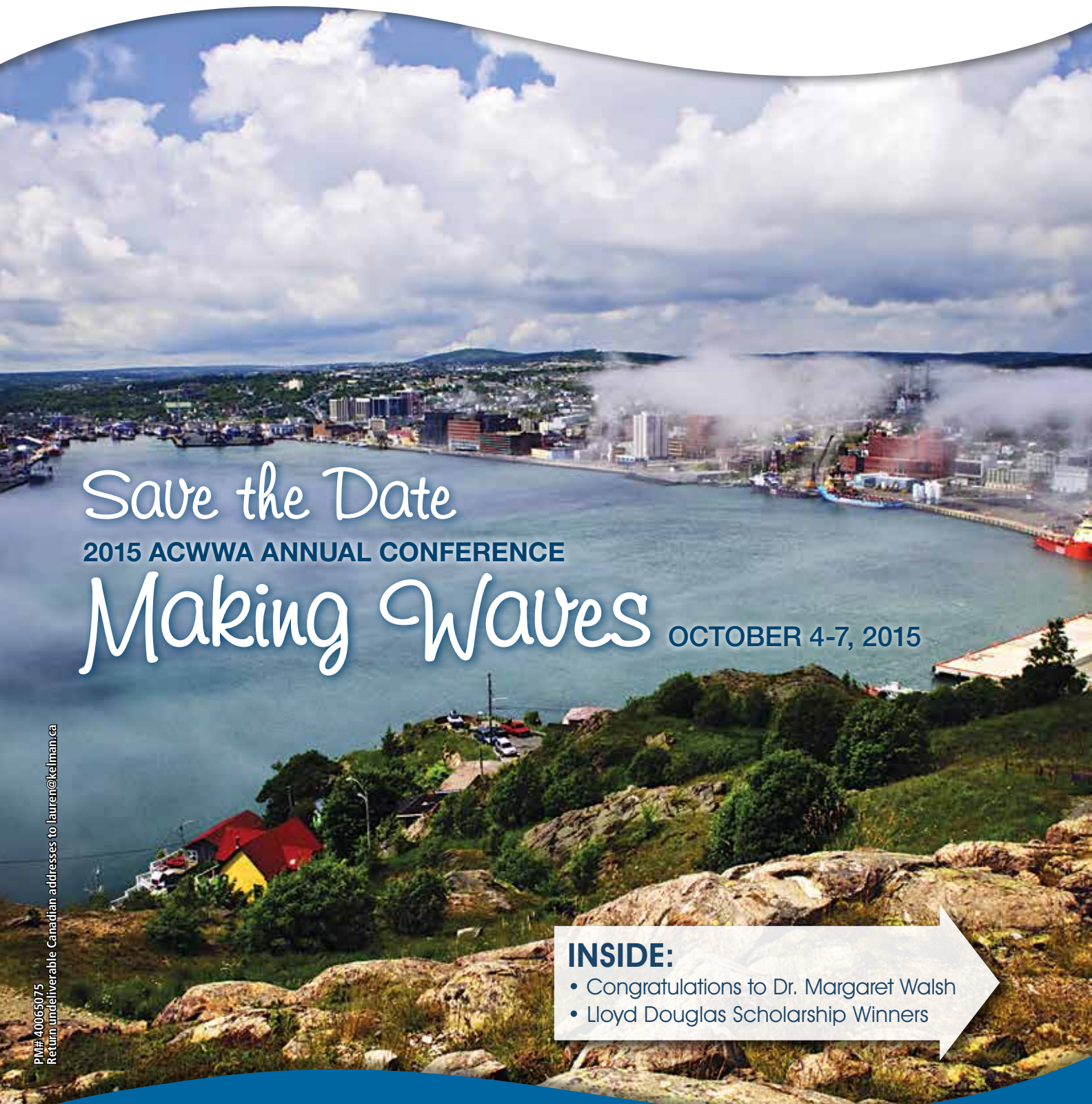


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INSIDE:

- Congratulations to Dr. Margaret Walsh
- Lloyd Douglas Scholarship Winners



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Blowers in Wastewater Treatment

Blowers consists of a wastewater treatment plant's costliest systems to operate and can account for 40 to 75 percent of the total Plant's energy consumption. For this reason, selection of the correct blower technology is of paramount importance.

Blower Selection vs. Application

When budgeting for either simple equipment upgrades or major process improvements, selecting the correct blower technology will influence your project's financial outcome and Plant's sustainability.

Blowers are first and foremost, application dependent. It is the application and air demand (*airflow & pressure*) that will determine which technology is best suited.



Fig. 1: Atlas Copco ZS-VSD Rotary Screw Blower Series

Positive Displacement Technology

PD machines operate with flow and pressure as **independent** variables. Their efficiency curve or specific energy ratio (SER) is

close to linear and their efficiency is similar throughout their operational range. These specific operational qualities make PD machines the ideal choice for applications with **variations in flow or pressure**.

There are (2) types of positive displacement blowers: Lobe or Rotary Screw blowers.

Lobe blowers find good application in low head, fixed speed applications. Their lower initial investment cost and a general strong following over the last 140 years has led to their strong market acceptance.

Today's industry has become more readily accepting of the rotary screw blower for its high value benefits such as 30% improvement in efficiency and reduction in ambient sound levels.

Screw blowers are available as complete factory assembled packages in variable speed or fixed speed configuration. Compact size, reduced maintenance needs and ready to install features are making these products a popular alternative.

Centrifugal Technology

Centrifugal units operate with pressure and flow rate as **dependent** variables. The efficiency of centrifugal blowers is generally better than PD machines at a specific given design point. However, the specific energy ratio (SER) curve of a centrifugal machine is parabolic; as the operating conditions deviate from the design point, the efficiency of the machine will decrease.



Fig. 2: Atlas Copco ZM Multistage Centrifugal Blower Series

Therefore, centrifugal blowers operate most efficiently as base load units or in applications with **constant pressure**.

There are (2) main designs of the modern centrifugal blowers: Multistage Centrifugal and Turbo Blowers.

Although more complex than positive displacement blowers, when correctly match with its application, a centrifugal unit can bring energy savings incomparable to any other technologies.



Fig. 3: Atlas Copco ZB Magnetic Bearing /High Speed Turbo

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Technology / Applications Table:

Application	Air Demand	Technology	Type
Activated Sludge	- Constant Pressure - Variable Flow	- Positive Displacement - Centrifugal	- Screws, Lobe - Multistage Turbo
Aerated Lagoon	- Constant pressure - Variable Flow	- Positive Displacement - Centrifugal	- Screws, Lobe - Multistage Turbo
BR	- Variable Pressure - Variable Flow	- Positive Displacement	- Screws, Lobe
MBBR	- Variable Pressure - Constant Flow	- Positive Displacement	- Screws, Lobe
MBR	- Constant Pressure - Variable Flow	- Positive Displacement - Centrifugal	- Screws, Lobe - Multistage Turbo

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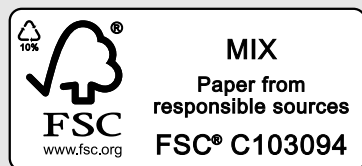


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Spring is here

As you read this, I hope that this past winter is becoming a distant memory. Despite the fact that the winter season offers many opportunities for outdoor activities that many of you no doubt enjoy, what we have experienced in this region – weeks of freezing temperatures, multiple snow storms, flooding, and ice buildups – makes me look forward to the spring, and some milder, sunny days.

Welcome to the spring edition of *Go With the Flow*, ACWWA's magazine published for the benefit of our members. Since the last edition, the ACWWA Board and Committees have been working on your behalf to ensure value for your membership. The harsh winter brought poor driving conditions, which forced us to reschedule three meetings. Still, we managed to conduct our annual strategic planning session in early January, and had great representation from our various committees. The focus of this year's session was a review of the ACWWA strategic plan, with the objective of ensuring our plan is in alignment with those of AWWA and WEF. Since the meeting, a working group has been struck to produce an update of the ACWWA strategic plan, both in content and format. We anticipate that this exercise will be completed by the fall. My thanks to all of the Board and Committee members who made the time to attend, and for your contributions to what was a productive strategic planning session.

Members are encouraged to review the ACWWA spring course offerings. Courses are scheduled throughout

"Since the last edition, the ACWWA Board and Committees have been working on your behalf to ensure value for your membership."

the spring, and your support of the education program by attending (or sending employees to attend) will add value to your organization by ensuring that people are prepared for operator certification exams, in addition to acquiring some new skills and knowledge in several water- and wastewater-related topics. Please check the ACWWA website for further information and course schedules.

If you know of a colleague who provides an excellent level of service to the water and wastewater industry, please consider nominating them for an ACWWA award. Many folks work in our industry year after year without fanfare, and I know there are many people who deserve to be recognized for their dedicated service to their community, and to our industry. The call for nominations for this year's awards is now published on the website. Please take some time to read through the awards criteria, and nominate someone whom you feel deserves some recognition. The deadline for nominations is May 29.

Many of the awards are presented at our Annual Conference, and I know we are all looking forward to this year's conference in St. John's, NL, at the Delta St. John's Hotel and Conference Centre, from October 4–7. Conference Chair Jason Phillips and his team have been hard at work preparing for what is sure to be a quality event. I hope many of you have submitted an abstract

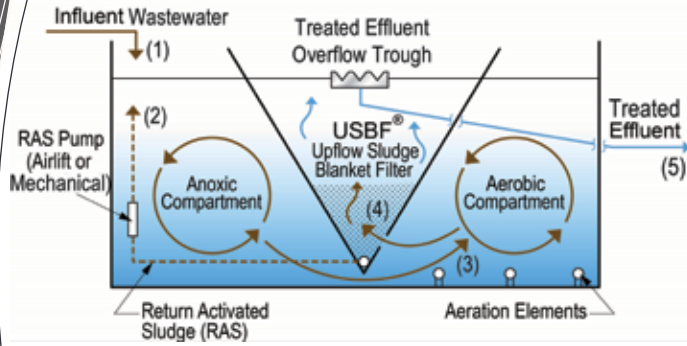
for consideration in the conference technical program, and I hope you plan to attend. I am confident that you will receive excellent value in St. John's, where the theme of this year's conference is *Making Waves*. Registration has never been easier, and the ACWWA website has all of the conference details so please check the website, and register early.

In June, AWWA hosts their Annual Conference and Exposition (ACE 15) in Anaheim, California. For those who plan to attend, be sure to include the Canadian Water Forum in your conference plans. This is the premier networking event for Canadian attendees at ACE, and a great way to meet new friends in our industry. This year, ACWWA has assumed responsibility for managing the event, and tickets are limited and generally fast sellers. Please contact our Executive Director, Clara Shea, if you are interested in attending the Canadian Water Forum at ACE 15.

In closing, I would like to thank Lindsay Wilcott, our Magazine Committee Chair, her team, and our publisher, Craig Kelman & Associates, for producing another quality product. It is a privilege for me to serve as ACWWA Chair, and I encourage you to contact me at scott.grasman@fredericton.ca should you have any questions, concerns, or comments.

Enjoy the spring edition of *Go With the Flow!* 

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Read on to expand your experience

Welcome to the Spring 2015 edition of the ACWWA *Go With the Flow*. Now that we have collectively shovelled the snow and managed through a cold winter, this is a great time to reflect on staff and the professional development opportunities that your membership in ACWWA provides. I encourage you to use the ACWWA, AWWA, and WEF resources that are available such as technical manuals, webinars, conferences, internet content, and on-site education programs to improve your staff's technical knowledge and expand their peer network.


Each edition of *Go With the Flow* will be highlighting a unique resource area available through WEF or AWWA to all members. Please read on and expand your experience.

One particular professional development opportunity coming up later this year is the AWWA Annual Conference & Exposition (ACE) 2015 that will be held in Anaheim, California, June 7-10, 2015. The ACE conference is a great place to get high-quality technical and leadership training. You or your staff will greatly benefit from the education and professional experience. When at ACE, be sure to plan to attend the Canadian Forum at the UVA Bar & Grill on Monday evening. This is a premier chance to meet with fellow Canadian water industry professionals in a fun

social environment. Please contact Clara at the ACWWA office for tickets – they may sell out quickly.

“When at ACE, be sure to plan to attend the Canadian Forum at the UVA Bar & Grill on Monday evening.”

In closing I wanted to reflect on the successful ACWWA Annual Conference in Halifax last October. The event was successfully managed by Co-Chairs John Eisner and Rob Gillis, and the schedule was full of activities for all. I was delighted to have Jim Chafee, Immediate Past President of AWWA, join us in Halifax as the AWWA delegate. In parting, Jim noted the conference was well planned and implemented; fun and successful; members were engaged and enthusiastic; and he had an opportunity to become better acquainted with Halifax and its history. Congratulations again to all for a great conference.

I am enjoying the first full year of activities as Director and remain pleased with the opportunity to represent Atlantic Canada at the AWWA Board. Please send me your comments or questions by email to Jamie.hannam@halifaxwater.ca. 



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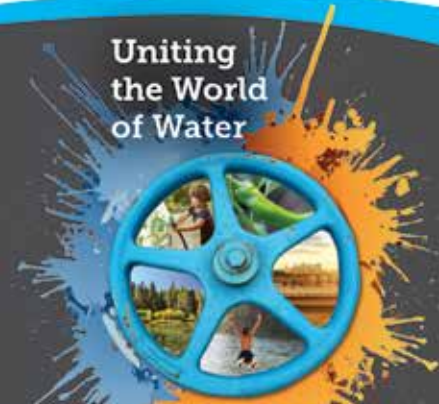


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Try out WEF.org


Hello WEF members in Atlantic Canada. For the next couple of issues, I have decided to try to bring you up to speed on what is available to you from WEF. All of you non-members, you are allowed to look too and hopefully you will see value in joining the WEF Association.

I am going to start with the website and highlight some tools that you may be able to use to help you with your job, training, etc. Here we go...

Go to WEF.org to get started. The first tool I am going to give you is Skills Builder. On the website, go to the *Online Education* tab, and click on *Skills Builder*. This is a tool to help you with all kinds of information related to wastewater education. Open *Start a Quiz* and you will be asked for your name and email. The next tab will ask you to select a category; you can choose from wastewater, laboratory, or WE&T certification quizzes. Once you select your category, you go on to the questions. After each question, it will tell you if you were right or wrong, and the correct answer. You will get scored at the end. This is an exceptional tool for helping you through your certification process and with your day-to-day work.

The second tool is the *Public Information* tab. Click on it and then go to *General Public*. Here you will see all kinds of great material on water/wastewater, such as:

- What you should know about clean water, which has a Household Waste Chart included (also included in this issue of the magazine; see page 11).
- Water's Worth It campaign – tells you all about this great campaign, you may decide you want to sign up.
- A video of a water resources recovery facility – remember, we don't use the term 'sewage treatment plant' any longer. This will provide a tool you may want to use to educate the public through tours, etc.
- 'Will it flush?' Another video of what you should and should not flush.
- 'Following the Flow' is a PDF that takes you through a plant step by step.
- 'Aqua Venturer' is a tool that takes you through the history and future of wastewater.

This is just the beginning of the task I have taken on to educate the ACWWA membership on the WEF organization. Take some time and have a look. I will have more information for you in the next issue of *Go With the Flow*. 

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Green leaves  indicate material that can be recycled or reused or shared with neighbors or family members. If there is a recycling program in your area, take the materials there. If not, encourage local officials to start a recycling program.

*The information contained in this chart is intended as a general guideline. Laws and regulations may vary from state to state. For more information on the safest way to dispose of these and other products, contact your area's solid and hazardous waste department or federal or state environmental agency. Check manufacturer's label for specific disposal guidelines.

Household Waste Chart

KITCHEN	TYPE OF WASTE DISPOSAL			
Aluminum cleaners		▼		
Ammonia-based cleaners	≈			
Bug sprays			⊗	
Drain cleaners			⊗	
Egg shells		▼		
Floor care products			⊗	
Furniture polish			⊗	
Metal polish with solvent			⊗	
Window cleaner		▼		
Oven cleaner (lye base)			⊗	
Fats, oils and grease (including oil from turkey fryers)		▼		
BATHROOM	TYPE OF WASTE DISPOSAL			
Bathroom cleaners		▼		
Diapers (baby wipes)		▼		
Disinfectants		▼		
Toilet bowl cleaner		▼		
Tub and tile cleaners			⊗	
Pharmaceutical products or drugs (expired or used)		▼		
Personal care products (aftershave, perfumes, depilatories, permanent or other lotions, hair relaxers, nail polish, dyes, waxes)		▼		
Sharps (needles for diabetics)			⊗	
GARDEN	TYPE OF WASTE DISPOSAL			
Fertilizer			⊗	
Fungicide			⊗	
Herbicide			⊗	
Insecticide			⊗	
Rat poison			⊗	
Weed killer			⊗	
GARAGE	TYPE OF WASTE DISPOSAL			
Antifreeze			⊗	🌿
Automatic transmission fluid			⊗	🌿
Auto body repair products			⊗	
Battery acid (or battery)			⊗	🌿
Brake fluid			⊗	
Car wax with solvent			⊗	
Diesel fuel			⊗	🌿
Fuel additives			⊗	
Fuel oil			⊗	🌿
Gasoline			⊗	🌿
Kerosene			⊗	🌿
Metal polish with solvent			⊗	
Motor oil			⊗	🌿
Other oils			⊗	

WORKSHOP	TYPE OF WASTE DISPOSAL			
Cutting oil			⊗	
Deck cleaners/stains			⊗	
Glue (solvent based)			⊗	
Glue (water based)	≈			
Paint (latex)		▼		🌿
Paint (oil based)			⊗	
Paint (auto)			⊗	
Paint (model)			⊗	
Paint brush cleaner with solvent			⊗	🌿
Paint brush cleaner with TSP	≈			
Paint stripper			⊗	
Paint stripper (lye base)			⊗	
Paint thinner			⊗	🌿
Primer			⊗	
Rust remover (with phosphoric acid)			⊗	
Turpentine			⊗	🌿
Varnish			⊗	
Wood preservative			⊗	
MISCELLANEOUS	TYPE OF WASTE DISPOSAL			
Aerosol cans (empty)		▼		🌿
Aerosol cans (not empty)			⊗	
Ammunition			⊗	
Artists' paints (acrylic)		▼		🌿
Artists' paints (oil based)			⊗	
Cat litter		▼		
Cellular phones			⊗	🌿
Dry cleaning solvents			⊗	🌿
Fiberglass epoxy			⊗	
Gun cleaning solvents			⊗	🌿
Lighter fluid			⊗	
Mercury batteries			⊗	🌿
Moth balls			⊗	
Old fire alarms			⊗	
Fluorescent light bulbs			⊗	
Pet care products (flea and tick repellent)		▼		
Photographic chemicals			⊗	
Shoe polish			⊗	
Swimming pool chemicals			⊗	
White-out (used for corrections)		▼		

- ≈ - Can be poured down the drain with plenty of water.
- ▼ - Cannot be poured down the drain, but can be safely disposed of in a sanitary landfill or incinerator.
- ⊗ - Hazardous wastes.
- 🌿 - Recycle, reuse, or share.



CWWA's 'Window on Ottawa' moving to spring 2016

No, it is not moving cities, or else we could not call it the Window on 'Ottawa.' But it is moving from its traditional dates.

The Window on Ottawa is truly our signature event that meets two of our core goals – to educate our members on national level activity and to facilitate dialogue with the federal government and its agencies. This very informative event allows delegates to hear the latest news from key members of federal departments and agencies. We get the details of recent legislation, but

more importantly, we hear about what is in the development stages and can provide comments.

We hold the event in Ottawa as that allows the easiest access for all of the federal representatives we invite. So this focus on Ottawa and the national efforts will not change. We normally conduct our CWWA Annual General Meeting at this event and hold a series of CWWA Board meetings.

Tradition has dictated that this event be held in November, but in recent years, this meant it fell just weeks after our other national

conferences – either the Canadian Drinking Water Conference or the Canadian Water and Energy Efficiency Conference. Not only was this hard to coordinate logistically by the CWWA staff, it was difficult for our members to attend both.

With the new event strategy for consolidating to ONE, ANNUAL, NATIONAL Water and Wastewater Conference in October of this year, it was decided to defer the Window on Ottawa event this year to the spring of 2016. Robert Haller and the CWWA staff discussed this with the delegates, conducted a survey, and consulted with our usual federal contacts, and they received very positive support for the move.

Our first, consolidated conference will be held in Whistler, BC in October of 2015 and will include our Annual General Meeting for 2015.

So we will NOT hold a Window on Ottawa event this fall. Rather, we will re-introduce the Window on Ottawa event in late spring 2016 (dates to be determined). CWWA is looking forward to the new approach to hosting its events as we move forward.

Mark your calendars for the first CWWA Annual National Event set for October 25–28, 2015 in beautiful Whistler, British Columbia.

Details on the program and venue can be found at www.cwwa.ca.

Should any other information be required on CWWA activities or initiatives, please do not hesitate to contact me directly at roland.richard@nb.sympatico.ca or visit the CWWA website at www.cwwa.ca.



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Winner of the **Silent Hero Award**, Rob Hamilton



1. **Job Title:** Chemical Technologist Supervisor. Short version...I am responsible for the lab.
2. **Who do you work for?** Saint John Water.
3. **Where do you currently live?** Quispamsis, NB.
4. **Where did you grow up?** Born in Winnipeg, and grew up in Saint John.
5. **When I'm not working, I'm...** enjoying time with my family. Or, on a ball diamond, at a bowling alley, on a golf course.... with some 'wobbly pops' of course!
6. **The accomplishment I'm most proud of is...** Adopting and being there for my son who is autistic.
7. **If you could go on a road trip with any one person (living or dead), who would it be and where would you go?** I'm going to cheat here; I'd have to pick my Mum and Dad as they both passed when I was quite young.

- It wouldn't matter where we went, just the opportunity to get to know each other.
8. **What is your philosophy on life?** Do unto others as you would have them do to you.
 9. **Toughest thing about your job?** Talking about it... wastewater treatment is not really good dinner conversation.
 10. **When you were a kid, what did you want to be when you grew up?** A veterinarian.
 11. **Last book you read?** *The Captain: The Journey of Derek Jeter.*
 12. **Last movie you saw?** *Skyfall* – James Bond.
 13. **What music did you listen to this morning?** "Old Time Rock & Roll."
 14. **Favourite TV show?** NCIS.
 15. **What was the best gift you ever received?** My son.
 16. **What's the most useless thing you ever purchased?**

- A golf pull cart. I have never used it... I always use motorized ones at golf course – I'm able to carry more beer in them.
17. **Not many people know that...** I am an accomplished air guitarist.
 18. **What attracted you to the water/wastewater industry?** It was an opportunity to use the education that I had gotten through the Chemical Technology Program at NBCCSJ.
 19. **What is your greatest luxury?** Not really a luxury person... but I have air conditioning in my car.
 20. **What's your favorite famous quote?** "There is no substitute for hard work" – Thomas Edison.
 21. **Describe your perfect day.** Sunny, mid 20s, nothing to do, with family and friends... and a fully stocked cooler.
 22. **What three objects would you rescue from your burning house?** If the family and pets are safe, laptop, golf clubs, and softball gear.
 23. **What do you like most about your job?** The dedicated people who are in the water and wastewater fields.
 24. **Who is the most influential person in your life?** My sister.
 25. **What is your ideal vehicle?** 1956 Corvette convertible (red with white inserts).
 26. **What is your favorite travel destination?** I have never been there but have always wanted to visit Australia. 🇦🇺

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Highlighting award opportunities for our members

As I write this article in February, I am dreaming that by the time I read it in our magazine, the mountains of snow will have finally disappeared and flowers will be beginning to bloom.

As you know, ACWWA offers a host of awards each year. These awards provide an opportunity to recognize the enormous contributions that our members provide to the water and wastewater industry as well as to our Association.

Did you know...

AWWA and WEF also offer numerous awards at the international level. I encourage you to take a look and see if any apply to someone you know.

At www.awwa.org/membership/get-involved/awards.aspx, you can find a list of awards offered by AWWA.

Membrane – Young Professional of the Year Award

To recognize and honour membrane-related contributions made by a young professional to the water or public health community.

Honorary Member Award

This award is presented each year to members “whose knowledge and accomplishments in the field of water supply entitle him/her to special recognition.” An Honorary Member shall have all the rights and privileges of an Active Member and shall be exempt from paying dues.

Previous ACWWA winners are Bill Butler (Saint John) and Bill Gates (Halifax).

Public Communications Achievement Award

To recognize AWWA members and/or organizations for significant accomplishments in communication/educating the public, promoting awareness and understanding of water issues, establishing media relations, implementing community involvement programs, and inspiring others to model behavior with the public that builds trust and credibility.

At <http://wef.org/awards/>, you can find a list of awards and recognition offered by WEF.

WEF Honorary Membership

WEF Honorary membership recognizes individuals who have proven their preeminence in the fields of activity encompassed by Water Environment Federation objectives. Recipients of WEF Honorary membership are recognized for their achievements in the water profession and are awarded a complimentary lifetime WEF membership.

Hatfield Award

The Hatfield Award is presented to operators of wastewater treatment plants for outstanding performance and professionalism.

Outstanding Young Water Environment Professional

Presented for significant contributions to the Water Environment Federation and to the wastewater collection and treatment industry. [🔗](#)

A big welcome to our new members over the past few months:

Name	Company	
Leah Boutilier	Nova Scotia Environment	AWWA
Sarah Butt		AWWA
Barry Faulkener	Municipality of Digby	AWWA
Patrick Fitzgerald	CBCL Limited	AWWA
Samuel Graham	Town of Westville	AWWA
Michel Grant	Town of Sussex	AWWA
Kevin Healy		AWWA
Kandy Mitton	National Process Equipment	AWWA
Price	City of St. John's	AWWA
Jordan Schmidt		AWWA
Dallys Serracin-Pitti		AWWA
Brett Wallace	Stantec	AWWA
Aileen Woodman	Nova Scotia Power	AWWA
John Lam	Stantec	WEF
Andrew MacDonald	Government of PEI	WEF

Here is a snapshot of what our membership looks like:

Membership totals as of February 15, 2015:	
AWWA - 449	WEF - 142



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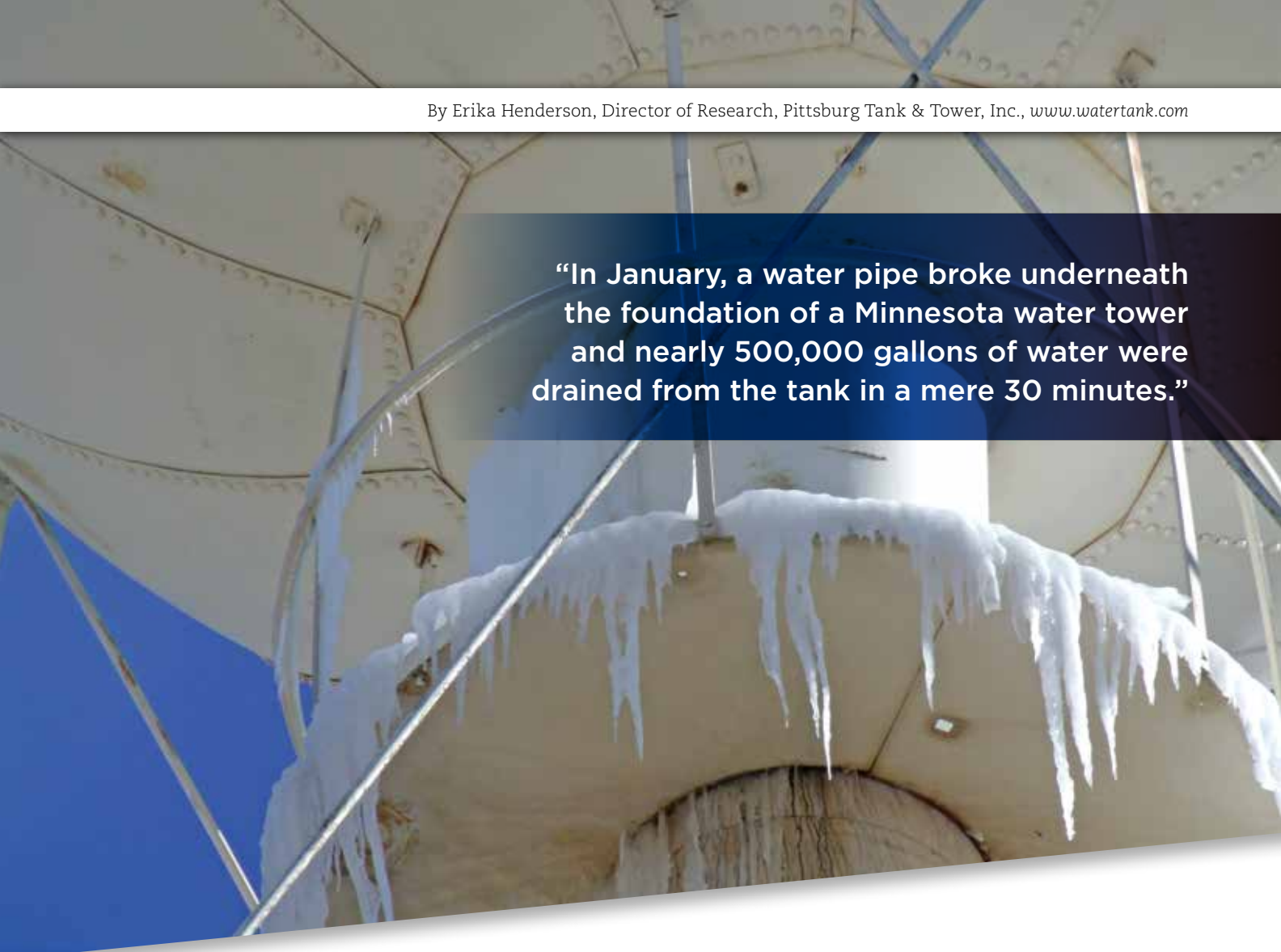
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“In January, a water pipe broke underneath the foundation of a Minnesota water tower and nearly 500,000 gallons of water were drained from the tank in a mere 30 minutes.”

Emergency Tank Repair

Prevention *and* Preparation

Drinking water tanks are surrounded by threats daily, but most problems associated with emergency tank repairs can be prevented. Extra time and maintenance may be needed to ensure the tank is protected, and water operators should have an effective plan to restore water services if a tank emergency does occur.

Most problems that lead to emergency tank repairs can be prevented with proper maintenance and regular inspections. Obtaining accurate information and saving the documentation of every inspection and repair can enable a deeper level of understanding about the tank's history. The knowledge gained from its history can then be

used to help create a more effective strategy in preventing and limiting future tank repairs.

Harsh winter weather often increases the risk for tank damage and emergency repairs. Last winter, several drinking water tanks nationwide experienced damage, leaks, and failures as a result. A Minnesota tank froze twice over the winter because of the prolonged deep freeze¹. And, according to *The Old Farmer's Almanac's* for 2014–2015, “this winter will be another arctic blast with above-normal snowfall throughout much of the nation.” Therefore, measures should be taken now to protect the tanks and help prevent damage that could be caused by snow, ice, and freezing temperatures.



Drinking water tanks are more susceptible to freeze during nighttime hours when water demand and turnover rate is low. Moving water is less prone to freezing, so keeping the turnover rate high or adding a mixing system can help. The National Fire Protection Association (NFPA) recommends maintaining the water temperature at or above 42°F to prevent tank freezing, and the water temperature can be monitored by installing a low-water temperature alarm². But, to maintain appropriate temperature, heating may be necessary. Insulation and standby electric heaters can be used for systems not already set up for steam or hot water.

All heater pipes, heating elements, and temperature alarms should be tested, inspected, and replaced as needed before the heating season begins and monthly thereafter or malfunctions are likely to occur. For example, the heater in a wooden Chicago water tank malfunctioned in March and the water inside froze solid. The tank's structural integrity was compromised and the tank had to be dismantled later that month³.

Changes in temperature can cause pipes to expand and contract, making them vulnerable to breaks and leaks. Therefore, all pipes subjected to freezing or temperature change should be protected with

insulation and heat tracing. The pipes inside small dry risers of elevated water tanks should also be insulated to prevent the inlet and outlet pipes from freezing. In January, a water pipe broke underneath the foundation of a Minnesota water tower and nearly 500,000 gallons of water were drained from the tank in a mere 30 minutes⁴.

Pipe connections and expansion joint connections should be monitored closely for leaks. Leaks hidden behind insulation can be difficult to locate, and insulation should be inspected and replaced as needed to reveal any defects hidden behind it and to remain effective. The American Water Works Association (AWWA), NFPA, and Occupational Safety & Health Association (OSHA) have devised a system of codes and standards that contain several recommendations on pipe inspections and a suggested timetable for inspecting each type of pipe.

Pumps, altitude valves, and overflow pipes should be checked before winter to prevent malfunctions. An overflow to grade may freeze solid if screens are plugged or flap valves are stuck, and vents can become clogged with ice and snow if they are not vacuum pressured and frost proof. Pumps or altitude valves that fail to shut off during tank filling can cause the tank to overflow.



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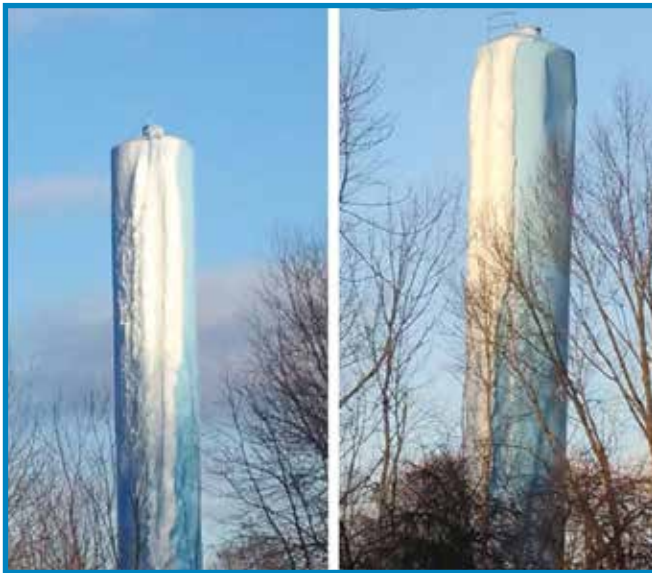
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AWWA states, "A properly operated tank should not overflow during normal operation. An overflowing tank is considered an emergency condition and the malfunction causing the overflow should be determined and corrected as soon as possible." AWWA does not recommend the use of an internal overflow, because if an overflow failure occurs it could go unnoticed and empty the tank⁵. This past winter, five water distribution pumps in Arkansas froze overnight, leaving the city's above-ground storage tanks empty. Without water, the city's fire hydrants became useless and firefighters were left with nothing but the water on their trucks⁵.

All valves, pipes, controls, alarms, and liquid level indicators must be in proper working order for adequate water to be available. Failure of any component could have dire consequences, and all components may need to be inspected daily during extreme weather for signs of frozen, cracked, or damaged areas. Sometimes, despite all measures taken, emergency repairs may still be needed. Therefore, effective strategies must be devised for a quick response and recovery. An established relationship with a dependable and experienced tank professional already familiar with the tank can be extremely useful. The selected full-service tank company should be educated, certified, and have received the proper safety training



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necessary to perform tank inspections, repairs, and modifications. They should be available 365 days a year to answer questions, address concerns, and be flexible enough in their scheduling to make emergency repairs when needed. Please do not attempt to thaw or drain the tank without professional help if water freezing does occur; further damage or a tank rupture could result. Please contact the author or Don Johnston (djohnston@watertank.com, 270-826-9000) for more information on emergency tank repairs.

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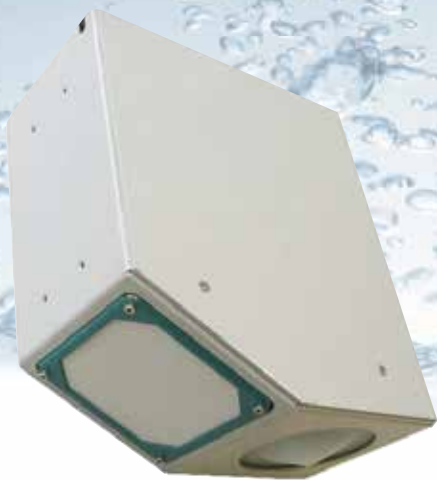
This year's Ira P. MacNab award winner – Dr. Margaret Walsh

The Ira P. MacNab Award is awarded by ACWWA and may be presented annually to a member of the ACWWA for outstanding service to the water industry in Atlantic Canada.

1. **What is your job title?** Associate Professor.
 2. **Who do you work for?** Dalhousie University.
 3. **Where do you currently live?** Halifax, NS.
 4. **Where did you grow up?** Antigonish, NS.
 5. **What's the toughest thing about your job?** Definitely coordinating timing of securing research funding and recruiting graduate students – having the important people who actually do all the work ready to start projects.
- Finish these sentences:**
6. **“When I’m not working, I’m...”** Hanging out with family and friends.
 7. **“The accomplishment I’m most proud of is...”** My PhD degree.
 8. **“When I was a kid, I wanted to be _____ when I grew up.”** An artist.
 9. **“Not many people know I can....”** Paint.
- What is...**
10. **the last book you read?** *The Silver Star* by Jeannette Walls.
 11. **the last movie you saw?** *The Grand Seduction*.
 12. **your favourite TV show?** Seinfeld... bring it back!
 13. **the best gift you've ever received?** Flowers from the students of the first university course I taught.
 14. **your guilty pleasure?** Ice cream.
 15. **the song or story you remember from the radio this morning?** The February 15th blizzard, closed highways, and all the snow in PEI.
 16. **the most useless thing you've ever purchased?** A hand-cranked radio/flashlight for when the power goes out.
 17. **If you could go on a road trip with any one person, living or dead, who would it be and where would you go? (and what would be in the CD player).** It would have to be both of my sisters and I heading to Boston. There would be great arguments about music selection and the number of pit stops, and we probably wouldn't make it all the way to Boston before we turned around to head home, but it would be a wonderful trip. ☺

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LLOYD DOUGLAS SCHOLARSHIP

The Atlantic Canada Water and Wastewater Association (ACWWA) renamed its annual scholarship in 2010 in recognition of the dedicated service rendered by long-time member and tireless ACWWA supporter, Lloyd Douglas.

Congratulations to our 2014/15 Lloyd Douglas Scholarship Award Winners!

Anna Haley (NS)

Anna Haley is studying in the Environmental Engineering program at Dalhousie University, Halifax, having graduated from a B.Sc. Physics at Dalhousie in 2010. Throughout her B.Eng., she has taken part in the co-op program, acquiring a range of professional skills. To date, her most significant experience lies within the subjects of water quality management, environmental compliance, and high-precision GPS surveying. In the future she plans to continue her education by pursuing a master's and even PhD degree studying water or wastewater treatment and then working in the water and wastewater industry.

Sonja Parkman (PEI)

Sonja Parkman is currently enrolled in the Environmental Applied Science Technology (EAST) Program at Holland College in Charlottetown, PEI. Aside from studying at Holland College, She is also a part of their cross-country running team as well as the Holland College Green Machine. The Holland College Green Machine is a group of students and staff dedicated to promoting sustainability and model environmental stewardship through education, conservation, and community engagement. She hopes for a future career with an engineering consulting company that specializes in design of water and wastewater treatment facilities.

Gary Whelan (NL)

Gary Whelan is a Mechanical Engineering student at Memorial University of Newfoundland, St. John's. He is highly oriented toward academics and professional development as he has high goals for himself. During the school semester, he splits his time between his coursework and research work in assisting his professor. He believes that working in the water industry is very much a public service that is of the utmost importance. The majority of his work experience has been in the oil and gas industry, however, he thinks that much of what he has learned can easily be applied to the water industry – of interest to him because of the direct and important impact that it has on the public. One of his current goals is to get accepted into a master's program at Massachusetts Institute of Technology (MIT).



ACWWA offers up to four Lloyd Douglas Scholarships valued at \$1,000 (one for each Atlantic Canadian province). Applicants must be Canadian citizens or permanent residents of Canada and be a resident of Atlantic Canada. The applicant must have successfully completed at least one year of post-secondary education in Canada and be registered as a full-time student. As well, one must be intending to pursue a career related to the water or wastewater industry.

Past Scholarship Recipients

2013/14 Academic Year

Ingrid N. Lozada - PEI
Conor Flanagan - NL
Ellen O'Hara - NS
Katuscya Gauvin - NB

2012/13 Academic Year

Colin MacEwan - PEI
JoAnne Dodd - NL
Laura Hayes - NS
Paul Young - NB

2011/12 Academic Year

Nathan MacNeill - Holland College, Charlottetown, PEI
Erin Mentink - Dalhousie University, Halifax, NS
Sarah Mapplebeck - Memorial University of Newfoundland, St. John's, NL
Nicholas LeBlanc - University of New Brunswick, Moncton, NB

2010/11 Academic Year

David Ball - Memorial University, St. John's, NL
Tara Chisholm - Dalhousie University, Halifax, NS

2009/10 Academic Year

Alf Johanson - Memorial University, St. John's, NL

winners

Samuel Jones (NB)

Samuel Jones is currently enrolled in the Environmental Applied Science Technology (EAST) program at Holland College in Prince Edward Island. He was born and raised on the Kingston Peninsula in New Brunswick and his family was involved in farming, commercial fishing, and woodlot management. He was fortunate enough to be able to participate in hockey, football, rugby, boxing, and rock climbing during high school. He enjoys fishing, hiking, and mountain biking. He is looking forward to pursuing a career in a wastewater treatment plant upon his graduation in 2015. He plans to seek employment in the wastewater industry in his home province of New Brunswick. His plan includes achieving his first level of certification, allowing him to pursue a career as a plant operator right after graduation. 🐟

2008/09 Academic Year

Jody Wentzell - Memorial University, St. John's, NL

2007/08 Academic Year

Jennifer Delaney - Memorial University, St. John's, NL

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Making Waves

Delta St. John's Hotel and Conference Centre • St. John's, NL • October 4 to October 7, 2015

Following on the heels of last year's successful inaugural 'hands-on' component of the Technical Sessions, the ACWWA has opted to once again incorporate this feature into the conference.

Please join us for the annual ACWWA conference in St. John's, NL, Canada's oldest city, cradled in a harbour carved from 500-million-year-old rock. The conference will feature technical sessions, the ABEA tradeshow, networking opportunities, and the ever-popular 'Top Ops' competition.

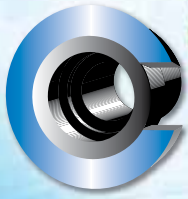
The St. John's, NL committee is targeting a first class technical program for the 2015 ACWWA Annual Conference, being held at the Delta St. John's Hotel and Conference Centre. The Delta St. John's is located in the heart of downtown, with easy access to the best local attractions including world-famous George Street, the East Coast Trail where the rugged coastline and 10,000-year-old icebergs provide stunning scenery for nice hiking or two of Canada's national historic sites – Signal Hill, where Marconi received the first transatlantic wireless signal and Cape Spear, the most easterly point in North America.

Reunite with friends and colleagues as we share our Newfoundland hospitality and discuss the many issues and changes that we face in the water and wastewater industry, making waves for the future.

What do you see as *Making Waves* in the water and wastewater industry? Every day the environment and weather provides challenges to the operation of our systems, whether it is extended period of warm weather without precipitation that affects our water supplies or a severe storm that challenges our wastewater collection and treatment systems. The 'waves' could also be viewed as the treatment processes at our water and wastewater treatment facilities, or simply the transmitting of water through our distribution systems. Finally the waves of change are happening everyday day as new equipment and technology change the way we complete our day to day tasks. Please join us in St. John's, NL and share your experiences in *Making Waves*. 🌊

“What do you see as *Making Waves* in the water and wastewater industry?”

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PROTECT YOUR WORKERS

By Kelly Kramer, CECD, HEM, RETTEW

At your wastewater treatment site, many hazards exist, particularly when moving in and around equipment and operations. At any given time you might be climbing, standing above ground level, or maneuvering over an unstable surface. All of these scenarios pose an increased risk of falling.

Every year, falls are one of the leading causes of injuries and death at work on construction sites, and fall protection was the most ignored OSHA standard last year. According to the Department of Labor, in 2013 alone, 668 falls resulted in death for people in the U.S. The most common were falls from an elevated walkway or work surface to a lower level, with falls from ladders and rooftops coming in second and third for worst outcomes.

Interestingly, about 25% of those falls were from heights less than 10 feet. While you might balk at climbing a ladder several stories high or working high above the ground, every day most of us go up or down a few feet to perform our job responsibilities.

Picture your work site, and think about the many possibilities of falling:

- Storage tanks
- Silos
- Elevated platforms and walkways
- Fixed ladders

- Portable ladders
- Manholes, pits, and vaults
- Slips and falls from the same elevation (parking lots/construction sites)

As you might imagine, OSHA has many regulations to address controls aimed at preventing falls and protecting workers. Most of these begin when an employee is four feet above ground level on completed facilities, or six feet above ground level while a site is under construction. However, like anything, there are some general exceptions:

- Scaffolding requires fall protection above 10 feet.
- If you are working above dangerous equipment such as an auger, fall protection is required at any height.

Avoidance

The best method to avoid injuries and control possible fall hazards is to begin with an assessment of your workplace, identifying areas in which slips and falls are most likely to occur.

Once identified, it is the responsibility of the employer to put in place preventive control measures, if feasible. Employees are also responsible to comply with these policies. Examples include measures such as properly designing or laying out your facility to minimize or eliminate the need to work in the area where exposure



exists. You can consider automated or remote-sensing equipment, or installing railings and slip-resistant coatings on catwalks and tanks.

You can also minimize exposures by developing and training employees to follow administrative controls such as standard operating procedures (SOPs). One such procedure might be requiring at least two people to work on any hazardous tasks, one working near the hazard and the other observing and assisting if needed.

In conjunction with these preventive efforts, you can also consider equipping your personnel with a personal fall arrest system. This system includes:


1. A properly fitted full-body harness, inspected prior to each use.
2. An anchor capable of holding 3,000 pounds (for positioning) or 5,000 pounds (for fall protection) per person.
3. A connecting lanyard from the anchor to the worker's back D-ring to minimize the fall distance and reduce arresting forces (keeps you from contacting the ground).

Once you have completed an analysis and instituted policies and preventative measures at your

facility, you must outline the procedure if a worker were to fall. At the very least, your employees should be trained in basic first aid and CPR and be aware of your site's emergency plan. Within the emergency plan, instructions should be provided for how to contact rescue personnel and assist someone who might have fallen.

When someone falls, they must be either equipped with a self-rescue device or nearby personnel must be able to provide prompt rescue. Necessary equipment might include suspension trauma relief devices, aerial boom lifts, and specialized lowering devices.

Of equal importance, employers must train all workers exposed to any possible fall hazards, and incorporate demonstrations from those employees showing they can effectively use control and recovery equipment.

Since falls are one of the most common causes for injury, take the time today to analyze your facility, develop or finalize procedures that are easy to follow, provide the right equipment, and train your employees to stay safe. Not completing these steps could result in an unfortunate accident that affects your valuable staff and your operations. 

Hit your target

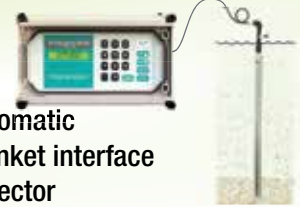
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Human-caused global warming impacting water resources, experts report

Source: awwa.org

Dramatic increases in human sources of greenhouse gases are “extremely likely” to be the predominant cause of global warming that, among other things, is “affecting water resources in terms of quantity and quality,” concludes a new report from the Intergovernmental Panel on Climate Change.

Synthesizing years of research by scientists from around the world, the report states that human influence on the climate system is “clear” and that global warming is “unequivocal.”

“Anthropogenic greenhouse gas emissions have increased since the pre-industrial era, driven largely by economic and population growth, and are now higher than ever,” the report declares. “This has led to atmospheric concentrations of carbon dioxide, methane and nitrous oxide that are unprecedented in at least the last 800,000 years.”

Natural systems, especially hydrological, have been among the hardest hit, including melting of glaciers and sea ice, acidification and warming of the ocean, a rising sea level and changing temperature and precipitation patterns.

As for what comes next, the report concludes that continued emission of greenhouse gases “will cause further warming and long-lasting changes in all components of the climate system, increasing the likelihood of severe, pervasive and irreversible impacts for people and ecosystems.”

Further, it predicts that the earth’s surface temperature will “rise over the 21st century under all assessed emission scenarios” and that it is “very likely that heat waves will occur more often and last longer, and that extreme precipitation events will become more intense and frequent in many regions.”

For more information, go to www.ipcc.ch/.



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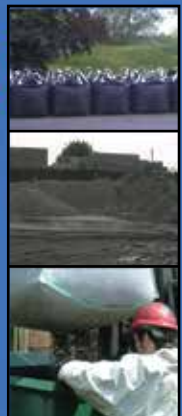


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EPA chief headlines SDWA birthday celebration

Source: awwa.org

At a 40th birthday party for the Safe Drinking Water Act on December 9, 2014, US Environmental Protection Agency chief Gina McCarthy commended water suppliers across the country for their efforts to provide safe drinking water to millions of Americans.

“We enjoy the cleanest drinking water in the world, with more than 90 percent of our citizens receiving water that meets all standards, all the time,” she said at a National Press Club event co-sponsored by AWWA, the Association of Metropolitan Water Agencies, the Association of State

Drinking Water Administrators, the National Association of Water Companies, and the National Rural Water Association. “We owe that accomplishment to this incredible law, and to your work at the state and local level and on innovation.”

In the face of emerging challenges from climate change and aging infrastructure, McCarthy also called for a ‘source to tap’ focus to ensure the continued provision of safe, reliable drinking water to Americans. “We can’t afford to look at water issues in isolation,” she said. “You guys know better than anyone, protecting drinking water has never been easy, and it’s not getting

any easier. But when we focus on infrastructure investments, building partnerships, and protecting source water—we can continue to make a difference.”

AWWA CEO David LaFrance opened the event with a brief welcome and an expression of gratitude to all the water professionals who make the SDWA a success. The event also featured panel discussions on future challenges and potential solutions that that included AWWA Water Utility Council Chair Aurel Arndt and AWWA Federal Relations Director Alan Roberson.



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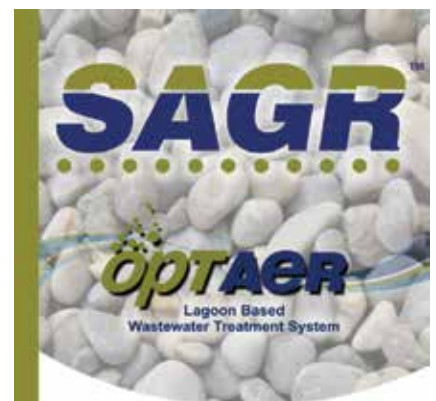


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AWWA and others team together on Clean Power Plan comments

Source: awwa.org

On December 1, 2014, AWWA submitted joint comments with the National Association of Water Companies (NAWC) and the National Association of Clean Water Agencies (NACWA) on EPA's Clean Power Plan (CPP) proposed rule under Section 111(d) of the Clean Air Act.

The CPP is intended to reduce carbon dioxide emissions from existing fossil fueled power plants by an average of 30% by 2030 (from a baseline of 2005) through a combination of four 'building blocks' of making power plants more efficient, using lower-emitting fossil fueled power plants more frequently, creating more zero- and low-emitting sources (such as renewables and nuclear), and increasing electricity end-use efficiency.

The CPP as proposed poses challenges and potentially brings opportunities to the water sector. The increased cost of electricity could cost drinking water utilities alone at least \$230 million more per year by 2020, based upon EPA's own cost analysis. However, the CPP is expected to result in additional funding for renewable energy and energy efficiency improvements, which may help offset the costs by reducing electricity use and offsetting some of the costs of improvements. These concerns and benefits are detailed in the comments. You can read the comments at www.awwa.org.

Send your news items to:
Lindsay Wilcott, Magazine Chair, at lwilcott@cbcl.ca.

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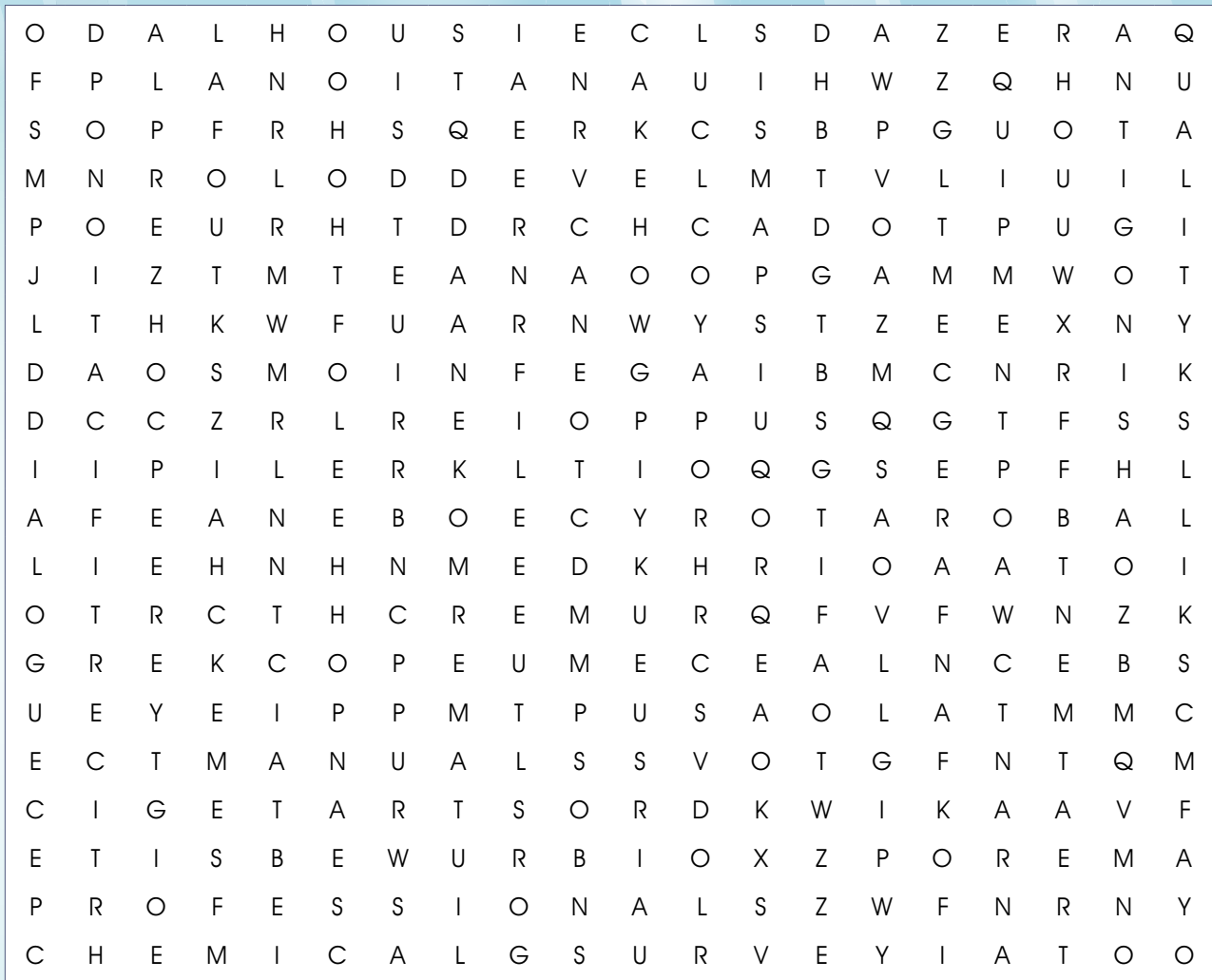
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