



MESSAGE FROM THE CHAIR

BY JERRY VILLARD

Our 39th Annual Training Seminar, Building on the Best: Operators Supporting Growth, is behind us. Hopefully everyone that attended enjoyed themselves, got value for their money, collected lots of great information on a variety of subjects of interest, and had the opportunity to meet friends and fellow operators.

Thanks to Conference Chair, Troy Atkinson, for the great job hosting his first seminar. Great job Troy! I would also like to thank the City of Moncton for supporting Troy and making us feel welcome in their city.

Thanks to the rest of the members of the MPWWA board for stepping up to help throughout the seminar in various capacities. Once again, our Executive Secretary Clara Shea makes things run smoothly due to her preparation, organized approach, and ability to keep us on track!

We now start to focus on 2020 in Halifax at the Marriot Waterfront for our 40th seminar. The theme for 2020 is: Growing Our Industry: Environment, Technology, Your Future. It will be co-chaired by Kevin Kelloway and Bill Cannon. Watch for more information coming in the September issue of the MPWWR and on our website, mpwwa.ca as things develop. If anyone has a workshop they would like to present, they can send an abstract for consideration by the MPWWA.

I'm sure everyone will be having another busy summer with construction, operation, and maintenance of your systems. Enjoy your summer and hope you take time off to be with family and friends.

Berm around wastewater plant offers protection from flooding

Saint John working proactively to stay ahead of increasing climate emergencies

BY ANDY WALKER

When officials at Saint John Water began to prepare for spring flooding in 2018, they were staring down the possibility of water levels rising to a record 6.6 metres.

After viewing computer projections of just how much damage the flooding could do to the city's water and wastewater infrastructure, Kendall Mason says it was clear some extra defences had to be put in place. The result was a construction of a clay berm around the wastewater plant in Millidgeville, which lay directly in the path of the rising waters.

"It was put together quickly; I think in about two or three days," says Mason, who is the deputy commissioner of Saint John Water.

The structure was built to the 6.6 metre height of the projected flooding. Fortunately, the water levels peaked well below that at 5.8 metres, the berm held in place, and the Millidgeville plant kept operating throughout the flooding period, ensuring drinking water and waste-



After viewing computer projections of just how much damage the flooding could do to Saint John's water and wastewater infrastructure in 2018, it was clear extra defences had to be put in place. The result was a construction of a clay berm around the wastewater plant in Millidgeville, which lay directly in the path of the rising waters.

water services to residents.

Mason says the berm was left in place and worked equally well this spring, when the water level again crested at

just under six metres. The deputy commissioner says it was unusual to have the water reach that level two years in a row. "I certainly have con-

fidence it will handle a water level up to 6.1 or 6.2 metres. After that, I would start to get

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a little concerned.”

The deputy commissioner is quick to praise commission staff, saying they worked around the clock during the flooding both this year and last year to monitor the situation and keep damage to a minimum. He says 10 wastewater lift stations were shut down during the worst of the flooding and the electrical equipment was removed to prevent damage.

“That allowed us to bring these stations back onto the system almost immediately after the water receded because there was no damage to the infrastructure,” he says. “We made every effort to ensure our drinking water and sewer services were maintained to customers.”

While Mason definitely recommends the idea of a berm to any other municipal utility that finds itself in a flood

zone, he says the infrastructure is only part of the solution.

“It takes a lot of planning and our staff went above and beyond the call of duty to ensure the plant continued to operate.”

However, Mason concedes the berm is only intended to be a short-term fix. The long-range plan calls for infrastructure such as Millidgeville to be relocated out of flood areas and for any new infrastructure to be built out of the danger zone as much as possible.

Funding was announced this spring for a Saint John Flood Mitigation Strategy, which includes federal donations under the Disaster Mitigation and Adaptation Fund, plus funding from the city. The plan includes refurbishing the sea wall, raising or replacing city pumping stations, and relocating vulnerable electrical utility infrastructure on the Saint John waterfront.



The berm was left in place and worked equally well this spring, when the water level again crested at just under six metres.



The structure was built to the 6.6 metre height of the projected flooding. Fortunately, the water levels peaked well below that at 5.8 metres, the berm held in place, and the Millidgeville plant kept operating throughout the flooding period.



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Millennials deserve to be judged as individuals, not a generation

Ed McCormick proving he can get the job done regardless of his age

BY KEN PARTRIDGE

Name: Ed McCormick

Job Title: Director of Public Works

Where do you work? Town of Digby

Number of years of service: 4 years

1. When did you join MPWWA?

I joined in 2015.

2. What are the advantages of being a member?

Being able to have others you can bounce ideas off and trouble shoot operator issues at their respective plants.

3. What's the biggest challenge in your job?

The biggest challenge is staffing. It's hard to find personnel that are trained to maintain our water and wastewater systems. It seems more and more people, es-

pecially the younger generation ("my generation") are leaving our rural area to try the city life.

4. Favourite part of your job?

It may sound strange, but I really like completing challenging tasks. Plus, I never know what I'm doing from day-to-day.

5. Less favourite parts?

People waiting for you to make a mistake so they can judge you. It's tough being a millennial some days.

6. How did you first become involved in the industry?

I needed a change in the industry I was working in and this opportunity just happened to "come a knockin..." lol

7. What's the least understood part of your job?

How many mechanical items we have to maintain. The public drinks their water,

showers, flushes their toilet, but not many citizens actually know what takes place so they have safe drinking water and their wastewater is treated properly so it can return to the environment for its next cycle.

8. What else should the public know about what you do?

We have rules and regulations to follow. That's why sometimes things are done differently then they use to be.

Change can be a nasty word, but not all change is bad.

9. What's something everyone knows about you?

I'm a Red Seal Certified Plumber, always happy go lucky, and if I'm not whistling something is on my mind.

10. What's something almost no one knows about you?

I enjoy gardening and doing inte-

rior/exterior designing of buildings. I spend a lot of my free time researching these topics.

11. What is your proudest professional accomplishment?

Designing and implementing a weekly preventative maintenance plan that works for the water and wastewater, which has resulted in call outs after hours and on weekends being reduced significantly.

12. What is your proudest personal accomplishment?

My two wonderful children.

13. What's your best advice to a fellow industry member, or someone looking to join the industry?

Respect each other for who we are individually, not by an age group. This industry may not be for everyone, but it can be an excellent career for anyone.

Health Canada guidelines for copper, strontium set for release this year

BY ANDY WALKER

Health Canada guidelines on the levels of copper and strontium are essentially complete and are due to be released later this year, says Krysta Montreuil.

The official with the Nova Scotia Department of Environment recently spoke on the topic during the MPWWA annual training seminar. She outlined the process used to determine the guidelines and how the new rules will impact municipal utility operators.

The guidelines were developed by a federal/provincial/territorial committee on drinking water with representation from each jurisdiction. The committee considered current, published scientific research related to health effects, aesthetic effects, and operational considerations. Health-based guidelines were established based on comprehensive review of the known health effects associated with each contaminant, on exposure levels, and on the availability of treatment and analytic technologies.

Aesthetic effects (e.g., taste, odour) were considered when they played a role in determining whether consumers will consider the water drinkable. Operational considerations were factored in when the presence of a substance may interfere with or impair a treatment process or technology (e.g., turbidity interfering with chlorination or UV disinfection) or adversely affect drinking water infrastructure (e.g., corrosion of pipes).

Montreuil says there were two ways for operators to have input into the process. They could make direct presentations to the committee during the consultation phase and they were often involved when provinces compiled case studies and documents for the committee to consider.

Since the municipalities play a major role in implementing the guidelines imposed by Health Canada, she says it was vital they have input into the process.

A technical document prepared for the consultations on copper notes there's a recommended daily intake of about 2 mg/day for adults, or 30 µg/kg body weight per day.

At average concentrations, drinking water contributes approximately 11 per cent of the daily copper requirement. Copper is generally considered to be non-toxic except at high doses, in excess of 15 mg/day.

The document also notes copper in public water supplies enhances corrosion of aluminum and zinc and can add a bitter taste to the water, as well as stain laundry and damage plumbing at levels above 1.0 mg/L.

The technical briefing notes for Strontium propose a maximum acceptable concentration (MAC) of 7.0 mg/L. Strontium is widely distributed in nature and has been identified in many different minerals. It may be present in water in the environment from natural sources (rock and soil weathering) or as a result of human activities.

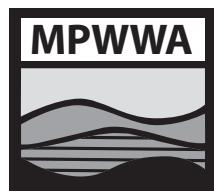
During its spring 2017 meeting, the Federal-Provincial-Territorial Committee on Drinking Water reviewed the guideline technical document for strontium and gave approval for this document to undergo public consultation.



Health Canada guidelines on the levels of copper and strontium in drinking water are essentially complete and are due to be released later this year.

Montreuil says the final guidelines for both copper and Strontium are slated to be released sometime in 2019.

Also coming up are proposed guidelines for aluminum, although the consultation process isn't nearly as far advanced in that case. Currently there is no health-based guideline or aesthetic objective established for aluminum in drinking water.



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Bursary winners announced

Since being established, MPWWA bursaries have awarded \$14,000 to deserving students



Kelsey Skinner

For the year 2019, the Maritime Provinces Water and Wastewater Association is pleased to once again award two educational bursaries, valued at \$1,000 each, to two deserving students attending post-secondary institutions and whose parents are members of the MPWWA.

This year's recipients of the Maritime Provinces Water and Wastewater Association Educational Bursaries are



Niall Smith

Kelsey Skinner and Niall Smith.

Skinner is from Saint John, N.B. and is entering her first year in the Bachelor of Science Program at the University of New Brunswick Saint John campus. She graduated from Simonds High School in Saint John and is driven to achieve her goal of graduating from medical school. Proud papa Scott Skinner is a member of the MPWWA from the Town of Rothesay.

Smith is from Truro N.S. and is his second year in the Bachelor of Science in Nursing Program at Dalhousie University. Since enrolling in this program, he has participated as a class representative, serving as a voice on the Nursing Society, and volunteered at the IWK Children's Hospital. He is the son of Truro area MPWWA Member Therin Smith.

Congratulations and the wish of continued success in their scholastic endeavors goes out to both!

Since the inception of the educational bursaries in 2013, the MPWWA has contributed a total of \$14,000 in financial assistance to students looking to further their education.

For more information on how to apply for the educational bursary, check out the MPWWA webpage: mpwwa.ca.

Service pins awarded

MPWWA recognizes longstanding members of 10, 15, 20, 25, 30 years of service

The Maritime Provinces Water and Wastewater Association handed out membership pins at the Annual Training Seminar to the following members:

30 YEAR

Jeff Hannam, Kingston, N.S.
Rick Reid, Halifax, N.S.
Steven Wheller, Dartmouth, N.S.

25 YEAR

Tom Cameron, Dartmouth, N.S.
Tim Devlin, St. Stephen, N.B.
Richard DiCarlo, Minto, N.B.
Joey Frenette, Boudreau Ouest, N.B.
Darrel Jennex, Eel Ground, N.B.

20 YEAR

Harold Blades, New Glasgow, N.S.
Adrien Blanchard, Rogersville, N.B.
John Burbine, Upper Nappan, N.S.
Jody Comeau, Little Brook, N.S.
Rick Cogle, Bristol, N.B.
Trevor Douthwright, Salisbury, N.B.
Curtis Fraser, Tide Head, N.B.
Bruce Gault, Grand Bay-Westfield, N.B.
Tony Henry, Rothesay, N.B.
Gary Jonah, Hillsborough, N.B.
Fidele Maltais, Eel River Crossing, N.B.
Renauld McIntyre, Dalhousie, N.B.
Tony Morehouse, Fredericton, N.B.
Larry Petersen, Charlo, N.B.
James Rafuse, Kentville, N.S.
Gary Richard, Atholville, N.B.
Craig Trenholm, Dorchester, N.B.
Peter Woodworth, Fredericton, N.B.

15 YEAR

Dino Amaral, Halifax, N.B.
Lori Arbeau, Turtle Creek, N.B.
Leonce Arsenault, Rothesay, N.B.
Rick Bennett, Turtle Creek, N.B.
Alan Benninger, Port Hood, N.S.
Paul Boiduk, Halifax, N.S.
David Bourque, Buctouche, N.B.
Wayne Caines, Truro, N.S.
Wally Caines, Truro, N.S.
George Cameron, New Glasgow, N.S.
Calvin Cholock, Dartmouth, N.S.
Wayne Christie, Upper Nappan, N.S.
Robert Creemer, Kentville, N.S.
Jack Dempsey, New Glasgow, N.S.
LeRoy Dillman, Kentville, N.S.
Larry Dunn, Sydney, N.S.
Korey Fram, Moncton, N.B.
Kevin Frank, Bridgewater, N.S.
Cecil Frost, Arichat, N.S.
Deborah Fullerton, New Glasgow, N.S.
Serge Gionet, Beresford, N.B.
Peter Haddon, Chipman, N.B.
Marc Hebert, Dartmouth, N.S.
Darryl Jelfs, Digby, N.S.
Peter Jones, Grandbay-Westfield, N.B.
Guy LeBlanc, Balmoral, N.B.
Trent MacDonald, Charlottetown, P.E.I.
Jay MacPherson, New Glasgow, N.S.

Fredericton working hard to keep flushing just the three P's

Constant public education needed to help reduce amount of inappropriate material being sent down the toilet

BY ANDY WALKER

For the past several years, Neil Thomas has worked tirelessly to educate residents of the New Brunswick capital to keep a watchful eye on what they flush down the toilet.

It's a message the city engineer drives home every chance he gets, but Thomas says it's especially important during the late winter and early spring when the city is prone to flooding, as it did this past spring. Thomas says the presence of foreign items ranging from sanitary napkins to kitty litter floating in the water works to impede the cleanup process, not to mention being a potential health hazard.

"Residents have to realize we're in a potential flood zone and if the system backs up, nobody wants to see these objects floating by," he says. "It just makes a bad situation worse."

Thomas is also a member of a committee of the Canadian Waste Water Association trying to drive home the message household plumbing is part of the municipal sewer network and the only things that belong are the three P's: pee, poo, and (toilet) paper.

"It's far from being a problem that's unique to Fredericton," he says. "Every municipality in the country is dealing with the problem."

Thomas says many people seem to have the attitude that when they flush something down the toilet, "it is no longer their problem." They may also think their actions are harmless, but he says nothing could be further from the truth.

Many products will wrap around the pump at the lift station and can cause damage to the machinery. Fredericton, like most municipalities in the country, is currently absorbing all the cost, but Thomas says that isn't sustainable over the long term. He says these products can cause blockages in sanitary sewer service connections, mains, and pumping stations.

"Keeping these products out of the system in the first place is the cheapest fix and that's why we have such an extensive education effort," Neil says.

He says residents may be under the impression such products as sanitary napkins, tampons, disposable diapers, personal wipes, and condoms can be handled by the system, but that's simply not the case.

However, he says other than appealing to people to change their flushing

habits, there's little municipalities can do. Once an unwanted item enters the sanitary sewer system, there's no way to determine who is responsible for putting it there.

Neil says the list of items that shouldn't be flushed includes houseplant leaves and clippings, silt or mud, rags, human or animal hair; tea bags, coffee

grounds or filters, cooking grease or animal grease, cigarette or cigar butts, kitty litter, solvents and paint, cotton swabs, dental floss, or medication. Household hazardous waste such as motor oil, windshield washer fluid, paints, pesticides, and household cleaning products also make the list.

Thomas says the city offers free house calls to provide a maintenance check on sanitary sewer service connections.

"We're willing to go the extra mile to work with residents to ensure they are aware of the impact their habits can have on our operation."



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Upcoming MPWWA training

The following courses are being offered in Moncton in August:

Aug. 22: Water Distribution, AWWS
 Aug. 20: Water Treatment, AWWS
 Aug. 22: Motor Controls and VFDs, Sansom

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April 2019	April 12, 2019	April 19, 2019
July 2019	July 12, 2019	July 19, 2019
November 2019	October 11, 2019	October 18, 2019

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Kevin McLean, Annapolis Royal, N.S.
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Scott Smith, Minesing, Ont.
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Dave Steele, Quispamsis, N.B.
Teddy Stevens, New Glasgow, N.S.
Sean Sullivan, Richibucto, N.B.
Kelly Terry, Truro, N.S.
MacKenzie Turner, Saint John, N.B.
Ernest Walters, Atholville, N.B.
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Call for presentations

The 40th Annual MPWWA Training Seminar will be held at the Marriott Harbourfront Hotel in Halifax, N.S. from April 19 to 22, 2020.

The Maritime Provinces Water and Wastewater Association is now accepting submissions for workshop presentations. The theme for the 40th Annual Training Seminar is: Growing Our Industry: Environment, Technology, Your Future. The MPWWA is accepting abstract submissions for all topics related to water and wastewater that meet

with the theme.

Presentations shall be one hour in length, approximately 45 minutes for the core presentation with 15 minutes to accommodate questions from the delegates.

Abstracts must be submitted by Oct. 5, 2019. Abstracts may be submitted electronically in Microsoft Word format. Make all submissions to the attention of: Jerry Villard, Chair, MPWWA, jvillard@townofstratford.ca, 902-393-6281, 234 Shakespeare Drive, Stratford, PE, C1B 2V8, Attention: Jerry Villard.

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Climate emergency demands better use of data

Severe weather, rising sea levels demand better approach to infrastructure

BY CHRIS BENJAMIN

Halifax city councillor Richard Zurawski first got involved with the Halifax Water Commission, where he sits on the board of directors, because of climate change.

“Water is a huge part of the health of a city and we’ve got a climate crisis, catastrophe, emergency—whichever term you want to use—affecting water with increasingly severe impacts,” he says. “We’ve had drought here five of the past seven years and we have massive downpours, almost tropical in nature.”

Across Canada our climate is warming at double the average global rate, which moved the federal government to pass a (non-binding) motion declaring a national climate emergency on June 17. Minister of Environment and Climate Change Catherine McKenna stated in her response that Canada needs to do much more in “pursuing efforts to keep global warming below 1.5 degrees Celsius.”

Data indicates the greatest warming in summer may happen here—meaning a decline in surface water, threatening our drinking-water quality.

The emergency declaration is essentially a symbolic gesture, but symbols can be powerful. Professionals responsible for infrastructure across Canada know how serious the threat is, and that their work has already been drastically affected.

A May report from McKenna’s department, Fisheries and Oceans, Natural Resources and university researchers, called Canada’s Changing Climate, notes that our average annual temperature has warmed by 1.7 degrees Celsius since 1948, and predicts a further increase of between 1.8 (assuming carbon emissions are peaking now) and 6.3 degrees by 2100.

Even the most conservative expected impacts are severe. We’re experiencing more winter precipitation in all regions. In the Maritimes, water professionals worry about runoff flooding when rain hits ice, which can also increase pollution levels. Warmer weather also means more parasites and other contaminants.

In the summer, drought is a concern, even in our temperate climate. The current once-in-20-year high temperature will occur every two to five years. Summer water supply shortages are a risk.

The spring thaw will come at least 10 days earlier by mid-century and the fall freeze will be at least five days later.

And we also need to consider the increase in sea levels, by as much as 2.5 metres by 2100, threatening saltwater contamination of our freshwater supply, especially for well users around the Bay of Fundy.

“I don’t think there’s a time we get together and don’t talk about [climate change],” Zurawski says of the Halifax Water Commission. “It’s on the minds of all our planners. Operators are affected—they have constituents complaining about flooding... crews out there all the time trying to mitigate impacts.”

A significant challenge for municipalities here is dealing with old infrastructure as realities change rapidly. Zurawski says data analysis is crucial, and it’s sometimes difficult to parse all the information, some of which is conflicting, depending on the source.

Trying to turn reports into good water policy and practices can seem “like trying to staple Jell-O to the wall,” he says. It’s a matter of constant review, and it



Increasingly severe flooding, paired with rising sea levels around the world, will require a different approach to water infrastructure and protection of such facilities.

takes time to turn information into plans.

A key lesson has been that old assumptions—like that flooding of rivers will be a once-a-century event—are no longer valid. The Halifax Water Commission must also consider entirely new problems, such as invasive species like algae, as temperatures warm.

“What was a dominant factor in 1980 may in fact no longer be a dominant factor. Rainfall may never have been an issue.”

At the same time, the amount of information managers and operators can access “is growing in leaps and bounds,” and it is in constant flux. “It’s a dynamic equilibrium,” Zurawski says.

Dr. Bu Lam, the director of the Canadian Municipal Water Consortium for the Canadian Water Network, says the ability to properly manage data is one of the key tools for water managers and plant operators in a changing climate. The CWN has been working with the Federation of Canadian Municipalities and Public Sector Digest, researching infrastructure vulnerability due to climate change.

“We are seeing big improvements in analytical instrumentation, our ability to measure,” Lam says. But of perhaps even greater importance is a shifting mindset, from being failsafe to accepting that extreme conditions and weather surprises will take systems past their limit, especially if the infrastructure is decades or over a century old. Accepting that, the question becomes, “how do we design our systems so that we are able to fail safely?”

Failing safely means, for one, rebounding quickly. It also involves identifying where the areas of risk tolerance exist in a water management system. For example, a street could flood, but if it does so without health or safety implications, Lam says that is failing safely.

It’s a completely different mindset as risks will shift constantly. “You can’t predict what the extreme

event is going to be, but you can build redundancy to withstand failures.”

Bernadette Conant, the CEO of the Canadian Water Network, echoes that sentiment. “You can’t judge anything in the future by the past anymore. We now assume ‘when’ rather than ‘if.’”

Under that mindset, Lam says it becomes crucial to get to know your water system, its age, its strengths, its vulnerabilities, its overall performance, what pressures it’s under, where it’s outdated and what portions need to be retrofitted and replaced. The danger is layering the uncertainty of climate change atop the uncertainty about your system.

He also recommends being informed about other municipal water systems and benchmarking them, as well as paying close attention to extreme weather events elsewhere, and how resilient water systems are to them.

“Understand how you would handle an event like that in your area. Is there something you can learn from another municipality that has done a good job?”

Conant stresses that the cost of sensors—to measure water pressure, volume of storm water, velocity, and flood levels around downtown buildings, for example—has “been plunging. This allows smaller systems to improve their degree of knowledge of their system, making it more accurate and efficient.”

Ultimately though, she says data must be applied well to make the technology beneficial, stressing governance and investment in the changes needed to prepare for climate change.

That’s the same challenge Richard Zurawski speaks of, the abundance of information and the need to make sense of it in a local context.

As Lam puts it, “Local context dictates risk. If your risk is not having enough information, you need to improve asset management, using different tools to know systems and determine where to invest.”

Clean water now a reality in Pouch Cove

Mayor Wall attributes community's success in securing new treatment to doing the homework

BY ANDY WALKER

Joedy Wall admits he still has trouble believing the quality of water that's now coming out of his tap.

"It is just such a joy. That's the only way I can describe it, just pure joy," says Wall, mayor of Pouch Cove, NL. It's now a little more than three months after a new water filtration plant began operating in his town of 1,866 people.

The plant, which carried a price of just under \$4 million, provides multimedia filtration (anthracite and sand) with a five-micron cartridge filter, nano filtration, UV disinfection, C₂ gas disinfection and soda ash pH adjustment.

It replaced a system installed in the 1970s that came with more than its share of problems throughout its shelf life. Residents of the community, located on the northeast Avon Peninsula, had grown use to water that was discoloured. Boil water advisories were common.

"The problem varied with the time of year," Wall says. "In the winter it usually wasn't that bad, but when the water in the river began to melt and the rains came, it certainly got worse."

It's an issue Wall heard time and again on the election trail when he ran for mayor in 2013 and at its first meeting, the new council decided to form a subcommittee to make improving the water system the top priority. "We wanted to make a tangible change for the town. You don't realize how much you depend on clean water until it's not there."

When they met with provincial officials, they were told the first priority was to plug the leaks in the water system. "We are a town of approximately 2,000 people and we were using water at the rate of a municipality of 10,000 people."

Wall says the town did receive approximately \$900,000 in exploratory funding, which was used to repair the leaks and to visit water utilities across Newfoundland and Labrador facing similar challenges and finding solutions. The leaks were fixed, and the system went from pumping 600 gallons per minute to 180 to 200 gallons per minute, which he described as the normal level for a system of its size.

"We really did our homework and we didn't go to the federal and provincial governments with our hand out. We went with a plan to fix the problem," says Wall, who is a life-long resident of the community.

Wall says he was fortunate the residents of his community understood from the outset this would not be a short-term fix. He says the goal from day one was to put in place a system that would serve the town's needs for years to come and be easily upgraded to allow for future growth.

The community issued a request for proposals and the top three companies were invited to the community to make their case. The winner was SNC Lavalin, with Filtrum Construction, a Quebec company that specializes in the installation of drinking water and wastewater systems. Filtrum oversaw the installation.

Wall says the construction process included an expansion to the chlorination plant to handle the infrastructure for the filtration system, plus installation of a water tower holding 220,000 gallons. That part of the project took some time, as the tower was constructed and tested for leaks in Quebec before being dismantled and transported to Pouch Cove to be re-assembled.

Wall says having clean water is now starting to pay economic dividends for the town. Despite having lower land prices than much of the northeast Avalon area, he says

there's little in the way of development throughout his first five years as mayor.

That's now starting to change. "Developers are coming to us now with proposals and I am personally very excited as to what the future holds for our community going forward."

The mayor says he and all council want to see the community proper and having infrastructure in place is a vital component to development. He says anybody building a house or business previously in the community was looking at thousands of extra dollars putting in a filtration system, an expense that's no longer necessary.

The past five years meant countless meetings and time away from his family helping to make the filtration system a reality. However, Wall says, "Every minute has been worth it." His son turned 20 this year and never knew what it was like to turn on a tap and get a glass of clean water until this year.

Wall also has advice for any other communities facing a similar challenge: do your homework. He says municipalities must be prepared to educate themselves on the problem and possible solutions, and have a plan in place if they expect to be taken seriously by the senior levels of government.

He also advises municipal leaders to ensure their residents know there's no such thing as a quick fix. "You're looking at years, not months."

The federal government contributed \$1,427,413 to this project, while the province provided \$2,426,988. "We have an annual budget of \$1.9 million. There's no way we could finance a multi-million dollar project ourselves," Wall says.

Comment period now closed for proposed new standard

Proposal would make greenfield developments less prone to flooding

BY ANDY WALKER

The Canadian Standards Association has now closed the public consultation period for its new standard on flood resilient design of new residential communities.

The regulations will pertain only to Greenfield development or planned communities on previously undeveloped land. The standard was released in late May and follows a call for a national standard in a 2017 study conducted by the Intact Centre on Climate Adaptation at the University of Waterloo.

Under the proposed standard, new guidelines would apply to detached homes, semi-detached homes, row houses (including stacked and back-to-back townhomes), mixed-use residential development (residential, small commercial, and institutional use), garages (attached and detached), and non-habitable accessory buildings (e.g., porches, gazebos, etc.) located on residential lots.

The University of Waterloo study indicates insurance payouts for catastrophic losses in Canada exceeded \$1-billion-per-year between 2009 and 2016. The standard pertains to design for resilience to address extreme weather events and operational uncertainties; storm sewer system design (minor drainage system considerations); street design (major overland drainage system considerations); sanitary sewer design (wastewater drainage system considerations); wastewater pumping station design; and considerations for preservation of natural infrastructure and low impact development measures.

The plan is designed to address several hazards, including river flooding or the excess of stream flow in a watercourse, such that land outside the normal banks is submerged or inundated. It can be caused by extreme rainfall or snowmelt, or physical conditions (such as ice jams and undersized watercourse crossings) associated with a watercourse.

It also deals with overland flooding that occurs when runoff water flows from the streets onto properties causing flood damages, storm and sanitary sewer surcharge, and drainage system failures like inlet, ice, and debris blockages.

This standard is not intended to cover flood-resiliency considerations as they relate to existing development, infill, intensification, or re-development. The policy is also not designed to deal with such flood hazards as a sea level rise, storm surges, unique flood hazards (i.e. dam failures) or flood risk specific to alluvial fans.

While the proposed standard would be national if adopted, the announcement from the Canadian Standards Association notes the application may be insufficient in areas with permafrost, such as Yukon, Northwest Territories, and Nunavut, as well as in areas subject to coastal and lake flooding, where sea level rise and storm surges pose additional flood risk.

Local jurisdictions might have criteria or requirements beyond what is provided in this standard. If local jurisdiction requirements are more stringent than that required by this standard, the more stringent requirement shall take precedence.

Mandatory metering making Stratford more sustainable

BY ANDY WALKER

As P.E.I.'s largest town approaches the first anniversary of moving to mandatory water meters for its 2,700 customers, Jeremy Crosby terms the move a success.

"We have just a handful of people who don't have meters and we're taking steps to bring them into the system now," says Crosby, the manager of infrastructure for the town.

He says the move to universal water meter installation in April 2018 was part of the town's effort to become a more sustainable community. While the town was expecting a slight decline in water usage, he says the decline has been steeper than town officials expected.

Crosby says the meter used is extremely sensitive and many customers have detected leaks in their home water system they would have missed otherwise.

He says the input from residents is mostly positive, adding, "It's making people aware of just how much water they're using."

The system uses a base rate for a 5/8" meter (most residential water meters are this size) of \$30.16 per quarter and the sewer base rate is \$44.28 per quarter. The water usage rate is \$0.8679 per cubic meter and \$1.2744 per cubic meter for sewer usage, for a total of \$2.1423 per cubic meter of water measured through the individual meter.

Crosby says he believes mandatory water meters will likely soon become a requirement for municipalities to access federal and provincial infrastructure funding for water systems.

"It's definitely the way things are moving as far as I'm concerned, and we're certainly pleased with the way it's working out in Stratford."

Auction reaches milestone

In the 10 years since the inception of the annual charity auction, it has raised more than \$42,600 for a variety of local causes. This year's recipient, the Boys and Girls Club of Moncton, received a cheque for \$2,827.

"The mission of the Boys and Girls Club of Moncton is to provide a safe, supportive place where children and youth can experience new opportunities, overcome barriers, build positive relationships, and develop confidence and skills for life," says Rebecca Campbell.

In support of the auction, board members received 87 donated items. The value of the donated items exceeded \$5,500. There were

also 104 MPPWA members registered as bidders and income for the actions was \$2,552.

The Raffle Draw held at the "Stay to the End Luncheon" included The Rock Panini Grill (value of \$120) and a Mastercraft Socket set (value of \$140). This also raised \$275 for the charity. Greatario once again donated back \$1 for each (\$272) returned lanyard. All combined, the total amount raised was \$3,099.

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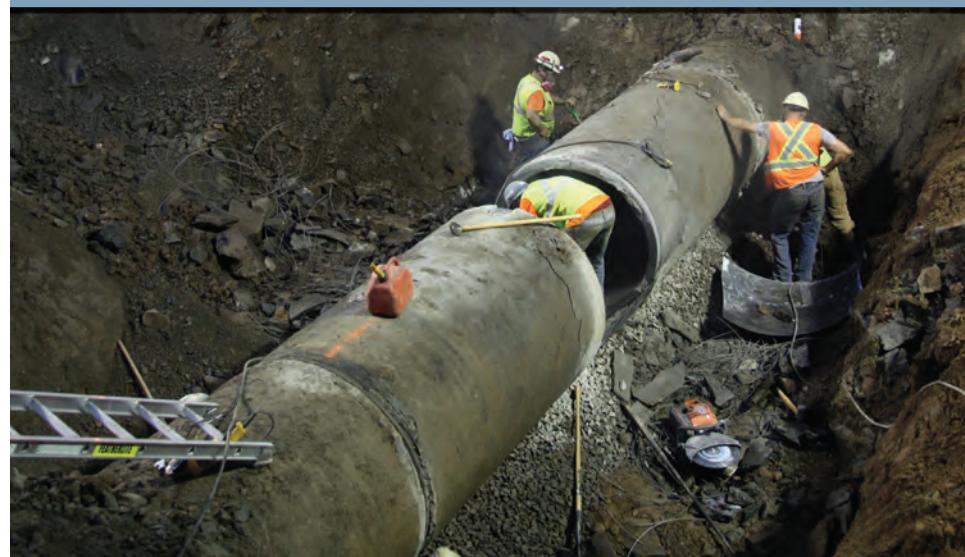
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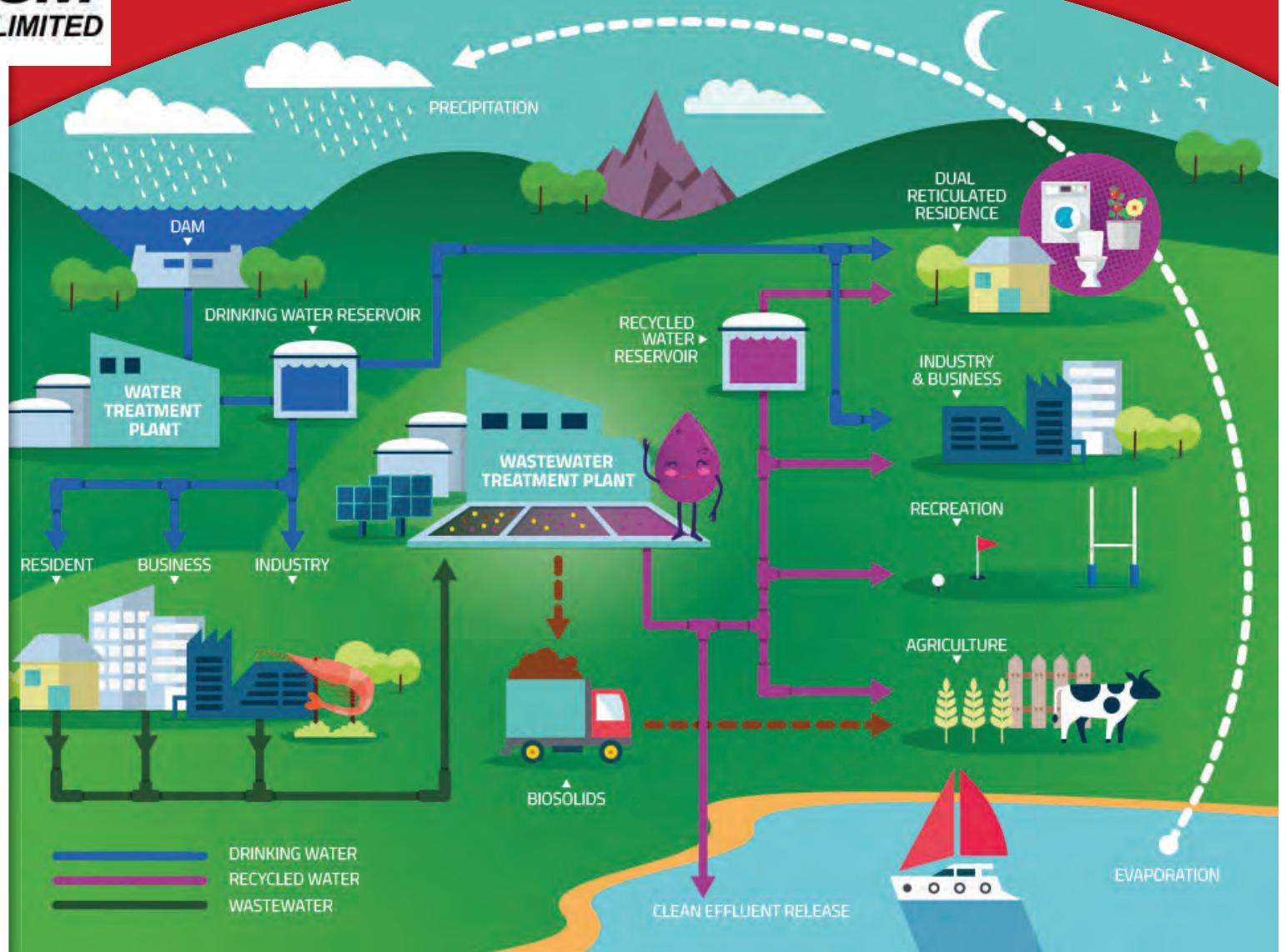


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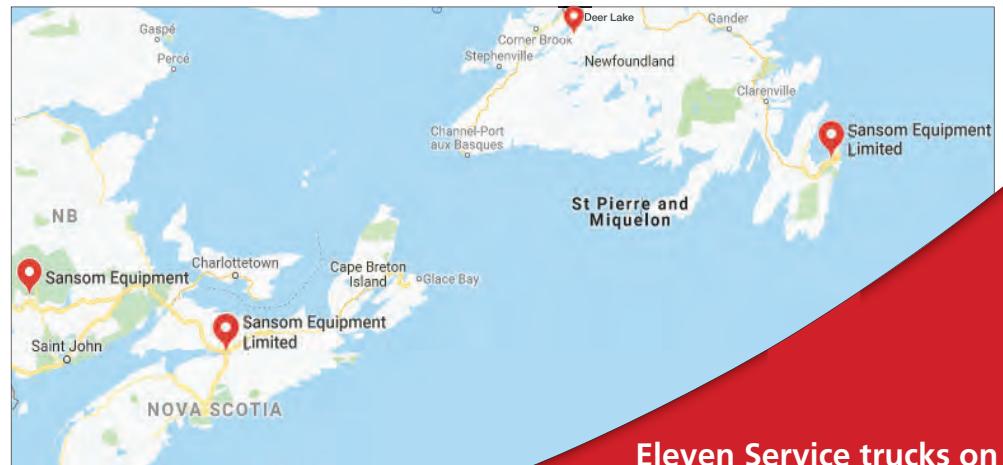
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