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THE OFFICIAL PUBLICATION OF THE ATLANTIC CANADA WATER AND WASTEWATER ASSOCIATION



2017 ACWWA Conference Charlottetown, PEI

RECAP

INSIDE:

- The Not-So-Dry History of the Saint John Water System
- ACWWA Technical Committee's YouTube Channel

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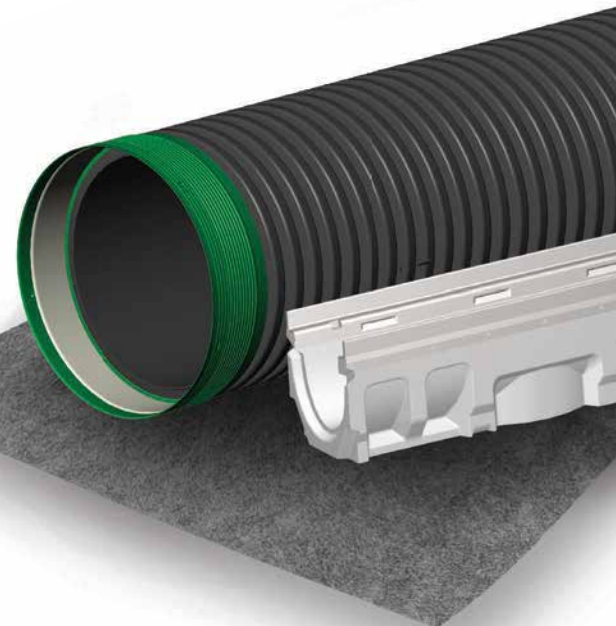
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TABLE of CONTENTS

FEATURES

| | |
|---|----|
| 2017 Annual Conference in Charlottetown: Highlights | 15 |
| Our 2017 Award Winners | 21 |
| Save the Date: 2018 ACWWA Annual Conference in Sydney | 24 |
| Fresh Ideas Winner | 25 |
| The Not-So-Dry History of the Saint John Water System | 26 |
| Help Us Meet Your Educational Needs | 28 |
| Archived Webinars Available | 28 |
| Back to Fundamentals | 29 |
| WEF Marketing Resources Webcast | 29 |
| ACWWA Technical Committee YouTube Channel | 30 |

DEPARTMENTS

| | |
|--|----|
| Message From the Chair | 6 |
| AWWA Director's Report | 8 |
| WEF Delegate's Report | 10 |
| Membership Corner | 11 |
| ABEA News | 13 |
| Tapped In | 30 |
| News & Notes | 33 |
| Reach Our Advertisers | 34 |



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Another successful conference


Welcome to the Winter edition of *Go With the Flow!* As recently appointed Chair

of our Association, I am looking forward to serving our membership and working with my fellow Board

of Directors to continue providing value to our membership in the water industry. My history with the Association has included roles with the Education Committee, 2010 Conference Committee, Magazine Chair and, most recently, Membership Director. If you haven't already done so, I encourage you to visit our webpage (www.acwwa.ca) and take a look out our Board Structure and Committees. If you are interested to know more about how the Association operates and what work we do, please do not hesitate to contact me (amyw@cbcl.ca) or any of the Directors. Contact information can be found on the webpage.

Congratulations to Richard McEwen and his committee for organizing another fantastic Fall Conference. Between the technical sessions, food, entertaining, and general camaraderie, the conference was a success! One of the highlights of the conference was the Town Hall discussion on lead, hosted by our Government Relations Committee. We recognize the interest from our utility members to have opportunities to discuss regulatory issues. Stay tuned as the Government Relations Committee continues develop these opportunities, and do not hesitate to contact Director Mark Butler (mbutler@dillon.ca) with any comments or suggestions.

Preparations are already in the works for next year's conference in Sydney, NS. This will be the first time we have held our conference there and organizers Greg and Matt are in full swing with lots of fun ideas!

Looking forward to hearing from you and your ideas over my term as Chair! 



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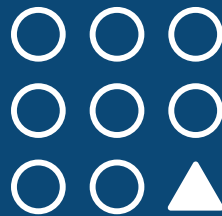
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ACWWA Annual Conference was a tremendous success!

I am very pleased to have had the opportunity to attend our Annual Conference in Charlottetown, PEI. I was really impressed by the technical content, the great networking opportunities, and really the overall feeling of the conference. The conference drew approximately 330 attendees from all parts of water industry in Atlantic Canada. A big thank you to our conference volunteers and to Clara for keeping us on track.

At the conference, our Section welcomed Mr. Kevin Bergschneider, AWWA Vice President. Kevin is from Denver, Colorado and is a member of the Rocky Mountain Section of AWWA. At the conference, Kevin had the

opportunity to golf, meet with a broad cross-section of our members, and attend many of our conference events. By the end of our conference, he had nothing but positive comments about our Section and, of course, PEI!

One highlight of the conference is the Annual General Meeting. During the meeting, Mike Chaulk ended his very successful term as Section Chair and we welcomed Amy Winchester as our ACWWA Chair for 2017-18. Amy is a hard-working Process Engineer who works out of the Saint John office for CBCL, Ltd. Based on initial discussions, I am very excited about the direction and plans that Amy has for our Section.

A few weeks after the conference, Amy, Jennie Rand (Vice Chair), Clara, and I traveled to Portsmouth, NH for the AWWA Regional Meeting of the Section Officers (RMSO). The RMSO allowed our team to compare notes with other AWWA sections, and I believe that we generated some great ideas on the AWWA One Scholarship, Diversity Planning for our Section, and new ideas for our annual conference.

As we head in to Christmas and the holidays, have a safe and warm season with family and friends. Take time to appreciate how fortunate we are to work in the wonderful profession of water! ☺



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Big shoes to fill

My first order of business as the new WEF Delegate is to recognize my predecessor Gary Chew. Gary has dedicated more than 20 years to the ACWWA, serving many roles within the organization with a great deal of time volunteering many evenings and weekends as the WEF Delegate. Gary has also served as the Chairperson of the WEF Canadian Affairs Council. Gary and I was one of several people instrumental in getting a signed MOU for WEF in Canada as well as having WEF in the US recognize they need to consider “Canadianizing” literature and media materials in both official languages. Gary told me his greatest accomplishment was being one of the people who hired Clara Shea as the Executive Director of the ACWWA. I am fortunate to have known Gary for approximately 25 years and I am currently working with Gary for the same company. I have big shoes




WEF 2017–18 Board of Trustees (from L to R): Treasurer Jamie Eichenberger, Denver, CO; Ifetayo Venner, Tampa, FL; Vice-President Jackie Jerrell, Charlotte, NC; Peter Vanrolleghem, Quebec City, Canada; President Jenny Hartfelder, Denver, CO; Mark Poling, Portland, OR; President-Elect Tom Kunetz, Chicago, IL; Lynn Broadus, Minneapolis, MN; Joan Hawley, Muskego, WI; Past President Rick Warner, Reno, NV.; Secretary & Executive Director Eileen O'Neill, Alexandria, VA; and Claus Homann, Aarhus, Denmark.

to fill and will do my best to represent the ACWWA at the WEF functions in Canada and the US. I am looking forward to the challenge; please let me know if I can answer any questions you may have about WEF.

Please see the following content from the WEF Leader Newsletter – October 2017 issue.

The Water Environment Federation Announces its 2017–2018 Board of Trustees

During a ceremony held at WEFTEC on Tuesday, Oct 3, 2017, the WEF “gavel of leadership” was passed from president Rick Warner (Reno, Nev.) to incoming president Jenny Hartfelder (Denver, Colo.). Hartfelder is currently a vice president with MWH, now part of Stantec, and serves as a national campaign manager out of Denver, Colorado. In this role, she provides strategic planning and leadership for the business development activities for the water sector across the United States. She also serves as a project manager and design engineer on numerous water and wastewater projects including utility privatization, master plans, preliminary and detailed designs, and engineering services during construction.

In addition to Hartfelder and Warner, the complete WEF 2017–2018 Board of Trustees is listed above. 

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Winter update

Welcome new members!

A warm welcome to our new members who have joined over the last few months:

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| Kyle Rauch | CWRS Dalhousie | AWWA |
| Omar El Ajou | Dalhousie University | AWWA |
| Toni Stanhope | | AWWA |
| Brad Carrigan | Falmouth Water Utility | AWWA |
| Grant Harrigan | City of Saint John Water & Sewerage Services | AWWA |
| John Burbine | Municipality of Cumberland County | AWWA |
| Rick Whelan | Town of Wabana (Municipality) | AWWA |
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| Logan Hunter | | AWWA |
| Stephen Fownes | Village of Baddeck | AWWA |
| Ashley Kearley | | AWWA |
| Jason Leclerc | | AWWA |
| Tony Whalen | Amec Foster Wheeler | AWWA |
| Kimberly Looyenga | Town of Middleton | AWWA |
| Jesse Campbell | Charlottetown Water & Sewer Utility | AWWA |
| Mark Buckingham | City of Miramichi | AWWA |
| Luc Richard | | AWWA |
| Zachary Bannister | Sansom | WEF |
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Did you know?

AWWA has a promotion until December 31 where students can join AWWA for FREE! You can join online at www.awwa.org/join. Use the code GIFT.

By referring a member, you could also be our next lucky winner of a \$50 gift card of your choice.

Congratulations to **Darren Row** of City of Miramichi, who was the lucky winner of a \$50 gift card of his choice for referring a new member. 🎉



As of November 6, 2017:
 Total AWWA members: **429**
 Total WEF members: **107**

2017 ACWWA photo contest winners

Congratulations to this year's photo contest winners!



TOP PRIZE: Brian Moreau (CBCL)



2ND PLACE: Wendy Krkosek (Halifax Water)



3RD PLACE: Matt Balcombe (CBCL)

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Our year in review

With the 2017 ACWWA Conference (Charlottetown) in the rearview mirror, we would like to share our year in review...

2017 Annual ACWWA Conference

Golf on Sunday was held at the Glasgow Hills Golf club – we had 66 participants. The weather cooperated and a good time was had by all. We would like to take this opportunity to thank our 65 members for their continued support, as well as our individual “Hole/Sand Trap” sponsors. They allow us to present a premiere event.

Monday saw us gathering at the Old Triangle for our Common Hospitality Event, where we were entertained by Raglan Road on the mainstage, and Norm Stewart and Sheila MacKenzie on the upper level.

The Tuesday morning Trade Show was the largest to date at 88 booths. We stayed the course of our “support

local” mandate and purchased PEI rum cakes, supplied by JJ Stewart, to share with the Trade Show attendees.

We look forward to hosting another successful event in 2018: September 16–19 in Sydney, NS. The planning is underway.

ABEA Academic Scholarships

This past year we supported five students with our ABEA Scholarship: Jade Hickey (Ashley Hickey – Aqua Data Atlantic), Ryan Lowe (Steve Lowe – Shaw Resources), Kyle Price (Dean Price – City of Saint John), Luc Richard (Todd Richard – Town of Windsor), and Jarod Fougere (Chris Fougere – formerly of Xylem).

We are well into the 2017/18 academic year, so now is the time to plan for the April deadline. We support four x \$1,000 scholarships annually. See the application process on www.ABEA.biz.



Trade Show



Rum cakes



Golf gathering



Grant recipient Joe Keddy with ABEA Director Catherine Cameron



Hospitality Event at Old Triangle

ABEA Annual Attendance Grant

For the second year, we supported an attendee through our “Annual ACWWA Attendance Grant.” Joe Keddy (the Village of Canning) was the recipient.

This is an opportunity for those affected by economic challenges, but see the value in attending the ACWWA Conference, to get a helping hand. The application can be found at www.ABEA.biz.

2017/18 ABEA Board:

- Past-President – Steve Philpott
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RECAP

2017 ACWWA ANNUAL CONFERENCE HIGHLIGHTS

Charlottetown, PEI

By Richard MacEwen, FEC, P.Eng.

The 70th ACWWA Annual Conference was held at the Prince Edward Island Convention Center in Charlottetown, between October 15 and 18, 2017. The theme for the conference was 'Serving Our Nation.' The technical program was filled with high-quality technical presentations. The program featured 42 technical presentations, a technical tour to water and wastewater treatment facilities, as well as a hands-on demonstration. Delegates, suppliers, and companions started the conference on Sunday by enjoying a round of golf at Glasgow Hills Resort and Golf Club. No rain showers were going to stop these golfers from having a great golf day. On Sunday evening, the Young Professional Mixer took place at the Merchant Man Fresh Seafood and Oyster Bar. Both young and mature professionals shared great stories and knowledge. Attendees then reconvened at the hotel for the Meet & Greet, where they were able to network with friends and colleagues, as well as partake in the Water Tower Building Competition, sponsored by Greatario.



There were also a few brave mainlanders who were ushered in as Honorary Islanders.

On Monday morning, the conference officially began with the Opening General Session,



which included the presentation of the George Fuller Award, Bedell Award, and Ira P. MacNab Award. The Keynote Speakers, Dr. Edward MacDonald and Dr. David Sabapathy, provided attendees with historical



and future perspectives on the importance of the water and wastewater services to the wellbeing of our nation. Monday afternoon saw a heated battle at the Top Ops Competition, with

Fredericton taking first place, followed by Moncton and Charlottetown. Early evening saw more than 30 attendees participate in the annual Water For People 5 km run/walk along the Charlottetown

Waterfront. Monday's activities ended with the ABEA Hospitality event at the Old Triangle, where many delegates, companions, and suppliers were showing off their dance moves while being entertained



by Raglan Road. Tuesday morning began with the Best of the Best Taste Test, where first place went to the Halifax Lake Major Water Supply Plant, second to City of Miramichi – Newcastle Distribution System, and third to Saint John Water West Side. The rest of the morning was followed by the ABEA Tradeshow, where suppliers were able to showcase many of their products and network with attendees. The tradeshow was one of the largest, with 88 booths. Tuesday wrapped up with the Down East Feast, where entertainment was provided by some of PEI's finest entertainers including The Singing Strings, JJ and Darla Chaisson, Meaghan Blanchard and Ten Strings and a Goat Skin. The conference came to a close on Wednesday with the Awards Breakfast. (See details about this year's awards recipients on page 21.) The Companion Program once again had no shortage of activities. They were able to express their artistic abilities at the East Coast Art Party. Companions were also educated in the rich and colorful history of rum running on PEI.

We would like to thank all who were able to join us in Charlottetown for the conference. It was the conference planning committee's pleasure to host you for a wonderful ACWWA Annual Conference.

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OUR 2017 AWARD WINNERS



CONTRIBUTION AWARD

Winner 1

Betty Pryor
Sustainability Projects Officer,
City of Charlottetown

Betty has been with the Utility since 1995. She started as a technician, followed by a Water Projects Officer, and is now a Sustainability Projects Officer with a broader portfolio across the corporation. Betty has held a seat on the Education Committee for several years and has been a valuable and knowledgeable resource for committee members and chairs during her lengthy tenure. She has also been on many conference planning committees, this year taking on a large role of overseeing registration and the conference brochure in Charlottetown. She is a dedicated worker for the City and thoroughly enjoys volunteering for ACWWA, while we truly appreciate her hard work and commitment. Outside of the industry, Betty loves to cook and bake, eat and drink, and enjoys time in her garden and pickling.

Winner 2

Steve Gregory
Vice President, Greatario

Steve started with Greatario in 1989 and has become very well known in the water industry in Atlantic Canada and Ontario. Greatario built its first

tank on the east coast in 1991 for Shubenacadie Band in Indian Brook, NS, followed by its first tank in NB in Drummond (1998), then its first tank in NL in Stephenville (2000), and its first tank in PEI in Stratford (2001). East coast is Steve's home away from home.

For many years, Greatario has supported the conference through sponsorship, and also donates \$1 to Water For People for every lanyard returned at the conference.

SILENT HERO AWARD

Silent Hero 1

Bruce King
Rothesay Utility Coordinator,
Town of Rothesay

Bruce came to the Town of Rothesay in April of 2007 so 2017 is his 10th anniversary year.

Bruce came to us from the Town of St. Andrews, where he was chief operator for their water and sewer utility. Under Bruce's management, St. Andrews built and commissioned a brand-new water treatment facility and made significant improvements to their sewer treatment system. In Rothesay, Bruce's first task was to oversee a major refit and expansion of the Town's G.E. Zeeweed microfiltration water treatment plant, the first such plant in Canada. Bruce has spent several years now working



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on a multi-million-dollar upgrade to Rothesay's sewer collection and treatment system. Bruce is a very dedicated, responsible, and reliable utility manager. Rothesay drinking water is of the highest quality thanks to his continued efforts – which brought about a second major upgrade of our facility, the second in his tenure with the Town, in 2014. Bruce has established a great working rapport with utility regulating bodies within the federal and provincial governments. His lengthy experience in the industry, as well as his continued diligence when it comes to monitoring and reporting, has greatly benefited the Town by establishing a culture of trust with regulators that Rothesay is always going to do things “the right way.” The Town is very lucky to have someone as devoted to, and as conscientious about, his job as Bruce King is. People don't often think about service delivery with respect to water and sewer and that is what makes Bruce the quintessential Silent Hero.

Silent Hero 2

Peter Brown

Lead Operator, TransAqua

TransAqua's 5'6" diameter 1.1-kilometre tunnel transporting wastewater from the cities of Moncton and Dieppe had not been inspected in more than 15 years. A quote for \$44,000 was received from an Ontario company that specializes in this type of inspection. Peter used an innovative approach – by paying \$840 for a catamaran-type boat and equipped it with a GoPro camera, waterproof LED lights, a rechargeable battery, two stainless steel cords for drag to slow the boat relative to the speed of the wastewater, and a top-mount bracket for surface delivery and retrieval. More than five kilometres of the 31-kilometre inventory of TransAqua's sewer collector pipes were inspected in 2016. The tunnel was not previously insured, and is now insured for \$12M. TransAqua now has a formal pipe inspection tool and program

that will save the ratepayers a lot of money compared to using the traditional methods of sewer pipe video inspection units. Peter worked closely with his personnel to develop ideas and run trials in the effluent pipe prior to inspecting the tunnel, bringing the team together and accepting input. The City of Moncton has asked TransAqua to use this boat to inspect their larger sewers, since they had the same issues that can now be addressed. The tunnel is the only sewer collector from Moncton and Dieppe to Riverview that crosses under the Petitcodiac River, and the structural integrity of this tunnel is paramount. The video shows us that we currently have no reason for concern, which is crucial for this community.

PROJECT OF THE YEAR

City of Moncton

The existing combined sewer crossed diagonally under CN tracks and onto two different properties. The development of these properties was hindered because of this sewer line. Capacity was also limited to the existing uses along the alignment. There also were some limitations with the existing combined sewer on Albert Street.

This project is a Downtown Service Improvement project that consists primarily in combined sewer separation and sewer realignment to gain sewer capacity and to permit further development in our downtown area. The realignment of the sewers within Albert Street takes, for the most part, the sewer back into the street right-of-way.

This project includes:

- 580 m of concrete storm sewer pipe (750 mm to 1,500 mm) at depths of up to 7.2 m (trenching method)
- 96 m of HDPE storm sewer pipe (750 mm) at depths of 3-4 m under CN tracks (trenchless method – Horizontal Directional Drilling)
- 600 m of PVC sanitary sewer pipe (300 mm) at depths of up to 6.4m (trenching method)
- 96 m of HDPE sanitary sewer pipe (300 mm) at depths of



- 3-4 m under CN tracks (trenchless method – Horizontal Directional Drilling)
- 445 m of PVC watermain installation and renewal (200 mm)
- 305 m of PVC transmission waterline renewal (500 mm)
- Full street reconstruction and parking restoration

This project was internally designed at the City of Moncton’s Design and Construction Branch. (Design Tech: John Nason; Sewer Modeling: Darryl Bonhower & Brian Harper; Project Engineer: Jacques Léger, Site inspection: Dan Ouellet.) Easements through private property were required and negotiated with some iteration to design and development planning, involving Engineering and Legal department staff. CN pipe crossing agreements application and permitting for Horizontal Directional Drilling (HDD) were also required under CN tracks within their right-of-way. Geotechnical work was completed by Stantec for the City and reviewed by GEMTEC for CN.

YOUNG PROFESSIONAL AWARD

Amina Stoddart
Research Engineer,
Dalhousie University

Dr. Stoddart was nominated as the Chair of the newly formed committee, Technical Knowledge, in 2016. Without precedence of previous committee activity, Amina has led the charge by recruiting committee members and initiating technical knowledge exchange programs for ACWWA members. In her short tenure, she has organized two very successful Lunch and Learn sessions, including one dedicated to *Responding to Health Canada’s New Manganese Guideline*, and another focused on *Managing Lead in Distribution Systems*. She has also launched a regular feature in the ACWWA magazine, *Go With the Flow*, called “Tapped In,” where relevant resources from AWWA and WEF are highlighted. Other contributions to ACWWA include several presentations as a student at our annual conference over the

past several years, and volunteering at various ACWWA functions and events. After completing her PhD earlier this year, Amina is currently a Research Engineer with the Centre for Water Resources Studies at Dalhousie University. She received her PhD in Civil Engineering and BEng in Biological Engineering from Dalhousie University. Her research focuses on the development and application of tools to understand and optimize biological drinking water treatment. Amina has contributed to several academic, government, and industry projects. She has co-authored 10 peer-reviewed journal articles and more than 20 conference proceedings. She is an active member of the drinking water treatment community; in addition to serving as Chair of the ACWWA Technical Knowledge Committee, she is a member of the AWWA Biological Treatment Committee and Biological Drinking Water Treatment Research Subcommittee.

This year’s Fuller Award winner:
Doug Brownrigg



This year’s Arthur Sidney Bedell Award winner:
Bing Chen



Congratulations to all of our award recipients for 2017! 



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Fresh Ideas winner

The Fresh Ideas program has been developed through AWWA's Manufacturers/Associates Council and the Young Professionals Committee. The top presentation selected from this group of presenters will be given the opportunity to compete in the Fresh Ideas poster competition at the AWWA Annual Conference and Exposition (ACE), representing the Young Professionals of ACWWA.

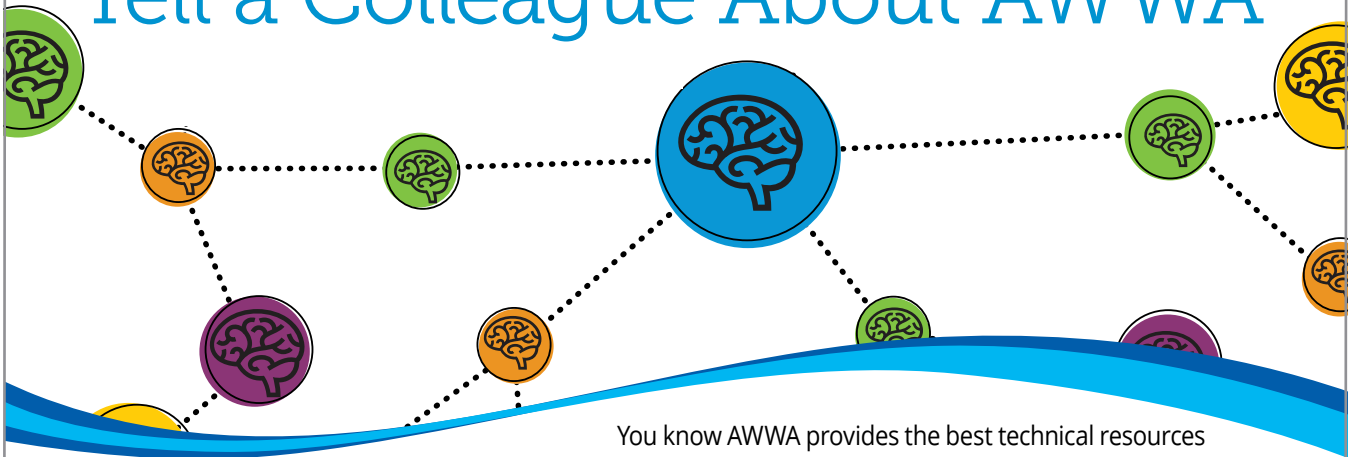


This year's winner was Dewey Dunnington (Dalhousie student). His presentation was titled, "Using Lake Sediment to Predict Future Treatment Challenges: A Case Study from Halifax."

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The Not-So-Dry HISTORY of the Saint John Water System

WE RECENTLY CAUGHT UP WITH PETER HANLON, A FORMER OPERATIONS ENGINEER WITH THE CITY OF SAINT JOHN'S WATER DEPARTMENT, TO TALK ABOUT A PRESENTATION HE GAVE TO A LOCAL HISTORICAL SOCIETY ON THE HISTORY OF THE OLDEST PUBLIC WATER SYSTEM IN BRITISH NORTH AMERICA (ACCORDING TO A MAGAZINE STORY FROM 1920). WITH THE "SAFE CLEAN DRINKING WATER PROJECT" CURRENTLY UNDERWAY IN SAINT JOHN, HE THOUGHT IT WOULD BE A GOOD TIME TO REVISIT OLD NOTES AND SHARE SOME OF THE BACKGROUND ON HOW THE SAINT JOHN WATER SYSTEM HAS EVOLVED OVER TIME. PETER HAS PULLED INFORMATION TOGETHER FROM ARCHIVED COLLECTIONS OF MAPS, REPORTS, DRAWINGS, AND DOCUMENTS DATING BACK INTO THE LATE 1700S. HERE IS SAINT JOHN'S STORY.

In the beginning, Saint Johners obtained their supplies of drinking and cooking water from wells, and their washing water from roofs. No house was considered complete without a hogshead or cistern for the roof water, and this was the case even long after the piping of the city. Many houses had wells, generally in cellars, and to these, pumps were attached, for delivery upstairs. When we consider the near proximity of pits for other purposes, it is easy to imagine how disease was spread and what a scourge Cholera became when it entered. The outhouse or privy had always been a luxury afforded only by the freeholder or house renter. For many city dwellers, the accumulation of human waste in pails and its disposal as 'night soil' in the streets or the harbour had been the common practice. As late as 1857, the Board of Health discovered

548 households in Saint John and Portland in which all excrement was still disposed of by the process of spreading it on the streets.

Wells such as Dole's well and Finn's well were in Union Street where Jones's Brewery used to be (roughly across from Prince Edward Square). The water at that time must have been of excellent quality, as the soil from which it came is an immense deposit of gravel and sand extending all the way up to King Street. The abundant yield of water here was, doubtless, why Robert Keltie's brewery, Melick's tannery, and Doherty's brewery were built there.

No fewer than three public wells existed in King's Square and one at the South Side of Queen's Square. There was a large brick well of circular plan, about 20 feet in diameter in the intersection of Duke and Sydney Streets, built in connection with the Gas Works nearby.

Perhaps the most historic well in the North End is that on the Millidge Estate on Rockland Road where the famous William Cobbett, when a soldier, stationed at Fort Howe, was said to have fallen in love with the young woman who, later, became his wife.

Residents of Strait Shore, had to carry water from a well in Main Street about fifty feet west of Sheriff Street, and when this went dry they moved over to Black Spring, which was North of Elm Street (near where the Thistle Curling Rink is today).

An abundant spring, however, was that immediately west of Saint Luke's Church, where water flowed constantly from a crevice in the limestone rock and drained the region of Douglas Avenue, including an old cemetery where is now Saint Peters Church. Possibly the drugs consumed by the tenants of this enclosure before their burial, had a medicinal effect on the water. A brewery derived its supply from this spring for many years.


Most of the population was dependent upon municipal wells maintained in each ward for the general use of the populace. Supplementary to these was a small army of water-carriers that had emerged to serve the needs of businesses and prosperous families unable to maintain their own wells.

These conditions proved the urgent need for a supply of clean, safe water. In the year 1825, a company obtained a Charter from the Legislature of New Brunswick to supply water to this city. Unfortunately, its capital stock was considered insufficient, and no works were undertaken. Instead, the company carried on a banking or money lending business for five or six years and then dissolved.

By the early 1830s, the opportunities offered by those prepared to pay for a continuous supply of fresh country water, coupled with the city's desperate need for massive quantities of water for street cleaning and fire-fighting purposes, persuaded a number of local capitalists, merchants, and

patricians alike that the situation provided fertile ground for a profitable venture. Early in 1832 they approached the legislature for incorporation as a joint stock company for the purpose of building a piped water system in the city.

The initial success of the water-company proposal was a function of the cholera epidemic of 1832. The epidemic, more than any other event in the early nineteenth century, produced a tendency toward change. The epidemic undoubtedly strengthened the resolve of the water-company promoters and added to the profit motive the satisfaction of creating an important benefit for the city. The proposal's success rested upon obtaining the Common Council's consent to its objectives, since the main thoroughfares of the city would have to be dug up in order to install the water mains. The Common Council agreed to the company's proposal. As a gesture of support and a guarantee of council participation in the company's deliberations, the city agreed to purchase 200 shares. As the cholera hysteria passed, in the winter of 1832 to 1833, so too did the initial enthusiasm for water systems.

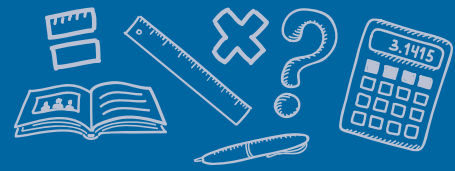
The idea languished until 1835 when, under the leadership of the mayor, the promoters reorganized the company. The city participated in the new venture with the purchase of 22 shares, sufficient to give it at least a nominal voice in the election of directors. None the less, although the council did not oppose the incorporation of the company, neither would it be drawn into the financial web the company was attempting to construct. In the autumn, the mayor proposed the council buy up the considerable block of unsubscribed stock. The council refused. Despite the presence of the mayor and recorder on the company directorate, common councils throughout the 1830s treated the company as a wholly private undertaking, the interests of which were frequently inimical to the public interest of the city. Despite serious financial difficulties, the company made considerable progress during its first three years. On the advice of American engineer Col. George Baldwin, a project was begun to transport water from Lily Lake to the city. Water flowed for the first time through the pipes in October 1838 or July 1837 (sources seem to conflict on date). 



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Help us meet your educational needs

By Kyle MacIntyre, P.Eng. – Director, Education

The ACWWA Education Committee is committed to providing high-quality continuing education to the water and wastewater industry, including operators, managers, consultants, regulators, and the general public. To meet the ever-changing needs of the industry, we are continually interested in receiving feedback or recommendations on the types and topics of courses you would like to see. On an annual basis, we offer our standard four-day and managerial courses, but also aim to provide innovative and new selections.

The education committee is composed of:

- Kyle MacIntyre, Dillon Consulting – Director
- Greg Campbell, CBRM – Chair
- Clara Shea, ACWWA – Executive
- Provincial Representatives:
 - Nova Scotia: Andrew Houlihan, Halifax Water and John Phalen, CBRM
 - New Brunswick: Danny Lanteigne

- New Brunswick: Natasha Horsman, Crandall Engineering
- Newfoundland: Darren Patey, Government of Newfoundland
- PEI: Betty Pryor, City of Charlottetown
- ABEA Rep: Cathy Cameron, AquaData

Several times a year, the committee meets to plan upcoming courses for the Atlantic provinces, and a significant amount of effort goes into each course. When interest is low, we must make the difficult decision to cancel that course, impacting our attendees, other members, the instructor, and the Education Committee.

To help us avoid this issue, we kindly ask that you send any and all course ideas to either Kyle MacIntyre (kmacintyre@dillon.ca) or Clara Shea (contact@acwwa.ca) to help us to continue providing a high-quality curriculum. We look forward to your response and hope we can continue to meet your educational needs in 2018! 🌊

Archived webinars available

Did you know?

ACWWA has recently partnered with the Illinois Section of the American Water Works Association (ISAWWA) to provide archived webinars.

ISAWWA records all its webinars and most are made available to ACWWA as Archived Webinars.

If you are an ACWWA member, you can watch the Archived Webinars for the low price of \$25 each (\$30 for non-members). Once you have registered, you may view the webinar as many times as you would like.

The Archived Webinars are available 24 hours a day, seven days a week, and you can start and stop them whenever you like.

ACWWA benefits from the purchase of each webinar. It's a great way to learn and help support our Section!



Visit our website at www.acwwa.ca/webinars-archived, or contact us at (902) 434-6002.

Welcome to the “Back to Fundamentals” department that will be published in this and forthcoming issues of the ACWWA periodical, “Go With the Flow” magazine. This department is intended to cover a broad range of fundamental water and wastewater topics that will be driven by you, the readers of this magazine. If you find a topic particularly interesting or confusing, most likely others will as well. So please forward your ideas for future columns to Kyle MacIntyre, P.Eng. (kmacintyre@dillon.ca, Dillon Consulting) and we will respond in future publications to your queries.


Understanding cBOD, BOD and COD

One of the most common guidelines and treatment targets in both municipal and industrial wastewater treatment facilities relates to the oxygen demand of its effluent. The oxygen demand of wastewater is the amount of oxygen consumed by biological processes within the liquid, over a set period of time. This number, typically expressed in mg/L or ppm, describes the effect the effluent will have on other living organisms in the receiving water, specifically how much of the available oxygen supply it will deplete. If the demand is too high when it is sent to the receiving body it can harm or kill the existing ecosystem, such as fish, mammals, and microorganisms.

There are three primary ways of expressing this pollutant, each describing the different makeup of oxygen demand and requiring different lab techniques to analyze.

- **BOD** – Biochemical oxygen demand is the amount of

dissolved oxygen necessary for aerobic organisms to break down organic matter. This is commonly expressed as BOD5, or the amount of oxygen consumed by aerobic organisms at 20°C over 5 days.

- **cBOD** – While BOD includes the oxidation of all carbons and nitrogen compounds, in carbonaceous biochemical oxygen demand testing a chemical inhibitor is added to kill nitrogen consuming bacteria, resulting in measuring strictly the oxidation of carbons. Similar to BOD, this test is usually completed over 5 days.
- **COD** – Chemical oxygen demand is the amount of oxygen consumed by chemical reactions (oxidation processes) within the water, with some exceptions such as aromatics. Its primary purpose is to quantify the amount of organic compounds in the water. Unlike BOD and cBOD, this test can be completed in as short as a few hours. 

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Presenters:

Jennifer Williams, WEF Staff Marketing Manager

Rahkia Nance, WEF Staff Digital Communications Manager

This webcast will present a guided tour through the newly developed Marketing Resources section of WEF’s MA Resource Center. Attendees will be provided with an overview of each resource section focusing on Marketing and Social Media Strategy and Building Brand Awareness, and the various tools contained within the section available for MA use.

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Responding to Health Canada’s new manganese guideline

On September 18, the ACWWA Technical Knowledge Committee hosted its second Lunch and Learn. Krysta Montreuil (Education and Outreach Coordinator, Nova Scotia Environment), Gavin Kennedy (Hydrogeologist, Nova Scotia Department of Natural Resources), and Mike Chaulk (Practice Lead – Water Treatment, CBCL Limited) gave talks on **manganese**.

Krysta, Gavin, and Mike talked in detail about all things manganese, including: proposed changes to the *Canadian Drinking Water Guideline* for manganese, effects the proposed changes to the Guideline will have on utilities, general water quality impacts of manganese, and treatment approaches for manganese.

Highlights from these talks include:

- **Proposed guideline changes**
The current Guideline addresses manganese through an aesthetic objective (AO) only. This AO is 0.050 mg/L. The proposed Guideline will address manganese through a new AO of 0.020 mg/L and a maximum acceptable concentration (MAC) of 0.120 mg/L.

Health Canada plans to implement the new Guideline in Fall 2017.

- **Treatment strategies**
The treatment strategies used to remove manganese from drinking water often depend on the source (i.e., surface water, municipal groundwater, or private/registered groundwater). Common treatment approaches include sequestration, greensand filtration, pre-oxidation (i.e., with air, chlorine, ozone, or

permanganate) with filtration, membrane treatment, and biological removal.

If you would like to view the recorded presentations, visit the Technical Knowledge Committee on YouTube: www.youtube.com/channel/UCVw28diBru2wBlhJXkkQbqw

Have topics that you would like to see highlighted by the ACWWA Technical Knowledge Committee?

Contact Committee Chair, Amina Stoddart, at amina.stoddart@dal.ca.

ACWWA Technical Committee YouTube channel

Did you know?

The ACWWA Technical Committee has created a YouTube page:

www.youtube.com/channel/UCVw28diBru2wBlhJXkkQbqw

We will be using this platform to share recorded Lunch and Learns and other resources with our membership.

Visit our page today to see what resources are available and to subscribe to our channel.



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Desalitech and Nexom win 2017 best employers to work for in the water & wastewater industry

By Ana Filipovic Windsor, Hunter Crown, LLC (ana@huntercrown.com)

Grafton, Wisconsin: Hunter Crown, a boutique Executive Search and Recruiting company, launched a new annual contest to recognize the best employers in the water and wastewater industry. Ten nominations were received from some of the most recognized and innovative in the industry. Due to the enthusiastic employee feedback from two companies in particular, the award was given to two impressive organizations: Desalitech in water and Nexom, in wastewater.

These companies had the highest percentage of their employees vote during the contest – 69% and 50%, respectively. They also received the highest scores for culture, growth, innovation, leadership, and collaboration, and had the most quality-based additional comments provided by employees. Hunter Crown officially congratulates Desalitech (www.desalitech.com) for winning the 2017 contest as the Best Employer in the Water Industry, and Nexom (www.nexom.com) for winning the 2017 contest as the Best Employer in the Wastewater Industry!


Here's what their employees had to say about these two companies:

“Desalitech is a close-knit group of skillful engineers & water treatment professionals that really strive to making the world a better place. Continually making advancements in one of the world's scarcest commodities - water - has really been a highlight in my young career thus far.”

“Nexom is the most exciting organization I've ever worked for. Led by a wonderful group of people who truly care about the team, and staffed by an incredible community of people that go the extra mile for one another.”

About Hunter Crown: Hunter Crown is the Water and Wastewater Industry's Executive Search Partner. The company was founded with the sole purpose of bringing top talent together with incredible opportunities at the best companies in the water industry. With 150,000+ professional contacts globally, 22+ years of cumulative recruiting experience, and 100+ successfully completed searches, Hunter Crown is the right search partner for you (www.huntercrown.com).

About Desalitech: Desalitech is helping dozens of Fortune 500 companies such as Coca Cola, Procter & Gamble and Kimberly Clark achieve a paradigm shift in water efficiency and reliability. Desalitech's game changing reverse osmosis is boosting our customer's financial, environmental and operational competitiveness with nearly all becoming loyal, repeat customers (www.desalitech.com).

About Nexom: As rising pressure from nutrient limits and energy costs expose the limitations of existing wastewater solutions, consulting engineers and end customers need new tools they can trust. Through a rigorous proving process and pre-project support that produces final design-ready drawings, Nexom makes best-value technology solutions accessible so engineers can confidently exceed the demands of any municipality or industry (www.nexom.com). 

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