

Onsite

ONTARIO ONSITE WASTEWATER ASSOCIATION NEWSLETTER

treatment | technology | innovation | reuse | recycle

CONVENTION EDITION 2018

Ontario Onsite
Wastewater Association

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To submit an article or place an advertisement contact the editor at outeach@oowa.org

The opinions expressed in this newsletter by contributing authors are not necessarily the opinions of OOWA's Board of Directors or the Association.

Communal Servicing and the Decline of Villages and Hamlets

Mike Keene, MCIP, RPP Associate Director of Policy and Development, Fotenn Planning

Rural communities in Ontario face challenges such as ageing populations, seasonal residency, and little or no economic growth causing youth out migration. Rural villages and hamlets are in decline as a result of these challenges. A consequence of this decline is a reduction in the availability of public amenities and services and likely contributing to health concerns such as rates of obesity, heart disease, asthma, smoking, and alcohol consumption which are statistically higher in rural communities across Ontario (OPJ, 2015).

Many smaller rural villages and hamlets face the added challenge of being too small in terms of geographic area or population, or both, for municipal water and wastewater servicing to be viable. These communities have often grown organically with a historical pattern of development resulting in relatively urban-sized lots, typically less than one acre (0.4 hectares) in area and often significantly smaller. These hamlets are also, typically, serviced by private on-site water (e.g. well) and private on-site sewage disposal (e.g. septic) systems.

Servicing standards are no longer able to allow the development of such dense villages and hamlets on private



services. We have a general and evolving knowledge of the ecological risks of nutrient loading in lakes and rivers. We also know the risks of contaminating aquifers and other sources of well water due to over-concentrating individual septic systems. The solution to these challenges is generally to only permit private on-site services on lots that are at least two (0.8-hectares) to two-and-a-half acres (1.0 hectare) in area. New rural development is therefore typically limited to lot sizes that make Frank Lloyd Wright's Broad acre City seem like a comparatively compact and efficient form of development.

The Provincial Policy Statement (PPS) provides the high level direction which guides development in Ontario.

continued on page 38

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PRESIDENT'S MESSAGE

I would like to welcome those participating in our 2018 Convention and Expo at Deerhurst Resort in Huntsville. We have two full days of information sessions, including technical talks and panel discussions. Building on the success of last year, we are once again offering training sessions to compliment the two days of information sessions. Our annual conference provides tremendous opportunities for professional development, and is the place to go to keep up to date on industry news and trends, and to network with other professionals in the industry. Our trade show floor will be full, with updates on the latest products and services available to industry practitioners. Thank you to our dedicated staff and volunteers who help make this event happen every year.

This year is OOWA's 19th annual conference. We have grown significantly as an association over that time, not just in our membership numbers, but also in the variety of professionals we represent across the industry. There is incredible depth to the knowledge base and skill sets within our own membership, and we have a tremendous opportunity to continue to grow as an association, and continue to advance as an industry. It has been my pleasure to serve as president of the association for the last two years. I will say that it has been a bit of a roller coaster ride, but I am confident that OOWA is heading in the right direction. I have learned much and I now have a greater appreciation for the extent of the knowledge, experience and expertise contained within our membership.

I think it is important to remember that a collaborative, collegial atmosphere will go a long way towards improving and strengthening our industry, especially as we interact with other groups and with government. Differences of opinion and disagreement among industry members is necessary to foster dialogue and further the conversation amongst ourselves. Diversity in our technologies, and the wide range of solutions available in all facets of the industry, are what makes it such a dynamic, engaging and interesting industry to be a part of. With these differences of opinion and diversity

of solutions comes healthy competition among industry partners, which is necessary and to be expected. However, we must be united when interfacing with the government, other outside organizations, and the public. Our messaging as OOWA members must be consistent to maintain credibility and respect.

To that end, we must keep the dialogue open amongst ourselves, and do our best to represent all industry stakeholders, not just our own immediate interests. This may not always be easy, but it is necessary to continue to move OOWA forward, and for us to continue to be the voice of onsite and decentralized systems as environmentally sound and sustainable servicing solutions for Ontario. To that end, I would challenge you to take a moment and ask yourself if your contributions to our industry are done with a view to advancing the industry in a collective manner so that we can be stronger together. We all shoulder other responsibilities as individuals and business owners that often have competing interests. I'm not suggesting we sacrifice our own success for that of our competitors, but I think we can always use a little reminder that sometimes we need to consider the bigger picture, if we are going to continue to move our industry forward. Enjoy the conference!

Anne Egan

Anne Egan,
President



CONVENTION SCHEDULE

SUNDAY, APRIL 15, 2018

10:30 am to 11:30 am	OOWA Board Meeting	J.E.H. Mac Donald Room
12:00 pm to 4:00 pm	Registration Opens	Guest Service Foyer
12:00 pm to 6:00 pm	Exhibitor Set-up	Legacy Hall
1:00 pm to 4:00 pm	TRAINING SESSIONS*	
4:30 pm to 5:30 pm	Annual General Meeting	Waterhouse 4
7:00 pm to 9:00 pm	Town Hall Meeting and Convention Welcome Reception	Legacy Hall
9:00 pm to 11:00 pm	Bar and Bonfire Social	Bonfire Pit, Rotunda

MONDAY, APRIL 16, 2018

7:30 am to 8:45 am	Registration & Networking Breakfast	Guest Service Foyer and Legacy Hall
8:45 am to 9:00 am	Convention Welcome and Opening Remarks	Peninsula Room
9:00 am to 10:00 am	KEYNOTE ADDRESS: <i>True Confessions from the Ninth Concession</i> - Dan Needles	Peninsula Room
10:00 am to 10:40 am	SESSION 1: <i>Update on the Ontario Building Code</i> Greg Zimmer, Building Code Policy Development, Ministry of Municipal Affairs	Peninsula Room
10:40 am to 11:10 am	Networking Break & Exhibit Hall	Legacy Hall
11:10 am to 11:40 am	SESSION 2A: <i>Thoughts & Reflections One Year into the CAN/BNQ Environment</i> Bill Muirhead – Waterloo Biofilter	Waterhouse 1
	SESSION 2B: <i>Managing Low Flows During Commissioning</i> Joe Witlox – newterra	Waterhouse 4
11:45 am to 12:15 pm	SESSION 3A: <i>Open Panel Discussion: Part 8 of the Ontario Building Code</i> Brady Straw - Waterloo Biofilter Systems - Moderator	Waterhouse 1
	SESSION 3B: <i>Application of a Semi-Passive Biofilm Technology (BioCord) for Treatment of High Strength Septic Lagoon Wastewater</i> Kevin Bossy – Bishop Water	Waterhouse 4
12:15 am to 1:30 pm	Networking Lunch & Exhibit Hall <i>Special Platinum Sponsor Feature, EnviroSeptic</i>	Legacy Hall
1:30 pm to 2:10 pm	SESSION 4A: <i>Lowest Achievable Nitrogen Levels in Decentralized Wastewater Treatment: Experience and Considerations</i> Serge Baillargeon – Bionest	Waterhouse 1
	SESSION 4B: <i>Know your Risk - Pollution & Professional Liability Insurance</i> Clark Thomas & Peter Toole – Purves Redmond Ltd.	Waterhouse 4
2:15 pm to 2:45 pm	SESSION 5A: <i>Dewatering of Septage & WWTP Sludges with Freeze-thaw Conditioning</i> Chris Kinsley – University of Ottawa	Waterhouse 1
	SESSION 5B: <i>Navigating Legal Claims</i> Eric Gunnell – Gunnell Engineering	Waterhouse 4
2:50 pm to 3:50 pm	SESSION 6A: <i>Moderated Panel Discussion: Planning for Future Business Success</i> Rick Esselment – ESSE Canada - Moderator	Peninsula Room
3:50 pm to 4:30 pm	Networking Break & Exhibit Hall	Legacy Hall
6:00 pm to 7:00 pm	Pre-Banquet Reception featuring Nicholas Wallace – <i>Practitioner of the Art of Astonishment</i>	Prefunction Space (Entrance to Ballroom)
7:00 pm to 9:45 pm	Annual Awards Banquet and Illusionist Entertainment	Peninsula Room
9:45 Onwards	Hospitality Suites	Pavilion 10-427

TRAINING SESSION #1

New Regulations for
Commercial Vehicles in Ontario

HANK DUBEE,
MTO Safety & Enforcement

*WATERHOUSE 1
*PARKING LOT DEMO

TRAINING SESSION #2

MOECC's New Environmental
Compliance Approval (ECA)
On-line Application Training

JELENA CRNOKRAK,
MOECC

*WATERHOUSE 5

TRAINING SESSION #3

Biological Health
and Safety Awareness
Registered Professional Program
Required Course

OOWA
*WATERHOUSE 4

TUESDAY, APRIL 17, 2018

7:30 am to 8:45 am	Registration & Networking Coffee	Guest Service Foyer and Legacy Hall
8:45 am to 9:00 am	OOWA's ECO Request for Review	Peninsula Room
9:00 am to 10:00 am	KEYNOTE ADDRESS: <i>The ECO's Perspective on the Onsite and Decentralized Wastewater Industry</i> Michelle Kassel – Environmental Commissioner of Ontario (ECO)	Peninsula Room
10:00 am to 10:30 am	SESSION 1: <i>Seeing is Believing – Convincing System Owners to Take Action</i> Kelly Galloway – Engineering Technologies of Canada	Peninsula Room
10:30 am to 11:00 am	Networking Break & Exhibit Hall	Legacy Hall
11:00 am to 11:30 am	SESSION 2A: <i>Sustainable Development and Domestic Wastewater Treatment Systems: A Comparative Life Cycle Assessment</i> Marie-Christine Belangér – Premier Tech Aqua	Waterhouse 1
	SESSION 2B: <i>Social Media Strategies for Small Businesses</i> Jane Zima – SimbiH2O	Waterhouse 4
11:35 am to 12:30 am	SESSION 3A & 4A: <i>Open Panel Discussion: Delving Further Into Decentralized</i> Trish Johnson – WaterTAP - Moderator	Waterhouse 1
11:35 am to 12:05 am	SESSION 3B: <i>Hazard Lands & Septics</i> Terry Davidson – RVCA	Waterhouse 4
12:05 pm to 12:30 pm	SESSION 4B: <i>The Use of Eljen GSF System in a Constrained Lot</i> Dominic Mercier – Eljen	Waterhouse 4
12:30 am to 1:30 pm	Networking Lunch & Exhibit Hall <i>Special Gold Sponsor Features: Premier Tech Aqua and newterra</i>	Legacy Hall
1:30 pm to 2:00 pm	SESSION 5: <i>Rural Development Review from a Conservation Authority Perspective</i> Jayme Campbell – NPCA	Peninsula Room
2:00 pm to 2:30 pm	SESSION 6: <i>Hydrogeology to Your Best Advantage - Maximizing Groundwater Loading and Minimizing Impacts</i> Jim Walls – R.J. Burnside & Associates	Peninsula Room
2:30 pm - 3:00 pm	SESSION 7: <i>CleanTech Supported Development</i> Roddy Bolivar – Bolivar=Phillips	Peninsula Room
3:00 pm to 3:30 pm	Thanks & Closing Remarks	Peninsula Room
3:30 pm - 4:00 pm	Networking Break & Exhibit Hall Contest Awards & Prize Draws	Legacy Hall

Agenda may be subject to change prior to the event

CONVENTION SPEAKERS

KEYNOTE SPEAKERS



Dan Needles
True Confessions from the Ninth Concession
Monday April 16th, 9:00 am to 10:00 am

For 30 years and from more than a thousand platforms, Dan has entertained audiences ranging from the Perth County Holstein Club Ladies Night to the Muck Soils Research Station in Bradford. He has appeared for the Canadian Club, the Canadian Bar Association, Royal Bank, the Royal Winter Fair, the Outdoor Farm Show, the Writer's Development Trust, Read for the Cure, the Farm Business Conference, Innovative Farmers of Ontario and many other organizations from B.C. to the Maritimes.

Dan is the author of three books and he also served as a speechwriter and legislative assistant to the Minister of the Environment in the Ontario government from 1976-80 at Queen's Park in Toronto.



Michelle Kassel
The Future of Wastewater in Ontario: The ECO's Perspective on Onsite and Decentralized Wastewater Management
Tuesday April 17th, 9:00 am to 10:00 am

Michelle Kassel is a Senior Manager, Legislative Analysis, with the Office of the Environmental Commissioner of Ontario (ECO), where she is responsible for reviewing and reporting on the provincial government's compliance with Ontario's Environmental Bill of Rights and evaluating government policy and action on environmental protection. Michelle oversees the ECO's policy and legal analysis on a range of issues, with a focus on air, waste, water and wastewater.

Prior to joining the ECO, Michelle spent several years practicing law, first at a large corporate law firm, then at a small boutique environmental firm. Michelle also spent a short stint at the Ministry of the Environment and Climate Change developing policy and regulations to better support composting and nutrient management in Ontario.

Michelle has a law degree from Osgoode Hall Law School, a masters in environmental studies from York University, and an undergraduate degree in mathematics from the University of Western Ontario.



Serge Baillargeon
Serge Baillargeon is Vice President of Technology at Bionest. Bionest is a manufacturer specializing in innovative domestic wastewater treatment solutions. He has been with the company since he graduated in agricultural and bio-systems engineering at the University of Laval in 2004. Among other nutrient removal projects, he had the opportunity to develop a solution to improve cold weather nitrification in an aerated lagoon which is the subject of an ongoing master degree with Mr. Paul Lessard, Ph. D at Laval University.



Marie-Christine Bélanger
Marie-Christine Bélanger is the current Product Director and Government Relations at Premier Tech Aqua (PTA). Ms. Bélanger joined PTA in 2002. Her functions at PTA have brought her to play key roles on several steering and advisory committees throughout North America, namely with the BNQ, CSA, NOWRA, NSF, local provincial and state organizations. She has taken part in the development and advancement of industry-wide regulations and standards leading to better protection of the environment and the public's health. Ms. Bélanger holds a Physics Engineering degree from Laval University and a Master's degree in Chemical Engineering from L'École Polytechnique de Montreal.



Kevin Bossy
Kevin Bossy joined Bishop Water Technologies in October of 2008 as CEO. He has built on the success of the Bonnechere Valley Nutrient Processing Facility which utilizes Geotube® dewatering technology. Since Kevin's arrival, Bishop Water Technologies has grown exponentially, with projects and installations across Ontario.

Kevin worked at RBC Capital Markets for 13 years, he then moved to the commercial and personal side of banking, as a Commercial Account Manager. In his role he offered financial advice and products to a variety of businesses - from small home based operations to companies with multi-million dollar sales.



Roddy Bolivar
Roddy Bolivar is a civil engineer with over 25 years practice in water resource management. With experience working in both industry and for municipalities, Roddy helps navigate increasingly complex water resource planning, infrastructure management, land use approvals and water business development opportunities. Roddy likes to focus on promoting and developing plans to implement innovative approaches and products along with new practices in water resource and infrastructure management. He can be reached at roddy.bolivar@bolivarphillips.ca. Roddy is currently a Director and the Treasurer on the OOWA Board.

Jelena Crnokrak
Business Transformation Branch, Environmental Assessment and Permissions Division Ministry of the Environment and Climate Change

Jelena has a background in law, economics, environmental studies. She is responsible for managing the implementation of initiatives to support the government's risk-based approach to environmental permissions through streamlined services for business. Jelena is also responsible for providing outreach, training and tools such as guidance materials, e-learning videos, and website content to support clients through permissions processes.



Hank Dubee
SGT Hank Dubee has over 30 years of service with the Enforcement Section of the Ministry of Transportation. Hank is a Commercial Vehicle Inspector and Dangerous Goods expert who is also a Provincial Instructor who trains MTO, OPP and Municipal Police services on multiple regulations dealing with vehicle and transportation safety.



Jayme D. Campbell
Jayme D. Campbell, is a professional engineer who has been practicing hydrogeology for over 20 years. After 9 years as a consultant, Mr. Campbell has spent the past 12 at the Niagara Peninsula Conservation Authority. For over 8 years at the authority, he provided comments on privately serviced developments proposals on Highly Vulnerable Aquifers. These reviews were completed as part of a Memorandum of Understanding with local municipalities.

He has sought to leverage existing policies, procedures and sewage treatment options to enable planners and Part 8 Septic officials to endorse development that is safe and sustainable, despite many proposals being on Hydrogeologically Sensitive Areas.



Terry K. Davidson
Terry K. Davidson, P.Eng., graduated in Engineering Science from the University of Guelph in 1987. As Director of Regulations at Rideau Valley Conservation Authority (RVCA), his responsibilities include Chief Building Official for Part 8 (Sewage Systems) for the City of Ottawa and Tay Valley Township. He has been active in providing advice to the Province with respect to the transfer of the septic approvals function to the Ontario Building Code as well as on Code compliance issues related to site servicing. Terry was instrumental in forming the Ontario Onsite Wastewater Association and was the inaugural President.



Mike Dwyer
Mike Dwyer is the Chief Administrative Officer for the Township of Rideau Lakes. A planner by trade, Mike has been championing the need for wastewater servicing innovation to unlock viable social and economic futures for Ontario's small villages. Mike co-authored a seminal report in this regard call A Fresh Look – Alternative Servicing Models for Ontario's Villages. He has presented on this topic twice at annual ROMA conference and OMAFRA's Teeny Tiny series. He is currently working on a follow-up project which will seek to ground truth the conceptual principles uncovered in 'A Fresh Look' through an innovative call for solutions for the village of Delta.

CONVENTION SPEAKERS



Rick Esselment

Rick is the President and Founder of ESSE Canada, a water resource management firm providing warranty, operation, maintenance, inspection and management services for drinking water and wastewater treatment clients in Ontario and Nova Scotia. He is a Past President of OOWA and has held a Director position with the Association for the past 8 years, serving as Chair on several committees.

Rick has a Bachelor of Science in Microbiology, Bachelor of Applied Science in Public Health, Post-graduate Diploma in Occupational Health and Safety, and is a certified public health inspector.



David Finch

David Finch from Wes Finch & Sons Excavating Ltd. located in Bracebridge serving the Muskoka area, running a 3rd generation family business. Received Bachelor of Business from Wilfred Laurier University, has 30 years' experience in onsite industry.

David has been a OOWA member for 18 years with 3 years on OOWA Board of Directors. David is also a director with the Muskoka Shrine Club.



Eric Gunnell

Eric Gunnell, P. Eng is a Professional Engineer, and president of Gunnell Engineering Ltd.

Eric has extensive design experience with both Part 8 Ontario Building Code on-site sewage systems, as well as Ministry of Environment & Climate Change Environmental Compliance Approvals for Sewage Works. His area of expertise includes the design of new and replacement septic systems, site investigations, troubleshooting new and existing systems, investigation of failed systems, and assessment and upgrading of distressed or undersized systems.

Eric is a past president of OOWA and served as a board member for many years. Eric also served two terms as a member of the Building Code Commission, for Part 8 sewage systems. Eric has presented at past OOWA events, as well as at other onsite sewage system industry events.

Eric has acted as an expert witness on many sewage system related legal claims. Such legal actions have included Ontario Court of Justice claims, Ontario Municipal Board (OMB) and Environmental Tribunal hearings.



Trish Johnson

Trish Johnson is the lead for WaterTAP's Better Best Practices Initiative. Trish has over 30 years of environmental management experience with all levels of government and has managed numerous environmental assessments. Prior to WaterTAP, Trish was an Associate and the Small Solutions Strategic Advisor for R.V. Anderson Associates Ltd. At RVA, she was an environmental advisor to several small towns and worked extensively for Indigenous and Northern Affairs Canada (INAC), including senior support on the National Assessment of First Nations Water and Wastewater Systems in Canada and the policy path forward.



Kelly Galloway

Kelly Galloway, P.Eng., is a Civil Engineer with 27 years experience, 22 years with her own firm, Engineering Technologies Canada Ltd. based in PEI. Kelly has received multiple awards for excellence in engineering and sustainable design, including a 2011FCM Sustainable Community Award.

Known by many in the onsite industry as the "Queen of the Throne", Ms. Galloway's areas of consulting activity include: design of small community, commercial and residential sewage systems, soil evaluations and planning studies. She has consulted on technical aspects of guidelines for NB and BC.

Kelly is a voting member of the CAN CSA B65-12 Technical Committee for decentralized wastewater systems. She delivers training to installers, regulators and engineers, and is a frequent speaker at major industry conferences. Kelly holds two patents for inventions for the on-site industry.



Eric Kohlsmith

Eric has been a Part 8 Building Official for the Rideau Valley Conservation Authority since 2008 working in Tay Valley Township in eastern Ontario. Over the last 10 years he has administered sewage system re-inspections programs in up to 5 local municipalities, and is a member of the OBOA Golden Triangle Chapter Part 8 Committee. Eric was instrumental in developing OOWA's regional meeting template and was part of the initial organizing committee. Eric is also an instructor with the Ontario Rural Wastewater Centre delivering courses related to onsite sewage systems and was a member of the Technical Advisory Committee for the last round of proposed code changes for Part 8.



Mike Keene

Mike is an Associate Director of Policy and Development in FOTENN's Kingston office. He has over 15 years of professional planning experience in land development, policy planning and facilitation in the public and private sectors. Prior to joining FOTENN, Mike worked for the Ministry of Municipal Affairs and Housing. Mike maintains a balanced private and public sector work load. He is routinely called as an expert land use planning witness for Ontario Municipal Board (OMB) hearings. Mike's policy work is broad, covering a range of topics but often related to rural and small-town planning, shoreline development and community improvement.

Mike is a full Member of the Canadian Institute of Planners and a Registered Professional Planner in the Province of Ontario.



Dominic Mercier

With a degree in Civil Engineering and a Master Degree in Environmental Engineering, Mr. Mercier has been working for more than 22 years in Onsite Wastewater Treatment design and product development. He is the founder and president of Enviro Neptune a firm dedicated to research and development of Onsite Technologies as well as Enviro-STEP Technologies a company distributing, manufacturing and commercializing wastewater treatment processes for the Canadian Onsite industry.



Katherine Rentsch

Katherine is a Project Engineer at R.J. Burnside & Associates Limited specializing in on-site sewage system design. Katherine assists clients with the design of new and replacement sewage systems of all sizes, guiding them through the permitting and construction phases of the project. Katherine also served as the Project Coordinator at the Ontario Rural Wastewater Centre (ORWC) for ten years. Katherine continues to teach courses for the ORWC on a contract basis. She has also recently been appointed to the Building Code Commission as a panel member with expertise in Part 8 of the Ontario Building Code.



Charles-Edouard McIntyre

Charles-Edouard McIntyre is currently the Regional Sales Manager at Premier Tech Aqua for Ontario, Western Canada and Atlantic Canada. He started out his career as a small business owner, starting several companies in the fields of painting, landscaping, sports retail and leadership consulting.

He then embarked on a successful corporate career holding various sales and executive management positions.

Charles-Edouard also holds a Bachelor's degree in management from the Université de Moncton.



Bill Muirhead

Bill Muirhead is the President of Waterloo Biofilter, which is a Canadian-owned and operated company that develops designs and maintains advanced onsite wastewater treatment systems. Prior to joining Waterloo Biofilter he was a partner with Stacey Muirhead Capital Management. Bill has experience in the manufacturing industry as he owned and operated Waterloo Bedding for 14 years. Bill has a Honours Bachelor of Business Administration degree from Wilfrid Laurier University and holds a CPA, CA designation. He is a past President of the Kitchener Grand River Rotary Club and currently is the Chair of the Investment Sub-committee and is a member of the Board of Governors at Wilfrid Laurier University.



Meg Ronson

Meg Ronson is the Director of Partnerships and Analyst at SuccessionMatching, a business that matches buyers and sellers of businesses and connects them with succession planning professionals. Meg is an experienced small business sector and succession planning researcher, educator, and resource coordinator. She holds a Master of Economic Development at the University of Waterloo.

CONVENTION SPEAKERS



Clark Thomas
Clark's experience in the insurance industry can be dated back to 2002 however over the past 10 years he has focused primarily on environmental & construction risks. With a belief of being proactive in the industry, Clark is involved with various Association's including acting Board Member at the Hamilton Halton Construction Association, as well as the Toronto Construction Associations' Young Construction Leaders Club where he is a Committee Member.

His approach differs from most other insurance brokers with respect to risk management. Not only does he produce the most competitive quotes amongst his peers time after time, he also offer solutions which the common traditional insurance broker does not; such as developing core risk competencies, full contract reviews, prequalification of Owners/General Contractors/ Sub Contractors, and benchmarking.

Clark has worked on a wide spectrum of risks from a small home builder in Northern Ontario to a Global mining contractor and everything in between.



Jim Walls
Jim is a Geoscientist, Qualified Person (QPESA) and Vice President - Environment with R. J. Burnside & Associates Limited. He has over 25 years of hydrogeological experience, both domestically and internationally.

Jim's experience includes the assessment and remediation of impacts to groundwater from a wide variety of sources including contaminated sites, landfills and wastewater. He provides hydrogeological and environmental peer review of development applications for growing municipalities including Newmarket, Whitchurch-Stouffville, and King.



Jane Zima
Jane is an avid promoter for sustainable onsite and decentralized solutions and responsible community growth. She is a passionate advocate for water and energy resource management, and responsible consumerism.

Jane is founder of SimbiH2O, an innovative drinking water and wastewater management and education platform designed for service providers, technology manufacturers and rural homeowners. She is also co-founder of Ampersand Media Co., a media and distribution company supporting businesses that positively impact the planet. Ampersand Media Co. generates awareness and impact through social channels and media technology, and features sustainably designed and responsibly sourced products and packaging.



Joe Witlox
Joe compliments newterra's seasoned water and sewage treatment team with a unique combination of experience in the land development sector – from field service to engineering to project and operations management. Since joining the company in 2013, Joe's technical background and problem-solving acumen have allowed him to advance newterra's focus on robust, operator-friendly treatment solutions. He is also applying his significant expertise in plant optimization and process refinement to our sustainable communal and decentralized treatment offerings.



Greg Zimmer
Greg is a professional engineer with 15 years of experience in both the private and public sector. He is currently the Manager of the Building Code Policy Development Unit at the Ministry of Municipal Affairs (MMA) which is responsible for the regulatory framework for the construction of buildings under the Building Code Act and the Building Code, developing technical standards, policy analysis and providing Code interpretation advice.

Prior to joining MMA, Greg held a variety of Supervisor and Senior Engineering positions at the Ministry of the Environment and Climate Change (MOECC). Greg holds a Bachelor of Applied Science in Geological & Mineral Engineering as well as a Master of Engineer in Civil Engineering from the University of Toronto.

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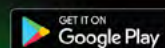
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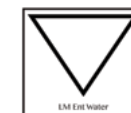
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MEMBER PROFILE

Bill Robinson

Robinson Enterprises Excavating and SepticCheck.ca

Name of Business:

Robinson Enterprises Excavating and SepticCheck.ca

Owner: Bill Robinson

Services:

Robinson Enterprises Excavating: Septic System Design/ Installation, Excavation/Site Servicing, Shoreline Reconstruction

SepticCheck.ca: Provincial Database for Septic Systems in Ontario

Service Area:

Robinson Enterprises Excavating: Simcoe County, York Region, Caledon

SepticCheck.ca: all of Ontario

Number of Years in Operation: 27 years

What got you started in the onsite wastewater industry?

At the age of 19 I began my career with my father's family business as farm drainage contractors. His company then began installing septic systems to diversify in a community that they were well established in. Seeing my growing interest in the business, my father took me on some septic system installation jobs. The opportunity of being my own boss was the biggest incentive to learning the trade. By the age of 22, my father retired from his company and I had started my own. I haven't looked back since.

Give us one reason/secret for your success

I have a natural ability to operate the equipment and an artistic vision to see the final outcome of a project. Me and my staff understand the value of quality work. It is our goal to keep our pricing competitive while making sure it accurately reflects our level of professionalism and experience. Our success is based in our repeat customer base and through extensive word of mouth referrals.



BILL ROBINSON
Robinson Enterprises Excavating
and SepticCheck.ca

Where do you see the onsite and decentralized industry going?

Our industry will always be regulated by the provincial government. It is important for Ministry staff to recognize the critical role that onsite professionals play in the treatment of septage. Technologies from the private sector are now available and enhance the protections provided under the Ontario Building Code. As a result, continued maintenance needs to be a part of the normal operational regime for all systems. This will help to ensure a clean bill of health during the change of ownership for septic systems, commercial or residential.

What can the onsite and decentralized industry do to improve?

I believe that we are doing a good job of connecting all industry stakeholders (associations, manufacturers, government, suppliers, installers, regulators, etc.). This work needs to continue to earnest. Our pain point in the industry is the lack of reporting on the maintenance and servicing of septic systems. There is still an "out of sight, out of mind" complex on the part of homeowners. All property owners need to be held accountable for the proper operation and maintenance of their systems and should be required to report this information.

Considerations for Flow Balancing

Anne Egan, P.Eng., Onsite Wastewater Specialist, R.J. Burnside and Associates

There are many situations where the use of flow balancing can benefit the design and performance of an onsite system. This design technique is particularly effective for facilities that experience predictable variations in daily flows, by temporarily storing short term peak flows that may exceed the downstream capacity of the remaining system components such as a treatment unit and/or leaching bed. I am referring here to situations where one may want to manage significant variations from day to day, as opposed to typical variations that may occur within a 24-hour period. The use of flow balancing requires a tank with sufficient storage volume, and timer-controlled pumps to limit the amount of flow to the rest of the system. Once the peak flow subsides, the timers will continue to dose the system to empty the balancing tank and treat the wastewater that was being stored. Examples of prime candidates for flow balancing would include churches, campgrounds, fairgrounds, banquet facilities, etc. If properly implemented, flow balancing can be used to moderate fluctuations in sewage flows and loadings to the system over longer periods, leading to better performance and treatment efficiency.

In order to properly design a flow balancing system and assign an appropriate pre-balanced and post-balanced design flow, careful consideration must be given to several factors, including the maximum daily flow, the duration and frequency of peak flow periods, where will the flows be balanced (i.e. raw or treated effluent?), the required capacity of the downstream treatment system and/or bed, the active storage volume required in the balancing tank, the size of tank required to accommodate that active storage volume, what timer settings are required to control flows. As with any tank that contains pumps, balancing tanks should always be equipped with access risers and hatches at grade, the ability to access the pumps and associated plumbing, valves, and floats without

entering the tank. Balancing tanks must be adequately vented, and equipped with a high-level alarm.

The concept of flow balancing is straightforward, but warrants a very careful and detailed analysis to simulate the anticipated conditions for each particular site and situation. A large tank with a pump will only balance properly if site specific conditions and constraints are well understood and considered. If flow balancing is not done properly, it will not be effective and the system performance can suffer. I have seen examples of designs that include a "balancing tank" that may or may not actually function to provide proper flow balancing. Each design requires an analysis of the anticipated inflows to the system over the course of a pre-determined period, the post-balanced design flow, and how much storage will be required to accommodate these two things. Balancing tanks must include timer-controlled pumps; demand dosing will not work to balance flows.

For simple, straightforward balancing applications where the peak use is predictable and isolated to one or two days per week (i.e. a church, or other weekend-use facility), it may be reasonable to calculate an average daily flow over the week and use that as the design basis for downstream components. For example, a church that is used minimally during the week may only generate a few hundred litres per day, but then a few thousand litres per day on a peak day over the weekend. The system must be able to accommodate these peaks, but the peak flow does not necessarily need to be the design capacity of all system components. In this case, it may make sense to install a balancing tank to manage peaks and limit the flow through the system to an average day flow calculated over the course of a weekly period. In this case, the minimum working volume of the balancing tank should be equal to the maximum

amount that needs to be stored over the course of the week. A simple mass balance calculation can be completed to determine the storage volume required.

In more complex situations, consideration may need to be given to the effect of multiple peak days that may occur consecutively, or within a relatively short period of time. If the balancing tank is not able to empty and "reset" itself in between peak periods, wastewater will accumulate and eventually reach a high level in the balancing tank. Seasonal use facilities such as campgrounds are a good example where consideration must be given to a more detailed analysis, or a flow simulation to determine the volume of balancing storage that is required. Simply relying on average flows could result in a system that is significantly undersized to accommodate flows during extended duration peak periods (i.e. summer holiday periods and long weekends). Consideration must be given to the number of consecutive days that may exceed the post-balanced design capacity of the system, and whether there is enough capacity to store and subsequently treat the wastewater that is generated. A flow simulation may need to be analyzed over several days or weeks to understand the variations in flows and how they will affect the design of the balancing system. In situations where there is not a good understanding of flows and use patterns it is always better to design more conservatively.

Due consideration to the above design elements is required to produce a robust design that will operate as intended. Flow balancing can be a great tool to maximize the efficiency and performance of treatment units and leaching beds; however, it should only be employed where the designer has a good understanding of the incoming flow patterns. Where significant and predictable daily flow variations are not present, flow balancing may not be possible.

2018 OOWA MEMBERSHIP BENEFITS



The **OOWA Insurance Plan** is administered by SeptiGuard, a company within the Verge Group. Coverage includes: General Liability, Pollution/ Environmental, Impairment/ Underground tank policies, Contractors Equipment, Barging and Waterborne Risks, Professional Liability for inspectors, designers etc., Vehicle/ Fleet coverage and Discount Home and Auto rates. Contact Scott Mullen: 905-688-9170 xt. 132 or email at mcmullen@vergeinsurance.com.



A new CAA Plus membership is reduced to \$99.00 for the first year (\$39.00 savings!) or a CAA Plus Associate Membership is reduced to \$75.00 for the first year. Contact CAA's Corporate Representative at 800-267-6394 ext. 6394 to sign up.



OOWA members save **10%** at **Mark's Work Warehouse** on the follow items and more; Carhart merchandise, Dakota Workware, Coveralls and Overalls, casual wear, work gloves, and all CSA footwear. Present it at any location to receive your discount.



Grand & Toy is your one stop shop for all your office needs including ergonomics, furniture, computer supplies, PPE, Jan/San. OOWA's partnership with G & T provides preferred pricing on 240 commonly consumed essentials, **plus 10% off market competitive web pricing**. Each member can add a customized price list of up to 25 items reflecting your business needs. Receive an additional 10% off your purchases for the first 90 days. Your savings could easily offset OOWA membership dues!



ALS Laboratory Group provides a **30% discount** on all your wastewater and soil testing needs. Contact Darlene Hoogenes-Stastny at 519-886-6910 or email at Darlene.Stastny@ALSGlobal.com.



Save **10% on any ORWC Course** offering (cannot be used in conjunction with other discounts). See their course offerings at www.uoguelph.ca/orwc/. Contact Bassim Abbassi at 519-824-4120 Ext. 52040 or via email at babbassi@uoguelph.ca.



OOWA members get guaranteed and discounted rates on car and trunk rentals.



OOWA has redeveloped the **Registered Professional Program (RPP)** to include an 'In-Development Stream' that addresses the needs of ongoing training and continuing education demands from our members. OOWA Professional Designations include: Wastewater Service Technician, Designer, Installer, Private or Regulatory Inspector, Residuals Hauler, Project & Administrative Professional and Technical Sales Consultant. Go to www.oowa.org to see the new Find an Expert directory and to learn how you can enroll and get placed on the directory.



OOWA collaborates with other associations in communicating to government with one united voice on issues that are of mutual concern to our industries. OOWA is proud to inform our members know that you can access membership rates for events and resources provided by our association partners:



- The Ontario Association of Septic Industry Service
- The Ontario Building Officials Association
- The Ontario Ground Water Association



To get more information on these member benefits please visit our website at:
www.oowa.org/about/join-oowa/

NEW & RENEWED MEMBERS LISTING

December 8th, 2017 – April 5th, 2018

NEW MEMBERS

Clark Ballantyne, City Of London
Robert Bezaire, Underground SpecialtiesC2
Ryan Brown, Randy Brown Excavating
Emily Burgess, University Of Waterloo - Business Development
Brian Campbell, Wyeval Concrete Products Limited
Pat Casey, Total Site Services Inc.
Greg Chappel, Ontario Parks/MNRF
Dwayne Coulas, Town of Petawawa
David Cousens, Kinburn Plumbing & Heating
Justin Davidson, Lloyd Collins Construction
Dennis Dedrick, Dedrick Bros. Excavating Ltd.
Nick Eisses, Eisses Bros. Excavating
Tom Ellis, Northumberland County
Marc Favaro, CMT Engineering Inc.
Greg Ford, Wilson-Ford Surveying & Engineering
Doug Godin, Town Of Huntsville
Nick Graham, Eisses Bros. Excavating
Brandon Hastings, Waterloo Biofilter Systems
Ryley Hilker, D. Greenfield Associates Ltd.
Brody Hodges, Lockwood Brothers Construction
Craig Kennedy, Newterra Ltd
Robert Koopmans, CMT Engineering Inc.
Tracey Laframboise, Total Site Services Inc.
Mat Maclean, C.C. Tatham & Associates
Andrew Maguire, ESSE Canada
Curtis Martin, Town Of Hunstville
Cody Morden, Charles Morden Construction Inc.
Nico Nirschl, Liberty Pumps
David Oliver, Concord Engineering
Nick Romero, D. Greenfield Associates Ltd.
Will Rounds, City Of London
Tim Salter, CMT Engineering Inc.
Tracey Spragg, Eisses Bros. Excavating
René LucSt-Arneault, Bionest
Mark Tardif, Township Of Wainfleet
Samantha Van Bussel, Young Professional
Mark Van Voorst, D.M. Wills Associates Limited
Jacob Vangerven, Van Gerven Excavating
Andrew Vitaterna, ASI Water
Sam Vreugdenhil, MakeWay Environmental Technologies Inc.
Andrew Waszczur, MNRF/Ontario Parks
Arthur S. Wesley, University Of Waterloo
Shawn Wheatley, CMT Engineering Inc.
Robert Whyte, Headwaters Construction Ltd
Amanda Willis, City of Belleville
Lee Wright, Dan Wright Equipment Rentals

RENEWED MEMBERS

Bassim Abbassi, Ontario Rural Wastewater Centre
David Adams, Adams Bros Construction
Leanne Addicott, KFLA Public Health Unit
Brandon Aitchison, Mysson Residential Consultants
Kevin Baltessen, Baltessen Excavating
Eric Bard Bionest, Technologies
James Barnes, Geo Barnes & Sons
Gord Bell, Acton Group Uxbridge Inc.
Dave Bell, B M Ross & Associates
Jean-Paul Bernard, Joop's Home Inspections
David Bettschen, O.Bettschen Construction

Jeff Binnie, G.E. Binnie Haulage & Excavation Inc.
Bruce Blackburn, B. Blackburn Ltd
Jeff Blackburn, B. Blackburn Ltd.
Bruce Bolduc, Construction Workplace Safety
Sandy Bos, Township Of Muskoka Lakes
Art Bos, Bos Engineering
Ryan Bos, Bos Engineering
Randy Bossence, Township of Centre Wellington
Ray Boyd, Premier Tech Aqua
Anthony Boyko, City of Markham
Penny Brake, Onsite Septic Solutions
Rick Brear, Adams Bros Construction
Randy Brown, Randy Brown Excavating
Paul Bruinsma, Bruinsma Excavating
Teresa Buckman, MakeWay Environmental Technologies Inc.
Brent Bunker, AAAA Sanitation
Darren Bunker, AAAA Sanitation
Mark Bunker, AAAA Sanitation
Joseph Burns, Howard Burns Equipment Rentals
Howard Burns, Howard Burns Equipment Rentals
Mel Bursey, Township of Rideau Lakes
Paul Cannon, Norweco Inc
Shannon Card, Waterloo Biofilter
Steve Carkner, Pentair Canada
Nancy Carpenter, Leeds, Grenville & Lanark Health Unit
Madeline Carter, C.F. Crozier & Associates
Robin Charette, Biobite
Frank Charlebois, S Charlebois Haulage And Excavating LTD
Greg Cherniak, Municipality Of Dysart Et Al
Louie Chiarappa, Hernandez Sanitation Services
Dorian Chlopas, Rowan Environmental Consulting Inc.
Howard Clark, P. Medley & Sons Ltd
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Brad Code, Lockwood Brothers ConstructionC45
Howard Cook, Howard Cook Drainage
Robert Cook, Township of Guelph/Eramosa
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Greg Corman, Waterloo Biofilter Systems
Eric Cousins, Cousins and Johnson Inc
Ron Cousins, Cousins and Johnson Inc
Clay Crepin, Gerry Crepin Cartage
Brock Cross, Gunnell Engineering
Ron Davenport, Infiltrator Water Technologies
Terry Davidson, Ottawa Septic System Office
Randy De Guire, Township Of Wainfleet
Anthony DeDominicis, Roswell Concrete Products
Larry E Dedrick, Dedrick Bros. Excavating Ltd.
David Denstedt, Muskoka Barging & Construction
John Desbiens, Cambium Inc
Lesley Desjardins, Alberta Onsite Wastewater Mgement Assoc.
Joe Dibbits, Dibbits Excavating
Don Dillman, Dillman Sanitation
Adam Dillon, Ottawa Septic System Office
Tammy Dobie, Municipality of Meaford
Kevin Dolderman, Pioneer Septic Solutions Inc
Lisa Dolderman, Pioneer Septic Solutions Inc
Ryan Dolderman, Pioneer Septic Solutions Inc
Stewart Dolstra, Cambium Inc
Matt Doyle, KFLA Public Health Unit
Eric Draper, The Septic Store

NEW & RENEWED MEMBERS LISTING

December 8th, 2017 – April 5th, 2018

Helena Draper, The Septic Store
Glenn Dryden, Dryden Excavation Inc
John Duffy, Van Harten Surveying Inc.
Gillian Dumencu, Clearford Water Systems Inc
Anne Egan, R.J. Burnside & Associates
Doug Elliott, Shepherd Environmental Services
Hassan Elmi, ADS Canada
Fritz Enzlin, Norfolk County
Harold Erb, Percon Excavating Inc
John Faris, Faris Excavating Ltd
Matt Farrell, Township Of Huron Kinloss
Dave Fedoriw, Township Of Georgian Bay
John Ferris, Ferris Trucking & Excavating
Steven Filipowicz, Ontario Parks/MNRF
David Finch, Wes Finch & Sons Excavating
Jim Firth, C.F. Crozier & Associates
Dwaine Fisher, Fisher Excavating & Grading
Laura Freeland, Durham Region Health Department
Peter Froehlich, Brooklin Concrete
Mike Fulton, Near North Supply

Jameson Gallinger, Waterloo Biofilter Systems
Andrew Garland, B M Ross & Associates
John Garrah, Ottawa Septic System Office
Carl Gauthier, Bionest Technologies Inc.
Jason Ghawali, Gunnell Engineering
Jack Gilbert, Gilbert & Sons Construction Ltd
Clayton Gilbert, Gilbert & Sons Construction Ltd
Perry Gingerich, P. Gingerich Excavating
Susan Gordon, Novatech Engineering
Rene Goulet, Goulet Septic Pumping & Design
Mark Green, Leeds, Grenville & Lanark Health Unit
Richard Green, R.J. Green Excavating
Brent Green, Township of Centre Wellington
Eric Gunnell, Gunnell Engineering
Daniel Hagarty, Township of Centre Wellington
William Handley, Handley Home Inspections
David Harsch, K Smart Associates Limited
Andrew Hartholt, Township of Centre Wellington
Kirk Hastings, Onsite Septic Solutions
Mark Heeg, Dynamic Fusion

NEW & RENEWED MEMBERS LISTING

December 8th, 2017 – April 5th, 2018

Andrew Hellebust, Rivercourt Engineering Inc.
Cliff Hobbs, Can-Mech Agencies
Jordan Hoekstra, Dig'R Wright Excavating Inc
Jason Hutton, Ottawa Septic System Office
Julie Ingram, Peterborough Public Health
Atul Jain, Peterborough Public Health
Chris James, Waterloo Biofilter Systems
Jaimee Johnson, Roth Global Plastics
Andy Jones, Town Of Gravenhurst
Christopher Jowett, Waterloo Biofilter Systems
Levi Junop, Town of Petawawa
Keith Karl, Caledon Excavation & Grading
Thomas Keane, Gunnell Engineering
Dan Keeble, Septic Tertiary Systems
Greg Keith, Matrix Property Inspections
Brent Kempton, Kempton Construction Inc.
Jocelyn Kerrigan, County of Lambton
Josef Kloepper, Gunnell Engineering
Lucas Knapp, Plum Hollow Excavating
Randy Knight, J.A. Porter Holdings Ltd
Bert Knip, MakeWay Environmental Technologies Inc.
Gerry Knoop, Denby Environmental Services
Eric Kohlsmith, Ottawa Septic System Office
Rick Kraemer, Thunder Bay District Health Unit
Don Krauss, Infiltrator Water Technologies
Terry Kuipers, Town of Minto
Lloyd Laidman, Intuitive Water Systems Inc
Coralie Lamaire-Chad, Bionest Technologies
Patrick LeBlanc, McIntosh Perry Consulting
Kevin Lehan, Town of Gravenhurst
Elizabeth Lew, Gunnell Engineering
Peter Libicz, Home Inspection Right Away
Veronica Linares-Krauss, Infiltrator Systems Inc
Steve Little, Norfolk County
Corey Lockwood, Lockwood Brothers Construction
Kevin Loiselle, Clearford Water Systems Inc
Andrew Lutyk, Chantler Barging
Rob MacLellan, Moose Creek Cement Products
Kevin MacLellan, Moose Creek Cement Products
Thomas Mahon, T.M. Mahon
Chad Mann, Lloyd Collins Construction
Cathy Marcellus, Wyevalle Concrete Products Limited
John Martin, Cromar Advanced Septic Systems
Philippe Masuy, Premier Tech Aqua
Bernard Mayer, BMK Health Inspection & Consulting
Frank McAughey, Pinestone Engineering Ltd.
Robert McAuley, County of Prince Edward
Dean McDonald, Township of North Glengarry
Andrew McGarvey, B M Ross & Associates
Joanne McGurn, KFLA Public Health Unit
Lynn McIlwaine, Gunnell Engineering
Charles-Edouard McIntyre, Premier Tech Aqua
Richard McKee, Vacutrux Ltd
Phil McKee, Vacutrux Ltd
Dominic Mercier, Enviro-Step Technologies
Kim Millen, Norfolk County
Gord Mitchell, KFLA Public Health Unit
Adrian Molloy, Molloy Contracting Inc
Wayne Moore, Cottage Country Environmental Services
Sherri Moore, Township Of Oro-Medonte
Stephen Morash, WMI & Associates

Kevin Morris, C.F. Crozier & Associates
Bill Muirhead, Waterloo Biofilter Systems
Corrine Nauta, County of Lambton
Caroline Newby, Caroline's Septic Designs
Don Oliver, Construction Workplace Safety
Bill Ormsby, Premier Tech Aqua
Steve Ott, Ottawa Valley Home Inspections
Mike Paquette, Anchor Concrete Products
Dennis Pardy, ZCL Composites Inc
Patricia Pearce, D. Greenfield Associates Ltd
Matthew Pearson, B M Ross & Associates
Gary Pearson, Pearson Engineering Ltd.
Cody Pearson, Edgar Howden & Sons
Glenn Pembleton, Waterloo Biofilter Systems
Martina Podolinska, Pentair
Duane Porter, J.A. Porter Holdings Ltd
Doug Post, D.F.Post Contracting Inc.
Michael Rahme, Home Pro Central Ont. Inc
Jason Rail, The Septic Store
Matthew Rainville, Gemtec Consulting Engineers and Scientists
Michael Reid, C.E. Reid & Sons
Greg Reimer, O'Hara Trucking & Excavating
Peter Reinhardt, Pentair Canada
Christine Reist, McIntosh Perry Consulting
Katherine Rentsch, R.J. Burnside & Associates
Steve Ritsema, Liberty Pumps
Bill Robinson, SepticCheck.ca/Robinson Enterprises
Scott Robinson, Unit Precast
Leroy Robinson, RH2O North America
Scott Roswell, Roswell Concrete Products
Eric Rozema, Rivercourt Engineering Inc.
Brian Rudak, Rudak Excavating Inc.
Robert Rudak, Rudak Excavating Inc.
Todd Rumble, Rumble & Associates
David Ruppert, Ruppert Haulage
Frank Salaris, Insight360 Home Inspections
Rob Sanna, Boyd Brothers
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Monique Sauve, South Nation Conservation
Stuart Saville, Zoeller Canada
Pam Sayne, Know Your Home Inspections
Jason Schoenfeld, Boyd Brothers
Doug Schultz, Township of Whitewater Region
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Paul Sharp, CONSTRUCTBUILT Inc
Mike Shepherd, Shepherd Environmental Services
Kathleen Shepherd, Peterborough Public Health
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Steven Shepherd, Shepherd Environmental Services
Deanna Simpson, ESSE & Associates Inc
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David Smith, Hens Sand & Gravel
Charles Smith, Second to None Inspections Inc.
Jason Snell, Township of Centre Wellington
Glenn Snow, Snow Brothers Contracting
Nick Snyder, Township Of Muskoka Lakes
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 Wilf Stefan, Clearford Water Systems Inc
 Jason Stephens, Stephens Excavating
 Robert Stevens, Waterloo Biofilter Systems Inc.
 Brady Straw, Waterloo Biofilter Systems
 Paul Studholme, Professional Home Inspections
 Sandra Swanton, K Smart Associates Limited
 Bernie Taylor, Cambium Inc
 Wayne Teel, Wayne Teel Septic Services
 John Teixeira, Teixeira Construction
 Scott Thompson, MTS Environmental Inc.
 Dale Thompson, Construction Workplace Safety
 John Thomson, Muskoka Septic Services
 Bob Thomson, Valley Sanitation Services
 Don Thomson, Valley Sanitation Services
 Simon Thome, James Thome Construction Ltd
 Terry Tompkins, Township of Tay
 Travis Toms, Township Of North Kawartha
 Jeremy Tracey, Cambium Inc
 Brendon Underwood, Underwood Construction Ltd.

Mark Van Alstine, Herns Sand & Gravel
 Brent Van Herk, BVH Excavating & Septic Inc
 John Vanden Hoven, JVH Consulting
 Andrew Vangerven, Van Gerven Excavating
 Joseph Voisin, Pinestone Engineering Ltd.
 Steve Walmsley, Township Of Tay
 Yuxin Wang, Clearford Water Systems Inc
 Kevin Warner, Cambium Inc
 Ryan Weddel, Newmarket Precast Concrete Products Ltd.
 David Wemyss, Mysson Residential Consultants
 Kyle Wetherall, Waterloo Biofilter Systems
 David White, Ken White Construction
 Marianne Willson, Waterloo Biofilter Systems
 Robert Wilson, Unit Pre-Cast
 Joe Witlox, Newterra Ltd
 Jazmyne Woolley, R.J. Burnside & Associates
 Ed Yohanna, Rural Water & Septic
 Jennette Zimmer, Huron County Health Unit
 Geanine Zuliani, Waterloo Biofilter Systems Inc.
 Ross Zwierschke, Zwierschke Bros. Ltd.

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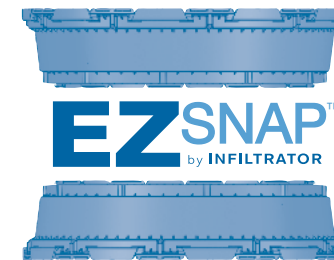
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OOWA'S REGISTERED PROFESSIONAL PROGRAM (RPP)

What is it?

The RPP is OOWA's skills and professional development program available exclusively to our members. The RPP provides special designations that cover all job descriptions in the onsite and decentralized industry. Depending on your experience and aptitudes acquired through formal study and course completion, members can apply directly to get any one of these designations. Another pathway way to an RPP designation is by registering in the In-Development Program. This program gets you on our exclusive on-line 'Find an Expert' directory and gives you three years to take the courses you need to meet your chosen designation requirements.

What's in it for me?

We know that onsite system owners want to hire only the best people. Your RPP designation tells potential clients that you are a qualified professional, that your skills and knowledge are current and that you are engaged with and care about your industry. An OOWA RPP designation also sets you apart from your competition and can serve as an effective marketing tool. Pursuing this designation also builds your career by positioning you as a desired individual for new opportunities.

What designations are available?

Below are the designations available through the RPP:

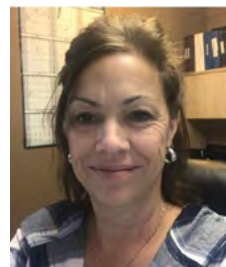
- Designer
- Installer
- Private Installer
- Project & Administrative Professional
- Regulatory Inspector
- Residuals Transporter
- Technical Sales Consultant
- Wastewater Service Technician

How do I enroll?

Go to OOWA's website and then find the 'Training' tab at the top of the home page. For the documents mentioned below, scroll down to the 'RPP Documents and Resources' page where you can download them for your reference.

1. Review the RPP How to Apply document .
2. Review the RPP Background document.
3. Select one or more RPP designations that apply to you and review the Aptitudes by Designation document to see what courses/aptitudes you still need of if you can apply directly to your chosen designation.
4. Check out the FAQ document to help with some specific program requirements.

SUPPORTING CONTINUING EDUCATION OF OUR MEMBERS HIGHLIGHTING REGISTERED PROFESSIONAL PROGRAM GRADUATES



Robin Allen

North Bay-Mattawa Conservation Authority
RPP, Regulatory Inspector

I am an I/CBO, Area Manager for NBMCA. I have worked in the industry since 1994, first with MOE and then making the transition to the OBC in 1998. I have my CBCO designation and I carry out inspections as well as act in a CBO capacity for on-site systems. I review and issue permits for 19 of our municipalities in the West Parry Sound Area. I am also a Part 8 instructor and enjoy sharing my knowledge and experiences that the last 24 years has given me.

I signed up for the RPP program to show my continued education as a regulator and to add another level of recognition to my qualifications. In addition, I wanted to support the program because I see OOWA as being a valuable association and a means of conveying information to various stakeholders. The association has brought a lot of awareness to the industry.



5. Download the In-Development Registration Form if you need to acquire more skills or courses to secure your desired designation.
6. Download the full RPP Application Package.
7. Contact us with any questions at 1-855-905-6692 ext. 101 or via email at outreach@oowa.org
8. Begin the process today!

Be recognized as a trusted professional!

Register in OOWA's RPP or the In-Development stream and join the ranks of other onsite professionals already getting recognition for their continuing education efforts in serving our industry on our website's 'Find an Expert' Directory.

RPP IN-DEVELOPMENT PARTICIPANTS

Anne Egan, R.J. Burnside & Associates, Designer
Brady Straw, Waterloo Biofilter Systems, Designer
Stefan Gruescu, LSK Septic & Drain, Residuals Transporter
Bert Knip, Makeway Environmental, Technical Sales Consultant
Deanna Simpson, ESSE Canada, Project Admin Professional
Jane Zima, SimbiH2O, Project Admin Professional
Greg Cherniak, Municipality of Dysart et al, Regulatory Inspector
Kevin Warner, Cambium Inc., Onsite Designer
Simon Thome, James Thome Construction, Onsite Installer
Don Krauss, Infiltrator Water Technologies, Technical Sales Consultant
Peter Libicz, Home Inspection Right Away, Private Inspector
Michael Rahme, HomePro Inspections, Private Inspector
Mac Taylor, Mac Taylor Corporation, Onsite Designer
Mac Taylor, Mac Taylor Corporation, Onsite Installer
Marilyn Taylor, Mac Taylor Corporation, Project Admin Professional
Sam Vreugdenhill, Makeway Environmental, Wastewater Service Technician
Teresa Buckman, Makeway Environmental, Project Admin Professional
Mike Gibbs, OOWA, Project Admin Professional

RPP GRADUATES

Dean Kerr, Willis Kerr Consulting, Installer
Robin Allen, North Bay Mattawa Conservation, Regulatory Inspector
Robert Palin, North Bay Mattawa Conservation, Regulatory Inspector
Jason Rail, The Septic Store, Wastewater Service Technician
Dave Ruppert, Ruppert Haulage, Installer
Ray Foster, ESSE Canada, Wastewater Service Technician
Rene Goulet, Rene Goulet Septic Pumping & Design, Designer
Brenda Burrows-Rabb, Rabb Construction Ltd., Installer
Kim Millen, Norfolk County, Regulatory Inspector



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via email and text. The control panel provides datalogging and two-way communication allowing information and operator control without the need to travel onsite. The Automated Aeration

Control eliminates any complexity or tuning the system that previously could only be done through a site visit.

For more information, visit rh2o.com

OOWA IS A PROUD SUPPORTER & PARTNER OF:



“LID” - WHAT IS IT? It's a Business Opportunity!

Roddy Bolivar P. Eng., Bolivar=Phillips

Low Impact Development or “LID” is the new buzz in stormwater management in Ontario – methods to store and infiltrate stormwater. Our industry already does a good job of designing and building to store and then infiltrate. Those skills and expertise may be easily transferrable to a new business opportunity for OOWA members.

Evolution of Stormwater Management:

Long gone are the days when a big ditch or pipe was considered the best solution for land drainage. Developing land increases the quantity of runoff and in the early 1980's the Province mandated controls on the peak flow at pipe and ditch outlets. The main method of control was stormwater management ponds. Then in the 90's concern for the impacts of the poor quality of stormwater resulted in a change in pond designs to also capture sediments. But ponds did not solve – and perhaps even made worse - erosion in natural streams. A further evolution of solutions was needed.

The New Solution – Mimic Nature:

On undeveloped land in Ontario, most of the water which falls from the sky is captured in small depressions and then infiltrates or evaporates. Low impact development aims to mimic a natural system. The two main tools to reduce the amount of stormwater leaving a developed site are small scale storage and infiltration. One method of storage is an underground tank and the stored water can be released slowly, reused for irrigation or even in-home non-potable uses. Methods to promote infiltration include shallow lot grading to small depressions, increasing the depth of topsoil and ensuring the underlying natural soils are not compacted by heavy building equipment.

How to Take Advantage – Get Training:

LID is a specialized industry with very specific needs to understand design

objectives, construction methods, materials, materials management and maintenance requirements. The main “crossover” opportunity for members is to transfer existing skills into LID skills - not that different from what members already do in a septic install. There are a number of sources of training – from short webinars to multi-day courses and certificates. A good place to start is the Credit Valley Conservation Authority web site (type “credit valley lid training” into Google).

How to Take Advantage – Materials:

Your existing suppliers likely carry products which can be directed to LID projects. Contact your tank supplier to see

if they have already identified how their products can be used on LID projects. Like septic sand, LID projects may use special granular materials such as coarse aggregate which has been washed to remove infiltration clogging fines. There are a number of products used on LID projects which OOWA members may not be as familiar. Plastic geogrids are used to prevent soil compaction or as a structural component to reinforce paving space between stones to allow infiltration. Tank level pumps and controllers which monitor predicted rainfall are used to time the drawdown of tanks to have new room for storage.

continued on page 39



A residential rain garden (sourced from trcp.org)



A depaved school yard (depaveparadise.ca)



Permeable pavement used on a park pathway (City of Hamilton)



Look familiar? A water storage tank install. (houseplanninghelp.com)

MEMBER PROFILE

Peter Froehlich

Sales Manager, Brooklin Concrete Products Corp.

Name of Business: Brooklin Concrete Products Corp.

Owners: Ironbridge Equity Partners Inc. Toronto, Ontario

Services: A leading manufacturer of quality precast concrete products since 1952, we produce and distribute tanks ranging in size from modest Pump tanks of 360L to large capacity Septic, Holding and Fire Protection Water Storage System tanks up to 90,000L.

Service Area: Throughout the Province of Ontario as we have manufacturing facilities in Brooklin, Ottawa, and Huntsville.

Number of Years in Role: I have been with this company for 34 years we intend to just stay a very long time. To be fair, there's not too much in my years with Brooklin that I haven't touched, tried, seen or done. From my early days in customer service/dispatch and sales support through to my current job as Sales Manager, I've held many unique positions that each offered different vantage points that have permitted me a window to watch, participate in and influence this organization's growth as a leader in the on-site industry.

What got you started in the onsite and decentralized wastewater industry?

I was in the right place at the right time. In my formative years, I got to learn from several industry icons about precast concrete and especially how it related to the onsite industry. The production, sales and distribution of these products has influenced my professional life since my beginning here. In the end, what has kept me in this industry is the day to day professionalism of my clients; the on-site installer base.

Give us one reason/secret for your success

In this business there is no silver bullet. It takes dedication, quality products, and teamwork. If there was a key to playing a



PETER FROEHLICH
Sales Manager, Brooklin Concrete
Products Corp.

significant role in this industry for as long as we have, it would have to be our commitment to service excellence. I demand this of myself and my entire sales staff.

Where do you see the onsite and decentralized industry going?

For years, we have witnessed a basic trend: lots are getting "smaller"; site conditions are more difficult and the demands on new and existing lots more intense. Innovation (be it regulatory or technical in nature) needs to keep pace and offer sound environmental solutions to these challenges to ensure the environment is properly protected. Production companies such as ours need to be flexible and adaptive to such innovation and change.

What can the onsite and decentralized industry do to improve?

Our industry tends to be relatively mature and most change and improvement will tend to be minor and incremental in nature. Where we, as an industry, can offer the biggest day-to-day impact is in the important contribution towards continuous education, especially to homeowners, cottage dwellers and even occasional users of on-site systems. There are excellent tools both on-line and in print and as an industry we all must play a leadership role and get the word out.

Join OOWA
www.oowa.org/join

... work in the onsite industry?

Why don't you join the Ontario Onsite Wastewater Association! The onsite industry is at the front line of environmental protection. Only as a team can we build the profile and recognition that our industry deserves. We have discounts for corporate multiple memberships.

Site Surveying: Terms You Should Know

By Jim Anderson, Ph.D., Onsite Installer Magazine

Jim Anderson explains some basic terms to begin this series on site evaluation and surveying.

I continually receive questions or comments about how to use transits and levels. So, at risk of raising the confusion level, I will take on some of these questions — relying on some of you out there to contribute your own ideas and approaches.

To begin, here are definitions of terms you need to be familiar with for any surveying discussion:

Benchmark: A relatively permanent object of known or assumed elevation. It may be a high point on a boulder that will not be removed, a stake driven next to a tree that will not be removed, a spike in a utility pole, corner of a garage or building — something that will not change over time.

The benchmark may have an elevation reference to mean sea level or can be given an assumed elevation of 100 (using 100 avoids the need for negative numbers).

Backsight (B.S.): A rod reading on a point of known or assumed elevation. The first rod reading on the benchmark would be backsight. The backsight reading is added to the elevation of the benchmark to determine elevation of the center crosshair of the leveling instrument.

Height of Instrument (H.I.): The elevation of the horizontal crosshair or line of sight of the surveying instrument. The height of the instrument is determined by adding the backsight reading to the elevation of the point being sighted upon. As an example, if the rod reading on the backsight of the benchmark designated an elevation of 100 feet, at 5.5 feet the elevation of the crosshair is 105.5.

Foresight (F.S.): A rod reading taken on a point for which the elevation is to be determined. The elevation is determined by subtracting the foresight reading from the height of the instrument. If the rod reading on the foresight is 7.5, the elevation is 105.5 – 7.5, or 98.0, which means the elevation of that point is 2 feet lower than the benchmark elevation of 100.0 feet.

Grade Rod: A rod reading when the bottom of the rod is held on "grade." The grade rod can be calculated using the plans and specifications.

This material is extracted from the Onsite Installer Magazine's 'Online Exclusive', April 2nd, published by COLE Publishing Inc., www.onsiteinstaller.com. It is reprinted by permission.

OOWA HAS GONE DIGITAL!



One of the benefits of being an OOWA member is getting access to all of the information products that we produce. During the third week of every month, OOWA emails a newsletter to all members containing important association news, regulatory updates and news on emerging industry trends. To support the skills and professional development of our members, OOWA also emails our Training Bulletin on the first of every month.



This bulletin lists courses offered by our training partners that are specific for onsite and decentralized wastewater professionals.

Please share the Training Bulletin with your colleagues and managers to grow interest in the courses and to help raise the bar of the skills of everyone in our shared industry!

MAKE THESE EMAILS THE ONES YOU LOOK FORWARD TO GETTING!

An Onsite Communal Treatment Solution

Greg Corman, P.Eng., Waterloo Biofilter Systems

Rural development is rapidly expanding and to ensure long-term sustainability it is important to recognize the many advantages of implementing communal decentralized systems. A key benefit to a clustered or communal approach is design specificity and flexibility. Where centralized plants must design for a much wider scope, decentralized systems can be more precise. In applications where there is existing infrastructure and historical information, designs can be tailored accordingly. The result is a more economical solution with no sacrifice to treatment performance.

Nova Scotia is one jurisdiction that has historically included regulations on cluster applications in their On-Site Sewage Disposal Systems Technical Guidelines (however of note, there is no mention of cluster systems in their most current On-Site Sewage Disposal Systems Standard – yet the guidelines are still being applied). The technical guidelines define a “cluster system” as a system intended to service more than one building, structure, or dwelling. These standards lay out minimum requirements for various lot applications – existing lots, new lots, municipal, and condominium developments. A common requirement across the different cluster applications is that the property and all buildings, structures, or dwellings comprising the lot have ownership via a single entity, whether that be an individual, business, or Municipality. A legal agreement indicating their responsibility for the system is also a condition. On an important final note, the On-Site Sewage Disposal Systems Technical Guidelines give Municipalities the option to create a Wastewater Management District By-Law, which allows the Municipal Government to be designated as the responsible entity. This requirement specifically states that this preference can be used as a mechanism to address limitations that can arise from cluster style developments.

A recent application of this ideology was evident when the Municipality of Chester required a new onsite treatment system to service a residential community in Mill Cove, Nova Scotia. A permanent and sustainable solution for wastewater management was needed to upgrade existing infrastructure and provide superior quality treatment with lower ongoing operational costs. The site was previously serviced using a conventional activated sludge package plant that was often overloaded due to infiltration via a 50-year old collection system. During wet conditions, flows could quadruple in comparison to dry periods.

Due to the proximity of the existing residential development and overlooking oceanic views, an aesthetically pleasing solution was required. The selected arrangement consisted of a poured-in-place concrete tank for anaerobic digestion and balancing, followed by four (4) Waterloo Biofilter biological



Waterloo Biofilter Fibreglass Treatment Tank Placement



Fibreglass Treatment Tank Excavation

filtration treatment units and UV disinfection to produce high quality effluent that is discharged to the Atlantic Ocean. The system was designed for a peak balanced daily design flow of 150,000 L/day and to produce tertiary quality effluent, in order to meet the ocean discharge criteria of cBOD/TSS = 25 mg/L and E.coli = 200 cfu/100 mL.

Utilizing a poured-in-place concrete tank allowed for a customized design with precise volume control of the pre-treatment compartments. A surge compartment was incorporated into the system to handle infiltration fluxes up

to 517,000 L/day that were evident from historical data. The Biofilter treatment segment was then sized for the lower peak balanced flow and consisted of custom below ground fibreglass tanks that were installed to simplify installation and minimize visual impact. This Biofilter treatment option comes pre-assembled, which reduces potential installation errors and delivers a more timely installation. The Waterloo Biofilter treatment system was also equipped with remote monitoring and control for advanced operation and maintenance. This allows operators to continuously observe the system and adjust remotely as required.

The communal onsite wastewater treatment system at Mill Cove has a compact footprint and uses energy efficient, environmentally sound, and sustainable technology to produce effluent that is safely discharged to a delicate ecosystem. The Biofilter treatment process is currently in the early start-up stage, however to date it has already shown effective performance, achieving 5 mg/L for cBOD and TSS parameters prior to UV disinfection.

The Mill Cove system is just one of the many examples where communal decentralized treatment systems have proven to be the ideal wastewater treatment solution. There are many proven onsite treatment technologies that can be utilized and adapted for a wide range of applications. Moreover, the industry has the qualified design and operational infrastructure necessary to ensure these systems perform as well or better than other alternatives. Ownership challenges persist, yet other jurisdictions have shown success through guidance documents and Municipal support.



Fibreglass Treatment Tanks with Residential Backdrop



Communal Treatment System for the Municipality of Chester, Mill Cove, Nova Scotia

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MEMBER PROFILE

Carolyn Newby
Caroline's Septic Designs
and Georgian Bay Environmental.

Name of Business: Caroline's Septic Designs and Georgian Bay Environmental

Owners: Caroline and Bernard Newby

Services: Our services include sewage system design, installation, maintenance, repair, consulting, system assessments for both residential and commercial.

Service Area: Our design and installation portion is limited to the Parry Sound/ Muskoka area. Maintenance is carried out on the French River north to the Sault Ste. Marie, Timmins, and Nipissing regions.

Number of Years in Operation: I have been in the industry for 30 years (minus a few years hiatus), as an inspector and installer, and now primarily a third-party designer, installer, and a maintenance provider/ service partner with Premier Tech Aqua.

What got you started in the onsite and decentralized wastewater industry?

When I was in university, I did door to door assessments on cottages on Trout Lake in North Bay. The type of inspections that are being done in our area currently. An opening for an inspector position became available with the North Bay MOE office when I graduated and I was the successful candidate. I have also worked in the Parry Sound and Gravenhurst MOE offices and for the North Bay Mattawa Conservation Authority. For a few years, I also worked with 2 large companies in Parry Sound overseeing their septic system program both in design and installation. I currently work on my own as a consultant/ designer.

Give us one reason/secret for your success.

Communication with customers and prompt service is the key. Having the required knowledge and experience with



CAROLINE NEWBY
Caroline's Septic Designs and
Georgian Bay Environmental

wastewater treatment and the Ontario Building Code is a must. Clients need to have their questions answered and they should be satisfied with the job we do. 'Word of mouth' referrals are a critical advertising tool. Keeping up with new technology is required as more and more property owners are doing their own research on new types of systems. .

What can the onsite and decentralized industry do to improve?

The onsite industry is moving forward rapidly with new technology every year. Keeping up with new innovations and the products is very important because in the near future, these newer technologies will be the norm and everyone involved in the industry will have to keep up to date. This goes for designers, installers, regulators and maintenance providers.

Where do you see the onsite and decentralized industry going?

Educating home owners is very important and has been lacking. The simple knowledge of the "do's" and "don'ts" can increase the life spans of systems. Educating them about maintenance of their system is very beneficial, and could be improved. In conclusion, everyone in the industry, from home owners to regulators can all contribute to increasing life spans of systems and protecting our environment.

Modular and Packaged MSBR Plants Eliminating Fouling and Operational Challenges in Small and Northern Ontario Communities

Irene Hassas, Director Strategic Planning and Partnerships, Aslan Technologies



Figure 1:
Lebovic Golf &
Country Club
and Community

Today's Challenge

Many small towns, remote communities, and new developments are not connected to municipal grids. Topography, geographic isolation, climate, attracting and retaining system operators, and limited financial resources are some of the barriers communities face when considering water and wastewater infrastructures for effective treatment services.

Many conventional water and wastewater treatment solutions or membrane-based innovative technologies are not feasible, cost effective, or manageable from performance, operation, or maintenance points of view in small towns or remote communities.

A New Approach in Using a Proven Solution

Small towns and communities are often dependent on lakes or groundwater for their drinking water supply and require a turn-key solution for treatment of water and wastewater that can be easily operated and serviced.

In the past few decades, decentralized water and wastewater treatment plants have been addressing some of the barriers such as capital and O&M costs by providing long-term and cost effective solutions for communities. In some cases, reuse of treated wastewater has made these communities more sustainable and promoted business and created job opportunities.

Distributed and decentralized systems are often used to treat water and wastewater in small towns and communities and can be designed to treat flows as low as 0.002 MGD or as high as 0.5 MGD. These systems can be constructed onsite or be provided as pre-manufactured treatment facilities, also known as modular packaged plants.

To address the concerns of our small communities, Aslan Technologies has designed an integrated modular and modified sequencing batch reactor (ASL-MSBR) to eliminate some of the complexities and operational challenges of existing solutions. ASL-MSBR is a variation of the activated sludge process where all clarification and biological treatment stages occur in a single tank. Separate tanks are not required for aeration and sedimentation steps.

Based on the wastewater flow characteristics, ASL-MSBR systems can consist of two or more reactor tanks that are operated in parallel or of one equalization tank and one reactor tank allowing continuous influent flow.

In either configuration, the influent flow first goes through a screening process before entering the MSBR. The waste is then treated in a series of batch phases within the MSBR to achieve the desired effluent criteria. The sludge that is generated from the MSBR moves on to digestion and eventually to solids handling, disposal, or beneficial reuse. The treated effluent then moves to disinfection, if required.

An equalization tank is typically needed before the disinfection unit, otherwise, a sizable filter may be necessary to accommodate the large flow of water entering the disinfection system. In addition, ASL-MSBR typically has no primary or secondary clarifiers as settling takes place in the process.

The Innovative One Water Concept

When designing and planning ASL-MSBR treatment plants, in addition to considering geographical challenges and land use planning, Aslan incorporates the "One Water approach".
continued on page 39

“One Water” is an emerging new concept that reduces the burden on water sources and infrastructure by encouraging greater conservation, discovery of new sources, and improving safe reuse of treated water. The “One Water” approach provides a way to reduce operating costs while investing in more cost-effective infrastructure.

This approach helps communities to tackle competing infrastructure demands, increasing regulatory standards, and challenges resulting from severe climate impacts and flooding. Communities are encouraged to unlock the full value of One Water through partnerships with different stakeholders such as industry, governments, and conservation authorities. By working together, great achievements can be made including flood and erosion protection, environmental land use planning, ecosystem regeneration, and water quality and quantity including reducing phosphorus discharge levels into bodies of water.

Recent Developments: Protecting Public Health Environment and Water Quality

A small community has been recently developed by Lebovic Homes in Aurora, Ontario consisting of over 70 luxury homes surrounded by an 18-hole championship golf course with associated amenities and a club house. Being a forward thinking community, they inquired “turnkey” drinking water and wastewater treatment solutions that could easily blend in with the surrounding buildings and address the community’s water management challenges.

Water Management Challenges in Golf course developments

Water management is one of the greatest challenges of golf courses’ sustainability programs as large quantities of fresh water are essential for obtaining high quality turf. High quality turf maximizes the “playability” of the golf courses. Golf course amenities also have challenges with varying levels of water usage. There is steady water usage in the summer, but little to no flow in the winter. There may also be brief periods of peak flow when an event is held in the vicinity.

On the other hand, residential communities typically have periods of peak water usage in the morning and evening and periods of low water usage during the day while residents are at school and work.

The Solution

To address these issues, two integrated and automated, packaged plants were successfully designed, programmed, installed, and commissioned for this site, one for drinking water and one for wastewater treatment.

The drinking water treatment plant includes a series of media filtration and chlorine injection systems to treat the groundwater to meet regulatory levels.

A complete MSBR Packaged Plant was customized and built to treat up to 170,000 L of wastewater per day. The plant is

composed of a raw wastewater pumping station, an ASL-MSBR, UV disinfection, an automated sampling system, an aerated sludge holding tank, and a generator auxiliary power system. The waste sludge is further digested in the storage tank and the effluent water is reused to irrigate the golf course.

To manage and handle varying water usage and flow rates, equalization tanks are included in the treatment plants.

Resorts: Cost management and wastewater reuse

The JW Marriott Resort, ranked as one of the Top 20 Resorts in Canada, is located in the heart of the Muskoka Lakes. The luxury resort, which features a year-round indoor-outdoor pool and spa, required drinking water and wastewater treatment plants.

Innovative design and treatment solutions for the resort’s drinking water and wastewater were required due to challenges with the site location and rock outcroppings. The system also had to provide potable water for fire flows which introduced other constraints to the design due to the high cost of blasting and trying not to put in clear wells.

The ultimate system manufactured and installed by Aslan provided potable water for flows ranging from 40 LPM up to 5700 LPM while eliminating the need for clear wells and associated contact times. It consists of a series of filtration and disinfection trains. The wastewater treatment plant selected was ASL-MSBR packaged plant. Both potable water (ASL-PWTS) and wastewater treatment (ASL-MSBR) plants were designed, built, and installed for the 221-unit hotel/residential condominium and over 500 guest ballroom and conference facility. Potable water is drawn from Lake Rosseau and the wastewater treated effluent is directed to the green side pond where it will ultimately flow back into Lake Rosseau.

Another recent development is a Northern cottage community consisting of over 40 heritage-inspired cottages on Lake Rosseau and a pool pavilion. The community will be open all year round for the enjoyment of both summer and winter activities.



Figure 4: Filtration trains at the drinking water treatment plant for JW Marriott Resort.

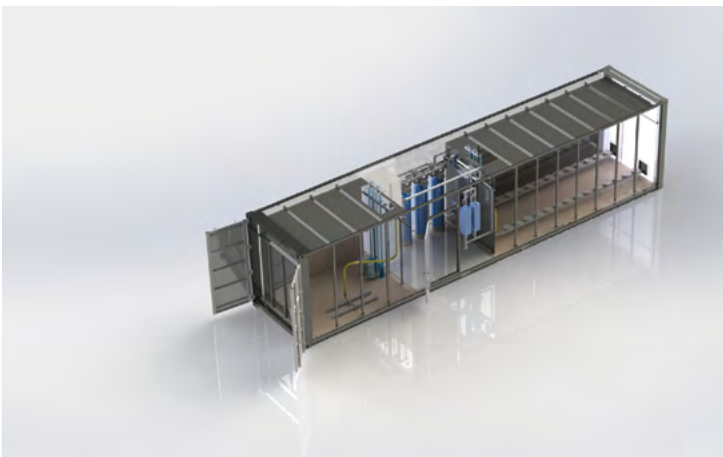


Figure 5: Aslan’s containerized modified sequencing batch reactor.

Decentralized drinking water and wastewater treatment solutions were required to complete the community development.

Once again, two packaged plants were designed for the treatment of drinking water and wastewater to be installed in the cottage community. Strategic planning was required when designing the treatment plants due to the resort’s location and topography. The slightly sloping property is located on Canadian Shield bedrock.

Water is drawn up from Lake Rosseau via a pumping station for the resort’s drinking water. This time, it was determined that an ASL-UF, an ultrafiltration membrane plant was the ideal solution for the drinking water treatment. Membrane systems have reduced footprints, are simple to scale up, have a higher flexibility, are capable of treating a broad range of water quality, and offer a high level of automation. The ASL-UF system with an accompanying clean-in-place (CIP) system and a UV disinfection system treat the incoming water.

An ASL-MSBR packaged plant was selected to treat the wastewater. This plant consists of a modified Sequencing Batch Reactor, sand filters, and a sludge digester.

Consistently Positive Results

Modular and packaged plant solutions allow for communities to take a phased approach to the implementation of treatment systems, thereby ensuring cost control of their investments, while consistently meeting health, safety, and environmental regulations and limits.

Drinking water treatment plants enable communities to utilize ground and surface water for clean and safe drinking water that meets regulatory levels.

The ASL- MSBR Packaged Plants treat and remove BOD, nitrogen, phosphorus, and pathogens from the wastewater such that it can be safely discharged or reused. Effluent from ASL-MSBRs consistently meet regulatory limits as seen in the Table 1.



Figure 3: JW Marriott resort and their drinking water and wastewater treatment pumping & control stations.



Figure 2: Aslan Technologies’ SBR (ASL-MSBR) installed at Lebovic Golf & Country Club and Community

TABLE 1

TYPICAL ASL-MSBR EFFLUENT	
BOD	< 5 mg/L
TSS	< 1 mg/L
Turbidity	< 1 mg/L
Total Nitrogen	< 10 mg/L
Total Phosphorus	< 0.3 mg/L

In over forty installations in small communities, golf courses and resorts, Aslan has met communities’ expectations by providing cost effective treatment solution that would enable them to be self sufficient and sustainable. These treatment systems have eliminated any potential membrane fouling, and through automation, training and on-going support has ensured long term operational stability, operation and maintenance cost savings and low life cycle cost.

OOWA E-MAIL COMMUNICATIONS TO MEMBERS: IMPORTANT INFORMATION

OOWA is communicating directly with our membership primarily through E-mail. Here are the important E-mails you get from OOWA staff:

- 1) Membership Renewal Notices: These reminder notices are E-mailed in 60 and then 30 days in advance of the renewal month of a member's renewal date. OOWA no longer mails hard copies of renewal notices or reminders.
- 2) Membership Renewal Receipts & Packages: Your receipt of membership payment is E-mailed to you immediately after your payment is received and processed by OOWA staff. Your E-mailed receipt is then followed up by a Renewal Package that is E-mailed separately a few days later. We experience the largest number of renewals between January and March so please be patient with us during this time!
- 3) Lapsed Renewal Reminders: These reminders are E-mailed out 30 and then 60 days after a member's renewal month. If a membership is not renewed after 90 days of their renewal month they are removed from our on-line member directory.

- 4) Information Products: OOWA E-mails our monthly Training Bulletin, monthly E-Newsletter, event notices, and other special communications. You can request to have a hard copy of our tri-annual print newsletter, 'Onsite' mailed to you on your membership renewal form.

PLEASE READ!

To ensure that these important E-mails are reaching the right people in your business or organization, please be sure to provide the E-mail addresses of the staff person responsible for processing payments and the E-mails for the person or persons whose name (s) are on the membership.

The OOWA membership renewal forms provides the required fields to provide this contact information. The above mentioned E-mails provide members with the information required to remain in good standing and to remain engaged and informed professionals. If a person is an OOWA member but is not the point person on E-mails coming into the business, please provide us with the E-mail address of the person who can share this information with those who need to see it. Thanks for helping us to communicate more effectively with you!

JOIN AN OOWA COMMITTEE!

Want to really make an impact in the industry?

Why not contribute to our collective efforts in getting onsite and decentralized recognized as viable and critical rural infrastructure? OOWA is looking for enthusiastic and engaged individuals to help move the industry forward.

Contact Mike Gibbs to find out how to join our ranks!

outreach@oowa.org

MEMBER PROFILE

Julie Ingram, BSc, BASc, CPHI(C)
Public Health Inspector

Name of Organization: Peterborough Public Health

Mandate: Certified Public Health Inspector assigned to Safe Sewage Disposal with the Environmental Health program at Peterborough Public Health.

Responsible for the enforcement of Part 8 of the Ontario Building Code within our jurisdiction.

Service Area: Peterborough County and City (with the exception of the Township of North Kawartha)

Number of Years in Operation: 8 years as a Public Health Inspector, 7 years as a sewage systems inspector

What got you started in the onsite and decentralized wastewater industry?

While completing my education at Ryerson University to become a Public Health Inspector, my favourite course was wastewater treatment systems. I was intrigued by the importance of wastewater treatment with respect to the protection of public health. The science behind onsite wastewater treatment appealed to my previous degree in biomedical sciences from the University of Waterloo. The onsite wastewater industry has been the perfect way to combine my love of science with my passion for the protection of public health. design.

Give us one reason/secret for your success.

As a regulator, consistency is critical. My job is to enforce legislation; the Building Code Act and Ontario Building Code dictate what can and cannot be done with respect to the onsite wastewater industry. I pride myself on being a fair and consistent inspector. I am extremely fortunate to work with another inspector at Peterborough Public Health who has the same mentality. Together, we make a great team so ultimately, consistency and teamwork are my secrets.



JULIE INGRAM, BSC, BASC, CPHI(C)
Public Health Inspector

Where do you see the onsite and decentralized industry going?

I believe that the onsite industry is heading in the direction of making Canadians responsible and accountable for their own wastewater, and I fully support this. Maintenance inspection programs are a positive addition for this industry and ensuring that residents operate and maintain onsite sewage systems as required will be valuable to everyone in the future and is a great way to help protect public and environmental health.

What can the onsite and decentralized industry do to improve?

Sewage is a health hazard; it contains pathogens that cause serious illness. Emphasis is often placed on sewage systems being regulated as part of Building Codes, but the public health importance must not go unrecognized. Safe sewage disposal has always been a pillar of public health – we need to remember that our daily actions as industry professionals ultimately protect the environment and prevent illness. Let's never forget the history of this industry... think John Snow and the Broad Street pump.

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Case Study: Adamo Estate Winery

Bionest

Adamo Estate Winery, located in Orangeville, makes small batches of wine and offers food and beverage services for visitors. This venue also hosts several events like weddings and receptions.

In order to treat wastewaters produced by this establishment and by a nearby house, a BIONEST® system was installed in spring 2016 to meet the required 10 mg BOD₅/L and 10 mg TSS/L. However, the process waters from wine production are not treated by the BIONEST® system.

KITCHEN SEWAGE TREATMENT

Flow rate	4,000 L/d
BOD ₅	3,375 mg/L
TSS	1,500 mg/L
VSS	1,200 mg/L

In projects where a significant portion of the flow comes from food preparation, a different design from conventional wastewater treatment is to be observed. Since kitchen sewages are more charged than domestic wastewaters, one of the challenges is to estimate realistic design criteria. Also, daily variation in load must be considered in the design stage to ensure robust treatment.

Fats, Oils and Grease (FOG) present in kitchen sewages must be removed before biological treatment to prevent operation problems and high load increase in wastewaters. Therefore, high strength wastewaters must first be treated by a properly designed and maintained grease interceptor. To ensure good treatment of the kitchen winery wastewaters, a three (3) compartment grease interceptor was installed upstream of the BIONEST® system. This tank offers a 2.3 day retention time.

Waters are then directed to a BCM, an aerated reactor that lowers the BOD₅ concentrations to residential level. Biological

sludge produced by this process is extracted with an airlift and stocked in a sludge tank.

DOMESTIC WASTEWATER TREATMENT

Flow rate	3,200 L/d
BOD ₅	250 mg/L
TSS	300 mg/L
TKN	75 mg/L
Phosphorus	10 mg/L

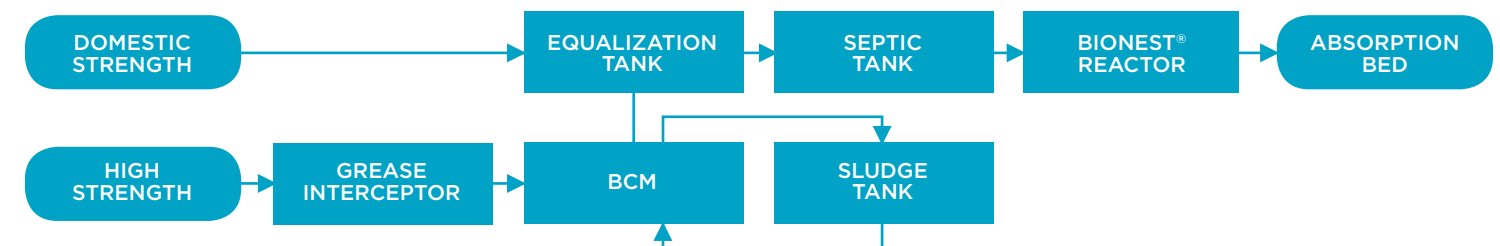
Treated kitchen wastewaters are combined with domestic strength wastewaters in the equalization tank. Since high flow variations may be caused by fluctuations in the number of customers depending on the day of the week and the time of the year, an equalization tank ensures optimal operation of the following biological treatment.

A 34 m³ septic tank separates the solids by settling. The high volume of the septic tank gives the flexibility to increase the capacity of the treatment chain if needed in the future.

A 2.3 days retention time BIONEST® reactor is the last step before pumping into the absorption bed. The reactor is filled with BIONEST® patented media. Fixed biofilm developing on the media gives the reactor additional robustness to hydraulic shocks by greatly reducing the flushing out of biomass when the flow is higher than anticipated for a short period of time. A fixed biofilm will also be thicker than suspended growth flocs. This gives the reactor additional resistance to toxic compounds that can be found in some cleaning products.

The system has been performing up to expectations since the start-up in spring 2016. As with all treatment systems, good maintenance and operation practices are essential to achieve expected results.

INSTALLED TREATMENT CHAIN



PERFORMANCE

	CBOD ₅	TSS
Average	5.2 mg/L	2.4 mg/L
Std Dev	1.3 mg/L	1.1 mg/L

Communal Servicing and the Decline of Villages and Hamlets

Continued from page 1

Section 1.1.3.1 of the PPS requires that communities focus growth in settlement areas and promote their vitality and regeneration. Section 1.1.3.4 also requires communities to implement appropriate development standards supporting intensification, redevelopment and compact form and mitigating risks to public health and safety. This mandate is for all communities in Ontario, not just rural municipalities.

The PPS provides specific direction for rural areas as well. Section 1.1.4.1 encourages a mix of housing types in rural settlement areas, building on rural character, efficiently using rural infrastructure and public service facilities, and promoting diversification and economic development. Finally, Section 1.1.4.2 directs that in rural areas, communities shall focus growth and development in, and promote the vitality and regeneration of, rural settlement areas such as villages and hamlets.

How, then, is it possible to balance the provincial direction for intensification and compact form in communities that are unable to support the municipal services that make greater density possible?

The clearest solution to this problem can be found in Section 1.6 of the PPS, which deals with Infrastructure and Public Service Facilities. The preferred form of servicing in settlement areas is municipal services, as provided in Section 1.6.6.2. Section 1.6.6.3 goes on to state “where municipal sewage services and municipal water services are not provided, municipalities may allow the use of private communal sewage services and private communal water services.” Section 1.6.6.4 further directs that where municipal services or private communal services are not provided, it is acceptable to provide individual on-site sewage and water services. Section 1.6.6.5 rounds out the provincial discussion on servicing by recognizing the appropriateness of partial services in certain circumstances; as a means to resolve situations were

individual servicing has failed, or to “allow for in filling and minor rounding out of existing development [...] provided that site conditions are suitable for the long-term provision of such services with no negative impacts.” So the provincial direction is clear: in settlement areas, municipal services are preferred. Otherwise, communal services are preferred where feasible. Private individual services are acceptable only where these other two options are not provided or feasible and partial services (i.e. a combination of communal and private individual services) are also permitted in certain circumstances.

Despite the clear provincial direction, many rural municipalities resist communal servicing by outright prohibiting these servicing options through their Official Plans, in direct contravention of the PPS. Other municipalities conform to the PPS by allowing communal servicing in villages and hamlets but as these systems trigger Environmental Compliance Approvals (ECAs), municipalities require Municipal Responsibility Agreements (MRAs). A typical MRA requires that proponents provide one hundred percent of the cost of the proposed communal servicing system as a security to protect against the risk of the system’s failure as well as financing lifecycle costs. MRAs effectively require that developers pay twice for the communal services. Intentionally or not, these MRAs render many good, rural intensification projects completely unviable and stifle the smart growth of villages and hamlets.

Rural municipalities need to find creative tools for attracting residents and growing their villages and hamlets, in conformity with the PPS. Communal services allow for the creation of smaller lots which can be consistent with the existing character of villages and hamlets, allowing for growth and intensification in conformity with the PPS. Decreased lot sizes mean that more people are able to live in a given area. This increase in density in existing communities is needed to support commercial and economic growth, public services and amenities, and active transportation initiatives.

Examples of creative solutions include the condominium process as a tool for

land division. There are two forms of condominium (Vacant Land Condominium and Common Element Condominium) that are very similar to traditional subdivisions, except that they provide a mechanism for funding the lifecycle and maintenance costs of communal services. In both cases each residential unit or lot is individually-owned while common elements such as services are communally-owned and maintained. The condominium agreement significantly reduces the financial burden on the developer and provides the necessary level of security for the systems by spreading out the costs for replacement and maintenance over a mandated timeframe. This process allows the MRA to either significantly reduce or eliminate the protective replacement cost expected by the municipality in the event of a system failure and mandated takeover of the system through provincial legislation.

Municipalities can also consider developing policies that account for the scale of communal services. For example, “micro-communal” wastewater services are a means of servicing up to five residential lots. These systems can be approved by local Health Units by processing fewer than 10,000 litres of wastewater per day, which is the threshold that triggers an ECA with the Ministry of the Environment and Climate Change. These small cluster systems do not require an MRA with the municipality.

One-hectare lots are entirely appropriate for certain forms of rural development but they are not a viable means of increasing density in our villages and hamlets. Some rural municipalities are taking leadership roles in exploring ways to make communal servicing financially-sustainable, reducing the risk to municipal authorities; while others continue to support Official Plan policies that are in direct contradiction to the PPS. The opportunity exists to work with the province and municipalities to find and implement creative policies and solutions that balance financial concerns of communal servicing while allowing our hamlets and villages to flourish.

Source(s): 1 - Ontario Planning Journal (OPJ), Rural Planning: The Challenges Ahead, Vol. 30, No. 3, May/June 2015 (pp.12- 13).

“LID” - WHAT IS IT? It’s a Business Opportunity! Continued from page 25

How to Take Advantage – Tell The Team: You already work with a team of technical specialist and each may have a stake in incorporating LID into the project. On new builds, the stormwater engineer may see LID as a benefit in order to meet municipal runoff requirements. The landscape architect may see LID as a benefit allowing “rain garden” features. The mechanical contractor may see LID as a benefit to feed non-potable water into toilets and irrigation. On retrofits and new builds, the owner may see LID as a benefit as the public is increasingly aware of water conservation and management. Let them all know you can help.

How to Take Advantage – Find Your Opportunities:

Many of the basics of an LID install – a tank, a base which infiltrates, grading directing runoff, an electrical panel – are very familiar to OOWA members. For some opportunities, training and certification in LID methods will distinguish you from other general contractors:

- Residential retrofit and new build: There may be opportunity to install LID and provide services linked to LID such as site management which aims to reduce compaction and delivering complex lot grading;
- Commercial: Commercial sites often have detailed stormwater requirements which may benefit from infiltration, tank storage and perhaps reuse. One of the main commercial applications of LID is in parking areas where deep courses of specialized granular over a well prepared base, geogrid reinforcement of surfaces

using paving stones and direction of runoff to depressions and rain gardens are common;

- Municipal right of way projects: Many municipalities are starting to implement LID in municipal rights-of-way. LID in large right-of-way projects are small individual projects requiring the skills noted above – understanding LID materials, construction activities geared to infiltration (instead of compaction typical of a road project), working with landscapers and attention to details – well suited to a smaller specialist service provider;
- Schools and campuses: Many schools are implementing “de-pave” projects where LID type installs are replacing paved areas. And campus type development getting on the LID bandwagon are reconfiguring

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