

SUMMER 2022

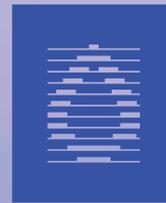
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THE OFFICIAL PUBLICATION OF THE ATLANTIC CANADA WATER AND WASTEWATER ASSOCIATION

75TH ANNUAL CONFERENCE

of the Atlantic Canada Water & Wastewater Association

October 2-4, 2022 | Hilton Saint John



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INSIDE:

- ACWWA Conference Details & Award Nominations
- Project Spotlight: AFNWA Asset Management Plans



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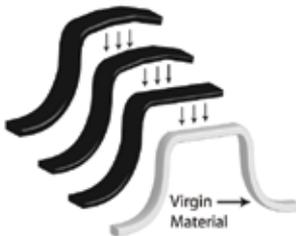
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On the cover: Saint John, New Brunswick



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Be the change

Summer is upon us, and we are doing life as Atlantic Canadians do – accepting the inconveniences that COVID may still be presenting but finding ways to move forward. We are proving that we can adapt to change.

Some of the key terms that have come out of COVID are pivot, change, adapt, virtual, and my favourite – COVID amnesia – to name but a few. And we are all now capable of attending or hosting a meeting – virtually.

Through change we are finding new opportunities both in the way we deliver our educational materials, the way in which we interface with our customers and support staff and, if possible, where we operate from.

This all lends itself to the theme of this year's Annual ACWWA Conference, **Uncertainty to Opportunity**.

“Victory comes from finding opportunity in problems.”

–Sun Tzu

The Conference Committee is working diligently to make sure that this year's conference meets the expectations of its attendees with a strong technical base and a social aspect which has been absent in our lives over the past three years. The ABEA continues to play a strong supporting role in the Annual Conference, and we thank its membership. The Conference Committee is also a group who have volunteered their time and expertise, without whom this would not be possible – and we thank them; they are silent heroes.

Mark your calendar to attend – October 2 to 5, 2022 in Saint John, NB at the Hilton Conference Centre.

We would like to thank the many individuals who worked on the new Atlantic Canada Guidelines Manuals which were completed/presented in May.

“Let's do our part to be responsible consumers today, and every day.”

The YP Committee has been discussing an update to their title – stay tuned as they re-brand themselves (see page 18 for more information). Their energy is infectious so if you have energy to spare, knowledge to share, or are looking to learn and want to join them, check out their activities and/or contact info at www.acwwa.ca/committees/ypcommittee.html.

If you are a person who keeps an eye on the news, you will have heard or seen the reports about Lake Mead and the rate at which it is disappearing. Closer to home were the floods in Manitoba, the decline in sea ice affecting the polar bears, forest fires/wildfires, the floods that have washed out roads in Atlantic Canada – but most notably in Cape Breton. It is all around us, and being stewards of our water, where it comes from to how it is treated and where it goes needs to be a part of our everyday lives.

Ben Franklin was noted to have said; *“When the well is dry, we know the worth of water.”*

Couldn't be more aptly said.

So, let's do our part to be responsible consumers today, and every day.

AWWA (www.awwa.org) and ACWWA (www.acwwa.ca) have some wonderful resources if conservation, efficiency, and stewardship are of an interest to you and/or your utility team, among a full range of topics. The ACWWA also has a strong offering of educational materials that can be delivered either in person, at your own pace or online: www.acwwa.ca/acwwa-courses.

To continue the topic of education, you can always be preparing for your next presentation – the call for papers will be coming out in the fall for MPWWA and the new year for the ACWWA 2023 conference. It is never too early to plan and be prepared with a topic of interest, case study to share, or new research with promising outcomes. We will deliver the audience if you deliver the presentation! If you require assistance or have a question, you can contact the office at contact@acwwa.ca.

Now, it is your turn to be the change you want to see in the world, and enjoy our precious summer – although in Atlantic Canada we also have magnificent fall seasons, too – so, until then... stay safe and take time to smell the flowers. 🌸

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First need to extend my sincere condolences to Clara Shea for her recent losses... our hearts were broken when we learned the sad news. Clara: your Water Family is here for whatever you need. The entire WEF family and the Canadian Affairs Council also wanted me to extend their sympathies and offer any support you need. We all admire your strength and leadership, and we are very fortunate to know you.

It seems like I just finished writing my article for the Spring issue of this magazine and already I'm preparing the summer article. Where is the time going? As I look out my window in the early part of May, the grass is turning green, the buds are appearing on the branches as the rain falls, and the sun occasionally shines... I am reminded that my lawn mower and I will be getting some exercise very soon.

I recently attended a WEFMAX event and chaired the Canadian Affairs Council meeting while there. We had representatives from every WEF MA (Member Association) from across Canada. This was the first in-person meeting we had since WEFTEC in October 2019. I won't lie – it felt weird and great at the same time. Everyone at WEFMAX had to show proof of vaccinations and not have any symptoms before being able to attend the event. It was very well run, and we learned a lot from other MAs and WEF with a large focus on communications. I look forward to sharing some of the concepts I learned with our ACWWA Board to see if we can use some of these ideas in the future. I also had the pleasure of meeting

Scott Kelman (*Go With the Flow* publisher) and he commended us on the great content we provide.

The great thing about attending WEF events is the wonderful people you meet and learning more about them in a relaxed setting. They have such great ideas and experiences on how they provide outreach to their members and communities. We have many similarities and challenges within smaller Member Associations like ours. We should be proud of our accomplishments in Atlantic Canada; everyone knows who we are, and they all want to come visit us.

The ACWWA will be hosting a WEFMAX event in Charlottetown, PEI, May 24–26, 2023. We hope that lots of ACWWA WEF members can attend so that you too can benefit from the knowledge and experience sharing over the few days. The people I talk to during WEF events are always so impressed on how well we provide value to our members and often ask us what our secret is. I simply state that we are from Atlantic Canada; we have the best lobster and potatoes in the world... and we have Clara!

This is friendly reminder to register for the 2022 ACWWA Annual Conference being hosted at the Hilton Saint John, NB, October 2–5, 2022. It has been 12 years since the ACWWA Annual Conference was last held in Saint John, and two years since it has been an in-person event. Please remember to renew your WEF/ACWWA membership and go to acwwa.ca to register for the Conference today. I am really looking forward to seeing everyone in-person. ☺



WEF CAC Meeting at WEFMAX, April 20, 2022
 Back row, L to R: Randy Craig, BCWWA WEF Delegate; Dean Iamarino, WEAO President; Dave Galbraith, ACWWA WEF Delegate & CAC Chair; Heather Tyrrell, WEAO CAO; Lisa Ruane, WEF Sr. Director, Association Engagement; Renee Kayal, WEF Managing Director, Governance, Association Engagement, & Special Projects.



WEFMAX 3K...5K Fun Walk/Run participants at 6:15 am – hotel lobby
 Front row, L to R: Erin Longworth, WEAO WEF Delegate & CAC Vice Chair; Natalie Wilson, WCWEA WEF Delegate; Janet Cann, WEF Board of Trustees, WEF CAC Liaison; Yvan Breault, Réseau WEF Delegate.

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AWWA ACE 22: back to in-person

Welcome to the Summer 2022 issue of ACWWA's *Go With the Flow* magazine. I hope by now that everyone is enjoying the nice weather and making some plans for vacation.

As I write this, final preparations are underway for AWWA's Annual Conference and Exposition (ACE 22), to be held in San Antonio, Texas. This will be the first in-person ACE since the onset of the pandemic. For those unable to travel, there is still a virtual component being offered.

It will also mark my first out-of-country travel since January of 2020, when COVID was just becoming a news story that still hadn't quite made it to the forefront of the headlines in our part of the world. I'm a bit hesitant still to be travelling during these times, but I think it's also important to try and resume some previously normal activities as we learn to live our lives with COVID.

I first had the opportunity to visit San Antonio back in 2006, when I attended my first AWWA ACE. I recall San Antonio as an interesting, clean, and well-maintained city, with a lot of historical character including the Alamo, the site of a pivotal battle in the Texas Revolution, still standing in downtown San Antonio and open to the public as a museum and interpretive center. I also remember the weather was very dry and very hot, certainly a shock to the system of a Maritimer like me. In terms of ACE itself that year, I remember being awestruck by the sheer scale of the convention centre, which housed the ACE exhibit hall and tradeshow. Having the opportunity to speak directly with suppliers and see products from every facet of our industry was of huge value, and even resulted in our utility subsequently purchasing a valve operating unit we had first seen at ACE in San Antonio. By the time you read this, this year's ACE will have concluded.

"Thank you for the opportunity to serve our Section."

If any of our Section members were able to attend, I hope you found it to be a rewarding experience.

AWWA's ACE event offers tremendous value for money for every facet of our industry, whether you are an operator, utility manager or executive, consultant, academic, or supplier. From the educational opportunities offered through the technical sessions, tradeshow, or networking events like the Canadian Water Forum, ACE is an event that everyone in the water industry would benefit from attending at least once. Most ACEs are held in the United States, which can make travel costs prohibitive for some employers, and certainly limits the number of employees who can attend in a given year. To that end, I would like to get an early start on mentioning that next year, AWWA's ACE 23 will be held in Toronto, Ontario, for the first time since 2007. This would be an excellent opportunity for employers in our region to consider budgeting for their staff to attend. With the travel and lodging costs next year in Canadian funds, attending ACE 23 will represent a great opportunity for employers to maximize the value and return on investment of their training and conference budgets. ACE 23 in Toronto is scheduled for June 11 to 14, 2023, so please mark your calendars now.

I would like to close this issue's report by acknowledging Barb Crawford, Michael Baker, and all of the members of their organizing committee for their tremendous efforts thus far in planning what promises to be a great ACWWA Annual Conference, scheduled to be held in Saint John, NB from October 2 to 5, 2022. Speaking of marking your calendars, I urge all members of our Section to plan to attend this year's annual conference. It marks ACWWA's return to an in-person annual conference for the first time since 2019. Barb, Michael, and team are planning a first-rate event with the full support of your ACWWA Board, and I look forward to seeing all of you in Saint John. It's been too long since we last gathered, and it will be a wonderful opportunity to resume in-person learning, supporting and interacting with our ABEA suppliers at the tradeshow, and to see old friends, and hopefully make some new ones.

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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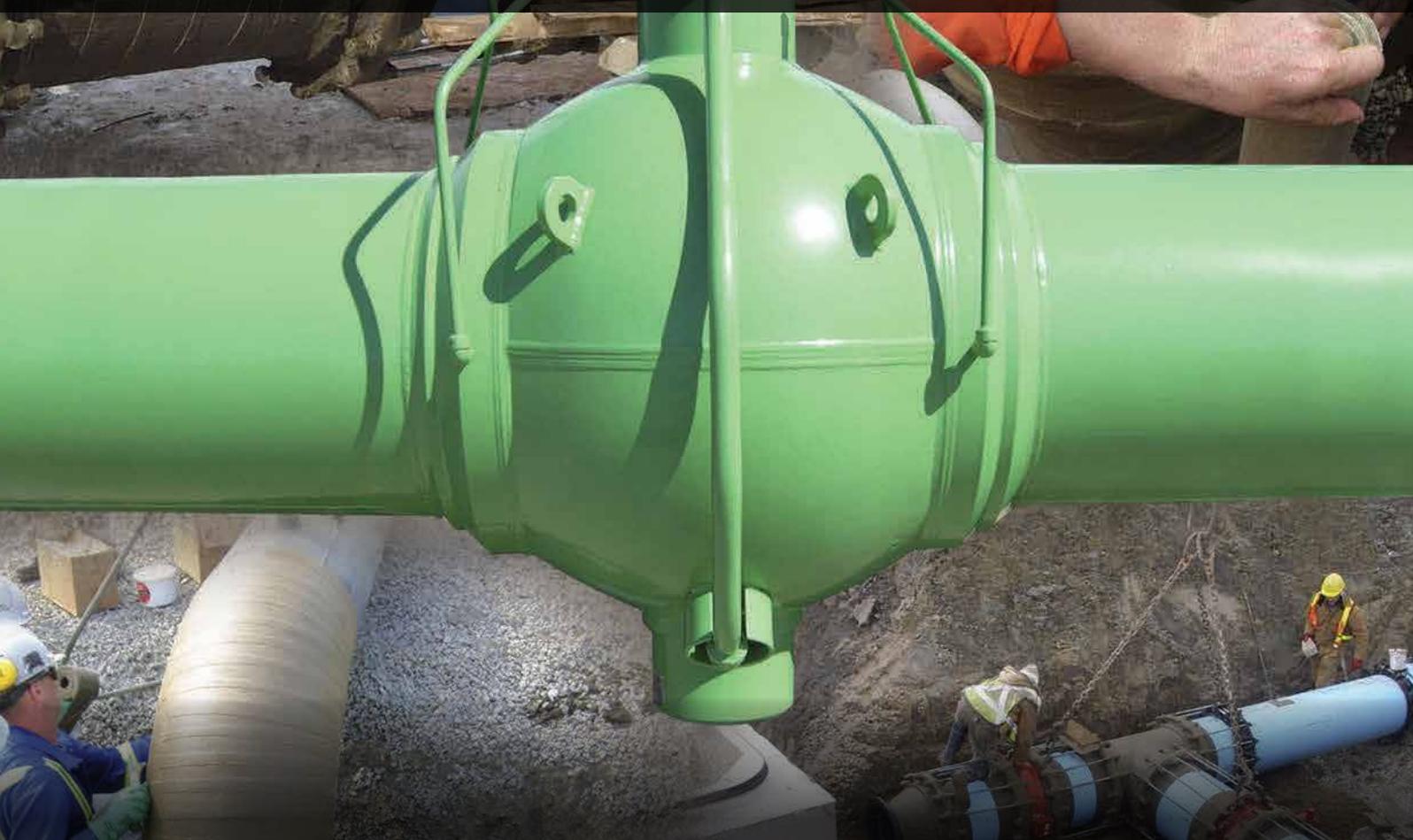
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Events of interest

The Canadian Water and Wastewater Association (CWWA) continues to be active keeping members informed on national issues, facilitating national dialogue and information sharing, and advocating for the water and wastewater sector on the national and international scene. Here is a list of current and upcoming events.

Window on Ottawa – May 13, 20 & June 10, 17

Spread over several weeks, the Window on Ottawa agenda is designed to offer a spotlight on federal activities related to all aspects of water and wastewater management, allowing you to pick and choose the sessions most relevant for you. The agenda and registration are online at cwwa.ca. Session topics include drinking water, plastics, biosolids, climate change, infrastructure, and water utility security.

National Water and Wastewater Conference 2022 – Halifax – November 6–9

Of particular interest for ACWWA membership is the National Water and Wastewater Conference (NWWC) which will be held in Halifax this November. This annual conference offers a wide-ranging technical program covering almost all aspects of the municipal water sector, while offering the best networking environment for Canada's water leaders. The program focus will be on water and wastewater management including:

- Utility management
- Wastewater and stormwater management, case studies, and emerging contaminants
- Drinking water management, monitoring, and outreach
- Water efficiency programs, community outreach, etc.
- Biosolids management
- Utility security
- Climate change and its impacts on the water and wastewater sector
- Collaborative research between utilities and academic institutions

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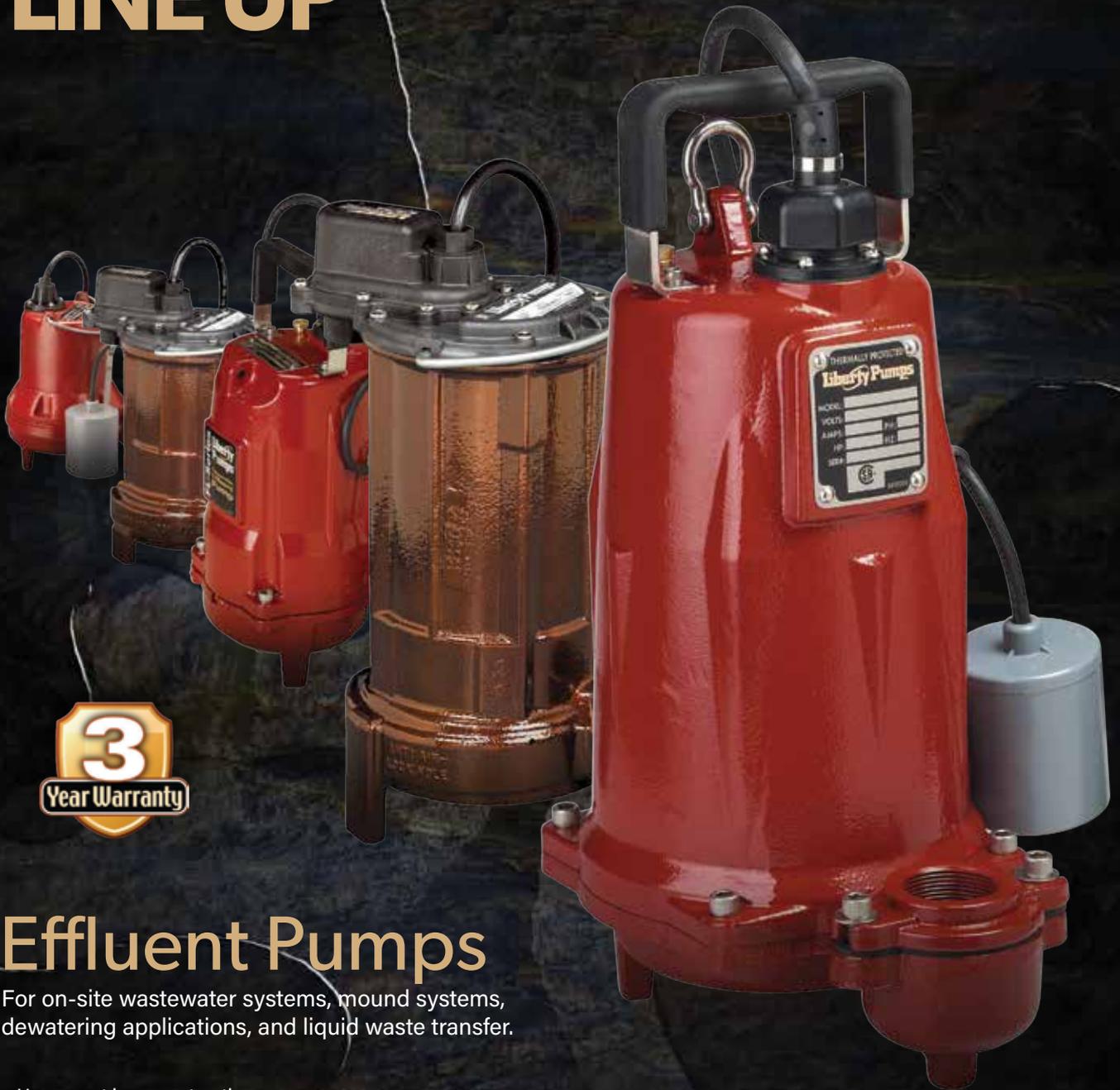
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Summer adventures await

Summer is amongst us and hopefully this means also vacations, outdoor family adventures, camping trips, etc. While you are out on your summer adventures, don't forget to take lots of pictures to submit for the ACWWA photo contest for a chance to win great prizes.

New this year for our annual calendar, we will have sponsorship opportunities for \$100; your company logo will be included in one of the pages in the calendar. Only 12 sponsorships will be available (one per month).

Our ACWWA family is always growing, and why not get recognition for having recruited a member? Don't forget the "refer a member" contest for a chance to win a \$50 gift card of your choice.

Welcome to the following new members:

Name	Organization	Membership
Jane MacInnis	GFL Environmental Services, Inc.	WEF
Jennifer Jackman	Town of Antigonish	WEF
Meghan Lea	Dalhousie University	AWWA
Marilyn Fanjoy	Exp Services	AWWA

Kalli Hood	Dalhousie University Library	AWWA
Darryl Myette	Strait Engineering Ltd.	AWWA
Alexandre Binette	City of Moncton	AWWA
Darcy McGuire	Emco Corporation	AWWA
Nihal Reddy Palle	Halifax Water	AWWA
Rishab Kumar Nellore	Halifax Water	AWWA
Hamideh Hamedi	Memorial University of Newfoundland	AWWA
Carlos DeLarrea	Dalhousie University	AWWA
Angelina Polegato	Nova Scotia Environment	AWWA
Melissa Roscoe	Village of Lawrencetown	AWWA
Ana Paerez	Stantec	AWWA

As of May 12, 2022

Total AWWA active members: **426**

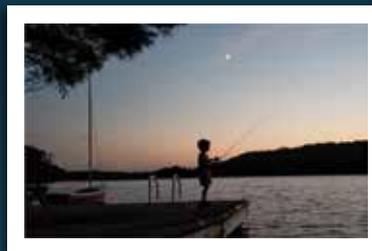
Total AWWA late members: **30**

Total active WEF members: **97**

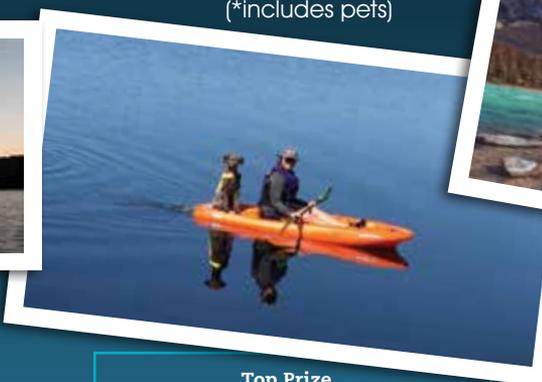
Total WEF late members: **32** 

2022 ACWWA Photo Contest

Our family*and water
(*includes pets)



1st Runner Up
Wendy Krkosek, Halifax Water



Top Prize
Nadine Keller-Wadden
Cape Breton Regional Municipality



2nd Runner Up
Deborah Smith, City of St John's

Rules and Criteria:

1. Photo must be submitted by an ACWWA Member.
2. Photo must include water AND a family member(s) and/or pet(s).
3. Please provide first name of those in photo.
4. Unlimited Submissions.
5. Only one winning picture per member.
6. Judged by ACWWA Board.
7. Deadline for submission is September 9, 2022.
8. Submit pictures or questions to julie.stokes@moncton.ca.



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meet the application criteria (visit www.ABEA.biz).

Congratulations to **Hailey Dowling** (Shawn Dowling – McLennan Sales/EMCO, NL) and **Benjamin Carew** (an employee of McLennan Sales, Dartmouth)!

Planning is well underway for the **2022 ACWWA Conference**

taking place October 2 to 5 in Saint John, NB. Mark your calendars!

ABEA golf has been booked at the Rockwood Park Golf Club on Sunday, October 2, 2022.

We are exploring hosting options for the ever-popular **Monday Night Hospitality Venue**, and finalizing the **Tuesday Trade Show**, which will host 90 exhibitors. Tuesday night will see the ABEA sponsoring the evening's entertainment and its updated format. Stay tuned.

Education is always a hot topic, and our membership continues to find ways to assist their customers with creative delivery methods to keep them informed of changes in the industry. If you have a need, please feel free to reach out. 

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Meet our ABEA members:

Contact information for our members, and applications for our Scholarship and Grant Program, can be found at www.ABEA.biz.

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Contact information for our members, and applications for our Scholarship and Grant Program can be found on

www.abea.biz



Emerging Leaders

UPDATE

By Lindsay Anderson

The ACWWA Young Professionals Committee now has a new name, Emerging Leaders, to better represent the diversity of our membership.

The ACWWA Emerging Leaders Committee is hosting a series of speakers to showcase diverse career paths of professionals working in water resources in an online lunch-and-learn format. Events are delivered via Microsoft Teams and include a 20–40-minute presentation by the speaker, followed by a questions and answers period.

Our first event occurred in April, where we welcomed Jeff Burton, P.Eng, PMP, who spoke about his journey

from new engineering graduate to project management professional. On May 27, Melanie Nadeau, award-winning businessperson and CEO of Centre for Ocean Ventures & Entrepreneurship (COVE), spoke about her career journey and lessons learned along the way.

Be sure to sign up for the next event taking place on September 28 where we will hear from Dr. Lauren Somers and her experiences studying groundwater resources in the Peruvian Andes under a changing climate. All are welcome! Details can be found via the ACWWA Twitter and Facebook feeds. 



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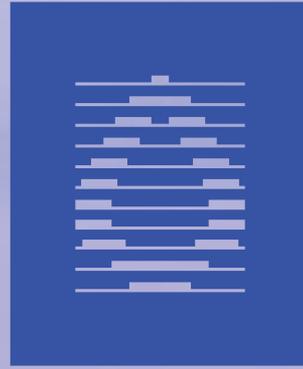
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SAINT JOHN  NEW BRUNSWICK

75TH ANNUAL CONFERENCE

of the Atlantic Canada Water & Wastewater Association

October 2-4, 2022 | Hilton Saint John





A MESSAGE FROM THE CONFERENCE CO-CHAIRS

On behalf of the Conference Organizing Committee, we are extremely excited to extend an “in-person” invitation to you to attend the 75th Annual Conference of the Atlantic Canada Water and Wastewater Association in Saint John New Brunswick from October 2 to 4, at the Hilton Saint John.

Saint John is growing from the inside out – from the Hilton you’ll have a window seat to the exciting changes at the Fundy Quay Waterfront Development site, Market Slip Plaza reimagination, and the Port Saint John Modernization project.

The conference theme this year is “Uncertainty to Opportunity.” The past few years have forced organizations to pivot, adapt, and become flexible as they discover new paths for delivery of their services. We want to embrace these challenges and find out what opportunities have come from the past two uncertain years.

Our keynote address will be given by Ryan Mitchell, P.Eng, President and CEO of Saint John Energy. SJ Energy has many similar parallels to the water and wastewater industry, which has to deal with the challenges of extending budgets farther and farther each year



Barb Crawford, P.Eng.



Michael Baker, P.Eng.

with limited new customers. We are looking forward to hearing Ryan’s insights on creating new opportunities and taking control of your own path in these uncertain times.

Our Technical Program includes many great papers from a varied cross-section of the water and wastewater industry. New to ACWWA this year is Hydrant Hysteria, which is a fast-paced competition where two-member teams assemble a hydrant as quickly as they can. This event ought to be very exciting and we are looking forward to crowning the winning team.

We have some traditional and unique water related tours to choose from this year ranging from Moosehead Breweries where they treat their water for brewing, the Clow Canada manufacturing plant where they fabricate fire hydrants, valves and water/wastewater accessories, to a tour of the City of Saint John’s newish water treatment plant. All the tours have limited spots available so sign up quickly to avoid missing out.

Different from previous years, this year will include an ABEA social on Tuesday night where attendees can mingle and socialize with other attendees while enjoying a comedy performance by James Mullinger. Food will be available at this social event so there is no need to eat before.

Excitement is growing as this will be the first in-person ACWWA conference in two years so we are anticipating that attendance will exceed everyone’s expectations – an even better reason for you to not miss out on this event.

We look forward to seeing you there!



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CONFERENCE HIGHLIGHTS

Sunday, Oct. 2, 2022	10:00 am	ABEA Golf Tournament at Rockwood Park Golf Course
	2:30 pm – 4:30 pm	Technical Tour of Moosehead Breweries
	5:30 pm – 7:30 pm	Emerging Leaders Event and Mixer
	7:30 pm – 10:30 pm	Meet & Greet Reception
	8:30 pm - 9:30 pm	Water Tower Competition
Monday, Oct. 3, 2022	8:30 am – 10:00 am	Opening General Session
	10:30 am – 12:00 pm	Technical Sessions
	12:00 pm – 1:30 pm	ACWWA AGM & Awards Luncheon
	1:30 pm – 2:30 pm	Hydrant Hysteria
	2:30 pm – 4:00 pm	Technical Sessions
	3:00 pm – 4:30 pm	Technical Tour of the Clow Canada fire hydrants, valves, and water/wastewater accessories manufacturing plant
	5:00 pm	Water For People Fun Run/Walk
Tuesday, Oct. 4, 2022	6:00 pm	Dine on Your Own in Uptown Saint John
	9:00 pm – 1:00 am	ABEA Common Hospitality Reception
	8:00 am – 9:30 am	Technical Sessions
	9:30 am – 10:30 am	“Best of the Best” – Tap Water Taste Test
	10:00 am – 2:00 pm	ACWWA/ABEA Tradeshow
	2:00 pm – 4:00 pm	Technical Sessions
	2:00 pm – 4:00 pm	Technical Tour of the Loch Lomond Drinking Water Facility
	6:30 pm	ABEA Tuesday Night Social

KEYNOTE SPEAKER: **RYAN MITCHELL**



As the President & CEO of Saint John Energy, Ryan is passionate about energy innovation, sustainability and economic development in New Brunswick. Ryan is a graduate of NBCC, UNB and

is an alumni of the Wallace McCain Institute Strategic Executive program.

He is a registered engineer in New Brunswick and has an MBA as well as over 20 years of engineering experience in diverse and progressive management positions, with most of his experience coming from the telecommunications sector. Ryan was also recently named to Canada's Clean50 list as one of Canada's top sustainability leaders in 2021.



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THE CONFERENCE VENUE

Our venue for the 2022 ACWWA Conference is the Hilton Hotel and Saint John Trade & Convention Centre, located on the beautiful waterfront. The Convention Centre is connected to the hotel, and is the largest facility in the province of New Brunswick, with a capacity of 2,300 people. The hotel is the only waterfront hotel in the city, and offers views over the Harbour and the Port of Saint John. Both the hotel and Convention Centre are connected to the indoor Pedway system, linked to Uptown Saint John, including the historic City Market. It features a heated indoor saltwater pool and harbour-front restaurant and bar. The venue is also connected to the pathway system, which allows users to walk or stroll around the harbour.

The hotel has multiple dining options, including the York Bistro & Pub and York patio. There are also award-winning restaurants a short walk from the hotel in the nearby historic zone, as well as a lively bar, restaurant, and patio scene in the adjoining mall. Our conference and hotel venue location makes access to all the amenities of Saint John an easy walk.

2022 ABEA ANNUAL GOLF TOURNAMENT

We welcome you to join us for our annual golf event being held on October 2, 2022, which is sponsored by the ABEA and its individual members.

Rockwood Park Golf Course is an 18-hole municipal golf course located in Saint John's Rockwood Park, one of the largest urban parks in North America. Regardless of season, a round at Rockwood Park Golf Course is a treat to the wonders of nature. Set amid a 2,200-acre pristine urban park, it's not uncommon to share your time with deer, groundhogs, small fox, and ducks.

All golfers, regardless of age or ability, can experience the course fairly and be equally challenged and rewarded. Tee times commence at 10:00 am – format to be determined based on registration numbers. Lunch will be provided. Price is \$85.00 + tax (green fees & shared cart).



Put your team together, or we will be pleased to place you with a group (forward requests directly to catherine@scotiatech.ca) – all ability levels welcome. Rental clubs are available for an additional fee (arrangements to be made directly with the course – <http://rockwoodgolf.ca/>).

*Please note that only registrations received by **September 1, 2022** will be guaranteed “swag.”*



**GOLF
ROCKWOOD**

EMERGING LEADERS

Look out for our Emerging Leaders networking event at the ACWWA Annual Conference on Sunday, October 2. Get to know leading figures from the industry and other Emerging Leaders through Speed Networking style chats.



SPECIAL GUEST: JAMES MULLINGER



James Mullinger was one of the UK's top comedians and Comedy Editor for GQ magazine when he moved to Canada in February 2014. Since his arrival, he has taken the country by storm. Sold out shows across the country, appearances on CBC's The Debaters, movies, TV shows, festivals, awards, stand-up specials – he's done it all.

James will entertain the ACWWA Conference attendees Tuesday night at the ABEA Tuesday Night Social!

13TH ANNUAL ABEA COMMON HOSPITALITY RECEPTION

The Atlantic Branch Equipment Association cordially invites all ACWWA Conference delegates and attending members to join us for an evening of music, mingling, and munchies at the Saint John Ale House on **Monday, October 3, 2022.**

Located in Market Square
(www.saintjohnalehouse.com/)
Festivities run from **9:00 pm – 1:00 am.**

What a great way to meet and greet your ABEA Equipment Suppliers, old friends, and introduce yourself to someone new.

Please remember your delegate badge for admittance to this ABEA member sponsored premiere/private event.



2022 ATLANTIC BRANCH EQUIPMENT ASSOCIATION TRADESHOW

The 2022 Trade Show will be held Tuesday morning, October 4, 2022, beginning at 10:00 am, offering 90 booths.

This popular event provides the equipment suppliers an opportunity to showcase their products and services, and delegates the opportunity to network with both participants and colleagues.

Prepare to be introduced to the latest technologies and services available to the waterworks industry.

The Trade Show will kick off upon the completion of the “Best of the Best” Water Taste Test.

Lunch will be served at noon.

Allow time to explore and engage... there is something for everyone, and more.



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ACWWA TECHNICAL PROGRAM

MONDAY – OCTOBER 3			
10:30 am – 11:00 am	TransAqua WWTF Upgrade to Biological Treatment – Year One Retrospective (Mike Abbott: CBCL)	And the Medal for Metal Mitigation Goes to... Mussels! The Role of Freshwater Mussels in Water Treatment (Alicia Penny, Kellie White, Anthony Mazzocca: Cape Breton University / Cape Breton Regional Municipality)	Backflow Compliance – City of Moncton's Success Story on Ensuring Public Safety from Source to Last Drop (Julie Stokes: City of Moncton)
11:00 am – 11:30 am	Rothesay WWTP Technology Innovation (David McKenna: Dillon Consulting Limited)	Brownification: Causes and Implications of Changing Source Water Quality on Drinking Water Treatment (Lindsay Anderson: Dalhousie University)	1,800 mm Raw Water Transmission Main Repair (Jason Leclerc: Saint John Water)
11:30 am – 12:00 pm	Winterize Your lagoon: Nitrification Below 1 (Marc Larivière, Christian Scott: VWT Canada)	Atlantic Canadian Surface Waters and Natural Organic Matter – Finding a Common Ground between Industrial Processes and Potable Water (Jillian Flanagan, Mitra Mehrabani: Stantec Consulting Ltd.)	City of Ottawa's Multi-Purpose Wet Weather Management Solution: Success with Integrated Planning and Operational Integration – from Concept through to Implementation (Adrien Comeau: Stantec Consulting Ltd.)
2:30 pm – 3:00 pm	Wastewater Effluent Dispersion Studies (Natasha Horsman: Englobe Corp.)	One Water, One Data: Utility-wide Adoption of Consolidated Water Quality Data Management & Analytic Applications (Adam McKnight: Halifax Water)	Standardized Water Treatment in Nunavut (David McKenna: Dillon Consulting)
3:00 pm – 3:30 pm	UV Audit of Four Wastewater Treatment Facilities in Nova Scotia, Canada: Determining System vs. Matrix Limitations (Kyle Rauch: Dalhousie University)	Building a Water Distribution Model for Hydraulic Analysis in the EPANET Application Utilizing a GIS Software (Mohamed Osman: Atlantic First Nations Water Authority Inc.)	Treatment of Biofilms and Opportunistic Pathogens in Simulated Drinking Water Distribution Systems Using UV LED (Carlos Jaser Lara de Larrea: Centre for Water Resources Studies (CWRS) - Dalhousie University)
3:30 pm – 4:00 pm	What Are the Long-Term MBR Plant O&M Costs and Risks: The Oxford PCP Experience (Olav Natvik: Stantec Consulting Ltd.)	Building an Asset Management System to Facilitate Capital Planning for Atlantic First Nation Water and Wastewater Systems (Julie DiCicco & John Lam: Dillon Consulting Limited / AFNWA Inc.)	Integration of UV LED Disinfection with Chlorine for a Small Water Supply (Xuedongzi Jiang: Dalhousie University)
TUESDAY – OCTOBER 4			
8:00 am – 8:30 am	I&I in 2022 – The Times they are A-Changin' (Barbara Robinson: Norton Engineering)	Advancements in Elevation (Z) Mapping for Watermains (Gerald Bauer, Krista Flanagan: Stantec Consulting Ltd.)	Proactive Approach to Transmission Main Condition Assessment – St. John's Regional Water Supply – Final Analysis (William Jappy: Pure Technologies Ltd.)
8:30 am – 9:00 am	The Moncton Story-- Stormwater Management from Inlet to Outlet and All Points In Between (Jody Malo & Darryl Bonhower: Omnitech Inc./ City of Moncton)	Integrated Urban Drainage Modeling – Rising to the Challenge of 21st Century Urban Flood Risk in a Changing Climate (Dave Eadie: Stantec Consulting Ltd.)	Renovation of a DN 250 Fresh Water Main Under a River in Winnipeg, Manitoba (Simon Richtmann: Primus Line)
9:00 am – 9:30 am	Greater Shediac Sewerage Commission WWTF Upgrades (Chris Gallant: Englobe Corp.)	Operations, Maintenance, and Asset Management: Opportunities for Information Sharing (Martha Myers: AIM Network)	What a Couple of Years! Leveraging Technology to Facilitate Remote Collaboration & Enhanced QA/QC (Ashley LeMasurier: Stantec Consulting Ltd.)
2:00 pm – 2:30 pm	Wastewater Surveillance of SARS-CoV-2 in Nova Scotia (Graham Gagnon: Dalhousie University)	Automatic Irrigation of Cannabis in Colombia (Mario Camacho: TAMPAC SAS)	Development of a Novel Passive Sampling Approach For Monitoring Geosmin and 2-MIB BY GC-MS in Source Water (Theresa Afi: Centre for Water Resources Studies (CWRS), Dalhousie University, Halifax)
2:30 pm – 3:00 pm	Applying Wastewater-Based Epidemiology to a Small-Scale Wastewater System in Nova Scotia (Meghan Swanburg: Dalhousie University)	Release of Atlantic Canada Water and Wastewater Guidelines (Amy Winchester: CBCL Limited)	Assessing the Feasibility of Passive Sampling for Early Detection of Cyanobacteria Using RT-QPCR Analysis (Dave Redden: CWRS Dalhousie)
3:00 pm – 3:30 pm	Use of Laser Scanning Technology for Process Facility Design (Matt Balcombe, Katherine MacCaul: Dillon Consulting)	Assessment of the CSO Reduction Strategy for the Greater Moncton Sewer Commission using Long-Term Computer Modelling (Victoria Fernandez: CBCL Limited)	Case History: Flow Test of 100-year-old Cement-mortar Lined Cast Iron Pipe (Sam Ghosn, P.Eng: DIPRA (Ductile Iron Pipe Research Association))
3:30 pm – 4:00 pm	Odour Control Systems in Wastewater Treatment Plants (Linda Cooke-Weaver: Wolseley Canada Inc.)	Challenges of Water and Wastewater Infrastructure in Nunavut (Sarah Collins, Paul Clow: Government of Nunavut)	Developing a Modified Approach of a Receiving Water Study in Complex Ambient Conditions (Jennifer Bainbridge: Dillon Consulting Limited)

Green = Fresh Ideas Presentations

TECHNICAL TOURS

OCTOBER 2

Moosehead Breweries

Join us October 2 for a specialized tour of Moosehead Breweries Limited. Moosehead is Canada's oldest independent brewery. The brewery was founded in 1867 and is still privately owned and operated by the Oland family. The company is now in the sixth generation of family ownership.

Our tour will encompass the brewing and packaging process at Moosehead, with a unique addition on the testing and treatment of water as an input in the process of transforming raw ingredients into a final product.

Join us for this exciting opportunity to peek into the process!



OCTOBER 3

Clow Canada

Please join us on October 3 for a tour of Clow Canada's Saint John facility.

Thomas McAvity & Company was established on May 19, 1834, in Saint John, New Brunswick. Currently located in the home of the former Bricklin auto manufacturing plant, Clow Canada proudly produces Canadian-made fire hydrants exclusively for the Canadian market. Clow's world-class facility has multiple environmental, health, and safety awards as well state-of-the-art machinery that produces various products for the Canadian waterworks market.



OCTOBER 4

Loch Lomond Drinking Water Treatment Facility

Join us on October 4 for a tour of the Loch Lomond Drinking Water Treatment Facility.

Saint John's Loch Lomond Drinking Water Treatment Facility is supplied from the Loch Lomond and Latimer Lake watersheds. The facility has the capacity of producing 75 million litres of drinking water per day. The three storage reservoirs have a capacity of 33 million litres.



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WFP EVENTS

Water For People (WFP) is a global non-profit that helps people bring clean water and sanitation solutions to their communities for generations to come. Born out of the American

Water Works Association (AWWA) in 1991, WFP have helped millions of people across nine countries get access to clean water, sanitation solutions, and hygiene education.



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ACWWA has a WFP Committee focused on raising awareness and providing opportunities for ACWWA members and others in Atlantic Canada to be involved with WFP by donating money or time in support of WFP's vision of a world where every person has access to reliable, safe water and sanitation services.

Each year, at the Annual ACWWA Conference, several WFP activities are organized to raise funds and awareness in support of WFP. These fund-raising efforts have gone a long way to make Atlantic Canada stand out as a tremendous donor among AWWA sections with the Atlantic Chapter raising approximately \$20,000 annually. Events organized to raise funds and awareness for WFP this year at the 75th Annual ACWWA Conference include the Charity Silent Auction, WFP Fun Run/Walk, and the 50/50 raffle during the Tuesday Night Social.

The Charity Silent Auction will be open for viewing and bidding throughout the conference, with bidding closing prior to the technical sessions on Tuesday afternoon. Those wishing to make donations to the Silent Auction can contact meghan.swanburg@acadiau.ca or bring the item(s) to the Silent Auction room the first day of the conference (Sunday, October 2).

When registering for the conference, do not forget to sign up for the 2022 Fun Run/Walk! The 5 km Fun Run/Walk will be held on Monday at 5:00 PM, leaving the Hilton Saint John and meandering along the Harbour Passage Trail. Thank you to Sansom Equipment Limited for supporting the WFP Fun Run/Walk.

WFP committee members will also be selling 50/50 tickets during the Tuesday Night Social.

We look forward to seeing all the attendees at the ACWWA Conference and being able to share our passion for such a worthy cause – and a huge thank you to those who have supported the WFP charity and its past activities in previous years!

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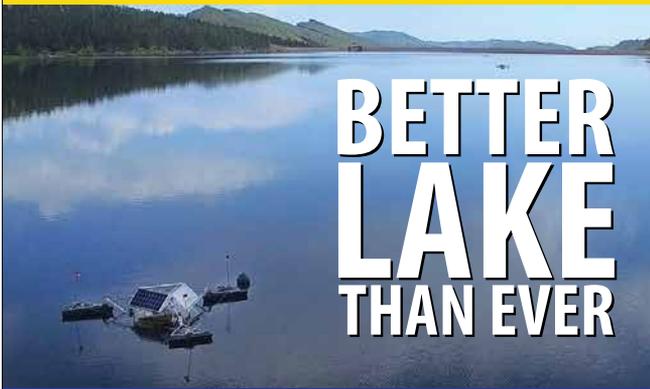
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ACWWA CONFERENCE REGISTRATION

PART 1 - CONFERENCE ATTENDEE GENERAL INFORMATION					
FIRST NAME		LAST NAME		ORGANIZATION	
MAILING ADDRESS				CITY	
PROVINCE		COUNTRY	POSTAL CODE	AWWA MEMBERSHIP NUMBER	
PHONE		FAX		WEF MEMBERSHIP NUMBER	
EMAIL ADDRESS				Would you like to be added to the ACWWA email list? <input type="checkbox"/>	Are you a first-time conference attendee? <input type="checkbox"/>
SECTOR: <input type="checkbox"/> Utility <input type="checkbox"/> Supplier <input type="checkbox"/> Contractor <input type="checkbox"/> Consultant <input type="checkbox"/> Student <input type="checkbox"/> Academic <input type="checkbox"/> Regulator <input type="checkbox"/> Other					

PART 2A - DELEGATE REGISTRATION			
Full conference selection includes: Sunday - Meet and Greet // Monday - AGM Lunch, ABEA Reception // Tuesday - Trade Show, Lunch, Tuesday Night Social			
Full Conference Delegate – On or Before Sept 6, 2022	<input type="checkbox"/> Member – \$495	<input type="checkbox"/> Non-Member – \$545	\$
Full Conference Delegate – After Sept 6, 2022	<input type="checkbox"/> Member – \$595	<input type="checkbox"/> Non-Member – \$645	\$
Student Full Conference (Registration is free if the student is presenting a technical session)	<input type="checkbox"/> Member/Non-Member – \$50		\$
Monday Full Day Pass (Includes AGM Lunch, and ABEA Reception)	<input type="checkbox"/> Member – \$260	<input type="checkbox"/> Non-Member – \$285	\$
Tuesday Full Day Pass (Includes Trade Show, Lunch, and Tuesday Night Social)	<input type="checkbox"/> Member – \$260	<input type="checkbox"/> Non-Member – \$285	\$
Tuesday 1/2 Day Trade Show Pass (Includes Trade Show, and Lunch)	<input type="checkbox"/> Member – \$135	<input type="checkbox"/> Non-Member – \$160	\$
Register before August 15, 2022 and be entered for the early bird draw – a \$200 VISA gift card!			Part 2a – Subtotal
			\$

PART 2B - DELEGATE MEALS & ACTIVITIES NOT INCLUDED WITH REGISTRATION		
Sunday, October 2		
Golf – Green Fee, Shared Cart and Lunch – Limited Capacity Indicate your shirt size(s): SM____, MED____, LG____, XL____, XXL____	_____ @ \$85 =	\$
Technical Tour – Limited Capacity – Moosehead Breweries Brewery Water Treatment (PPE will be provided, no open-toe shoes)	_____ @ \$20 =	\$
Monday, October 3		
Technical Tour – Limited Capacity – Clow Canada (Hard hat, safety vest, and steel toe work boots required)	_____ @ \$20 =	\$
Hydrant Hysteria – Limited Capacity	_____ @ \$50 =	\$
Tuesday, October 4		
Technical Tour – Limited Capacity – Loch Lomond Drinking Water Treatment Facility (Hard hat, safety vest, and steel-toe work boots required; glasses and hearing protection will be provided)	_____ @ \$20 =	\$
Tuesday Night Social – Included in Delegate Registration Fees	Additional Tickets _____ @ \$75 =	\$
		Part 2b – Subtotal
		\$

PART 3A - TRADE SHOW BOOTH RENTAL & EXHIBITOR REGISTRATION			
Booth Rental (Max 3 Booths & 2 People/Booth)		ABEA Member – _____ Booths @ \$525	Non-Member – _____ Booths @ \$900
			\$
EXHIBITOR'S NAME	EXHIBITOR'S NAME	EXHIBITOR'S NAME	
EXHIBITOR'S NAME	EXHIBITOR'S NAME	EXHIBITOR'S NAME	
Extra Booth Exhibitor Registration (includes Meet & Greet, ABEA Reception Monday, Tuesday Lunch)			\$
			ABEA Member – _____ @ \$75 Non-Member – _____ @ \$100
EXHIBITOR'S NAME	EXHIBITOR'S NAME	EXHIBITOR'S NAME	
			Part 3a – Subtotal
			\$



ACWWA CONFERENCE REGISTRATION

PART 3B - EXHIBITOR MEALS & ACTIVITIES NOT INCLUDED WITH REGISTRATION		
Sunday, October 2		
Golf - Green Fee, Shared Cart and Lunch - Limited Capacity Indicate your shirt size(s): SM____, MED____, LG____, XL____, XXL____	___ @ \$85 =	\$
Technical Tour - Limited Capacity - Moosehead Breweries Brewery Water Treatment (PPE will be provided, no open-toe shoes)	___ @ \$20 =	\$
Monday, October 3		
Technical Tour - Limited Capacity - Clow Canada (Hard hat, safety vest, and steel-toe work boots required)	___ @ \$20 =	\$
Annual General Meeting Luncheon	___ @ \$50 =	\$
Tuesday, October 4		
Technical Tour - Limited Capacity - Loch Lomond Drinking Water Treatment Facility (Hard hat, safety vest, and steel-toe work boots required; glasses and hearing protection will be provided)	___ @ \$20 =	\$
Tuesday Night Social	___ @ \$75 =	\$
Part 3b - Subtotal		\$

PART 4 - FEES	
(Part 2a + Part 2b + Part 3a + Part3b) Subtotal	\$
Life Members deduct \$100.00	-\$
HST 15% (869 924 910 RT2)	\$
Indicate your shirt size(s): SM____, MED____, LG____, XL____, XXL____	Water For People Fun Run - ___ @ \$25 \$ Water For People Fun Walk - ___ @ \$25 \$
Are you interested in participating in a blood drive in memory of Jonah and Danny? <input type="checkbox"/> YES	
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	\$

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Choose payment method. Complete as appropriate. <input type="checkbox"/> Cheque <input type="checkbox"/> Money Order <input type="checkbox"/> Visa <input type="checkbox"/> MasterCard	
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Full conference has a 1.5 CEU value.

TRADE SHOW INFORMATION

Each booth measures 8' x 10'. Booth selection will be online and first come first serve. ABEA members will have exclusive access for one week prior to general public. Contact the ABEA to learn more about becoming an ABEA member (Cathy Cameron at catherine@scotiotech.ca). For trade show questions contact Cathy Cameron at catherine@scotiotech.ca.

****Booth registrations must be paid with Visa or MasterCard at time of booth selection in order to confirm registration****

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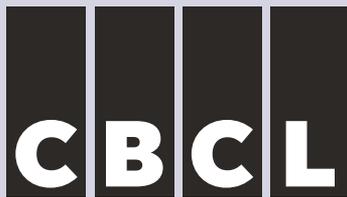
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ACWWA Invites Submissions for Award Nominations for 2022



If you know someone who has made a contribution to the water and/or wastewater industry, don't let their efforts go unnoticed. The following awards are eligible for presentation at the ACWWA Conference on October 2-5, 2022 in Saint John, NB.

Please note that the deadline for 2022 Award Nomination submissions is August 2, 2022.

You can fax your nominations to ACWWA at 902-435-7796 or send by email to contact@acwwa.ca.

NOMINATIONS PROCEDURE

Where applicable, an awards committee has been established for the specific awards. The awards committee

shall select the recommended candidate for the award from the nominations received, and shall present the award to the recipients during the ACWWA annual conference.

All awards are presented at the ACWWA annual conference.

Individuals wishing to nominate an individual or group for an award should complete the form that follows, or contact the ACWWA office and request the applicable nomination form.

LIST OF AWARDS (descriptions follow)

Individual awards

- Silent Hero Award
- Young Professional Award
- Contribution Award

Organizational award

- Project of the Year

SILENT HERO AWARD (nominee must be an AWWA or a WEF member)

The Silent Hero Award(s) is awarded by ACWWA and is presented annually to recognize outstanding contributions of water and wastewater operators.

CONTRIBUTION AWARD (nominee must be an AWWA or a WEF member)

The Volunteer Recognition Award is awarded by ACWWA and may be presented annually to recognize outstanding contributions by an individual or a group of individual volunteers to ACWWA programs and/or the water industry throughout Atlantic Canada.

YOUNG PROFESSIONAL AWARD

(nominee must be an AWWA or a WEF member)

The Young Professional Award recognizes a Young Professional within the Atlantic Canada Water & Wastewater Association for outstanding contributions to the water and wastewater industry, and to the ACWWA Young Professionals' committee.

PROJECT OF THE YEAR – ENGINEERING AWARD/ENVIRONMENTAL AWARD

The Project of the Year – Engineering Award/Environmental Award is awarded by ACWWA to a Municipality or Utility and their Consultant, one of which is a member of ACWWA, to recognize **outstanding projects in Atlantic Canada that demonstrate innovation and state-of-the-art technology in water or wastewater projects.**

Awards may be presented in each of the following three categories:

- Small Utility – less than 5,000 customers
- Medium Utility – between 5,000 and 25,000 customers
- Large Utility – more than 25,000 customers

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ACWWA Award Nomination Form 2022

Nominee's Full Name: _____

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Nominee's Phone & Email: _____

Award: _____

Submitted by: _____

Phone: _____

Email: _____

For Project of the Year – _____

Size of Utility: _____

Individuals/Companies Involved: _____

For individual awards, please provide a short write-up that outlines the contribution of the nominee.

For project awards, please provide a short write-up that outlines the specifics of the project being nominated and identifies the primary people involved with the project.



For any questions, please contact:
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Atlantic First Nations Water Authority Asset Management Plans for First Nation Communities

By John Lam (AFNWA) and Julie DiCicco (Dillion Consulting Ltd.)

BACKGROUND

The Atlantic First Nations Water Authority (AFNWA) represents progress, innovation, and a long-term solution for water and wastewater issues that affect Atlantic First Nations communities. Incorporated on July 18, 2018 as a non-profit organization under the Canada Not-for-profit Corporations Act, the AFNWA is a ground-breaking First Nation owned organization that will provide water and wastewater services to participating communities. 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 systems on their reserves.

The management structure of the AFNWA is aligned to deliver full water and wastewater services for First Nation communities with a central main office, located in Millbrook First Nations (Truro, NS), and a decentralized approach to operations. This model reflects current best practice for service delivery to First Nation communities in Canada. It incorporates a hub and spoke approach to operations for optimal service delivery and to foster a deeper relationship with the communities served by the utility.

AFNWA is positioned to take responsibility for the operation and maintenance of water and wastewater systems in participating First Nation communities. In preparation for this transition, AFNWA partnered with Dillon Consulting Limited (Dillon) to develop individual Asset Management Plans for each community with the goal of increasing financial sustainability and assisting with long-term planning for the water and wastewater systems. The project included establishment of the utility's Asset Management System, identifying asset inventory and condition, understanding system operation and maintenance needs, and identifying lifecycle costs and replacements to determine the capital investments required within 17 participating communities.

AFNWA will manage the central water and wastewater systems in each community, but not individual septic or well systems. This coincides with the scope of the funding for water and wastewater infrastructure by Indigenous

Services Canada (ISC), which will be the primary source of funding for AFNWA capital and operational budgets.

Wastewater systems discharging to Canadian water bodies are to comply with federal regulations, specifically Wastewater Systems Effluent Regulation (WSER). Effluent quality needs to be consistent with National Performance Standards or better. AFNWA has adopted a risk management approach, named by the Elders Advisory Lodge, *Nujo'tme'k Samuqwan* (we take care of the water), to follow the CCME Canada-Wide Strategy for the Management of Municipal Wastewater Effluent. This strategy outlines the steps to establish effluent quality targets based on the ability of the receiving water to assimilate the contaminants and to minimize the environmental impacts. WSER is administered by Environment and Climate Change Canada (ECCC).

Potable water systems will comply with Health Canada requirements in the *Guidelines for Canadian Drinking Water Quality*. At this time, AFNWA is considering adoption of the Nova Scotia protocol for assessment and classification of groundwater sources for groundwater under direct influence of surface water (GUDI). The regulator or oversight agency for potable water systems has not been identified to date.

ASSET MANAGEMENT PLAN DEVELOPMENT

Prior Asset Management planning that was completed in these First Nation communities included work that was undertaken through Asset Condition Reporting System (ACRS) and Annual Performance Inspection (API). The Atlantic Policy Congress of First Nations Chiefs Secretariat (APC) commissioned a condition assessment study of water and wastewater assets in First Nation communities in the Atlantic region, which was completed by CBCL and Dalhousie University Centre for Water Resources Studies.

AFNWA used a Request for Proposals process and selected Dillon out of eight highly qualified firms that submitted proposals.

Dillon conducted a scan of industry best practices for development of Asset Management Plans (AMPs).

Through close consultation with AFNWA, they developed the Asset Management Framework. The graphic below shows the four pillars that support the AMPs, namely: Information, Lifecycle Process, Financial Sustainability, and People & Leadership.



Workshops were held with operators and AFNWA staff both to inform on the progress and to solicit input in identifying levels of service, asset hierarchy, and assessment of risks.

The field programs for the project were extensive, consisting of the following:

- Asset inventory and condition surveys
- Operational survey including turning valves and opening covers/hatches
- Geomatics survey to locate infrastructure where visible/known
- Wastewater sampling for Environmental Risk Assessments (ERAs)
- Drinking water investigations (GUDI assessments and video inspections of wells where well construction data or routine inspection was lacking)
- Environmental Site Assessment (Phase 1) to identify potential contamination of sites

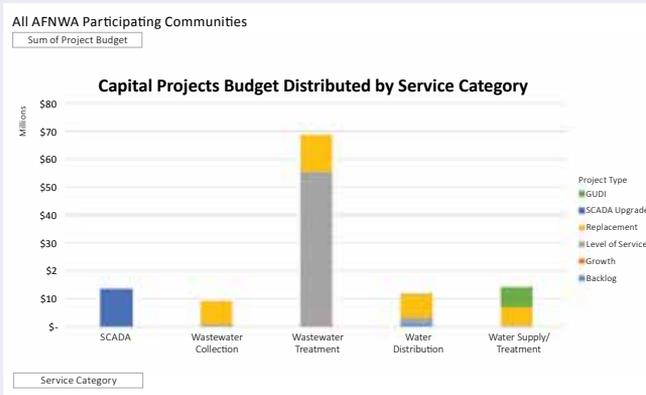
CAPITAL PLAN PRIORITIZATION

Dillon identified approximately 6,500 assets in the 17 communities. Due to the huge amount of data and potential for confusion, AFNWA created a system of unique codes to identify the community, location, service category, and component. This allowed staff to check for missing assets or duplications.

More than 1,000 capital projects were identified by Dillon and Eramosa Engineering (consultant for the SCADA Master Plan project) for the 17 communities over the 10-year planning horizon. Comparison of projects and review by ISC indicated that there were duplicate projects to ongoing projects that ISC was currently managing. It was felt that a number of these projects were best left in ISC's hands for continuity. AFNWA staff and operators would provide technical and operational input to guide the design development or construction.

The approach was to repair or replace assets before failure. Dillon developed more than 100 decay curves to establish the useful life for each asset, and when intervention is required. The anticipated repair or replacement dates would be adjusted based on observed or reported conditions, criticality of equipment, impact on health and safety, service disruption, and environmental/regulatory compliance.

The total capital budget, recently approved by the Government of Canada, is \$117.6 M excluding inflation in 2021 dollars. This includes a contingency allowance of 10 to 15% depending on the uncertainty of the project. The budgets in various categories are presented in the following table.



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CNAM 2022 TEREIO INNOVATOR AWARD

The project was recently presented as a technical breakout session at the Canadian Network of Asset Managers (CNAM) Hybrid Conference in London, Ontario. John Lam was awarded the first place Tereo Innovator Award on behalf of the AFNWA for the work completed as part of this project. The Tereo Innovator award is awarded to organizations that are successfully developing and implementing Asset Management approaches for business improvement. Congratulations!

A graphic for ERAMOSA featuring the company logo at the top left. Below it is the tagline "investing in today for tomorrow". The main text reads: "We are honoured to win the Project of the Year award for the SCADA Master Plan we completed for the AFNWA." Below this is the phrase "excellence. period." and a stylized sunburst graphic on the right containing various utility-related terms like POWER, INDUS, WATER, ENERGY, MAINTENANCE, OPERATIONS, SECURITY, SCADA, and UTILITY. At the bottom, there is a globe and contact information: "Calgary · Guelph · Toronto · London · Overland Park", "eramosa.com 519 · 763 · 7774".

Wastewater treatment was the highest category, at \$69.8 M. Much of this budget was for the upgrading of wastewater treatment facilities for reduction of nutrients or higher effluent quality to meet effluent discharge objectives established in the ERAs.

Water supply and treatment was the second highest category, at \$14.2 M. Much of this budget was for upgrading of water treatment facilities to address treatment process shortfalls stemming from GUDI assessments.

SCADA upgrades were budgeted at \$13.3 M. This category of work will upgrade controls and instrumentation in water and wastewater facilities to address standardization of the platforms, communications protocols, hardware components, and cybersecurity gaps.

One of the deliverables from the project is the development of GIS mapping for each community. Georeferenced coordinates were picked up by field staff when they were in the communities. Maps were created in ArcGIS format for use by AFNWA staff and operators. With geomatics field equipment recently purchased by AFNWA, staff and operators are able to load these maps onto a tablet and find the asset in the field to a high degree of accuracy.

Another deliverable from the project is development of a Roadmap for Implementation. This recognizes that Asset Management is more than a plan but is a continuous improvement process that supports a sustainable approach to service delivery. The AMPs showed us a “snapshot in time” of the inventory, condition, and known locations of the infrastructure. As our information matures, we are able to fill in data gaps, update conditions, and reschedule project priorities and timelines. The issue is how to keep it current.

Feedback from operations staff is crucial. They are the ones that see the equipment and observe performance on a daily basis. Changes in performance or conditions will be most obvious to the facility operators.

Regular communications with communities about development plans or issues are very important to make informed decisions about priorities and to assess facility capacities.

Keeping good records of repairs, replacements, and extensions of services is a priority. Staff will be encouraged to use survey equipment to update the location of existing buried infrastructure when excavation or repairs are done, to check against locations in the GIS maps.

There is still a lot of work to be done. However, with the completion of this Asset Management Plan project, AFNWA is now aware of what needs to be done, when, and by whom. 🌐

BACK TO FUNDAMENTALS

Emerging water quality parameter of concern – cyanobacteria

By Melissa Fraser, P. Eng., CBCL, Halifax



One of the emerging parameters of concern for the water industry over the past 10 to 15 years has been cyanobacteria, often referred to as blue-green algae. Cyanobacteria are a group of photosynthetic bacteria, that can be present naturally in many aquatic ecosystems including lakes, rivers, and ponds. While they may be present in many bodies of water, cyanobacteria can pose a public health risk when excessive growth occurs, resulting in a bloom event. These bloom events are often called harmful algal blooms (HAB) or CyanoHABs.

Depending on the species present in a bloom, the cyanobacteria may have the potential to produce either cyanotoxins and/or taste and odour compounds along with increased biomass. Cyanotoxins are a group of toxins that can be harmful to humans, pets, and wildlife, and exposure to the toxins may affect (but is not limited to) the liver, nervous system, and skin systems. Geosmin and 2-methyl isoborneol (MIB) are two taste and odour compounds that can be produced by cyanobacteria, and while they do not have specific health concerns, they can lead to aesthetic complaints from consumers if present at detectable levels. For cyanotoxin limits in drinking water, Health Canada currently has a maximum allowable concentration of 0.0015 mg/L for Total Microcystin. Microcystins are considered the most prevalent cyanotoxin in fresh water; however, there are other known cyanotoxins that currently do not have health-based concentration limits.

There are many factors that can influence the growth of cyanobacteria. These include low water levels, high water temperature (due to warm summer weather or drought conditions), and elevated concentrations of nutrients

in the water body (phosphorus and nitrogen). As there is a combination of factors at play, there can be large variations in the presence or levels of cyanobacteria in a source water year to year. Some source waters may never experience a HAB event, while other source waters may experience blooms on a regular basis.

Over the past 10 years, there has been an increase in HAB events detected in surface waters in Atlantic Canada. While most have been in recreational waters, there has been cyanobacteria detected within several municipal water supply source waters in the region with detectable limits of geosmin or MIB reaching the water treatment plants and distribution systems. There have also been instances where cyanotoxins were detected in the water treatment plant source water, but did not reach the raw water intake of the facility. These occurrences highlight that surface waters in Atlantic Canada can be susceptible to a HAB event occurring and that the possibility of a HAB event should be included in future planning for water treatment plants and development of sampling programs. This can be especially important for facilities reaching the end of their original design life and beginning to transition to the next operation period by undergoing extensive process upgrades or replacements – which could incorporate processes that are capable of removing cyanotoxins and taste and odour compounds that may not be removed using conventional treatment common in the region. [🔗](#)

Do you have a topic for a future Back to Fundamentals article? Email it to kmacintyre@dillon.ca or contact@acwwa.ca and we will do our best to cover it!

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