water's next

Celebrating Canada's best and brightest in water. **2011**

WATER CANADA
THE COMPLETE WATER MAGAZINE

TRUST

Municipalities across Ontario trust the Ontario Clean Water Agency (OCWA) to operate their water and wastewater facilities — efficiently and effectively.

That's because we take our commitment to clean water, community health, and the environment, just as seriously as they do.

We interrupt this message to congratulate the people, businesses, innovations and projects nominated for Water's Next in celebration of Canada's water excellence.

NOMINEES

People

- Phillip Adsetts, Kinetico Canada
- Bill Berzins, Fossil Water
- Cathie Brown, Ausable Bayfield Maitland Valley Drinking Water Source Protection Region
- John Coburn, XPV Capital
- Robert Dell, The Water School
- Peter Huck, University of Waterloo
- Karen Kun, Waterlution
- Dalton McGuinty, Ontario Premier
- Tim Morris, Walter and Duncan Gordon Foundation
- Wayne Parker, University of Waterloo

Businesses

- Armstrong Manufacturing
- Bernardi Building Supply
- Building Water Solutions
- EcoWater Canada Ltd.
- EnviroTower Inc.
- ENBALA Power Networks Inc.
- Enermodal Engineering
- LPJ Plumbing Inc.
- Paradigm Environmental Technologies Inc.
- Purifics
- Regional Municipality of York
- SMART Watering Systems Inc.
- Unifay-Fedar Investments

Innovations

- Conduit Mapping and Scanning System
- First fixed network AMR system in Canada
- GE Power & Water and FilterBoxx Water & Environmental Corp. agreement
- GE Mobile Evaporator
- Bacterial Source Tracking Technology
- Water Opportunities and Water Conservation Act
- West Elgin Water Treatment Plant
- World's First Single Flush 3L Toilet
- Locating polybutylene water service main stop with the use of a closed-circuit television camera

Projects

- Alberta WaterPortal
- Cartier Water Treatment Plant
- Collaborative Study to Protect Lake Ontario Drinking Water
- City of Welland: ISO9001:2008 Drinking Water Distribution System
- Dawson Creek Water Re-Use Project
- Elm Drive Sustainable Stormwater Management Retrofit Project
- Lakeview Water Treatment Plant Expansion
- Living Lakes Network Canada
- Moncton Water Treatment Plant
- Sanford Water Treatment Facility

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

water's next

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WATER CANADA
THE COMPLETE WATER MAGAZINE

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Time for Some Good News

It's a hard time for water.

Whether they're about crumbling infrastructure, inadequate monitoring, or climate change, the piles of reports released this year continue to indicate the water sector's—government, business and otherwise—failure to measure up. The statistics paint a depressing picture for our country's most important natural resource.

At Water Canada, we're looking at things a bit differently. Every day, we hear stories about our country's energized leaders, innovative technologies, quality research, and unique solutions for water challenges. It's refreshing news, and we wanted to share it with you.

Every day, we hear stories about our country's energized leaders, innovative technologies, quality research, and unique solutions for water challenges—we wanted to share them with you.

The result is Water's Next, a collection of incredible achievements. In the following pages, you'll read about the people and ideas that are making a difference in Canada's waterscape and beyond—from Karen Kun's efforts to help shape the next generation of leaders, to the City of Dawson Creek's innovative reuse plans, to ENBALA's work in the water-energy nexus, to Hennessy & Hinchcliffe's three-litre toilet that actually works.

How did we choose these features? It was a long process. Back in July 2010, we invited you, our readers, to submit nominations under four categories: People, Projects, Business and Innovation. Nominations closed in October, and we were thrilled with the results.

The Water's Next selection committee (*see page 4*), a group of water experts from varied disciplines from across the country, carefully reviewed the nominations. Divided into teams*, the committee members tackled the categories and made some tough decisions. Five people, along with three each from the projects, innovation, and business categories, were chosen based on the teams' recommendations.

Water Canada extends heartfelt thanks to the selection committee members for lending their time and submitting thoughtful comments about each nomination. We'd also like to congratulate the successful nominees for their hard work and commitment to making safe, healthy water resources a priority.

We hope you enjoy the publication. You've got good news in your hands.

Kerry Freek
Editor, Water Canada

PS. Don't forget to visit our website, **watersnext.ca**, to read profiles and learn about nominations for next year's edition.

** Like water itself, Canada's waterscape is interconnected and touches many different areas. As such, we made our best efforts to form category teams that represented multiple backgrounds and required committee members to declare any conflicts of interest regarding nominees.*

selection committee

Zafar Adeel has experience in a variety of water and environmental issues, including monitoring and control of water pollution, and solutions to industrial environmental problems. He is also keenly involved in development of and liaison with international networks of water experts. He serves as director at United Nations University Institute for Water, Environment and Health (UNU-INWEH). Currently, Adeel is serving as the chair of UN-Water, a group of 27 agencies focused on global water issues.

Rupert Allen is the water and wastewater sector analyst for Industry Canada where he works on issues of technological innovation and sector capability. He has worked for Canada's federal government for the past three years. Prior, he worked for private sector companies in England, Italy, and Brazil. Rupert has a Master's degree from the University of Essex.

Peter Bozzo has worked in the water industry for 15 years. He is a Certified Water Treatment Specialist. Currently the president of the Canadian Water Quality Association, Peter is actively involved in the industry and has served on numerous boards and panels. Peter is proud to be part of a successful family business in Toronto, Ontario (Nimbus Water Systems Inc). In 2005 he took over the active role as president and launched a national water dispensing business (Nimbus Water Vending Services Inc). In 2010 he hopes to continue the success and momentum with the birth of a new business, Go Bottleless Inc.

Adam Chamberlain is a partner with the law firm of Borden Ladner Gervais LLP and a member of the firm's Environmental and Energy practices. Adam acts as Environmental Assessment and environmental approvals counsel on large infrastructure projects in the water, wastewater, energy, and waste sectors and is active with environmental assessment processes for other types of projects as well. He is a Certified Specialist in Environmental Law.

After a long career in institutional equity sales with various Canadian banks, **Milla Craig** is now the principal of Millani Perspectives, offering sustainable investing industry analysis and consulting services to asset owners, asset managers, and publicly listed corporations.

Harry Dahme is a senior partner at Gowlings' Toronto office and leader of the National Environmental Law Practice Group. He has practiced exclusively in the area of environmental law since 1984 and has a solid reputation as one of the foremost environmental lawyers in Canada. Harry is certified by the Law Society as a Specialist in Environmental Law.

Since 2001, **Rick Findlay** has been a director of the Canadian Water Network, a national Network Centre of Excellence that matches, directs and manages Federal Government NCE funding for water research at Canadian universities and other public and private partner institutions. He is now vice-chair. Rick retired in July 2008 after almost a decade as director of the Water Programme of Pollution Probe, a Canadian non-profit, non-government organization.

Nancy Goucher is the program coordinator for Forum for Leadership on Water (FLOW), a collaborative of water policy experts encouraging government action to protect Canada's freshwater resources. She has a Master of Environmental Studies degree in Planning from the University of Waterloo. Nancy has published numerous articles on water management in Canada, including Seeking Water Justice: Strengthening Legal Protection of Canada's Drinking Water, a report she co-authored with Randy Christensen of Ecojustice.

Alan Harvie has practiced environmental law since 1989. He is chair of Macleod Dixon LLP's Environmental Law Practice Group. Alan has significant water law experience in Alberta, and has been involved with water law issues involving power plants, irrigation infrastructure, real estate and tourism projects, industrial facilities, water and wastewater treatment plants, and water rights trading. He is a past-president of Trout Unlimited Canada (Bow River Chapter) and a member of various water-related public advisory committees.

David Henderson is the founder and managing director of XPV Capital Corporation, a leading investment firm that invests in high growth water companies. David identifies and invests in companies capitalizing on the opportunities created by the "new water economy." He is a respected speaker and contributor in water technology and investing. David is an advisor to the Ontario Clean Water Initiative and Imagine H2O and was a recipient of Canada's Top 40 Under 40 Award in 2009.

Elizabeth Hendriks is the water governance and policy coordinator for the POLIS Project on Ecological Governance—University of Victoria (*poliswaterproject.org*) and is involved in the provincial government's *Water Act* modernization process. She is also part of the Living Water Policy Project and manages the evolving national water policy library found at waterpolicy.ca.

Christopher Hilkene is the president of the Clean Water Foundation, a Canadian non-profit organization dedicated to engaging individuals in actions that preserve, protect and improve our water. Since 2007, Chris has been a member of the National Roundtable on the Environment and the Economy and chairs its water program. He is a governor of Ryerson University, a director of the George and Helen Vari Foundation, Pollution Probe, and an advisory board member of Green Living Enterprises.

selection committee

Prior to joining Climate Change Infrastructure, a clean technology investment firm, **Faisal Mirza** worked as a consulting engineer for Earth Tech (now AECOM) where he designed, modelled and project-managed the construction of water resource systems for clients across North America and West Africa. He lived in Nigeria for 13 months managing Earth Tech's offices providing his water expertise to the World Bank, various state water corporations and the Canadian International Development Agency (CIDA).

John Nicholson is a member of the editorial advisory board of Water Canada and is its past editor. John co-founded Environmental Business Consultants (EBC), a firm that specializes in helping environmental companies grow and prosper through technical assistance, financing, and business development. He has worked in the environmental sector, including water and wastewater, since 1989. John has an B.Sc. (Eng.) and an M.Sc. in environmental engineering from the University of Guelph.

Bruce Pardy is a professor in the Faculty of Law at Queen's University. He has written extensively on environmental governance, ecosystem management, climate change, water policy and environmental liability, and has taught environmental law in Canada, the United States and New Zealand. Before becoming an academic, Bruce was a litigation lawyer at Borden Ladner Gervais LLP in Toronto. He presently sits on the Ontario Environmental Review Tribunal as an adjudicator and mediator.

Lynn Patterson is director of corporate responsibility for RBC, and is responsible for the strategy and promotion of the RBC Blue Water Project, the company's wide-ranging, 10-year, global commitment to water stewardship. She is the executive editor of RBC's annual Corporate Responsibility Report, and oversees the company's sustainability reporting.

Dianne Saxe is one of the world's top 25 environmental lawyers, according to Best of the Best, 2008. She's also listed as one of Canada's best environmental lawyers in numerous rating services, including every edition of Lexpert's Guide to the 500 Leading Lawyers in Canada. One of Canada's first Certified Specialists in Environmental Law, she has received the Ontario Bar Association Distinguished Service Award and has 34 years of experience in all areas of environmental law and litigation.

Hans Schreier is a professor in the Faculty of Land & Food Systems at the University of British Columbia. His research focuses on watershed management, land-water interactions, soil and water pollution, and GIS. He has worked extensively in watershed studies in the Himalayan and Andean regions, and in Brazil, Honduras, Vietnam, and Mongolia. In 2004 he received the Science in Action Award from the UN's International Year of Fresh Water, Science & Education Program, for outstanding work in making watershed management knowledge available in Canada and in developing countries.

An aquatic biologist with extensive work experience in water management issues in both British Columbia and Yukon, **Bob Truelson** is involved with Environmental Assessment work related to mining project reviews, conducting water quality trend assessments on priority watersheds in Yukon, and represents Yukon on national water files related to water quality. He is the manager of water quality for the Government of Yukon.

Anthony M. Watanabe is the founding CEO of the Innovolve Group, a consultancy helping clients maximize their investments in sustainability. Working with multinationals such as P&G, Kraft, RBC and Bayer, or global initiatives such as the Asia Pacific Partnership or the World Green Building Council, Innovolve seeks scale at the forefront of the sustainability movement. Anthony has championed Innovolve's emerging water practice, first with the inaugural Canadian Water Summit, and more recently with the report titled Water and the Future of the Canadian Economy. Anthony also volunteers his time to water initiatives such as the Canadian committee for ISO 14046 and the Water Footprint standard.

Cynthia Wesley-Esquimaux has taught Native Studies, Political Science, History, and Business, at Georgian College, Seneca and Laurentian University, and Aboriginal Studies and Social Work at the University of Toronto. She is an advisory member of the Mental Health Commission of Canada, holder of the Nexen Chair in Aboriginal Leadership at the Banff Centre in Alberta, a returning member of the Lake Simcoe Science Advisory Committee, a Lady of the Lake, and an active and engaging media representative. Cynthia is a member of the Chippewa of Georgina Island First Nation in Lake Simcoe.

Kevin Wong is the executive director of the Canadian Water Quality Association. His responsibilities include the execution of the association's strategic plan, growth of its membership, and close interface with regulatory bodies. Previous to joining the CWQA, Kevin worked with Cimatec Environmental Engineering and Jacques Whitford Environmental.

"Hopefully, in the not-too-distant future, there will be enough public support behind water issues that it will tip the balance." —Tim Morris

The Great Communicator

The Gordon Foundation's Tim Morris brings a fresh energy to politics and policy.

BY MAX FAWCETT

Sometimes, it pays to listen to your professors. That's certainly been the case for Tim Morris, the manager of the Walter and Duncan Gordon Foundation's Fresh Water Resources Protection Program. After all, it was a professor's suggestion that he read Marq de Villiers' Water: The Fate of Our Most Precious Resource that set him on the path that he's on today. At the time, Morris was working towards a Master of Laws degree at the University of British Columbia. He says, "That was probably the defining moment, in terms of when I really woke up to the challenge posed by water issues, both globally and also in North America."

In the years since, Morris has played an increasingly important role in the dialogue around water policy in Canada. Those efforts have been highlighted by his role in the creation of Changing the Flow: A Blueprint for Federal Action on Freshwater, a report published in October of 2007. "It's really a call for the federal government to work constructively with other governments to build a strategic approach for Canada around water issues," Morris explains, "so that we're not reinventing the wheel in different places."

Morris's gift for communicating complicated information in comprehensible terms is one of the reasons the report has remained relevant, says Bob Sandford, the EPCOR chair of the Canadian Partnership Initiative in support of the United Nations Water for Life Decade. "I think this is one of the most important movements that we're having in this country, being able to translate complicated scientific research outcomes into language the average person can understand and the politicians can act upon. Tim has been a leader in bridging the gulf between science and public policy."

Dr. Thomas Axworthy, president and CEO of the Walter and Duncan Gordon Foundation, thinks that this leadership role is the result of Tim's sincere commitment to the cause. "He walks the walk as well as does the talk," Axworthy says. "You know when you meet him that this is not a press release with a set of pat lines that somebody has written, but that he feels it deeply." For his part, Morris remains optimistic that meaningful change isn't too far away. "Hopefully, in the not-too-distant future, there will be enough public support behind water issues that it will tip the balance and we'll put in place a really comprehensive strategy for the country."

> "Tim takes an educated, big-picture view of the world, acutely understands the need for collaboration and teamwork, and supports the development of better public policy—not just through the foundation's funding, but also through his personal leadership, vision and integrity."

"I hate the idea of us making decisions in conference centres or behind desks." —Karen Kun


Credit: Roger Cullman

Open Dialogue

Working for social change in Canada's waterscape, Karen Kun is starting with young leaders.

BY KERRY FREEK

An oil sands executive, a First Nations community leader, a government policy advisor and a young person interested in sustainable environmental practices walk into a room. Sound like the beginning of a joke? Not if you're Karen Kun.

This group of unlikely conversation partners comprises the exact sort of people Kun is interested in bringing together for thoughtful dialogue on Canada's water issues—in fact, she's facilitated these and many other discussions several times, garnering and encouraging respect from all sides.

"Karen has a capacity to speak to any person in a way that is energized, true and focused," says friend and Waterlution colleague Dawn Fleming. "She's also a maverick—but there's intent, thought, experience, wisdom and structure in her methodology."

Educated in international business and environmental sustainability, Kun brought her global experience back to Canada after piloting water learning programs in South Africa, consulting in the United Kingdom, and completing field work in several countries including Colombia and Bolivia.

In 2003, she and co-founder Tatiana Glad started Waterlution, an organization that aims to harness knowledge, enthusiasm and commitment from young leaders in order to develop positions on water policy, company innovation and research interest areas. Frequent workshops in controversial locations such as Fort McMurray bring together young leaders, facilitators, and resource guests from disparate disciplines to discuss issues and share thoughts on innovation and resource management.

In October 2010, Waterlution upped the stakes. The Canadian Water Innovation Lab brought over 250 participants to Exshaw, Alberta for a successful "unconference" that promised to give young leaders the insights, tools and connections to make a difference in protecting and preserving water.

Building a community from these experiences is a huge part of Waterlution's mandate. "I hate the idea of us making decisions in conference centres or behind desks," admits Kun, who believes that informal networks are at the heart of social change. Another key, she adds, is mentorship. Through Waterlution, she and her associates have trained several facilitators to encourage dialogue on water.

"Karen enables people to feel more capable than they did before they met her," adds Fleming. It's this empowerment that Kun aims to pass on to Waterlution participants. "Ultimately, we're hoping to have a very real impact on the way Canadians develop water policy, the way industries manage water resources and innovation, and the way the public engages," says Kun.

"I'd love to see Canadians be a bit bolder," she says. "Canada could be a phenomenal force in water, but collectively we have to want it."

> "Karen is making a positive, decisive and impressive contribution to the water sector in Canada. She strives to bring multiple stakeholders to the table and elicit real change while acknowledging and respecting opinions."

Credit: Owen Chang

Peter Huck stands beside a liquid chromatograph/organic carbon detection instrument in UW's lab. Purchased by a consortium of eight researchers from three different universities with support from NSERC, it is the first of its kind in North America.

On the Leading Edge

Peter Huck's team makes increasingly polluted water safer to drink.

BY KERRY FREEK

From an early age, Peter Huck knew water would be an important part of his life.

"Living across the street from the Welland River certainly piqued my interest in water and the environment," says the University of Waterloo (UW) professor. "At the time, Welland [Ontario] was one of the only municipalities of its size in Ontario that didn't have a wastewater treatment plant." As a young man, Huck preferred maintenance to lifeguarding and opted to backwash filters and change chlorine cylinders at a local swimming pool.

Huck's early exposure to water issues and his choice to investigate drinking water has produced a lifetime of valuable research. An internationally recognized and awarded water treatment expert, he has held the Natural Sciences and Engineering Research Council (NSERC) Chair in Water Treatment for four five-year terms—a length of time that Rick Culham, associate dean of research and external partnerships in UW's Faculty of Engineering, believes may be unmatched by any other researcher at the school.

In addition to conducting high-level, quality research, Culham credits Huck's ability to build lasting partnerships as the secret of his success. "He's done an excellent job of building a very strong team," says Culham, who refers to not only research colleagues but also municipal partners—many of whom have continued to support the Chair over its lifetime.

Municipalities are at the core of Huck's research. Called upon to participate on an expert panel during Part I of the Walkerton Inquiry, he is well known for his expertise in municipal utilities. Currently, his team is partnered with a number of municipalities looking at several areas, including methods to treat for trace contaminants such as pharmaceuticals and endocrine disrupters; the use of membranes and ways to reduce their fouling; and improved methods of analyzing for pathogenic organisms.

Additionally, Huck's team is responsible for training the next generation of specialists in new treatment technologies. Teaching, he says, is a great opportunity. "Students have a passion to learn and a curiosity that I find quite stimulating," he says.

> "Peter has a thoughtful and thorough involvement in the field of water technology, not only due to his own contributions, but also in mentoring and pushing forward the next generation of engineers."

As he nears the end of his fourth term with NSERC, Huck is game for a fifth. "The ultimate goal is to try to make the drinking water supply as safe and reliable as possible for people, and to allow it to be robust," he says. "In general, we take for granted the provision of a safe and adequate water supply on this continent. It's one of the key underpinnings of our society; we have to keep working to ensure that it's safe and reliable."

"What we've found through these working groups is that there's movement, the finding of common ground, and the creation of relationships which will also create the potential for negotiation as things move forward." —Cathie Brown

Informed Consent

For Cathie Brown, engagement means more than just having an opinion.

BY MAX FAWCETT

For Cathie Brown, like most rural Ontarians, the Walkerton Tragedy still looms large. "We've really taken water for granted," says Brown, the project manager of the Ausable Bayfield Maitland Valley Drinking Water Source Protection Region and a member of the Walkerton Clean Water Centre's board of directors. "I think the events of Walkerton stopped us all in our tracks and caused us to really rethink what we had taken for granted."

Brown, who also lectures on rural health issues at the University of Western Ontario's Faculty of Health Sciences, believed that a different approach to the creation of a regulatory framework, one that involved citizens from the beginning, was needed. "If the people in the municipalities don't understand the rationale and the goals it's going to be very difficult to move forward," she says. "It's a more difficult process than it needs to be if people aren't included right up front."

That inclusion makes the conventional concept of public consultation—which tends to take the form of a few one-off meetings and a Seinfeldian airing of grievances—look like a joke. Brown believed that the public didn't just need to be consulted, but engaged and educated, an approach that she describes as a "community development model." Rather than simply asking for their opinions, she wanted to create a program that would help them formulate more educated and informed opinions; ones that would challenge the people making the decisions.

The result was a network that featured six local, multi-stakeholder, community-based working groups, a regional municipal sub-committee and a professional adult-education learning program to train its participants. Almost 100 people joined the working groups, with more than 75 of those completing the 15-module training component by 2009. The educational benefits produced by this form of so-called "deep engagement" flowed both ways, too. "It sharpened our ability to understand what people were thinking, and the things that maybe we'd overlooked in terms of issues and perspectives that we were going to have to address," Brown says. "It was very educational for us; it was educational for everybody."

Larry Moore, CEO of the Walkerton Clean Water Centre, admires Brown's ability to see the bigger picture when it comes to formulating good policy. "She doesn't just take a two-dimensional view of what communication and outreach can be," he says. "She sees it as a very complex, but at the same time manageable, enterprise to really engage the people of Ontario in drinking-water issues." That engagement, Brown believes, has to take place at the source. "I know broadly people have been looking at electronic alternatives, but my experience is that face-to-face really does have a huge impact. It is such a rich process, and the results are so valuable, that I believe it's worth the effort."

"Cathie's work in developing source protection programs in western Ontario is a gold-star example of how to truly engage stakeholders."

Bob Dell returns from his first two-hour walk to a cattle pond with children in Kisoro, Uganda in 2002. Since then, the Water School has helped over 200,000 people in Kisoro gain access to clean water.

Worth Fighting For

Bob Dell's dedication to clean water is having a global impact.

BY JESSIE DAVIS

After a 30-year career as a water scientist at his own Dell Tech Laboratories, Bob Dell visited Uganda in 2004 with global charity Compassion Canada and saw firsthand the impact that waterborne illnesses were having on the nation. He realized the answer to this problem was potentially so simple that it had been hidden in plain sight for years. The biggest roadblock was a lack of education. Since then, he has dedicated himself to ensuring that children around the world are educated about the importance of hygiene, sanitation and clean water through the Water School, which he founded in 2007 with colleague Fraser Edwards.

Rather than sending their own representatives (essentially strangers) into the community, The Water School trains local teachers and other respected community members to use solar water disinfection (SODIS), then leaves it to them to engage children and families and teach them how to run the process and take clean drinking water into their own hands. "Ownership is the only way that you get sustainability," Dell says.

Recommended by the World Health Organization (WHO), UNICEF, and the Red Cross, SODIS involves containing water in polyethylene terephthalate (PET/PETE) plastic bottles and exposing them to direct sunlight for a full day so that UV-A rays can kill illness-causing viruses, bacteria and parasites like giardia and cryptosporidia.

In his testing, Dell also managed to simplify the process originally set out by the Swiss Federal Institute of Aquatic Sciences and Technology.

With continued success in Uganda, Bolivia, Sudan and Kenya, the Water School began expanding into Haiti in October 2010, in the wake of its devastating earthquake and cholera outbreak. Dell is spending two months in Zambia to solidify opportunities there.

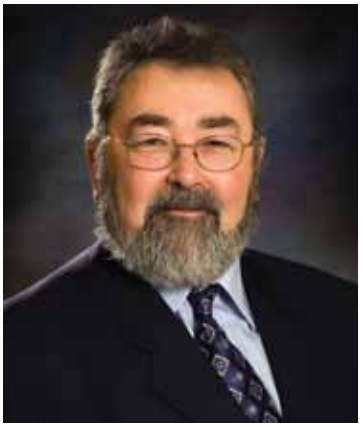
Bradley Pierik is currently researching water bag technology as a substitute for bottles, which don't ship well due to their awkward shape. In addition to working on his Master's thesis in Chemical Engineering at the University of British Columbia, he also works closely with the Water School, having built connections and assisted on projects in the Philippines and East Africa.

"Bob's work is having a tremendous impact on water health and awareness in Canada and abroad," Pierik says. Dell, he explains, has a very unique leadership style that engages his team to look for their own opportunities—and this has even spilled over into the community. Inspired by the Water School's annual fundraising Climb for Clean Water on Mount Kilimanjaro (which raised over $200,000 for clean water efforts in March 2010), one London, Ontario girl got her entire school involved and organized the Kids Water Climb this past October. The students raised over $9,500 as they climbed Mount Boler. The Water School is developing an information package based on this success in the hopes of engaging more schools across Canada in the global issue of clean water.

> "Bob is clearly unique in that he works with appropriate technologies in small-scale problem solving."

"Bob jokes that he works harder now that he's retired," says Pierik, adding that Dell does it for the smiles on children's faces when they're happy and healthy. "No one is better qualified to be recognized as a Canadian water champion."

Our selection committee also gave these people the thumbs up.



John Coburn, Chairman, EnviroTower

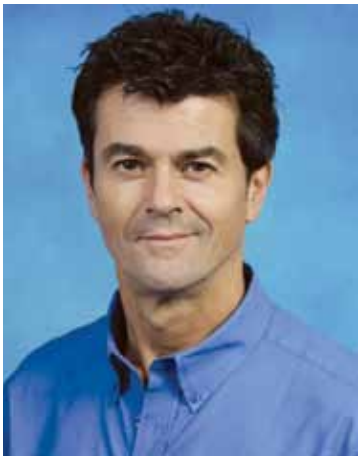
John Coburn was one of the earliest employees of ZENON Environmental, one of Canada's most successful water technology companies to date. As president and COO, he helped grow the company from start-up to world leader. Prior to his involvement with ZENON, Coburn honed his water expertise with Environment Canada. He now sits on Sustainable Development Technology Canada's investment committee and is the sector practice lead, water and wastewater, for the Department of Foreign Affairs and International Trade's cleantech strategy.

"John's success in growing ZENON from a startup into a business with a $770-million market capitalization should make him the water equivalent of Jim Balsillie or Ted Rogers."

Wayne Parker, Professor, University of Waterloo

University of Waterloo's Wayne Parker is one of Canada's foremost experts on wastewater treatment. He has projects with Health Canada, Environment Canada, the Canadian Water Network Centre of Excellence, the Ontario Ministry of Environment, Ontario Centres of Excellence, and many private sector companies. Parker has recruited and trained many graduate students while performing the duties of associate dean of engineering for cooperation education and professional affairs.

"Canada's cities continue to grow, and so do the demands on our municipal and industrial wastewater treatment facilities. It's gratifying to know that people like Wayne are out there developing innovative engineering, chemical and technological solutions to the problems."



Phillip Adsetts, Managing Director, Kinetico Canada

For Phillip Adsetts, trust and respect are some of the best goals a company could achieve. Using his work with Kinetico as a vehicle for change, he encourages consumer understanding of water issues as they pertain to environment and lifestyle. Adsetts also supports the industry as the current VP of the Canadian Water Quality Association, and a volunteer for Alternatives, a Canadian environmental advocacy magazine.

"Phillip is an inspirational leader in our industry. Since he took charge of Kinetico Canada in 2000, he has consistently worked to enhance public perception and knowledge of the water treatment industry."

A member of SMART's team does an irrigation audit.

The Bottom Line

SMART Watering System's simple solution makes a splash with building owners and operators.

BY JESSIE DAVIS

The concept is simple: synchronize and monitor irrigation systems to use water more responsibly. Yet somehow, it still manages to slip under the radar of most irrigation distributors. SMART Watering Systems' founder, Chris Le Conte, explains that despite the logic, it's still such a new idea that many people don't even know that they don't know about it.

"Most property and operations managers don't even realize that there are problems with their current system unless something dies or drowns," Le Conte says.

This was the case for Dennis Nazareth, former operations manager at Toronto's Yorkdale Mall and currently at the Scarborough Town Centre.

"Within two years," Nazareth says, "the cost of the upgraded system has paid for itself."

At Yorkdale, SMART Watering Systems did a complete irrigation retrofit, installing new nozzles and sprinkler heads as well as a weather station on the roof of the building to adjust the watering schedule accordingly. The end result? Yorkdale used 85 per cent less water for irrigation. At the Scarborough Town Centre, phase one's complete system upgrade has just been completed. Next year sees the beginning of phase two, which will monitor flow patterns to virtually eliminate waste and maximize the building's water conservation.

As environmental responsibility becomes a higher priority across the country, SMART Watering Systems has expanded from Ontario into British Columbia, and has become a leader in providing environmentally sound water irrigation solutions. In just four years of business, the team has already saved clients millions of litres of water by updating irrigation systems to include new controllers, master valves and flow sensors, tracking weather systems to adjust flow accordingly, and making recommendations for collecting and redistributing rainwater.

"We thought we were doing great, but they've really brought us over the finish line in terms of water conservation," says Michelle Brown of Bentall Real Estate Services.

When SMART Watering Systems finished with one of their corporate properties in Mississauga, they were using 72 per cent less water.

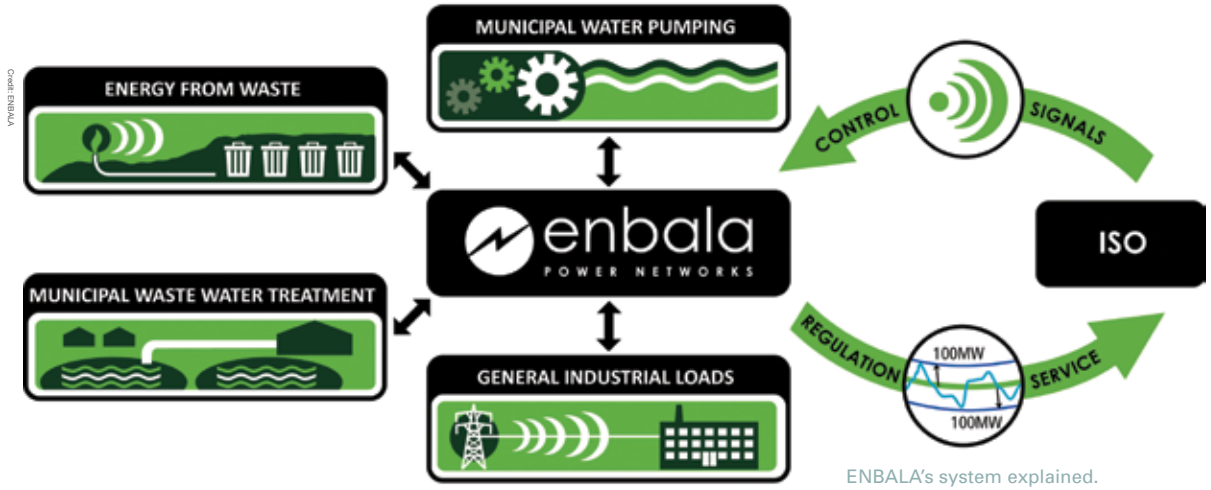
"They were also a great conduit for municipal incentives," Brown adds.

In fact, SMART Watering Systems has been working closely with Peel Region, Ontario to establish a pilot program offering financial incentives to local businesses that actively reduce their water consumption. In addition to helping set the qualification standards for the program, they also assist clients in meeting these criteria to maximize their cost savings.

> "As greywater systems become integrated into the larger water management strategies in Canada, this company poses to be a leader in the industry."

"Most regions are looking for smarter ways to use water, but not many are offering financial incentives just yet," Le Conte says. "We're helping municipalities improve their understanding of the irrigation market."

As SMART Watering Systems assists individuals, businesses and municipalities in improving their water conservation methods, the company's momentum shows no signs of slowing. Nazareth attributes this to Le Conte's dedication. "When you talk to him, you can see how passionate he is."



ENBALA's system explained.

Thinking in Grids

ENBALA's technology harnesses energy and opens new revenue streams for water plants.

BY KERRY FREEK

It's seems impossible, but with its new smart grid development, ENBALA Power Networks is promising municipalities a no-strings-attached source of revenue. We're not taking full advantage of the flexibility in our power systems, says Ron Dizy, president and CEO of ENBALA. And wasted power is wasted money.

Formerly called Sempa Power, the originally British Columbia-based company's heritage started with hybrid heating, a system designed to allow commercial buildings to decrease greenhouse gas (GHG) emissions and reduce energy costs through automatically switching between fossil fuels and, in British Columbia, hydroelectricity, based on the cheapest fuel source in a 24-hour cycle. "We've always been about optimizing the way loads use energy," says Dizy. Sempa's team wanted to know what else it could do to balance energy.

What does this have to do with water?

Now located in Ontario, the newly renamed ENBALA Power Networks is connecting its smart grid technology to water and wastewater systems. Using two-way communication networks to help the electricity market connect to these facilities, the technology adjusts the way equipment, such as blowers and large pumps, uses energy on a second-by-second basis.

"Based on the water system's capacity and inherent flexibility, adjusting real-time electricity usage is achievable without affecting water treatment or the delivery of water to the end-user," Dizy explains. This flexibility, also known as system regulation, is one of the ancillary services required by Ontario's Independent Electricity System Operator (IESO). Municipalities can sell system regulation back to the IESO—all while reducing the need for fossil fuel generation.

Why water? "The core technology could be applied to anything," says Dizy. "We look for places that are large users—cold storage facilities, industrial ventilation—or creators of electricity, such as landfill gas. We went after water first because it's one of the biggest consumers of energy."

The City of Windsor, Ontario has signed on to become one of the first municipal participants to test the technology, and the Ontario Clean Water Agency (OCWA) is also a partner. OCWA's first collaboration with ENBALA will be a pilot project to demonstrate capacity for water systems to provide demand-based ancillary services to the IESO.

> "I like this business for its multiple environmental, energy, and economic benefits."

"This technology helps to free up hydro generators, allowing them to run more often and place more energy into the grid," says Nick Reid, OCWA's VP of business development. "We're also trying to do the right thing for our clients—helping to introduce a new revenue stream by leveraging their existing assets in a new way."

By helping consumers use an existing system in a smarter, more efficient way, ENBALA is offering them a low-to-no-cost way of lowing GHG emissions and, at the same time, seeing very real economic benefits.


The Enermodal team at the LEED-Gold Ball's Falls Centre for Conservation in Jordan, Ontario.

Credit: Enermodal Engineering

Right from the Start

Enermodal's green building mandate begins with its head office.

BY JESSIE DAVIS

With three Leadership in Energy and Environmental Design (LEED) Platinum certification ratings (New Construction, Commercial Interiors, and Existing Buildings: Operations and Maintenance), Enermodal Engineering's Kitchener, Ontario headquarters sets a standard for environmentally responsible building development. A Grander View, named for its location on the Grand River, was completed in 2009. The building uses 82 per cent less energy than it would if it had been built conventionally.

Factor in the Platinum certification of its Calgary office and Platinum candidacies in Toronto and Denver, and it becomes obvious that the Canadian consulting firm is a leader in the green building industry. With over 250 projects in various stages ranging from design and construction to pending or certified, Enermodal consults on over 40 per cent of all LEED-certified buildings.

Richard Lay is a senior mechanical engineer at the Kitchener office. He says that he's very happy with the 2009 improvements to LEED criteria, which are more focused on balancing both energy and water efficiency. He explains that before the LEED program, it could sometimes be difficult to convince clients to spend a little extra on water conservation efforts, because water and sewage were already relatively low cost. Now, however, LEED certification gives clients an extra push to use water more responsibly without compromising quality on amenities or design.

The Centre for Conservation at Ball's Falls is a great example. Part of the Niagara Peninsula Conservation Authority, the centre is a Gold-certified LEED building that is leading the way in water stewardship. In addition to low-flow fixtures, waterless urinals and on-site sewage treatment, Enermodal also installed three rainwater cisterns that supply the water for both toilets and outdoor irrigation. The landscaping consists of native species to ensure that plants can survive with very minimal irrigation requirements.

Toronto and Region Conservation Authority's LEED Platinum Restoration Services Centre is another great example of Enermodal's work. The centre uses low-flow fixtures, composting toilets and waterless urinals, meaning that they use absolutely no water for wastewater conveyance. Rainwater harvested on the roof and directed into a nearby pond along with surface drainage is used for irrigation. Compared to a conventional building of the same size, the building's indoor water use is effectively reduced by 80 per cent.

Enermodal also strongly believes in conserving at home. In addition to the buildings themselves being green, the firm offers employee incentives for driving hybrids, taking transit and even using compost bins and rain barrels. In further attempts to become carbon neutral by 2014, they have even installed video conferencing in each North American office to avoid travel whenever possible.

> "Enermodal demonstrates a commitment extending further than its bottom line."

This winter sees a new era for Enermodal as they settle into a partnership with MMM Group, combining their 30 years of expertise in sustainable design, LEED certification and green buildings with MMM Group's expansive national and international consulting capabilities. The firms are already working together on two of the largest public-private partnership projects in Canada.

Our selection committee also gave these businesses the thumbs up.

The EcoWater Canada team with its comic book character EcoRilla.

Credit: EcoWater Canada

EcoWater Canada

As the world's largest manufacturer of residential treatment systems, EcoWater Canada values leadership and its team believes that its job doesn't stop with sales. In addition to several social responsibility directives, EcoWater introduced the industry's first-ever recycling program designed for reverse osmosis water filtration cartridges. "Companies are larger than individuals and should be taking responsibility for the products they produce," says Paul Godin, president. EcoWater also developed EcoRilla, a comic book character that teaches young children about water stewardship.

"By beginning the reverse osmosis water filtration cartridges program, EcoWater Canada has empowered its customers to take control of their health and environment."

Paradigm Environmental Technologies

Currently, Canadians produce more than 660,000 metric tons of municipal wastewater biosolids each year and the annual cost of biosolids management is approximately 50 per cent of the total operating cost of wastewater management. Vancouver-based Paradigm Environmental Technologies has developed a solution. A disruptive, made-in-Canada technology, MicroSludge is a pre-treatment process is that is applicable to municipalities and industrial food and petro-chemical wastewater treatment plants. It applies an established organic material processing technology to improve the effectiveness of anaerobic digesters to convert waste sludge to renewable energy.

The MicroSludge technology recently received funding from the B.C. government.

Credit: Paradigm Environmental Technologies

"Paradigm recognizes the connection between wastewater and energy resources and works to optimize the chemical and biological energy producing resources that we also depend upon for clean wastewater."

Several stakeholders gather minutes after the Act is passed. L-R: (back row) David Rudolph, University of Waterloo's Water Institute; Minister of Environment John Wilkinson; Premier Dalton McGuinty; Brenda Lucas, MOE. (front row) Kelly Brown, MOE; Brent Wootton, Fleming College's Centre for Alternative Wastewater Treatment; Theresa McClenaghan, CELA; David Henderson, XPV Capital; Marc Bracken, Echologics.

A Bold Vision

Does Ontario have what it takes to become a global leader in water technology? The world is about to find out.

BY KERRY FREEK

Hot on the heels of the lauded *Green Energy Act*, Ontario's new *Water Opportunities and Water Conservation Act* aims to secure a significant role for the province in the estimated US$400-billion global water industry.

Why here, and why water? "We live in an increasingly thirsty world. There are billions of people who will need access to clean drinking water, and Ontario has a global reputation for providing it," says Minister of Environment John Wilkinson. "We see an opportunity to leverage our international status and solve a global need while creating jobs here in the province."

To bolster homegrown water technology development and export, the government has set aside up to $5 million over three years for the Water Technology Acceleration Project (Water TAP).

"The emerging cleantech cluster in Ontario is a pretty critical piece of our economic future," says Glen Murray, Minister of Research and Innovation. The ministry's task will be to oversee WaterTAP, a non-crown corporation that will help make connections between entrepreneurs, academics, investors and customers. "WaterTAP is focused on trying to bring industry together, and identifying possibilities for partnerships," says Murray.

During the Act's development stages, several groups (including Ecojustice, Great Lakes United, and Green Communities Canada) formed to launch the Ontario Water Conservation Alliance (OWCA), figuring that if the province wants to talk the talk, it must also walk the walk. In April 2010, OWCA called for the provincial government to include a strong conservation and efficiency theme.

The Province listened. "We're water hogs," admits Wilkinson. "We use more water per capita than almost anywhere in the world."

Recognizing that the group's platform made sense, the government amended the title of the proposed Act (originally referring to "opportunities" only) to include the word "conservation." The Act now requires water efficiency standards for consumer products, water use goals, and standardized information about water use on bills. "We're blessed with an amazing treasure in Ontario. We want to empower consumers to conserve more water," says Wilkinson.

> "Visionary legislation—forward-thinking in its support of technology development and comprehensive in its approach to conservation."

As the Act passed in November, its champions celebrated the victory, but cautioned that the real work was only just beginning. "We have more work to do as we enter the implementation phase of this legislation," said Theresa McClenaghan of the Canadian Environmental Law Association. "We must ensure the best possible outcomes."

A clear tank shows the inner workings of the 3L toilet.

Straight Flush

For the Proficiency 3L toilet, less really is more.

BY MAX FAWCETT

It wasn't long ago that the low-flow toilet was seen in the same skeptical light as the electric car—it was an environmentally friendly innovation that aspired to do more than it could actually achieve, requiring vast reserves of money and patience. But while an economically viable electric vehicle remains part of an as-yet unrealized future, the same can't be said about the low-flow toilet. Meet the Proficiency Ultra High Efficiency Toilet, a three-litre (3L) low-flow model designed by Hennessy & Hinchcliffe Inc. that actually works.

The concept behind the creator Phil Hennessy's latest invention is fairly simple. "By pressurizing the bowl's trap-way, which nobody else has done, you're able to start an immediate siphon without depending on water entering the bowl to start the flush, allowing efficient, effective, and quiet removal of waste with only three litres," says Jerrad Hennessy, Phil's son and an employee at Hennessy & Hinchcliffe Inc. That simplicity, Hennessy believes, will be the secret to the Proficiency 3L's success. "There's nothing to break on it, there's nothing to go wrong, it's easy to produce, and it just functions better than the traditional system."

Paul Roszell, the director of assets and property services for the London and Middlesex Housing Corporation, can attest to that efficacy. His organization replaced over 2,000 toilets in its high-rise towers with the Proficiency model, and the results so far have been impressive. "I'm not going to throw out a number, but it's quite substantial," Roszell says of the savings. "Within a few short years they will have paid for themselves." Better still, there have been no performance-related complaints associated with the decision to replace the older units, some of which used as much as 23 litres of water per flush. "If anything," Roszell says, "the performance exceeds that of the equipment that was in place."

Saving money is one thing, but the Proficiency 3L toilet's ability to save water is even more impressive. For example, an apartment building on Toronto's Danforth Avenue managed to cut its water consumption level in half just by installing the new toilets. "They're saving ten litres of water with every flush," Jerrad Hennessy says, given that the old models used 13 litres per flush. Based on an average of five flushes per day, he notes, "Every person in that building is saving at least 50 litres of water per day just from retrofitting their toilets."

Despite the accolades it has already earned, including recognition as the product of the year at the most recent International Association of Plumbing and Mechanical Officials symposium, the Proficiency 3L toilet still has a few doubters. "That's why we started with the retrofit market, to show people that this technology works," Jerrad Hennessy says. "Even now, if I talk to people about our 3L toilet, it usually takes a demonstration for someone to believe in it." But with the product already appearing in Home Hardware and Lowe's stores, and Rona soon to be added to the list of distributors, it appears that the Proficiency 3L is here to stay. "Like anything, it takes a little while to catch on," Jerrad Hennessy says. "We've really started to snowball now."

> "With trustmarks secured such as WaterSense and LEED eligibility, the manufacturers have taken meaningful steps to reduce risk for buyers, particularly early adopters."


In Moncton, the fixed network AMR system has stimulated a greater interest water usage patterns and how to improve them.

The Information Revolution

In the City of Moncton, a new monitoring system has residents thinking differently about how they use water.

BY MAX FAWCETT

Management consultant Peter Drucker said that if you can't measure something, you can't manage it. The City of Moncton could add a footnote to that widely traded aphorism, based on its experience implementing a fixed network AMR system. As they've learned, the more accurately you measure something, the easier it is to manage.

But the decision to install a new system of measurement for water usage wasn't inspired by any management theories. Instead, it was motivated by the imminent failure of the existing system, a telephone-line based set-up that shared infrastructure with the city's other utility networks. "In the end," says Mike Richard, the City of Moncton's utilities supervisor, "we had a quarter of our accounts that weren't reading." They thought about patching up the old system, but soon realized that the only satisfactory solution was an entirely new system.

Enter the Hexagram STAR system, a radio-based network that relays information from the household meter transmitter units (MTUs) to a series of 28 Data Collection Units (DCUs) that are mounted on roofs and utility poles throughout the city. Those units can take up to four reads a day, and that information, once collected, is linked into the billing system. Both the City and its customers have benefitted from the enhanced quality of information, which was instrumental in the City completing its first-ever International Water Association water audit in 2008.

The system also allows the City to create usage pattern profiles in order to determine when something unusual is happening. "If the average current is 200 per cent above the previous level, then you've either got theft or a leak," Richard says. "This provides us with a service call, where we can go out and respond at a given time." Those service calls, Richard suggests, have helped the city curtail the number of leaky toilets, bathroom fixtures and frozen pipes, all of which can lead to substantial volumes of wasted potable water. "It's become a big leak detector, you might say." Plugging those leaks is having an impact, too, if the city's consistent water consumption levels are any indication.

Robert Gillis, an engineer with Atlantic Purification Systems Ltd. and the chair of the Atlantic Canada Water & Wastewater Association, says that Moncton's monitoring system illustrates the value of good information. "Without accurate knowledge of what's going on in your water distribution system and the efficient relaying of that information, you can't provide the level of service necessary to ensure that safe drinking water is provided to your residents." Perhaps more important is the influence that this kind of accurate knowledge can have on the people who generate it. In Moncton, the fixed network AMR system has stimulated a greater interest water usage patterns and how to improve them. "You can monitor your own usage," Richard says. "Customers become more educated; they tell two friends or neighbours and the power in numbers just grows exponentially because you've educated them and empowered them to do it themselves."

> "This innovation is a driver technology. Hopefully, it will inspire many municipalities to realize that there is tech to assist them in meeting their sustainability and financial goals."

Our selection committee also gave these innovations the thumbs up.

A product rendering of GE's mobile evaporator.

GE Power & Water's Mobile Evaporator

In September 2010, GE Power & Water introduced a mobile evaporator specifically designed to help natural gas producers recycle untreated waters resulting from the hydraulic fracturing process. The evaporator is energy efficient, fully transportable, and cost-effective. It will enable onsite frac water recycling, reducing the volume of wastewater and fresh water hauls on and off site. Initial applications will be in various North American markets such as the Marcellus Shale reservoirs located in the Appalachian Basin, as well as the Horn River and Montney Shales in Canada.

"Industry needs to find less impactful means to discover and produce gas. This innovation takes into consideration all stakeholders and economic profitability. It is cost-efficient to the industry, impactful to the stakeholders, and it reuses and recycles water versus using freshwater sourcing."

West Elgin Water Treatment Plant

The original West Elgin Water Treatment Plant (circa 1912) presented difficulties with taste and odour, frazil ice, high turbidity events, inadequate chlorine contact time, untreated backwash residuals discharged to Lake Erie, and increased capacity to meet increasing demand. The new facility addresses all these challenges, incorporates new environmental concepts that are resulting in sustainability and cost benefits, and anticipates future issues. The water treatment plant boasts three primary innovative features: the backwash recycling process, the ultraviolet/advanced oxidation process application, and an engineered wetland.

"This multifaceted approach to water treatment is exciting for its mix of cutting-edge technology and wetland restoration. It saves the client significant costs in avoided pipelines, engages the community, and helps regenerate ecohabitats and woodlots. Such eco-restorative success is at the leading edge of the sustainability movement."

Credit: Region of Durham

Water Service Connection Replacement

After about 20 years in the ground, polybutylene water service connections in the Regional Municipality of Durham started to break down, causing the connections to leak. The Region identified hundreds of leaking connections that required replacement, which were causing a loss of treated water, valued at about $250,000 per year. When the problem first arose, the only solution was to estimate the approximate location of the main stop and proceed to dig holes in the grass or through driveways—at a cost of about $800 per connection and a number of unhappy residents. The Region received approximately $9.8 million through the Infrastructure Stimulus Fund and replaced connections using a less-invasive method and closed-circuit television cameras.

"This is a very clever project. The team should be commended for putting their heads together and coming up with an innovative and cost-effective way to solve what could have been a very expensive and damaging problem."

The Lake Windermere Project recently won recognition from the Real Estate Foundation of British Columbia Land Awards.

Building on Success

Living Lakes Canada is the newest member of an international network dedicated to protection, rehabilitation, and restoration.

BY JESSIE DAVIS

The world's wetlands are our natural filtration systems, protecting our watersheds from potential contaminants and impurities. Sadly, there is actually very limited ongoing monitoring of wetlands by government agencies, and very little funding for new initiatives. Enter Living Lakes Canada, the newest member of the Living Lakes International Network, headquartered in Germany with the Global Nature Fund.

Living Lakes Canada officially launched on November 29, 2010 as a collaborative effort between British Columbia-based Wildsight and the Lake Winnipeg Foundation. The growing international network strives to conserve and protect the earth's natural water resources through research and stewardship, and with Canada's involvement comes a new era in worldwide collaboration.

The organization's ongoing Lake Windermere Project is a groundbreaking demonstration of community involvement, with over 100 volunteers assisting in testing and data gathering. The project's success was recognized by the Canadian Environmental Assessment Agency in March 2010 when it was chosen as a best practice for community-based environmental monitoring. In November, the project was also honoured with the Real Estate Foundation of British Columbia's Land Award in recognition of leadership and innovation related to sustainable land use within the province.

Because of the Lake Windermere project's success, the Living Lakes Network founders at the Global Nature Fund have also asked Wildsight to create a community engagement handbook to be used among its many partners.

Alex Salki is a board member of the Lake Winnipeg Foundation and is a liaison for Living Lakes Canada. He says the Living Lakes Network has realized that stewardship is strongest and most effective when community members are empowered and working together.

"Having the project operate on this level make it a growing tool for change," he says.

The Lake Winnipeg project, aimed for completion in 2012, follows similar guidelines to the Lake Windermere project and hopes to engage the community in reclaiming the lake's functionality despite the depletion of its shorelines and surrounding wetlands.

> "The Lake Windermere project was hatched at the local level and, uniquely, the driver was not a crisis, but an understanding that managing natural resources is important."

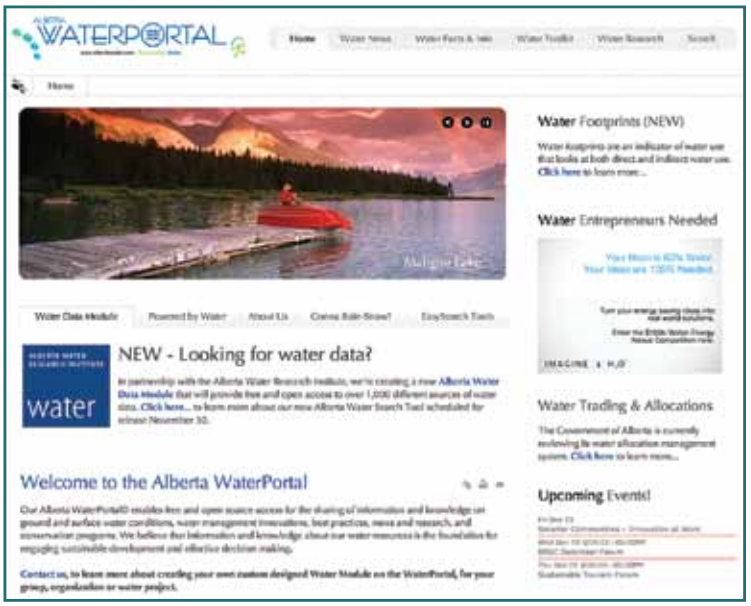
In addition to playing a role in creating a unified monitoring system to ensure worldwide consistency and compatibility in community water stewardship, Living Lakes Canada also hopes to increase its membership to include representatives from every watershed in the country.

"We're looking for active, non-governmental organizations that can contribute to our network while simultaneously being supported within our framework," says Heather Leschied, program manager of the Lake Windermere Project. Specifically, they're looking to include members from the Arctic, Atlantic and Pacific oceans as well as Hudson Bay, in addition to smaller drainage basins across Canada.

Tools for the Trade

Alberta WaterPortal provides a one-stop shop for the province's water data.

BY KERRY FREEK



Credit: albertawater.com

When it comes to water, coordinating knowledge is a challenge—in Alberta alone, there are over 1,000 water-related organizations. Recognizing the need to connect communities, streamline and disseminate information, and add value to the goals of these groups, the team behind Alberta WaterSMART, a not-for-profit society dedicated to the improvement of water management awareness, technologies and practices in Alberta, has partnered with the Bow River Basin Council, IBM, and Tesera Systems to deliver the Alberta WaterPortal.

"Our goal is to provide free and open access to water data information and knowledge," says Mike Scarth, the Portal's executive director. "Access to information is the foundation for effective decision making and sustainable management of water."

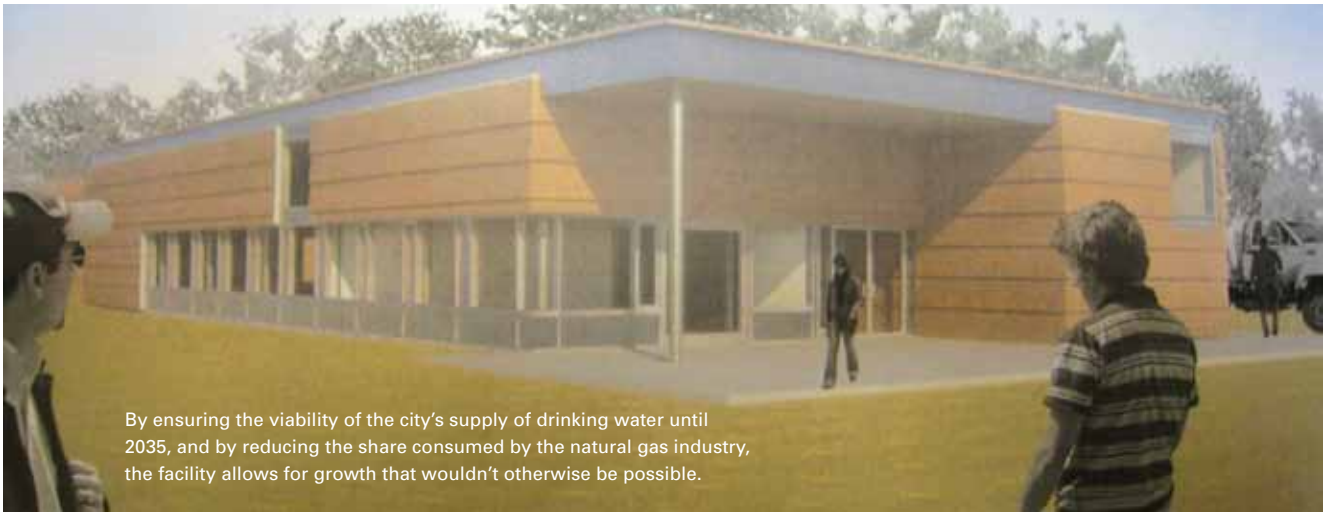
Two major sources provide content to the Portal. "Most of the content comes from searching and research that we do ourselves, but a growing portion of content is contributed and shared by visitors to the site." Visitors to the site, says Scarth, reflect a very diverse community from the water sector, educational institutions and the general public. "Teachers make up one of the most exciting groups—they tell us that their kids are passionate about the environment and trying to make a difference. They're looking for new ways to get them engaged."

Gathering all of the information into one place isn't as easy as it looks, so the team has developed a few additional tools to make it easier. In January 2011, in partnership with the Alberta Water Research Institute, the Portal will launch the Water Data Access Module, a customized Google search engine that will provide access to thousands of searchable sources of data.

What's next for the WaterPortal? "We're looking at expanding opportunities and partnerships beyond Alberta over next two years throughout western Canada and then nationally," says Scarth. In collaboration with Cybera, Western Economic Diversification, University of Lethbridge, University of Calgary, and Tesera, the WaterSMART team is involved in creation of the Water and Environmental Hub (WE Hub), an open source web platform that promises to aggregate, federate, and connect water data—initially across Alberta but will expand to include adjacent jurisdictions such as British Columbia, Saskatchewan, Manitoba, Northwest Territories and the Yukon to leverage and build on existing water knowledge. The project is valued at $1.758 million.

> "Sharing of knowledge and experiences is key, particularly using the web. This is a great initiative."

In the meantime, Scarth and his team are beginning to work with the 12 major watershed groups in Alberta, helping them to get their data onto the web—an important task, Scarth believes, because these groups have been tasked to be stewards. "One of the biggest challenges they have is communicating the health of their watersheds and basins. We're building web-enabled tools so they can share the most recent data and information regarding quality and quantity," explains Scarth. "We want to connect Albertans with all of the work and research that's happening around water."



Credit: City of Dawson Creek

By ensuring the viability of the city's supply of drinking water until 2035, and by reducing the share consumed by the natural gas industry, the facility allows for growth that wouldn't otherwise be possible.

Full Circle

The City of Dawson Creek and energy and petrochemical company Shell Canada find common ground on an innovative water treatment project.

BY MAX FAWCETT

As far as public-private partnerships go, you'd be hard pressed to find a more mutually beneficial arrangement than the one that's been struck by the northern British Columbia community of Dawson Creek and Shell Canada.

The city has been a hotbed of natural gas exploration and extraction in recent years, but that activity has placed a strain on its water resources, consuming up to 20 per cent of the available supply of potable water. When those demands and a particularly severe drought in 2006 combined to bring the nearby Kiskatinaw River, the source of Dawson Creek's fresh water, to dangerously low levels, city officials knew something had to be done.

As it turned out, the answer to their water woes lay in their own backyard. Instead of trying to limit the oil and gas industry's use of fresh water in its operations, the City elected to find a more familiar source. After the requisite feasibility studies and engineering reports, the City realized that it could treat and trade its own effluent water.

Finding a solution was just one half of the challenge. Figuring out how to pay for the $12-million project was the other. That's where Shell Canada came in. The company agreed to pay $9.75 million in exchange for 3,400 of the 4,000 cubic metres (m^3) of treated water the facility would produce each day. The City agreed to cover the remaining $2.25 million, in return for the other 600 m^3, a resource that can be used for watering parks and sports fields or sold to other industrial users for an estimated $500,000 a year.

For Mayor Mike Bernier, the partnership behind the Dawson Creek Reuse Project was a natural fit for his community's needs. "Most communities, especially small communities our size, really don't have the economic means to try to pull off a project of this magnitude without looking at partnerships," he says. "It only made sense to partner with the people who were causing some of the issues." Shell Canada was just as enthusiastic about the idea, says Kevin Henderson, the City's director of operations. "They don't want to be using potable water any more than we want them to be using it. They're very excited to find an alternative, and they were very aggressive in this."

The facility, which Henderson hopes will be completed by November 2011, will have longer-term implications for the City of Dawson Creek. By ensuring the viability of the city's supply of drinking water until 2035, and by reducing the share consumed by the natural gas industry, the facility allows for growth that wouldn't otherwise be possible. "We're looking at shifting twenty per cent of our potable water use right off the plate onto this, so that's going to free up all that usable water for growth in other sectors," Henderson says. "It's a win-win. There's no way around it."

> "This is a great example of how the public and industry can partner together to solve real water issues."

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