award. To educate our membership on the 5S Shovel Award, this month’s magazine includes an article on the award and I would encourage members to take some time to read the article to learn more about this award (see page 11).

As it relates to awards, we have many members who go above and beyond on a regular basis and who make significant contributions to our industry and I would encourage each of you to consider who you know that may be worthy of nominating for one of the many awards. The following are some of the awards that will be available for presentation at the 2020 ACWWA Conference in Fredericton, NB.

Individual Awards

- Silent Hero Award
- Young Professional Award
- Contribution Award

Organizational Award

- Project of the Year

Please note that the deadline for Award Nomination submissions is June 30, 2020 and the link to complete the online form is located at: www.acwwa.ca/conferences/awards/award-nominations.

Please feel free to contact me if you have any ideas or suggestions for ACWWA. I can be reached at brent.mcgovern@saintjohn.ca. In closing, I would like to send a sincere thank you to our many excellent volunteers that we have in the Association – they truly make a difference. Lastly – a big thank you to our Executive Director Clara for all that she does. 



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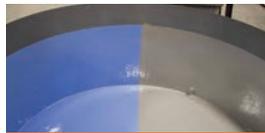
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Navigating the challenging times

March 22, 2020 passed and World Water Day reminded me how important each Water Professional is in Atlantic Canada. Through safe water and wastewater practices our communities have an important asset as we currently battle through the COVID-19 epidemic.

AWWA has been very active in providing current information to its sections and to its members through webinars, web updates, and broad communications. While COVID-19 will undoubtedly affect our lives ways we are only beginning

“While COVID-19 will undoubtedly affect our lives ways we are only beginning to understand, networking with colleagues and learning best practices has been a critical fabric of AWWA.”

to understand, networking with colleagues and learning best practices has been a critical fabric of AWWA. We expect that this will continue well into the future.

At our Winter Board meeting in January 2020, I was reminded that our organization – with more than

53,000 members – is very strong. We elected Dr. Chi Ho Sham as our next President, who has a breadth of experience and knowledge to lead our organization. Also at the Winter Board meeting, I was excited to have our incoming Director – Scott Grasman – join the meeting. He is already having an impact at the Board and will represent ACWWA extremely well!

So as we all continue to prepare for COVID-19, take comfort that as an organization, AWWA, its member sections, and its members have the passion and intelligence to overcome many challenges like *Cryptosporidium*, lead, and water affordability. We can rise to the current challenge and be the organization that water professionals continue to turn to for professional guidance in water as we navigate these challenging times. 

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Our successful events

Sitting here on a cold February morning, I am watching the birds out the window at the feeder wondering if this snow will ever melt and when the robins will return. You know it is a bad winter when Shubenacadie Sam (the famous Groundhog) from Nova Scotia cancels his first official appearance of the year on Groundhog Day... and then predicts six more weeks of winter. I am trusting that when you are reading this, the snow is mostly gone and the temperatures are well above the zero mark.



Since my last article, WEF has officially released the brand-new documentary, **Brave Blue World**... if you were at the 2019 ACWWA Conference Awards Luncheon in Halifax, you would have seen the video trailer presented by WEF's Past President, Tom Kunetz. This documentary is narrated by Liam Neeson, and also features Matt Damon. This is a global perspective on water and how many corners of the earth are dealing with water and wastewater issues. I have seen the documentary on my laptop during a webinar session with WEF. I am really looking forward to seeing it on a larger screen.

The ACWWA will be looking at offering FREE public screenings in the near future. Stay tuned... we will be announcing dates and locations

soon. If you have questions in the meantime, or are willing to host a FREE public screening – such as at a university, public library, school, etc. – please get in touch. We would be happy to discuss organizing a showing with you. I have included web links below for the documentary and the trailer.

- <https://www.braveblue.world/projects>
- <https://www.youtube.com/watch?v=T1Ju352d9Z4&feature=youtu.be>

I am chairing the WEF House of Delegates – Stormwater/NGICP Working Group. The NGICP stands for **National Green Infrastructure Certification Program**. This program is currently being offered in the US; however, there is an International program, IGICP, that is being piloted in New Zealand and Canada will also be considered in the future once a need has been identified.

We sent out an email survey in February to WEF Delegates and each of the Member Associations within Canada, the US, and beyond to gather information about what the various regions are doing now with respect to (GI) Green Infrastructure. The results were not be available before the publication deadline of this issue. Please let me know if you would like to learn more about this program.

You can also visit <https://ngicp.org>.

What are NGICP's missions and objectives?

NGICP's primary objectives are to:

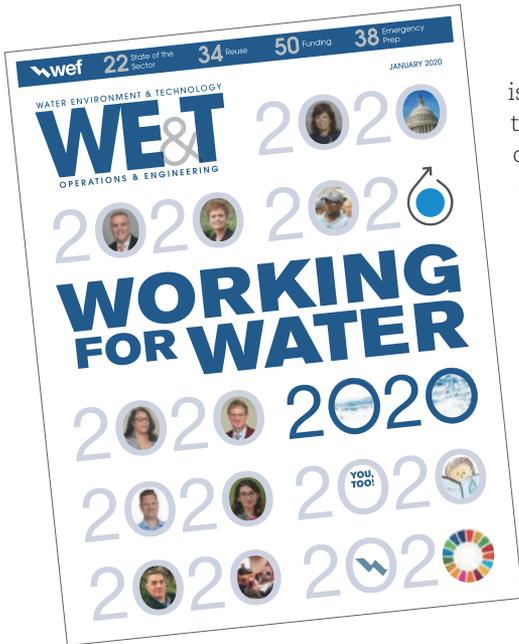
- Provide a pool of skilled workers to construct, inspect, and maintain GI to support the long-term performance of these systems
- Support efforts to catalyze sustainable employment within local communities

- Create career opportunities with livable wages through GI investments

I am involved with the WEFMAX Planning Committee and participate in many conference calls. The WEFMAX conferences are held in four different US host cities each year. Every second year, Canada is included as one of the host locations. I will be attending the next WEFMAX meetings in April in the US. These meetings provide tremendous networking opportunities and training to help us provide more resources and programs for our WEF members. We are very excited to share that Charlottetown will be one of the host cities in 2021. Planning is well underway and we are looking forward to welcoming Canadians and Americans to PEI.

I am also part of the WEF Nominations Committee – we will soon be reviewing nominations for several positions within the WEF Board of Directors, etc. Hopefully we can see some more Canadian names be brought forward. In addition to the Nominations Committee, I would like to mention that WEF has many awards available to deserving volunteers. We need people to nominate their colleagues for these awards so we can present them at our Annual Conferences.

For those of you WEF members of the ACWWA who receive the *WEF Water Environment & Technology Magazine*, you may have noticed my mugshot on the cover of the January 2020 edition. So why am I in this magazine you may ask? We held a debate at the House of Delegates meetings at WEFTEC in Chicago in 2019. The debate theme was, "What do you think is the most significant



issue that will affect our industry in the next ten years?" My topic was climate change. Others focused on communications, government funding gaps, and workforce development. After our very well received debate, WEF staff asked that we submit our comments to be included in an upcoming edition of the *WE&T Magazine*. So here we are.

As an early reminder: WEFTEC 2020 will be held October 3 to 7, 2020 at the New Orleans Morial Convention Center in New Orleans. Planning is underway already, and 795 companies have reserved more than 284,000 net square feet of space. You should plan to attend. 



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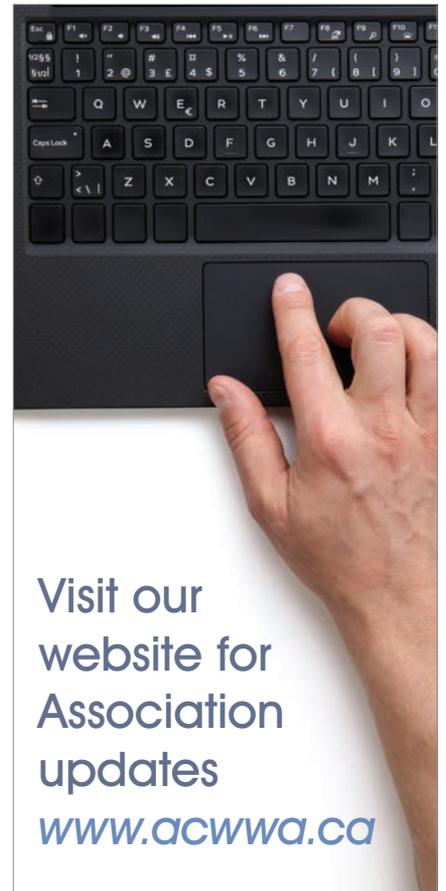
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5S - Select Society of Sanitary Sludge Shovelers

By Dave Galbraith

Many people are not aware of the significance or the origin of the 5S Award. This is a brief history and an overview of the 5S "Select Society of Sanitary Sludge Shovelers."

The 5S Society is a WEF (Water Environment Federation) member-specific award to honour those who have made a particular contribution to the water and wastewater industry in their Member Association. The ACWWA was invited to create a 5S Society Charter in 2011.

Peter Nichol (OWEA) and Bill Borlase (WCWEA), both members of the 5S Society, attended our Annual ACWWA Conference in 2011 and presented the first 5S Shovel to the ACWWA WEF Delegate, Gary Chew. Gary was then designated as the "Influent Integrator," who is also referred to as the neutral "pH7." The pH7's duties are to record and report nominated selections by existing 5S members, present official certificates, bestow 5S Shovels, and preside over these 5S presentation ceremonies. Once Gary retired in 2019, the pH7 duties were passed on to me, whereas I am the currently the ACWWA WEF Delegate. Once my term is complete as the WEF Delegate, it will be passed on to the next WEF Delegate. I am still learning the ropes and plan to have a better understanding of the pH7 role in the near future.

The 5S Shovel Award is meant to be a prestigious award, yet the presentation ceremony is also

intended to be fun and not too serious at the same time. However, it is important that time be taken to educate our membership on the background knowledge of where the award came from, why certain people are presented with the 5S Shovel, and how to go about nominating someone. My intent with this article is to shed some light and help everyone better understand the history and importance of the 5S Award.

Some history... Pennsylvania started the High-Hat Society in 1937 and used the words "Sludge Shovelers Society" in its initiation ceremony. Later, this became known as the Ted Moses Sludge Shovelers Society. The second Chapter of the 5S Society was formed in Arizona in October 1940, the idea being conceived by A.W. "Dusty" Miller and F. Carlyle Roberts, Jr. There are chapters in many of the United States and in Canada, as well as the United Kingdom, Australia, and New Zealand. The 5S Society Chapters do not accept applications, but select their potential societies to be invited. Each inductee receives a gold tie bar in the shape of a round-nosed shovel. NOTE: The ACWWA is currently researching a 5S Award design that is not a specifically a Tie Bar but instead something that is gender neutral.

The 5S Shovel designs are very distinctive to each Member Association. When traveling to other water and wastewater conferences,

especially WEFTEC, you will see a variety of gold 5S shovels being displayed on shirt and jacket collars/lapels... such as a flower, fish, animal, tree, etc., that are significant symbols to their region. The ACWWA 5S Shovel has a red lobster on it, something significant to Atlantic Canada. They are the most-talked-about shovels at WEFTEC each year. It is an honour to wear and display the 5S Shovel at these events. Those understanding the significance of the 5S know that the person wearing the shovel has provided outstanding service to their WEF Member Association.

The ACWWA may choose to present one or more 5S Awards each year at the Annual Conference. However, some years there have not been any recipients. As a kind gesture, the ACWWA has presented the 5S Shovel at the Annual Conference to the visiting dignitaries from WEF and AWWA.

For a list of recipients with the ACWWA 5S Award since 2011, some of which are CWWA, WEF, and AWWA dignitaries please visit our website at www.acwwa.ca.

To improve the presentation of the 5S Award and to better align it with the ACWWA annual awards ceremony, the ACWWA Board has decided the 5S Award will no longer be presented at the Down East Feast but instead will be presented at the awards ceremony at the Annual Conference. 

It is an honour to wear and display the 5S Shovel at these events. Those understanding the significance of the 5S know that the person wearing the shovel has provided outstanding service to their WEF Member Association.



A great passion for our work

As I compile notes and write my first article for *Go With the Flow* magazine, I reminisce on receiving these publications back in my early days in the water industry. Simpler times then, operating a gas chlorination plant with pH correction with no automated control other than flow pacing via a water meter. Not to date myself, however, this was before the age of high-speed internet, overabundance of news and information that floods our inbox, newsfeeds and social media castigating us daily. However, I do still look forward to taking some time to read this particular magazine and all the wonderful content and information it has to offer. So, if you are reading this article, thank you and I hope you enjoy reading it cover to cover as I have for so many years.

Being fortunate to have this wonderful opportunity to serve on the ACWWA Board of Directors, while following in the footsteps of several dedicated volunteers before me, is not a task I take lightly but one I look forward to. Hats off to Roland Richard for the many years he dedicated to this position. His passion and commitment to the ACWWA in his role as director was clearly evident as he is well respected and will be missed by his peers. Roland served many terms as the Government Relations Director, Canadian Water & Wastewater Association Rep, and Canadian Affairs Committee Chair. On behalf of ACWWA and its members, thank you Roland for all you have done in promoting the water/wastewater industry, along with the objectives of this association and beyond.

So, this being a new position for me I would like to circle back to my reference of early days in the water industry. Going from a disinfection water plant with preliminary screening and pH correction to being involved with the design, implementation, commissioning, and operation of a state-of-the-art new DAF water treatment facility was such a great opportunity. The journey through this process involved many stakeholders and included working with all level of government, consultants, and suppliers. Having been a member of several water associations also gave me access to a great network of professionals and training opportunities. This early career journey took place before the well-known Walkerton incident, and since then my job titles and responsibilities have changed vastly, along with treatment standards and water regulations. While there is always more work to be done in all aspects of municipal infrastructure, it gives me great appreciation of how far we have come in the past three decades. Over that time, I am fortunate to have built many connections and contacts in the industry across many fields. Having a great passion for this field of work provides motivation and interest for taking on this role within the ACWWA and CWWA.

Activity from the CWWA Drinking Water Committee – Lead and Manganese Guidelines: As the National Water & Wastewater Conference was in full swing in Banff, Alberta a media blitz hit the news about lead levels exceeding

in many places across the country. Previous to this there was very little reaction from the public regarding the new amendments to the National Drinking Water Guidelines. Fortunately, CWWA was able to re-distribute fact sheets and speaking notes for use by the media, utility staff, and public officials.

Latest work from Health Canada is on natural organic matter and aluminum – There are concerns on increasing issues with blue-green algae; in response the Canadian Water Network is leading a series of webinars on this topic. We will hear more updates on these and other issues from Health Canada during the Window on Ottawa in June 2020.

Wastewater Committee – CWWA continues efforts with our partners towards getting an enforceable standard for “flushability” in Canada. Funds have supported research at Ryerson University to test how “dispersible” current products are. The Ryerson Report showed very disappointing results for all products. A simultaneous study at Western University showed a great lack of compliance by the industry for their own labeling guidelines. CWWA has just supported a second phase of research at Ryerson. The issue around the disposal of these products continues to cause many operational issues and damaging results to wastewater collection and treatment infrastructure. This creates widespread implications from costs associated with sewer main backups, insurance claims, harm to the environment, along with

all the operational and capital costs to put measures in place to deal with these products.

CWWA – National and international

International Water Association (IWA) – 2022 is getting closer and our chance to host the World Congress and Exhibition in Toronto. CWWA is planning how to make a big splash in Copenhagen in 2020 to promote our event. Support has been tremendous from both WEF and AWWA for this 2022 North American event.

Window on Ottawa & Canadian Water Summit

CWWA and Water Canada magazine are excited to announce that we that we will merge our two events in 2020. The Water Summit is organized annually by *Water Canada* magazine and is a national event focused on water and the economy. Our annual Window on Ottawa focuses on federal policy and legislation. The event will run from June 10–12, 2020.

National Water and Wastewater Conference

Planning is well underway for NWWC2020 in Niagara Falls, November 8–11. The call for papers is going out soon as well as the prospectus for exhibitors and sponsors.

CWWA has confirmed the site for NWWC2021 – in Halifax!

Website

CWWA's website has been redesigned. Please visit www.cwwa.ca and take some time to check out the new features and content. 

“The issue around the disposal of these products continues to cause many operational issues and damaging results to wastewater collection and treatment infrastructure.”



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Expanding our networking opportunities

Hopefully by the time this article reaches you, the snow has melted and spring flowers are in full bloom.

In 2020, the membership committee will continue to expand on member networking opportunities to help with member engagement by hosting a first-time member/non-member meet & greet at the Annual ACWWA Conference in Fredericton. We will also continue to reach out to small communities and small systems that could benefit from the Association.

Gabriel Belliveau, AWWA Membership Chair, and I had the opportunity to represent ACWWA at the AWWA Membership Summit February 5-7 in Denver, Colorado. ACWWA was presented with an award for having achieved their first-year retention goals. This could not be possible without our members,

Executive Director Clara Shea, and our Membership Committee which is comprised of Gabriel Belliveau, Melissa Fraser, and Sean Chillibeck. Thank you!

Did you know?

ACWWA has more than 150 books and videos ranging from various topics that can be borrowed for a period of three weeks at no additional cost to you as a member. Whether you need a safety video for a safety talk, are preparing for a certification exam and would like one of the certification study guides, or are re-evaluating your utility rates, take advantage of this great library and the resources provided to you as a benefit of being a member. For the complete list of books and videos please refer to www.acwwa.ca/resources/section-library or contact ACWWA at (902)434-6002.



AWWA Membership Summit in February.

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

Spring 2020 \$50 gift card winner

Congratulations to Geno Pace from CUPE Local 56 from Nova Scotia who was the lucky winner of a \$50 gift card of his choice for recruiting a new member. 🍷

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As of February 14, 2020

Total AWWA active members: **431**
 Total AWWA late members: **16**
 Total active WEF members: **104**
 Total WEF late members: **22**

Welcome to our new members

Name	Organization	Membership
Jason Phillips	City of St. John's	WEF
Andrew Forsythe		WEF
James Sheppard	Dillon Consulting Limited	WEF
Jason Leclerc	Saint John Water	WEF
Higgins Construction, A Division of Lindsay Construction		AWWA
Royce Williston	Higgins Construction, A Division of Lindsay Construction	AWWA
Peter Lively	Nova Scotia Community College IT Campus	AWWA
Craig MacMullin	Halifax Regional Water Commission	AWWA
Mike Deagle	Halifax Water	AWWA
Scott Quinn	Municipality of Kings County	AWWA
Grundfos Canada Inc.		AWWA
Blaise Currie	Cape Breton Regional Municipality	AWWA
City of St. John's		AWWA
Steven Ruddock	Town of St. Andrews	AWWA
Keith Williams	City of St. John's	AWWA
Daniel Martin	City of St. John's	AWWA
Brittany Gregory	Corona Environmental Consulting	AWWA
Ryan Cawley	SpryPoint	AWWA
Erik Neilson	City of Corner Brook	AWWA
Luc Gould	Town of Riverview	AWWA
Corey Fougere	Iconix	AWWA
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Winner of the **Silent Hero Award**, Blaine Parkman



1. **Job title:** Utility Foreman.
2. **Who do you work for?** City of Charlottetown – Water & Sewer.
3. **Where do you currently live?** Charlottetown.
4. **Where did you grow up?** South Rustico, PEI.
5. **When I'm not working, I'm...** enjoying time with my grandchildren.
6. **The accomplishment I'm most proud of is...** my leadership.
7. **If you could go on a road trip with any one person (living or dead), who would it be and where would you go?** I would go with my wife to Ireland.
8. **What is your philosophy on life?** Always live life to its fullest and reach for the stars.
9. **Toughest thing about your job?** Co-worker and public safety.
10. **When you were a kid, what did you want to be when you grew up?** A police officer.
11. **Last book you read?** *Blue Future*, by Maude Barlow.
12. **Last movie you saw?** *We Were Soldiers*.
13. **What music did you listen to this morning?** Country rock.
14. **Favourite TV show?** History.
15. **What was the best gift you ever received?** Grandchildren.
16. **What's the most useless thing you ever purchased?** A snowmobile.
17. **Not many people know that I...** love photography.
18. **What is your greatest luxury?** When a pilot let me fly his airplane when I was a kid.
19. **What's your favourite famous quote?** "Good job boys."
20. **Describe your perfect day.** To have lived another day.
21. **What three objects would you rescue from your burning house?** Pictures, camera, and will.
22. **Who is the most influential person in your life?** My dad.
23. **What is your ideal vehicle?** Mustang GT. 🚗



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Operations Manager, The Panel Shop
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Sponsorship Opportunities

Returning again to New Brunswick's Capital Region, the Atlantic Canada Water & Wastewater Association welcomes delegates to Fredericton for the 2020 ACWWA Annual Conference. The Fredericton Convention Centre has once again been selected as the host venue; this LEED Silver Certified building with 36,000 square feet of meeting space makes it an ideal location.

The theme for this year's conference is "THIRST FOR RESILIENCE." In an ever-changing climate with increased extreme weather events, RESILIENCE is the name of the game. Whether it is ensuring that the

water supply meets the demand during droughts, or that sanitary and stormwater systems have capacity to protect residents and property, proper planning and forward thinking is key to fostering robust and resilient communities.

While you're here, why not extend your stay and enjoy what The Capital Region has to offer. Head out for a scenic drive to Historic Kings Landing, taste one of many local award-winning craft beers, or enjoy another authentic experience all while in the stunning views of the Saint John River Valley.

The Opportunity

The success of this conference is made in part by the generous support of national, regional, and local businesses and companies. By becoming a sponsor, you'll be helping us share your particular message regarding "Thirst for Resilience."

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the conference sessions and trade show floor, to reach municipalities, regulators, utility managers and operators, design professionals, contractors, suppliers and other water and wastewater professionals in the industry.

This opportunity provides an excellent means to showcase your firm,

its unique abilities and offerings to a singularly motivated audience of more than 400 people from throughout the region.

The Sponsorship Committee has assembled an opportunity for various levels of participation enabling everyone their time in the spotlight.

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Please note, sponsorship submissions will be taken on a first come, first served basis.

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Deadline for submission: May 1, 2020



EARLY BIRD SUBMISSION: Register by April 15, 2020 and your logo will be included in the conference summary included in the summer edition of *Go With the Flow* magazine.*

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By signing below, you agree to pay the above selected amount for the selected sponsorship level at the 2020 Annual Conference. Full payment is due 30 days prior to the scheduled event. Non-refundable. You hereby release the Atlantic Canada Water & Wastewater Association, the parent company, organizers, affiliates, sponsors and attendees from any and all legal liability howsoever caused.

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STRAIGHT from the SOURCE

Update

from the YP and Water For People Committees

So far, 2020 has been an exciting year for the Young Professional and Water For People Committees. The YP Committee would like to welcome Kyle Rauch, who will be serving as the YP Committee Chair for the Water Environment Federation (WEF). Kyle received a BEng in Environmental Engineering and MAsc in Civil Engineering from Dalhousie University. He is currently working towards his PhD in Civil Engineering at Dalhousie with a focus on UV treatment in domestic wastewaters. In addition to Kyle, several new volunteers have joined our committee and we will be forming sub-committees for social and technical events, as well as for conference planning. We would like to thank all volunteers for working hard to ensure the success of the YP and WFP committees this year.

The YP Committee and WFP Committees have hosted successful events so far in 2020. In February, several YPs attended a screening of Brave Blue World hosted by the Centre for Water Resources Studies at Dalhousie University. Brave Blue World is a documentary on how humanity

is adopting new technologies and innovations to re-think how we manage water. Sebastian Munoz, a YP from Dalhousie University noted that the documentary inspired him to think of ways to investigate new and alternative technologies like wastewater reuse, to ensure a sustainable future for water in Atlantic Canada.

This year the YPs are organizing several Treat and Meet events, where YPs visit a water or wastewater treatment facility to learn about various treatment processes, and network with other YPs. Our first Treat and Meet consisted of a tour of the Dartmouth Wastewater Treatment Plant and was well attended by local YPs. The WFP 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 WFP 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 2020, so please check our social media feeds for more details (Facebook: 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 additional volunteers from New Brunswick, Prince Edward Island, and Newfoundland and Labrador to join our team. We are also looking for several YPs to volunteer at the 2020 ACWWA Annual Conference in Fredericton, NB. If you or one of your colleagues are interested, please reach out to Lindsay or Sean.

Lindsay Anderson, YP Chair
lindsay.anderson@dal.ca

Sean MacIsaac,
Water For People Chair
seanmacisaac@dal.ca 



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The One AWWA Operator Scholarship recipient: QUENTIN CROUSE

Congratulations to Quentin Crouse on being awarded a One AWWA Operator Scholarship! Quentin is an operator in training who applied for funding through the One AWWA Operator scholarship to pay for his Level 1 Distribution System Operator certification course and materials. Quentin is passionate about pursuing the field of water/wastewater operations and has recently completed the Wastewater Collection course through NBCC. Below is a snapshot in his own words showing Quentin's passion for the industry and furthering his education.



My education would continue after certification; with such a wide industry there is always more to learn, and I am eager for those experiences. In the future I plan to attain my Water Distribution level two certification. This is a goal that will not be easily achieved. With this scholarship I plan to prepare myself for

the steps leading up to this. I know that taking courses and classes is only part of the learning process and am also very interested in the conferences and workshops that provide hands-on experience. This is a field where one is always learning and growing as the industry standards change and improve, and I look forward to increasing my knowledge and staying up to date with future advancements.

In my spare time, I am a volunteer firefighter with my local department, Upper Kingsclear. In this field of work, water distribution is a critical element. Coming from a family with a background in firefighting and being raised outside of city limits where you are on a separate water source, I have known the importance of clean/safe water from a young age. Water is essential in our lives and my job is to ensure only clean and safe water is provided to our guests.

Congratulations Quentin, and we wish you all the best as you pursue your career in the water/wastewater industry! 🍷



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Spotlight on AWWA's Toolbox

In our last feature, we provided a general highlight of the important resources available through AWWA's Resource Communities. AWWA's Resource Communities are collaborative communities that integrate current resources, tools, and learning opportunities for a wide variety of water topics from asset management to customer service to Legionella to wastewater.

A key component of these resource communities are the tools available in the AWWA Toolbox (www.awwa.org/Resources-Tools/Toolbox). This toolbox consists of interactive tools to optimize operational performance, inform management decisions, and standardize tasks. Key tools that are readily available through the platform include:

- **Water Audit Software v5.0:** Free spreadsheet-based water audit tool designed to help quantify and track water losses in water distribution systems
- **Hypochlorite Assessment Model:** Web-based predictive modeling tool for guidance on the degradation of hypochlorite and levels of select degradation byproducts
- **Flange Torque Calculator:** Web-based interactive tool to determine recommend torque ranges and other important flange details, gasket stresses, and bolt yield loads
- **Utility Benchmarking Program:** Program consisting of online surveys and data portals to help utilities use established performance indicators to track their own performance and identify areas for improvement
- **CyanoTox 2.0:** Spreadsheet-based tool to help utilities calculate their system's oxidation options for cyanotoxins

CyanoTox 2.0

Given the increasing occurrence of algal events in our region, of particular interest to our water community here in Atlantic Canada is the **CyanoTox 2.0** tool. If you were familiar with the original CyanoTox tool, it is important to note that this new version includes an expanded pH range (pH 6–10), improved confidence intervals and relative rates for microcystin, and increased validation of model kinetics.

Cyanotoxins available to investigate through the tool include anatoxin-a, cylindrospermopsin, microcystin-LR, and the microcystin-mix (entered as a percentage of each microcystin variant present) mentioned previously.

You can then include water quality and operational aspects of your system such as pH, temperature, target concentrations, oxidant of interest, oxidant concentrations, contact times, and baffling factors to inform outputs. Outputs include expected cyanotoxin removal, cyanotoxin remaining, final cyanotoxin concentration, estimated CT, CT needed to achieve target concentration, and maximum influent cyanotoxin concentration to achieve target concentration.

We hope you are inspired to check out a few of these tools!

Have topics that you would like to see highlighted by the ACWWA Technical Knowledge Committee? Contact Committee Chair, Amina Stoddart, at amina.stoddart@dal.ca.

And remember, content from our Lunch & Learns is always available by visiting the Technical Knowledge Committee on YouTube (<https://goo.gl/DStnFz>). 

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Inclusion, Diversity & Equity Committee update

As you may have read in the last issue of this magazine, the ACWWA IDE committee is working with researchers from Acadia University to better understand how ACWWA can improve and retain diverse representation within the Atlantic Canadian water industry through quantitative and qualitative surveys. The project is funded through the NSERC Women in Science and Engineering Program for the Atlantic Region (WISEatlantic), the A.D. Foulis Chair in Engineering at Acadia University, the NS Labour and Advanced Education Co-op Education Incentive program, and the ACWWA. A preliminary report was submitted to WISEatlantic for phase one of the project (survey implementation) and additional applications for funding have been submitted for phase 2 (data analysis and interpretation).

The quantitative survey consisted of five standardized questionnaires:

- i. workplace commitment,
 - ii. sense of belonging,
 - iii. corporate social responsibility (one's view of how socially responsible their employer/organization is),
 - iv. work life balance, and
 - v. diversity perception.
- The goal of the survey was to determine what factors predict workplace commitment, and whether gender and/or age moderates such effects. In addition to the questionnaires, a number of demographic variables were included (e.g., gender, sexual orientation, ethnic origin, etc.) to capture the diversity of the ACWWA workforce. In-person and telephone qualitative surveys will be conducted over the summer – for those who indicated that they would like to

be interviewed. The interviews will focus on capturing how employees' relationships and interactions with co-workers and supervisors affect their sense of belonging, and how the workplace culture and policies contribute to the lack of diversity within the industry.

Based on preliminary analyses of data obtained from the quantitative survey, the findings show: with respect to the age distribution of the ACWWA workforce, 29% of respondents are 50 years of age or older and 50% are in their 20s and 30s; the gender gap among respondents is isolated to those 45 years of age or older whereas slightly more than 50% of individuals aged 44 years or younger in the ACWWA workforce are women; members of the ACWWA workforce are evenly distributed across three job categories, utility (26%), consultants (23%), and government (21%); the majority of respondents obtained college diplomas (26%) or university degrees (67%); and the vast majority of respondents identified as heterosexual (97.5%). These demographic statistics have given us a snapshot of the diversity within the Atlantic Canadian water industry, while further analysis of the themes (standardized questionnaires) is needed to better understand members commitment and belongingness to the industry. Recommendations for the Atlantic Canadian water industry and the ACWWA to recruit and retain people from diverse backgrounds will be based on this analysis and results from the qualitative survey.

The final results of this two-phase project is expected to be presented at the annual conference in Fredericton (October 2020) and at the AWWA Annual Conference and Exposition in June of 2021. For anyone who is interested in learning more or has questions about the IDE committee, please contact committee chair, Dallys Serracin, for more information (dallys.serracin@dal.ca).

The goal of the survey was to determine what factors predict workplace commitment, and whether gender and/or age moderates such effects.



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WATER DISPATCHES

NO. 2: WENDY KRKOSEK, Manager of Water Quality, Halifax Water

Water Dispatches Host:
Stephanie Gora, PhD



Water Dispatches is an interview series with ACWWA members on interesting topics that impact the

water industry in Atlantic Canada. Stephanie is a Postdoctoral Fellow at the Centre for Water Resources Studies at Dalhousie University and is the host of Water Dispatches. Her favorite water-related song is “The Water” by Feist.

Interviewee:

Wendy Kikosek, Manager of Water Quality, Halifax Water



Tell us a bit about your position at Halifax Water.

I'm the Manager of Water Quality with Halifax Water. We're a department of six staff and myself. Our main responsibility is looking after water quality from source to tap. My job has several different components. Firstly, I managed a small, but mighty, team who run monitoring programs in our source water watersheds so they can be out on the boats or they can be out in the streams, in the watersheds. They're also within the treatment plants and distribution system to ensure that we're consistently providing high quality drinking water to our customers. They also respond to any customer-related concerns or inquiries that we come across. Secondly, I manage the Lead Line Program. This program branches into all of the departments within Halifax Water, but it finds its home in our group. This is where we create, execute, and coordinate all the different efforts around lead. Last but not least, I am responsible for ensuring that the utility is at the forefront of research and best practices with respect to water quality. This involves: developing water quality plans; understanding current trends and emerging issues; and managing research partnerships and contracts, which includes the research partnership with Dr. Gagnon at Dalhousie University.

Is lead in drinking water a problem in Halifax?

Well, like most older North American cities, lead service lines are common

because lead was the material of choice for service lines up until the 1960s. A service line is composed of two different portions. We have the public portion, which goes from the water main in the street to the property line, and then the private portion is the homeowner's responsibility and it goes from the property line into the home. At Halifax Water we have about 84,000 service connections and of these connections we expect that about 2,000 of them on the public side are lead and about 3,500 of them on the private side are lead. Homes in areas of the city that were on centralized water service prior to 1960 could have a lead service line, but a lot of these were replaced over time as well. This includes peninsular Halifax and downtown Dartmouth and you can find out if your address falls within this lead boundary by going to the Halifax Water website.

That was going to be my next question. I just bought a house on the peninsula and, you know, two water engineers in the house – we have wondered but we've been a little bit scared to check.

Exactly. There is a lot of hesitation because it is a big question for people. You can go onto our website and we have an app you can look up whether your house falls within the boundary and if it does you can give us a call or send us an email and we'll talk you through the process. Another thing to note is that until the 1980s there was lead-tin solder that was used in homes, and so if you're not within the lead boundary you may

have lead-tin solder. We generally don't see as high lead concentrations with lead-tin solder as we do with lead service lines. We offer free sampling for anyone with a lead service line as well so we can give the homeowner an indication of what their lead levels are right at the tap. But in terms of "is lead a problem?" we add a corrosion inhibiting product into our treated water to minimize any corrosion that can happen and to minimize any exposure to lead, but we do sometimes see homes that are over the maximum acceptable concentration recently set by Heath Canada and we're working hard to get rid of the lead within the system. A lot of people ask us: "Why can't we just replace all of the lead service lines? What's the big deal? Let's just go and dig them up and take them out." but the real problem here is that shared responsibility. We (Halifax Water) only own up to the property line and then the homeowner owns from the property line into the home, so a large part of our program is trying to educate the homeowner and provide incentives for them to be able to afford to replace their lead service line and not be scared of the process. We're working hard on breaking down those barriers. In 2017 we introduced a new program which we'll probably talk about in a few minutes called "The Lead Line."

It's good to know what Halifax Water is doing to address lead in drinking water. Before we get into this Lead Line, are there any other programs at Halifax Water related to lead that you'd like to tell us a bit more about? Sure. Halifax Water has been researching lead for about ten years through a partnership with Dr. Gagnon at Dalhousie University and even prior to that we had historical programs in place to replace lead service lines. The whole process has evolved based on research and best practices. One thing that we've really come to learn through the research we've done and through industry direction is that corrosion control can't manage all of the sources of lead, so a comprehensive program needs to be in place in order to minimize exposure to lead through both corrosion control

and removal of lead components. Based on this idea, we now have a program that consists of five pillars: developing an inventory to understand where lead is within the system; replacing lead service lines, both the private and the public portions; engaging and communicating with homeowners to encourage lead service line replacement; and then we also have an extensive sampling program both to monitor corrosion control within the distribution system but also to look at homeowners' lead levels. Lastly, we're constantly improving our corrosion control practices based on research and what's going on in the industry.

Could you expand a little bit on what you mean by corrosion control?

Corrosion control is basically taking a look at the water quality leaving the treatment plant and assessing it for its corrosiveness towards different metals. Depending on a variety of different water quality parameters, you can have a water quality that will promote the release of lead into the water or you can have water quality that can inhibit the dissolution of lead. A lot of utilities will use either pH control or alkalinity or you can add an ortho-phosphate product, which works to coat the lines and prevent any corrosion within the system. We (Halifax Water) add an ortho-phosphate based product.

Could you tell us a little more about The Lead Line? It seems like a pretty exciting program.

The Lead Line is an initiative that we started launching in 2017 and it's a way for us to pull together all of the programs that we have around lead, put them under one umbrella and put a familiar face and a name to the program for our customers. This is based on the five pillars that I talked about, so: inventory, replacement, engagement, sampling, and corrosion control are all equal parts in this program. Since we started the program we've developed a few initiatives. We now have two on the financial incentive side, including a rebate available to customers for private side replacement. We'll

pay for up to 25% of the cost up to a maximum of \$2,500 for private side replacement. In 2018 we also initiated a lateral loan program where we can give up to \$10,000 for the replacement of a private side lead service line. The loan has an interest rate of prime plus 2% and over a five-year term. We're really trying to break down those barriers for homeowners. With the branding of the program we've also developed some simplified communications materials. We have a few videos on our website that talk about how to do sampling, how to identify a lead service line, and how to flush within your home. We've also developed some IKEA-like instructions on sampling to really make things easy for the homeowner. One of the big aspects of The Lead Line program is we now have one point of contact within the utility, so when somebody emails us or calls us about lead-related questions, we have one dedicated staff to answer any questions. It develops a little bit of a relationship with the homeowner, which we found to be really helpful. Lastly, a big component of our approach is the protection of public health. A large focus of the program is engaging the customer and providing them with information, but also making sure that we're protecting public health throughout the process. We provide pitcher filters for lead service line replacement to mitigate any increased lead after construction, and we also provide homeowners with flushing instructions and suggestions on managing lead exposure from drinking water in general and around construction practices. Those are the main initiatives around The Lead Line program. Since launching the program in 2017, we have seen an increase in interest in the program, but in an effort to further remove barriers, we have just received direction from our Board to pursue an application with the Utility and Review Board to replace the full lead service line at utility cost. This program enhancement will enable us to meet our goals of removing all lead service lines.

Seems very forward thinking. Are you one of the first utilities in North America to do something like this, or

is this something that you've been inspired to do from other utilities?

There are a variety of different models and programs used by utilities in North America. I would say that in general the US is about 10 years ahead of Canada in terms of lead service line replacement programs, largely due to differences in how lead has been regulated historically between the two countries. Within Canada, more and more utilities are developing lead programs, but the models vary for a variety of reasons. A lot of utilities have different financial incentives but every utility is unique in how they operate and will come up with their own process. We see our model as a robust program that fits our goals and a way to engage the homeowner, get uptake, and get rid of lead in the system while maintaining corrosion control to manage the other sources of lead.

Moving onto a more general topic, in a way. Halifax Water is a partner in Dr. Graham Gagnon's industrial research chair here at Dalhousie; could you describe some of the research that you're involved with?

Halifax Water has been supporting the research chair since 2007 and we've been involved in many different research projects with the group. Some of the early research around 2010 focused on corrosion and lead and really gave us an indication that doing partial replacements, or replacing only a portion of the service line and leaving some lead in the ground was not a good practice and could actually lead to increased lead exposure to the homeowner for a period of time after replacement. Because of that research, which is now an industry standard, we stopped doing partial replacements. The research had a direct impact on our policies within the utility. We've also conducted different research projects with Dr. Gagnon's group on corrosion control products and doses and those have really shaped what our corrosion control program is, and helping us to optimize corrosion control. Through the partnership we've also done research around sampling strategies, which has allowed us to build an extensive database focusing on monitoring around lead service

line replacement. This has allowed us to have confidence in implementing a customer monitoring program and it provides the customer with a comprehensive understanding of lead within their home, and has been a really big component of our lead program both in terms of understanding lead occurrence and increasing customer confidence. Beyond that, we've done research with Dr. Gagnon and through the chair on a variety of different aspects of water quality. Everything from source water, to at the tap water quality. A lot of research right now is focused on lake recovery and the impact of lake recovery on changing source water quality which is something we're experiencing here in Atlantic Canada. Significant efforts have also focused on treatment optimization within the plant, looking at specific unit processes and optimizing finished water quality. We've incorporated a lot of the outcomes of the research directly into practices within the plants, which has resulted in cost savings and more efficiency and improved water quality within the process. It's been a really valuable program for the utility.

So, we've talked quite a bit about the programs you have available for homeowners, but not everyone owns their own home here in Halifax. If someone is renting and they are concerned about lead in their water, do you have any suggestions to what they might be able to do?

Definitely. I think whether you're a homeowner or a renter, the first thing you can do is check that app that we have online. If you Google Halifax Water and lead you'll come to our lead webpage and then it's pretty easy to find the app there. You can put in your address and figure out whether you could potentially have a lead service line. If you are within the lead boundary, you have two options from there, you can either call or email us directly for information or you can ask the property owner to do so. We have just changed our process to allow the disclosure of service line material and to provide sample kits to tenants and release the information to both

the property owner and the tenant, as ultimately it is the tenant who is consuming the water and concerned for public health and it is the property owner who is responsible for replacing the service line if it is lead.

There are also things you can do within the home to minimize lead exposure if you think you may have sources of lead. Basically, if you haven't used your water for a little while, a few hours, just let your faucet run for several minutes until you get fresh water coming in from the distribution system and that will generally result in much lower lead levels than you would experience if you took water that had been sitting in the service line. Use this flushed water for cooking and drinking. You can also clean your aerators because particles of lead can buildup in the aerators in a faucet. It's a good practice to regularly clean those aerators. You can also purchase point-of-use filters, either pitcher-style filters or you can have ones that attach to a faucet or under the sink. This would be something pretty easy for a renter to do. You need to ensure that they're certified NSF53 specifically for lead removal to make sure that they will work. One last note, it's important to note that boiling water will not remove lead.

It sounds like you basically have everything that people would want to know about lead on the Halifax Water website. Is there anything else that you'd recommend beyond that?

We have everything with respect to our program and lead in Halifax on our website. We encourage you to go there and check it out. Health Canada and the EPA and the American Water Works Association also have a lot of resources around lead that may be of value.

Excellent. So, most difficult question: What's your favorite water-related song?

Favorite water related song... well, I think I'm going to take a throwback to my childhood here and maybe date myself a little bit – I'm going to go with "No Rain" by Blind Melon.

Beautiful, very good choice. Thank you so much again for coming in, it's been very informative. 🍷

Water and wastewater operator certification in Nova Scotia

By Denis Tufts, P.Eng., Administrator, Water and Wastewater Operator Certification

We take water from the environment to use and deliver it back to the environment after we are finished with it. While this may seem like a simple statement, the journey this water takes along the way is complex.

Many sources of water are not directly suitable for drinking purposes and must be treated prior to use. Once the water is treated it is distributed to our homes and businesses through a maze of underground piping. We use this water for our daily needs then dispose of it, along with many types of waste, down our drains. This used water, or wastewater, is collected in another series of underground piping that delivers it to a point of discharge. This discharge is treated before being released to the environment.

Engineers, architects, and contractors combine their skills to design and build the facilities that treat and distribute the water and collect and treat the wastewater. But once the facility is complete it is the operator who is responsible to maintain, repair, and manage these expensive pieces of infrastructure.

Operator certification

Nova Scotia's operator certification program began in 1984, when it was a voluntary program. Operator certification became mandatory in 1996 and further requirements and guidance were introduced in 2005, including the need to renew certificates. The requirements for persons operating water and wastewater facilities are described in the *Water and Wastewater Facilities and Public Drinking Water Supplies Regulations*

made under Sections 66 and 110 of the *Environment Act* (Nova Scotia).

The duties of an operator are diverse. In smaller plants an operator may control the machinery, perform tests, keep records, handle complaints, and perform repairs and maintenance. In large plants, operators may be more specialized and monitor only one process. They might work with chemists, engineers, laboratory technicians, tradespeople, helpers, supervisors, and a superintendent.

The operator certification program is required to ensure that operators have the necessary training and experience to operate a system for the protection of human health and the environment.

The benefits of a certification program include:

- Having a measure of competency
- Providing some assurance of public safety
- Employee pride and recognition
- Meeting a national standard
- Meeting a national standard provides for reciprocity (ability to move between provinces)

Facility classification standards

Nova Scotia regulation requires that the following categories, or "types," of water and wastewater facilities receive a classification issued by the province.

- Water Treatment
- Water Distribution
- Wastewater Treatment
- Wastewater Collection

Each of these facility types are further classified according to their complexity and/or relative size. Engineers working at Nova Scotia Environment district offices

are responsible for assigning classifications to each facility based on a nationally accepted standard. Each of the above types could be:

- Class I – smallest or least complex
 - Class II
 - Class III
 - Class IV – largest or most complex
- Only certified operators are permitted to operate classified facilities.

Becoming a certified water or wastewater operator

An operator can become certified in any of the types and classes matching the facility classifications standard. Certification is achieved through work experience at classified facilities and writing a certification exam. To reach the level of Class I, an operator must first complete one year of experience at a classified facility. For Class II, the operator must complete three years of experience at a Class I or higher facility. For Class III and IV, a combination of education and experience is required, and a portion must be direct responsible charge (DRC) experience. DRC means direct responsibility for a process that controls the effectiveness or efficiency of a facility. In each case, certification for one class lower must be held before achieving the next class up.

Since only certified operators may operate classified facilities, the Operator in Training (OIT) certificate was developed. A new operator, with no working experience, must first write and pass a provincial OIT exam. With this certificate, the new operator is permitted to work at classified facilities and learn from certified operators as an apprentice until they've gained enough experience to write a Class I exam.

Once certified, an operator is qualified to oversee operation of facilities matching the certifications they hold. For example, an operator holding a water treatment Class I certification is qualified to operate a water treatment Class I facility. Classified facilities are required to have one operator who is designated to be the operator in Overall Direct Responsible Charge (ODRC). The ODRC operator is responsible for operation, repair, and maintenance of a facility. This does not mean that the ODRC operator must always be present. But it does mean that they are responsible for duties that may be delegated to other operators in their absence.

The above certification and operational requirements have been simplified for the purposes of this article. More information including Nova Scotia's *Water and Wastewater Facilities and Public Drinking Water Supplies Regulations* can be found on Nova Scotia's operator certification website by typing: novascotia.ca/wwoc. Questions about operator certification in Nova Scotia may be directed to our email, wwoc@novascotia.ca. 

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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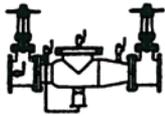
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