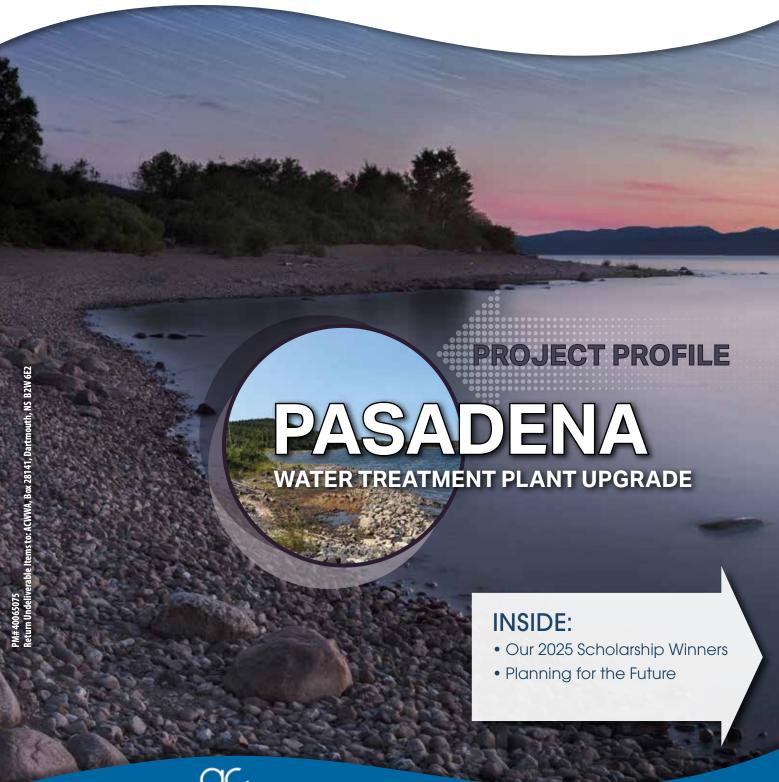


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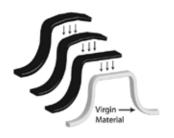
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On the cover:

Twilight begins in Humber Valley at Deer Lake. Dreamstime.com



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#### Your contributions are vital

s we welcome the changing colours and crisp air of autumn, I'd like to take a moment to reflect on the year so far and share a few updates from the Atlantic Canada Water & Wastewater Association (ACWWA).

It has been a busy and productive year for our Association, and I continue to be inspired by the dedication and professionalism of our members across the region. Whether you're in the field, in the lab, in the office, or in the classroom, your contributions are vital to the industry, and to the health and sustainability of our communities.

This fall, we're especially looking forward to our Annual Conference, taking place in St. John's, NL from October 5 to 7. The conference is always a highlight of the year – a chance to connect/reconnect (socialize and network), share knowledge and celebrate the innovation and hard work that define our industry. I encourage all

of you to participate, whether as attendees, presenters, or volunteers. And if you cannot go, encourage your young professionals to attend.

Training and professional development remain key priorities for the ACWWA. Our technical committees and education partners continue to deliver relevant, high-quality courses and resources tailored to the needs of Atlantic Canada's water and wastewater professionals. If you haven't yet explored our latest offerings, I invite you to do so – it's an investment in your future and our sector as a whole.

Lastly, I want to thank our dedicated Board members, committee volunteers, and staff who work tirelessly behind the scenes to keep the ACWWA running strong. This Association thrives because of your passion and commitment.

Wishing you a safe, successful, and engaging season ahead. 🐸



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#### AWWA resources can help

ater utilities in Atlantic Canada continue to face challenges. The dry weather from this past summer has put a strain on many water supplies, resulting in both voluntary and mandatory conservation measures. With the dry conditions, the risk of wildfire increases, potentially threatening watersheds and water treatment facilities. AWWA has a number of resources that can be accessed through their website (www.awwa.org) to help support utilities on drought and climate change issues.

During ACE25 in Denver in June, I started my one-year term as an



AWWA Vice President. Over the coming year I am looking forward to the opportunities this will bring.

One of my first duties will be to visit the Nebraska AWWA Section in November to attend their annual conference. I am excited for the chance to showcase Atlantic Canada to AWWA members in Nebraska especially considering how vastly different our geographies are.

In January, the AWWA Winter Board meeting will be held in Vancouver rather than an American locale. This may be the first time for this event to be held in Canada.

The Journal AWWA is always looking for Canadian content. If you are interested or know of someone who may be interested in writing an article for the journal about an interesting project or water related initiative, please reach out to discuss the process for submitting an article. 🥌

"I am excited for the chance to showcase Atlantic Canada to AWWA members in Nebraska."



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#### **IMPORTANT AWWA UPDATE FOR** CANADIAN MEMBERS AND UTILITIES

🕤 ince the winter, Canadians have been facing an unprecedented level of uncertainty regarding relations with the USA. The water industry in Canada has not been immune. From tariffs on critical materials and equipment, to restrictions on travel to the USA and procurement with USA-based companies and organizations, including in some cases AWWA.

AWWA is the North American professional association for the water industry, but as a USAbased organization this has created challenges for Canadian members and utilities. In March 2025, AWWA CEO David Lafrance and other senior leaders of AWWA met in person in Toronto with Canadian AWWA Section leaders. They heard firsthand the seriousness of the concerns of Canadian members. Coming out of this meeting, AWWA committed to look at options to retain and support Canadian AWWA members, recognizing that AWWA is at its best with full participation from Canadian members.

At the June 6, 2025 AWWA Executive meeting in Denver, the AWWA Executive Committee of the Board made two significant decisions. First, AWWA member utilities that have been barred from renewing their AWWA memberships due to the ongoing political turbulence may have their AWWA memberships extended to Jan. 1, 2026. If any Atlantic Canadian utilities are in this situation, please contact AWWA Section Services at sectionservices@awwa.org to discuss your options.

Second, Canadian membership dues will no longer be impacted by the daily USA-Canadian exchange rate and the resulting currency fluctuations. Discussions with members of the AWWA Canadian Affairs Committee and others has made it clear that the current dues methodology introduces unnecessary uncertainty for Canadian members. Starting January 2026 a new membership rate schedule will be prepared in Canadian dollars. These fixed membership rates will be valid for the calendar year and reviewed and adjusted on an annual basis. This approach will provide more certainty for Canadian members. 🥌

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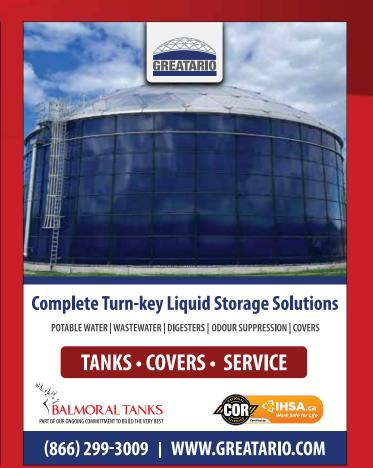
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#### News & activities

he role of government relations director includes providing liaison to the ACWWA Board of Directors from both the ACWWA Government Affairs Committee (GAC) and the Canadian Water and Wastewater Association (CWWA) Board.

#### **Government Affairs Committee**

The Government Affairs Committee continues to meet on a regular basis to promote cooperation between the ACWWA and various levels of government by providing advice to the ACWWA Board and



Victoria, November 2-5

members regarding the status and implications of various legislative and regulatory matters. To this end, in March of this year Health Canada published final Guidelines for Canadian Drinking Water Quality: Operational

Parameters. These Guidelines set aesthetic parameters for:

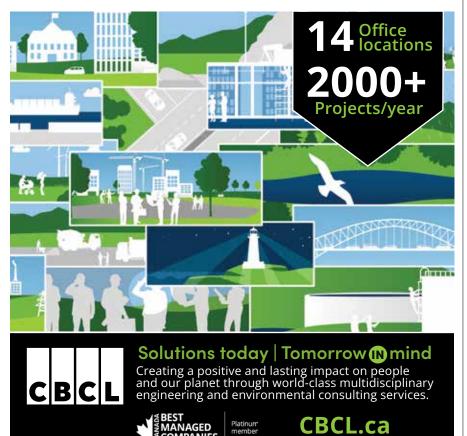
- chloride ≤ 250 mg/L
- sulphate ≤ 500 mg/L
- total dissolved solids (TDS) ≤ 500 mg/L
- sulphide (as hydrogen sulphide) ≤ 0.05 mg/L in drinking water The updated guidelines can be found on the Health Canada website and consolidate all relevant information for the seven parameters: calcium, magnesium, hardness, chloride, sulphate, total dissolved solids (TDS), and hydrogen sulphide.

#### CWWA activities

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. The national conference is approaching, as noted below:

National Water and Wastewater Conference 2025 - Victoria, November 2-5.

All is looking good for another successful national event set for Victoria, BC. This is an excellent networking event for water leaders. This conference has the potential to be a big one as many professionals will not be attending the large US conferences this year.



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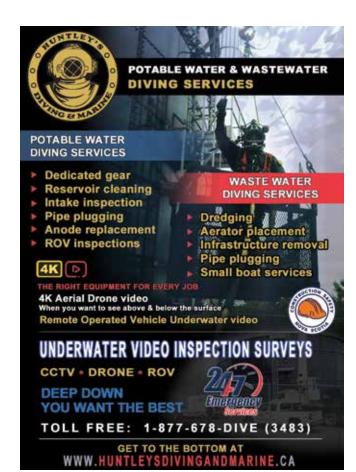
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#### Around and about

s I write this article in
August, summer is here
with a heat wave and
drought going through the
region. The ACWWA Conference
is coming up in St. John's, NL in
October. I suspect this will be very
well attended due to so many people
not travelling south of the border, so
hopefully I will get to see you there.

I attended WEFMAX in Palm Springs June 3–6, where the theme was V.I.B.E. (Value, Inclusion, Belonging & Equity). Our hosts were the CWEA "California Water Environment Association."

As I travelled from Nova Scotia to California, I was not sure of the reception I would receive on the US side of the border. However, I was pleasantly surprised when things seemed to be same as before and I was encouraged when arriving at the PSP Airport to see several banners hanging welcoming Canadians. They had these banners hanging in the streets as well. I felt very welcomed.





Canadian Affairs Council attendees at WEFMAX Palm Springs – West to East.



Providing support to the attendees during WEFMAX Engagement Activity that I help to develop as part of the HOD "House of Delegates" Strategic Planning Work Group.

Representatives from all five
Canadian Member Associations –
Canadian Affairs Council (AKA
the CAC) were in attendance. We
typically meet the day before
WEFMAX officially starts. Most
everyone was in person except for
two who joined virtually due to US
travel restrictions by their employers.

Our CAC meeting included WEF Sr. Director of Inclusion &

Belonging, Steve Hamai; WEF Vice President, Paul Schuler, and WEF Board of Trustees, Tracy Ekola (WEF/ CAC Liaison). We discussed the current Canada-US concerns and possible trade impacts on the water/ wastewater sector... including the membership renewals with WEF and AWWA. We also worked on a Strategic Plan for the CAC facilitated by Tracy Ekola.

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Early Reminder: One of the several 2026 WEFMAX events will be held in Montreal. Stay tuned for more information.

There is still time to register for WEFTEC in Chicago. I hope to see you there.

#### WEFTEC 2025 -98th Annual Technical Exhibition & Conference

McCormick Place Convention Center. Chicago, IL Conference:

September 27 – October 1, 2025 Exhibition:

September 29 - October 1, 2025



Perhaps you need to stay closer to home this fall. If you find yourself unable to head south of the border, then now is the time to register for our ACWWA AGM Conference being held in St. John's, NL, October 5-7, 2025.

We are very fortunate to have Stephen Saunders join us as the Keynote Speaker. He is a great motivator and communicator. I am looking forward to spending time with Stephen and his family when they come to town.



Christine Volkay-Hilditch is a member of the WEF Board of Trustees

She will bring us greetings from WEF, and she is excited to meet you all at the Annual Conference. I am looking forward to hosting her on behalf of the ACWWA.



The Canadian Residuals and Biosolids Conference is being held in Winnipeg, Manitoba October 20-22, 2025. Another great conference being held in Canada.



Please reach out if you have any questions about WEF and I look forward to seeing many of you soon at the ACWWA Annual Conference and/or at WEFTEC.

"I was encouraged when arriving at the PSP Airport to see several banners hanging welcoming Canadians. They had these banners hanging in the streets as well."



#### Fall membership update

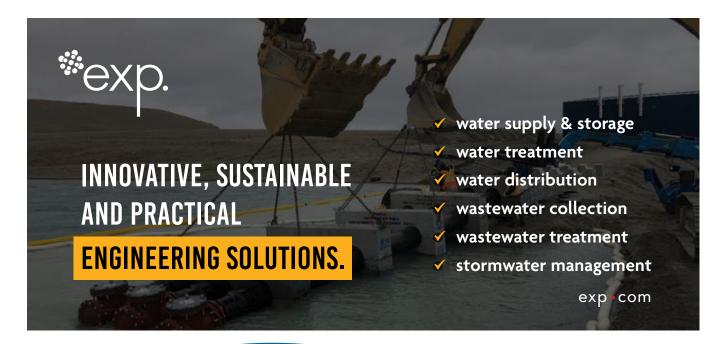
#### Welcome to the following new members:

Name	Organization	Membership
Peter VanTol	AIWUC Ltd.	AWWA
Jeremy Clack	City of Saint John	AWWA
Riley Gray	2025 ACWWA Scholarship Winner	AWWA
Nana Frempong	2025 ACWWA Scholarship Winner	AWWA
Samuel Benson	2025 ACWWA Scholarship Winner	AWWA
Milad Jalilian	2025 ACWWA Scholarship Winner	AWWA
Robert Jessop		AWWA
Anick MacDonald	City of Moncton	AWWA
Raymond Boudreau	Cape Breton Regional Municipality	AWWA
Jennifer Collins	Cape Breton Regional Municipality	AWWA
Aaron MacPhee	Cape Breton Regional Municipality	AWWA
Anthony Mazzocca	Cape Breton Regional Municipality	AWWA
Nicola Anderson	Cape Breton Regional Municipality	AWWA
Jaimie Phillips	AIWUC Ltd.	AWWA
Glenn Sharp	Sharp Management	AWWA
Mike Jacquard	FIAA	AWWA
Jenna Brown	Town of Truro Water Utilities	AWWA



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#### **Conference highlights**

We are looking forward to the **Annual Golf Tournament** – being held Sunday, October 5 at GlenDenning Golf Course in St. John's (www.qlendenninggolf.ca).

#### We would like to acknowledge and thank the sponsors of our Tournament:

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The **Monday evening Hospitality night** will be held at **O'Reilly's Pub** on George St. from 8:00 pm – 1:00 am. Nibblies and entertainment for all ages and palates. If you are interested in getting a seat before the crowd arrives you may want to explore dinner options ahead of the entertainment.

Trade Show – coming up on Tuesday from 10:00 am – 2:00 pm in the St. John's Convention Centre – lunch will be served during the event.

**Education & Outreach** remains a key focus. Our members continue to support their customers with innovative delivery methods to keep them informed of industry changes. If you have a need, please feel free to reach out.

#### 2025 ABEA scholarship recipients

April Cross – Steven Cross – City of Quispamsis Liam McCallum – Grant McCallum – City of Fredericton Lindsay Rodgers – Jeff Rodgers – Geatario

#### **Current ABEA Board:**

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Past-President - Martin Phinney - McWane/Canada Pipe

Senior Director – Andrew Burgess – Flowstar

Junior Director - Adam Harley - EMCO (NB)

Junior Director – Sean Hogan – Soleno

Junior Director - Noah Brace - EMCO (NL)

Sec./Treasurer - Kyle Gracie - EMCO (NS)

Director-at-large - Catherine Cameron - Aqua Data/Scotia Tech

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Contact information for our members, and applications for our Scholarship

and Grant Program can be found at www.abea.biz









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## Congratulations to our 2025 SCHOLARSH winners

#### Lloyd Douglas:

Nova Scotia - Riley Gray is a recent graduate of the Environmental Engineering Program at Dalhousie University. Riley has been awarded the Lloyd Douglas Scholarship for Nova Scotia.



**Newfoundland** – Samuel Benson is a fourth-year civil engineering student at Memorial University. Samuel has been awarded the Lloyd Douglas Scholarship for Newfoundland.

#### Bill Butler

Nana Manso Frempong is a first-year student pursuing a Doctorate of Engineering in Civil and Resource Engineering at Dalhousie University. Nana Manso Frempong has been awarded the Bill Butler Scholarship.



**Prince Edward Island** - Milad Jalilian is a second-year student enrolled in the PhD in Sustainable Design Engineering at UPEI. Milad has been awarded the Lloyd Douglas Scholarship for Prince Edward Island.

#### Craig Kelman

Jaser Lara de Larrea is a Master of Applied Science student in the Environmental Engineering program at Dalhousie University. Jaser Lara de Larrea has been awarded the Craig Kelman Scholarship. 🐸



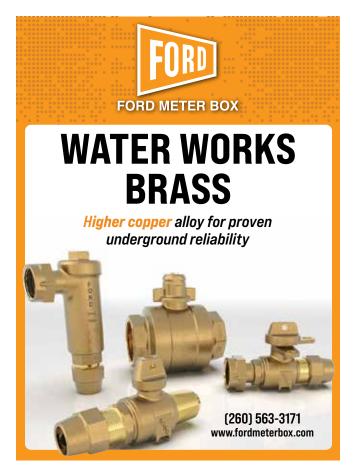
his August the ACWWA Emerging Leaders Committee swapped spreadsheets for steel and hosted an axe-throwing showdown at Halimac. The event had a great crowd of professionals from across the water and wastewater industry - from academia to utility. With fierce (but friendly) competition and plenty of laughs, the evening offered a refreshing way to connect outside of a typical professional setting. Thank you to all the attendees for making this event a success.

Congratulations to our top throwers: Aaron Ryan and James Dalton!

A big thank you to our event sponsors McWane Canada, ScotiaTech, and Flowstar for making this event possible and helping us hit the mark.

Make sure to follow ACWWA on socials and stay tuned for details on the next Emerging Leaders event! 🤐





## PROJECT PROFILE



### WATER TREATMENT PLANT UPGRADE

OWNER'S ADVISOR: WSP, WWW.WSP.COM/EN-CA

hen elevated levels of trihalomethanes (THMs) and haloacetic acids (HAAs) began to appear in Pasadena's water filtration and treatment plant, operators recognized a need for an upgrade to the existing filtration system.

Elevated organic carbon levels in the raw water of Blue Gulch Pond were the likely source of the issue, one that could only be addressed with updates to the plant. The Town of Pasadena, nestled in Newfoundland and Labrador's Humber Valley near Corner Brook, relies on the pond for its clean water resources.

Prior to the upgrade, treatment processes included pre-filtration (80 micron), filtration (3 micron), UV disinfection and chlorination. However, this was not enough to address the new need for increased filtration measures.

Serving in the role of Owner's Advisor for the community of just over 3,500, WSP was tasked with developing and executing the procurement process for the design-build project. The three pre-qualified bidders presented a variety of solutions, including the creation of a brand-new facility.

The desire to fit technology upgrades within the existing footprint was one of a series of challenges that faced the successful proponent. This included, but was not limited to:

- The need to address Disinfection Byproducts (DBPs).
- Long lead time for some items, requiring the need for construction resourcefulness and creativity.



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- The need to manage waste streams to allow direct discharge to the environment.
- The lack of three-phase power near the site.
- The remoteness of the existing water treatment plant and the raw water source.
- Community engagement and need to educate residents about the change.

Each of these demanded a community-specific solution that would both meet local needs and keep the project on time and within the existing budget.

However, the successful proponent was able to discover the necessary physical footprint for two trains







of nano-filtration within the existing facility. In addition, the UV system with complete redundancy was replaced within the existing setup, upgrades were made to the existing SCADA system, and cartridge filtration was installed.

The successful installation of the system led to an interesting set of 'complaints' from members of the community, ones who couldn't understand why their previously brown water was suddenly blue!

More than two years since the successful installation, the new system components continue to produce excellent quality water. 🐸







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#### The time three future AWWA presidents showed up at the New Brunswick legislature

By Laurie Corbett

he installation of a water supply in Fredericton in 1883 had created an interesting and unintentional problem. As interior plumbing became more popular, the common 130 grams from a bowel movement that took little space in an outhouse with a sample of sphagnum moss to sweeten the smell was now being accompanied by 20–25 litres of water. The great volumes of wastewater were running into cess pools, into illegal storm sewer connections, and overflowing onto streets. The city stunk a bit, and much of the problem with typhoid fever was blamed on the situation. Fredericton needed sewerage in a bad way.

There had been studies, and there had been failed plebiscites, but the solution came in 1905 after Fredericton Council got a bill through the Legislature that allowed them to proceed with a sewerage system without an approving plebiscite. They then hired Frank A. Barbour, a dynamic Boston engineer who was in the area anyway to design and build an expansion to Saint John's Lock Lomond water supply. Barbour reviewed, updated, and improved the past designs, and convinced Council to put out the contracts to close in January of 1906.

However, the outlet for the pipes to drain the 7,000+ people of Fredericton was at Shore Street, and into the St. John River. While contracts were being signed, pipe and appurtenances were being ordered, and accommodations for the labourers were being organized, authorities in downstream Sunbury County were arguing their case in front of the local and provincial Health Boards. The Provincial Board called for legislative changes to stop the sewerage from entering the river. They succeeded on March 22 with a bill that called for the system to be satisfactory to the Provincial Board of Health.

The City, with Mr. Barbour as their primary spokesperson, gave their arguments at an August 14 meeting of the Provincial Board, but three days later, the ruling was unanimously against the City: Fredericton's raw sewage was not to be conveyed to the river. Regardless, the contractors were laying pipe throughout the spring, summer, and fall.

As the appeal process dictated, a meeting was arranged that would allow both sides to address the government in the executive chambers of the Legislature in Fredericton. This ultimately happened November 7 and December 5–7, 1906. J. Douglas Hazen, Sunbury County's MPP, represented the county while Mayor McNally, City Clerk McCready, and

Engineer F.A. Barbour represented Fredericton. Both sides brought in their experts. With our hindsight, the arguments must have been frustrating for both sides: with significant evidence lacking on the ability of the river to absorb or cleanse itself and on the longevity of waterborne pathogens like typhoid fever in the river environment. Concepts like biochemical oxygen demand were being worked on by the Royal Commission on Sewage Disposal in Britain at the time, but even such testing had not been standardized. Little was known on the impacts of industrial wastes on the environment, although many were aware of fish kills from tannery wastes. Further, options available for wastewater treatment at this time were not fiscally practical, required significant flat area and tremendous maintenance, were troublesome, malodourous, and would be ineffective at times with Fredericton's winters. They would also have cost 4–5 times the cost of the sewerage project – way beyond what the city could spend. Not only that, but the state of the art in 1906 for wastewater treatment was, according to Barbour's testimony: "...no peach orchard." It was quite a fight!

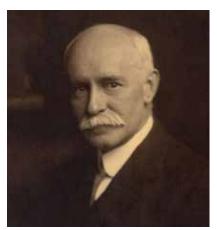
One of Fredericton's experts was William Pitt Mason, a professor. A water analysis expert, he insisted the river was already unfit for human consumption, and that the waste from Fredericton would not significantly change that. He had done a complete survey of the river and waterfront in the fall of 1904 for the city when they were looking for ways to improve their drinking water quality.

Another was George Warren Fuller, a New York-based sanitation and water filtration expert who had traveled with Barbour purposely to assist Barbour in his New Brunswick projects. His testimony demonstrated his holistic knowledge of wastewater management on the continent as well as his specific understanding of the St. John River valley.



Sir J. Douglas Hazen

This cast of characters, not really celebrated until now, is quite amazing. Douglas Hazen had already served as the Mayor for Fredericton but was now a loyal servant of Sunbury County. He went on to become the Premier, then Chief Justice for the province, then served in the Imperial War Cabinet during WWI, for which he was knighted by King George V.



Dr. William Pitt Mason

Dr. Mason was a graduate engineer, a doctor, and a student of biology at the prestigious Pasteur Institute. and was serving as professor and head of both the Chemistry and the Chemical Engineering Departments at the Rensselaer Polytechnic Institute. More

importantly, he was author of Examination of Water, Chemical and Bacteriological as well as other books. His books, well accepted, became the basis of the first "Standard Methods for the Examination of Water and Sewerage" in 1895. It is now in its 24th edition.



George Warren Fuller

George Warren Fuller had a Bachelor of Chemistry from MIT, worked for Berlin Water Works while studying bacteriology at the University of Berlin, studied water purification and wastewater treatment at the Massachusetts Board of Health, and was a key

investigator of filtration science when that Board established an Experiment Station at Lawrence. In 1902, with full private sector backing, Fuller designed a 130 ML/d plant at Little Falls, East Jersey with the cooperation and equipment from the New York Continental Jewel Filtration Company. This plant pretty much standardized all surface water filtration systems since then. Fuller went on in late 1908 to install, with Dr. John Leal, the first and second continuous public water disinfection systems in the world. Of course, Fuller is an AWWA hero with awards given in his honour.

"This cast of characters, not really celebrated until now, is quite amazing."



Frank A. Barbour

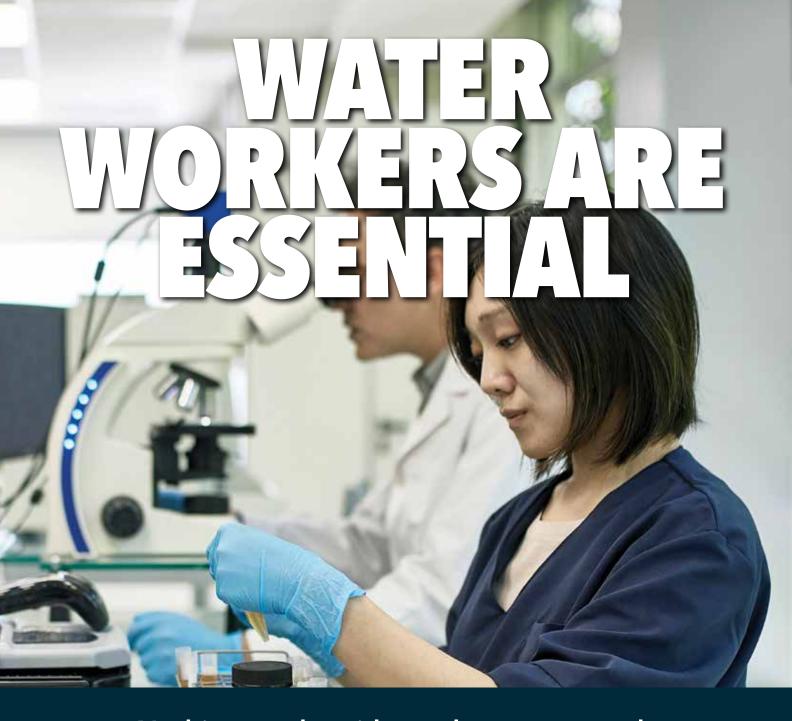
Frank A. Barbour was a Saint John High School graduate. One of three grandsons of the owner of Barbour Foods, he found his way to UNB to study science and engineering while his father and siblings stuck with the family business. He excelled with honours in Science

and Mathematics, and was presented with a microscope by Dr. Loring Bailey at the 1987 Encaenia. He practiced municipal engineering in Boston between 1888 and 1900, and was growing his presence in the Maritimes by working for Fredericton, Lunenburg, Saint John, St. Stephen and elsewhere. He was also designing and installing Fredericton's rapid sand filtration system – which would become the most complete system in Canada at the time. Frederictonians should be glad he didn't just stick with selling King Cole tea.

Three of the characters giving testimony for Fredericton in 1906 later became president of AWWA: William Pitt Mason (1909), George Warren Fuller (1923), and Frank A. Barbour (1936).

As for the sewerage: The Legislature was bound to uphold the Provincial Health Department's ruling and removed the City's privilege of river disposal without treatment. However, by March 1907, as a result of the education they got from the witnesses, the realities of public health, economic development, and what was actually happening in the large St. John River valley, the Legislature voted to remove the need for wastewater treatment in this particular valley. Fredericton got to connect to their sewerage system, and the city began to smell a little better and live a little healthier. Ultimately, wastewater treatment processes evolved into the effective, efficient, and affordable systems we work with today, and Fredericton got their treatment as well.

Laurie Corbett is a retired Fredericton W&S engineer. He is a former editor for this magazine and was ACWWA Chair 1997–98. He is also the author of two books on water and sewer history: Fire, Disease, and the Pump House – What had to happen before Fredericton had running water and Three Decades at the Pump House – How Fredericton's water works surpassed all others in Canada. Both books are available at Amazon.ca with Laurence G. Corbett as the author.



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- 3. Wolseley/Mueller Hydrant operation, servicing & troubleshooting
- 4. Omnitech Wastewater lift station level controls, devices, set-up, programming

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  - · Continental Breakfast at 7:30 AM
  - Classrooms A, B, C, AB Hands-on training with supplier/trainers
  - 15-minute coffee/tea and snack break
  - · Classrooms A, B, C, AB Hands-on training with supplier/trainers
  - 30-minute lunch break
  - Classrooms A, B, C, AB Hands-on training with supplier/trainers
  - 15-minute coffee/tea and snack break
  - Classrooms A, B, C, D Hands-on training with supplier/trainers
  - Final review/quiz and survey/feedback forms at end of each session

Time	Omnitech	Prominent	Flowstar	ABB
Time	Room A	Room B	Room C	Room D
08:00 – 10:00	Group A	Group D	Group C	Group B
10:20 – 12:20	Group B	Group A	Group D	Group C
13:10 – 15:10	Group C	Group B	Group A	Group D
15:30 – 17:30	Group D	Group C	Group B	Group A

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#### Planning for the future

By Adam Sketchley, P.Eng., M.A.Sc. - DesignPoint Engineering & Surveying Ltd.

nfrastructure planning is about more than solving today's problems. Municipalities are under pressure to replace aging assets while also preparing for unprecedented growth. Balancing these two demands is one of the most difficult challenges faced by system owners today. Failing to invest in infrastructure can result in environmental issues and losing out on growth. Accounting for too much growth in infrastructure projects can result in project delays due to insufficient budgets and wasted money on growth that doesn't meet projections.

Much of our existing water and wastewater infrastructure was designed for conditions that no longer exist. Flows are often higher due to infiltration and inflow, rainfall is more extreme, the regulatory burden is higher, and expectations for environmental compliance are stricter than when many systems were built. At the same time, new housing developments and densification are placing additional demand on infrastructure that is already stretched thin. Simply replacing what exists is no longer enough.

A key strategy for accommodating future growth is staged design. By constructing facilities in phases, municipalities can meet immediate needs while promoting growth, without oversizing infrastructure for a distant future that may never materialize. Pumping stations, for example, can be built with space for larger pumps, storage, or additional forcemains but equipped initially to handle current flows. This approach preserves flexibility while deferring significant capital costs until they are truly required. The approach also limits the interim impact on downstream infrastructure which may not yet have a matching capacity.

Equally important is the reduction of unnecessary flows. Every litre of stormwater entering a wastewater system reduces available capacity for growth. Investments in inflow and infiltration reduction, sump pump disconnections, and stormwater separation can be as critical as building new pipes or plants. Flow reduction strategies not only extend the life of existing systems but also reduce long-term operating and

"Simply replacing what exists is no longer enough. A key strategy for accommodating future growth is staged design."



maintenance costs. Further, reducing stormwater input in parallel with staged construction prolongs the initial, most cost-effective stages. The flow reduction balances out some of the growth.

Finally, planning for growth must be integrated with broader community objectives. Identifying growth centres, defining target populations, and establishing service levels all help align infrastructure investment with housing and economic goals. Without this alignment, utilities risk building capacity in the wrong place or at the wrong scale.

Communities will continue to grow, and infrastructure must grow with them. By combining staged investment, flow reduction, and strategic planning, municipalities can maintain systems not only meet today's demands but are also resilient, adaptable, and ready for the challenges ahead.

Do you have a topic for a future Back to Fundamentals article?

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