



Cover: Design Considerations for Effluent Dosing to Large Leaching Beds Cont'd on 16

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Design Considerations for Effluent Dosing to Large Leaching Beds

By: Jazmyne Woolley, B.Sc., C.Tech. & Anne Egan, M.Sc.(Eng), P.Eng.

R.J. Burnside & Associates Limited

There are many instances where a leaching bed must be dosed with a pump system, either to overcome elevation differences, for pressurized distribution, or based on the total length of distribution piping exceeding 150 m. Leaching beds servicing multi-lot residential development, or other large commercial and institutional sites can start to require total distribution piping lengths that easily exceed 1,000 m or more. When designing large leaching beds, a leaching bed dosing tank will be required in order to evenly disperse the effluent. The design of this dosing system must consider a number of items that may not be relevant at a smaller scale. Generally, the leaching bed will need to be divided into several cells or zones to optimize the dosing requirements and avoid overly large dose volumes and flow rates. Careful consideration must be given to how to split the flow, as well as identifying an appropriate type and size of pump and forcemain. The following elements should be considered when designing and specifying pumping systems for a large leaching bed:

1. Design flow and tank size: The size of the pump tank must have sufficient working capacity for the design flow.
2. Even distribution: How will the design distribute the flow evenly to different zones or cells within the bed? Will this be done with distribution boxes, or automatic distribution valves, multiple forcemains, etc.? How many times will the flow be split?
3. Dose Volume: What is the specified diameter of perforated piping in the bed and how does that impact the recommended dose volume?

Story continued on page 16



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Land Acknowledgement

The Ontario Onsite Wastewater Association (OOWA) represents members from across the Province of Ontario and beyond. We respectfully acknowledge that Ontario's lands and waters are the traditional territories of many First Nations, including the Anishnaabeg, Cree, Haudenosaunee, Huron-Wendat, Mississauga, Odawa, and Petun.

Our office in Nogojiwanong, or Peterborough, Ontario, is on the traditional territory of the Treaty 20 Michi Saagiig and Chippewa Nations, collectively known as the Williams Treaties First Nations, which include Curve Lake, Hiawatha, Alderville, Scugog Island, Rama, Beausoleil, and Georgina Island First Nations.

OOWA acknowledges that the First Nations have been and continue to be the stewards and caretakers of these lands and waters in perpetuity, and that they continue to maintain this responsibility to ensure their health and integrity for generations to come.

As onsite wastewater professionals, we have a role in protecting our waterways and human health by following industry best practices and promoting the regular maintenance of onsite wastewater systems.

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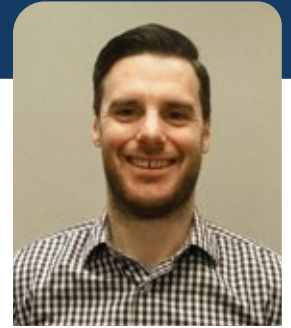
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President's Message



Welcome to the 2024 OOWA Convention! Thank you to all the delegates, exhibitors, sponsors, and speakers for supporting this great event. And an especially big thank you to the OOWA volunteers and staff who have worked so hard this year on OOWA's initiatives. Their time and expertise are necessary to promote, grow, and better our industry.

Stemming from discussions at our 2023 conference, we formed a New Initiatives committee. This led to a task group focused on bringing consistency to sewage system permit applications from municipalities across the province. Keep the conversations coming at the convention this year. We hope that talks from 2024 will spur on more ideas for the association to consider.

Much of the discussion among the Board over the last year was about giving back to our dedicated membership. Because of the support from our members OOWA stayed strong through COVID-19 and 2023 was our most successful convention ever. As a not-for-profit association the Board and committees looked for ways to spend our surplus on initiatives that benefit our members.

The External Relations Committee brought awareness about OOWA and promoted our members to different stakeholders. OOWA exhibited at the OBOA Conference and Cottage Life show, encouraging attendees to engage with and hire our members. OOWA is looking at advertising to municipalities across the province, specifically highlighting the OOWA Membership Directory and encouraging regulators to use the directory when talking with homeowners.

The Professional Development Committee has allocated resources for subject matter experts to create more resources such as webinars, training, and educational materials. Training and education are vital to our members, and it remains a top priority for us to provide these opportunities.

The Communications Committee created our most ambitious video yet, the installation of a filter bed including check-ins from the inspector. This was a big undertaking, hiring the videographers, coordinating everyone onsite, developing the script, and recording the commentary. We often hear that better visualization of how to install systems is necessary, so we hope this video is helpful.

Despite rising costs, the Membership Committee kept 2024 annual membership rates the same

as in 2023, benefiting all our members. The promotional membership program for Part 8 prep course participants has been a success in engaging new people to our industry and we plan to not only continue the program but enhance engagement with some exciting events.

The Events Committee also kept the 2024 convention registration rates the same as in 2023, even though certain costs increased. You will see some great swag and entertainment to enhance the 2024 convention experience. We increased the budget to bring in exciting and informative keynote speakers, so be sure to attend both sessions. Also, keep your eyes and ears open for a videography crew in attendance. Stay tuned for videos that promote the industry and association.

We are excited to reveal OOWA's updated brand. The process was lengthy, with more revisions and discussions than we thought possible, but it was exciting to see the final product unfold. You can learn more about the experience on page 20 of this newsletter.

The Ontario Not-for-Profit Act (ONCA), which OOWA is governed by, comes into effect in October of this year. We hired a lawyer to help us navigate through the compliance process which included a significant update to our by-laws. This was a beneficial process to go through and has already helped us improve some of our procedures. Hopefully you attended the information webinar we had in February and can attend the Annual General Meeting held at the convention as we present the new by-laws for approval by the membership.

The new branding and by-laws are the start of the next phase for OOWA. We will soon embark on revising our strategic plan to guide the Association for the coming years. This is my last President's message as my time as President is coming to an end. Thank you to everyone who has helped me along the way. We have a great Board and staff who will continue to lead OOWA.

Brady Straw, President

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**20 Annual
24 Convention
& Expo**

SCHEDULE

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CONVENTION SCHEDULE - DAY 1

Sunday, March 03, 2024

10:30 am - 11:30 am	OOWA Board Meeting	JEH Macdonald Room
12:00 pm - 4:00 pm	Registration Desk Open	Guest Service Foyer
12:00 pm - 6:00 pm	Exhibitor Set-Up	Legacy Hall
1:00 pm - 4:00 pm	Training Sessions	See Right
4:15 pm - 5:30 pm	Annual General Meeting	Waterhouse 1-3
6:00 pm - 9:00 pm	Welcome Reception: Light dinner, Trivia, Games, Canvas Brewery samples	Legacy Hall
9:00 pm Onwards	Hospitality Suites	

CONVENTION SCHEDULE - DAY 2

Monday, March 04, 2024

7:30 am - 8:45 am	Networking Breakfast	Legacy Hall
8:45 am - 9:00 am	Welcome and Opening Remarks	Peninsula Room
9:00 am - 10:00 am	KEYNOTE ADDRESS	<p>Dr. Robyne Hanley-Dafoe: Expert on Resiliency and Workplace Wellness</p> <p>Everyday Resiliency in Ever-Changing Times</p>
10:00 am - 10:30 am	Networking Break and Exhibit Hall	Legacy Hall
	Waterhouse 1-3	Waterhouse 5
10:30 am - 11:00 am	<p>Session 2A: Soil Compaction</p> <p>Terry Davidson Ottawa Septic System Office</p>	<p>Session 2B: Grease Interceptors Function and Design</p> <p>Chris Strycharz Infiltrator Water Technologies</p>
11:10 am - 11:40 am	<p>Session 3A: Excess Soils</p> <p>Jim Walls R.J. Burnside & Associates</p>	<p>Session 3B: Onsite Management of High Strength Wastewater</p> <p>James Hotchkies Eneareu Systems Group</p>
11:50 am - 12:20 pm	<p>Session 4A: Septic Sands 101 - Understanding the Quality and Production of Aggregate Filter Materials</p> <p>Bill Kester and Bill Millar Summit Aggregate</p>	<p>Session 4B: Advanced Treatment System Design Review</p> <p>Eric Gunnell and Tom Keane Gunnell Engineering</p>
12:20 pm - 1:20 pm	Networking Lunch and Exhibit Hall	Legacy Hall
1:20 pm - 1:50 pm	<p>Session 5A: Social Media in our Industry</p> <p>Taylor White Ken White Construction</p>	<p>Session 5B: Corporate Emissions Data Collection and Reporting</p> <p>Denyse van Opbergen EllisDon</p>
2:00 pm - 2:30 pm	<p>Session 6A: OOWA Guidance Document Updates</p> <p>Onsite Technical Committee Members</p>	<p>Session 6B: Accomodating Growth in Rural Ontario through a Municipal Services Corporation Model</p> <p>Roddy Bolivar/Joe Gallivan Make-Way Environmental/County of Frontenac</p>
2:40 pm - 3:40 pm	<p>Session 7: Panel Discussion on Large Systems</p> <p>Panelists: Mike Varty Envision Consultants, Jazmyne Woolley R.J. Burnside, Paul Villeneuve Kollard Associates, Katherine Rentsch Crozier Consulting</p>	Peninsula Room
3:40 pm - 4:00 pm	Networking Break and Exhibit Hall	Legacy Hall
4:00 pm - 5:30 pm	No scheduled events: Self-directed activities could include walking trails, Deerhurst Spa, indoor rock climbing, arcade room, ping pong, escape room on-site (extra costs may apply for these activities)	
5:30pm - 6:30 pm	Pre-Banquet Reception	Rotunda
6:30pm - 11:00 pm	Annual Awards Dinner & Entertainment	Peninsula Room
11:00 pm Onwards	Hospitality Suites	

TRAINING SESSIONS

Sunday, March 03, 2024
1:00 pm to 4:00 pm

** Training sessions run concurrently and therefore you can only attend one session. These sessions will not be recorded.

TRAINING SESSION # 1

Overview of Pumps and Control
Eric Kohlsmith
Ottawa Septic System Office

Waterhouse 1-3

* Eligible for OOWA Registered Professional Program credit

TRAINING SESSION # 2

Electrical Safety Awareness
Dave Gent
Occupational Safety Group Inc.

Waterhouse 4

* Eligible for OOWA Registered Professional Program credit
* Space will be limited

TRAINING SESSION # 3

Design Workshop
Anne Egan
R.J. Burnside & Associates

Waterhouse 5

* Space will be limited.

CONVENTION SCHEDULE - DAY 3

Tuesday, March 05, 2024

7:30 am - 8:45 am	Networking Breakfast	Legacy Hall
8:45 am - 9:00 am	Welcome and Opening Remarks	Peninsula Room
9:00 am - 10:00 am	KEYNOTE ADDRESS	Peninsula Room
	Barbara Robinson: President of Norton Engineering Sanitary Sewers are Finally Sexy - You Have no Idea!	
10:00 am - 10:30 am	Networking Break and Exhibit Hall	Legacy Hall
10:30 am - 11:00 am	Session 2A: Update from MMAH Speakers TBA Ontario Ministry of Municipal Affairs and Housing	Peninsula Room
	Waterhouse 1-3	Waterhouse 5
11:10 am - 11:40 am	Session 3A: Update on Digitalization of Community Development Processes for Building and Planning Aubrey LeBlanc Cloud Permit	Session 3B: Canadian Solution to Enhance Treatment Capacity and Performance of Wastewater Lagoons Etienne Boutet Bionest
11:50 am - 12:20 pm	Session 4A: CAN/BNQ 3680-600 Standard Madeleine Tétraut BNQ	Session 4B: Case Study on an Island Greywater System Design/Urgent Call for Code Revision Martin Burger Groundwork Engineering
12:20 pm - 1:20 pm	Networking Lunch and Exhibit Hall	Legacy Hall
1:20 pm - 1:50 pm	Session 5A: Reflections on Sewage System Maintenance Inspection Programs Paisley McDowell EnVision Consultants	Peninsula Room
1:50 pm - 2:20 pm	Session 6A: From One to Many: Transferring Part 8 Services from Health Unit to Municipalities Matt Doyle, Chris Beeg/Kathleen Shepherd, Julie Bromley South Frontenac Township/Peterborough Public Health	Peninsula Room
2:20 pm - 3:20 pm	Session 7: Understanding Mental Health Jack Veitch Canadian Mental Health Association	Peninsula Room
3:20 pm - 3:30 pm	Closing Remarks, Prize Giveaways/Pick Up and Final Announcements	Peninsula Room

***IMPORTANT NOTE: The Convention Agenda is subject to change at any time leading up to, and throughout the course of the event.**

If you have any questions regarding the agenda please reach out to Kelly at op-coordinator@oowa.org



Dr. Robyne Hanley-Dafoe

Expert on Resiliency and Workplace Wellness

MON. MAR 04
9AM - 10AM

Everyday Resiliency in Ever-Changing Times

Described as one of the most sought-after, engaging, thought provoking, and truly transformative speakers and scholars in her field, Dr. Robyne Hanley-Dafoe is a multi-award-winning education and psychology instructor. She specializes in resiliency, navigating stress and change, wellness in the workplace, and optimal performance both at home and work. Her keynotes, grounding in global research, share accessible and practical strategies that help foster resiliency and wellness within ourselves and others.

Hanley-Dafoe's work is inspired by personal experience. She learned resiliency from the ground up as someone who has experienced significant obstacles throughout her life. This, combined with more than 18 years of university teaching and research experience, makes Hanley-Dafoe's work both accessible and relatable while providing realistic and sustainable strategies for understanding and practicing everyday resiliency and wellness.

Hanley-Dafoe is the bestselling author of two books: *Calm Within the Storm*, which won a 2022 Silver Nautilus Award, and her most recent, *Stress Wisely: How to Be Well in an Unwell World*.

Session description: The global landscape is ever changing. Times of unparalleled stress, unrest, and uncertainty are becoming more common. Our physical, emotional, and mental health are being tested everyday. There is an extraordinary need to build, foster and practice resilience so we navigate our lives. In this learning event, the five pillars of resiliency will be presented from a global perspective. The information and ideas presented in this workshop are researched informed, readily available, and are grounded in wise practices. Dr. Robyne aims to facilitate knowledge mobilization that is relatable, accessible, sustainable, and realistic. The learning outcomes are multifaceted. Participants will learn how to incorporate resiliency practices for personal applications and wellness, as well as learn the skill sets required to share these practices with their teams. It is time to start feeling steady again and ready for whatever comes your way.



Barbara Robinson, M.A.Sc., P.Eng.

President of Norton Engineering

TUES. MAR 05
9AM - 10AM

Sanitary Sewers are Finally Sexy - You Have no Idea!

Barbara Robinson, M.A.Sc., P.Eng., is the president and founder of Norton Engineering Inc., established 9 years ago. Norton Engineering is dedicated to making sewers better across Canada, for all residents. Norton works across Canada, helping municipal, provincial and federal governments and agencies with the catastrophe of leaking sewers. Norton conceived of, wrote and brought to fruition the first ever national sewer documents in Canada, "Reducing the Risk of I/I in New Construction" (2019) and "Developing an Efficient and Cost-Effective I/I Program" (2021), by Standards Council of Canada. Norton also works with the National Research Council on sewer standards issues (particularly as related to the building codes). Barbara is constantly solicited to author, contribute to, or review most national I/I and urban flood protection documents and regulations.

Norton has delivered dozens of guidelines, papers, presentations, etc. on all aspects of the design, construction, testing, acceptance and operation of sewer systems to technical audiences. More importantly, Barbara has been speaking widely to lay audiences for the past five years, teaching the public about their sewer and how to operate and maintain it, to rave reviews. She is an acknowledged public intellectual and is regularly published in print, radio and TV, sharing the essential message about sewers and climate change. She is Canada's national sewer expert.

2024 Convention Presenters



Anne Egan: Anne Egan, M.Sc. (Eng.), P.Eng. is a Professional Engineer and Manager of Onsite Wastewater Services with R.J. Burnside & Associates Limited, where she leads a team of professionals specializing in onsite and decentralized wastewater management. The team services a broad client base with a variety of projects involving the assessment, design, approvals, construction and operation of onsite and decentralized wastewater treatment systems. Anne is a graduate of Queen's University, having earned both a Bachelor's and Master's degrees in Civil Engineering. She has served on the OOWA board of directors since 2014.



Aubrey LeBlanc: Aubrey is the Country Director for Canada for Cloudpermit Inc., an international cloud-based SaaS company providing community development software to all levels of government and to other regulatory entities and systems. Aubrey was Chief Administrative Officer of the Ontario Building Officials Association. He was principal of his own building and residential consulting practice. For a decade, Aubrey was President and Registrar of the Ontario New Home Warranty Program (now TARION Warranty Corporation and the Home Construction Regulatory Authority). He has also been a senior executive in several provincial government ministries and was the director responsible for the Ontario Building Code. He was also Chief Operating Officer for the Ontario Association of Home Inspectors. As a volunteer, Aubrey is Past-President of the Consumers Council of Canada, Chair of the Construction and Civil Infrastructure Strategic Committee at Canadian Standards Association Group, and is Chair of the Condominium Management Regulatory Authority of Ontario, which regulates property managers under condominium legislation. He has a M.Sc. from the University of Wisconsin, and a MBA from York University's Schulich School of Business.



Bill Kester: Bill is a graduate of the Civil Technology program at Ryerson University. He worked around pits and quarries as a summer student and has continued in the industry for the last 37 years. He started Summit Aggregates in 2014 and with the hard work of his staff, they have created a brand of service and quality in the septic filter material and construction industries.



Bill Millar: Bill Millar, is an MBA graduate from the University of Liverpool, whose career in the construction industry spans over 35 years in various senior leadership roles across diverse product lines such as aggregates, asphalt paving, ready mix concrete, and the rail industry. Over the past decade, Bill has been the General Manager of Summit Aggregates KW Inc, a family-owned aggregate business. During this time, he has helped lead the company through its initial growth phase, transforming it from a startup aggregate sand and gravel venture into a thriving aggregate supplier entity. Bill is recognized for his proactive approach in pursuing new business development, and he has been instrumental in implementing grassroots sales and marketing strategies that seamlessly align with prevailing industry trends and needs.

2024 Convention Presenters



Chris Beeg: Chris Beeg has been involved in the housing construction industry for over 20 years, starting his career as a carpenter journeyman in Germany and then moving to Canada continued his path in the construction industry in various positions to his current occupation as a Building Official. Chris has been a Building Inspector with the Township of South Frontenac for 5 years and was instrumental with implementing the Part 8 services to the Township's Building Department. He has been the Township's designated Part 8 inspector for the past 2 years working closely with the Township's Part 8 On-Site Sewage System Specialist. Chris enjoys the networking and collaboration within the industry and enjoys expanding his knowledge and experiences in administering Part 8 and other parts of the Ontario Building Code. Chris has recently accepted the role as one of the two Deputy Chief Building Officials within the Township of South Frontenac.



Denyse Van Opbergen: In her role as Senior Manager, Climate & Sustainability at EllisDon, Denyse van Opbergen works on identifying, defining, and implementing EllisDon's climate commitment and low carbon agenda at a corporate- and project-level. This includes focus areas such as reducing carbon emissions from EllisDon's own (site) operations, building materials, as well as the operations of the projects built. As an experienced project and program manager with a background in municipal public policy, consulting and in-house, she leads internal and external stakeholders to find common ground and work towards decarbonizing the built environment.



Eric Gunnell: Eric Gunnell is a Professional Engineer and president of Gunnell Engineering Ltd., specializing in providing engineering services. Gunnell Engineering Ltd. is actively involved in the design of conventional septic systems and tertiary treatment systems, all of which are assessed to meet specific requirements of individual clients and their objectives for the property.



Eric Kohlsmith: Eric has been a Part 8 Building Official for the Rideau Valley Conservation Authority since 2008 working in Tay Valley Township with their program expanding to an additional 5 municipalities in eastern Ontario in 2022. Over the last 16 years he has administered sewage system re-inspection programs in up to 5 local municipalities. 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 is also a member of the Technical Advisory Committee for the last round of proposed code changes for Part 8. For the last three years Eric has been a member of the OOWA Board of Directors.



Etienne Boutet: Etienne Boutet is a recognized expert in wastewater treatment having over ten years of experience in the industry. He holds a bachelor's degree in water engineering and a master's degree in civil engineering from Université Laval and an MBA from HEC Montreal. A speaker at prestigious events for different associations such as the Canadian Association on Water Quality (CAWQ) and the International Water Association (IWA), he is also co-author of several scientific papers published in renowned journals such as Water Research and Water Science & Technology. He is co-inventor of many patents such as the KAMAK technology to enhance wastewater lagoons' treatment capacity and performance. Currently Director of Operations at Bionest, a company specialized in the development, design, and manufacturing of domestic wastewater treatment systems, he oversees production, engineering, research and development as well as institutional, commercial and municipal sales.

2024 Convention Presenters



Jack Veitch: Jack Veitch is the Manager of Community Engagement and Education with the Canadian Mental Health Association, Haliburton, Kawartha, Pine Ridge Branch. Jack has worked with his local CMHA branch for over fifteen years in a variety of roles including; Housing, Community Support, Intensive Case Management and Forensic Case Management. In his current role, Jack teaches a variety of certificate courses including safeTALK, Applied Suicide Intervention Skills Training, Mental Health Works, Mental Health First Aid, Living Life to the Full and is a Certified Psychological Health and Safety in the Workplace Advisor. Jack was a part of the team that helped to create the Ontario Hockey League/CMHA Ontario Talk Today program, in which he currently works as the Peterborough Petes Mental Health Coach.



James Hotchkies: With over 35 years of experience in the water sector, Jim Hotchkies has held senior management positions with many of the industry's leading firms around the world, including ZENON, GE Water, Toray, Ostara, and others. Jim has led the development of decentralized treatment solutions at many of these firms and has been an advocate for advanced on-site treatment across the industry. Jim is a graduate of McMaster University and, after 15 years of overseas experience in Australia and Europe, is now based near Fort Erie.



Jazmyne Woolley: Jazmyne Woolley, B.Sc., C.Tech. is an Onsite Wastewater Technologist with R.J. Burnside & Associates Limited where she has been providing design solutions for Burnside's private and public sector clients since 2017. Her experience includes a variety of sewage system types and sizes, from conventional to advanced treatment for residential, commercial and institutional applications, with a particular focus on large and complex systems. Jazmyne has a Bachelor of Science from Laurentian University, a diploma in Environmental Technology from Georgian College, and is a Certified Technician with the Ontario Association of Certified Engineering Technicians and Technologists



Jim Walls: Jim is a Geoscientist, Qualified Person (QPESA) and V.P. Environment with R. J. Burnside & Associates Limited. He has over 25 years of environmental and hydrogeological experience, both domestically and internationally. His experience includes, environmental site assessments and remediation projects involving contaminated soil and groundwater, hydrogeology and groundwater supply, and the management of excess soil from source sites to receiving sites.

Jim represented municipalities as part of the MECP Stakeholder Group for Ontario Regulation 406/19 On Site and Excess Soil Management. He was a contributor to Best Management Practices for Aggregate Pit and Quarry Rehabilitation in Ontario, March 2021, with the Ontario Society of Professional Engineers (OPSE).

Jim fills the role of Municipal Peer Reviewer and QP for a variety of municipalities including Town of Whitchurch-Stouffville, Town of East Gwillimbury and Township of King.



Joe Gallivan: Joe Gallivan is the Director of Planning & Economic Development for Frontenac County and a member of the County Planning Directors of Ontario and has been in that position since 2009. He has over 35 years' experience in planning with municipal, regional and provincial governments in both Nova Scotia and Ontario. Joe has a Master's Degree in Urban and Rural Planning from Dalhousie University.

2024 Convention Presenters



Julie Bromley: Julie Bromley (formerly Ingram) is the Manager of Environmental Health and Chief Building Official for Part 8, Sewage Systems with Peterborough Public Health (PPH). She has been involved in the onsite industry since 2011, primarily as an onsite sewage system inspector. She is a devoted advocate for environmental and public health and safety. Believing in the strength of community partnerships, Julie strives for collaboration and values teamwork above anything else. Julie's current portfolios include climate change, safe sewage, safe drinking water, and health hazards, including the advocacy for legislative improvements related to indoor air quality. Julie is actively working with the PPH team to transition the services and activities related to Part 8 of the Ontario Building Code to local municipalities, as PPH will divest the program when the current services agreement expires in November 2024. Julie is a proud member of OOWA and currently sits on OOWA's Membership Committee.



Katherine Rentsch: Katherine is a professional engineer with over 20 years of experience in consulting engineering, specializing in onsite sewage system design and private servicing for residential, commercial, and industrial developments. Since 2005 Katherine has led workshops and courses specializing in onsite sewage systems to the members of the Ontario onsite wastewater industry through the Ontario Rural Wastewater Centre at the University of Guelph. She is also a board member of the Ontario Onsite Wastewater Association, where she shares her expertise and experience with the Association's members



Madeleine Tétrault: Ms. Tétrault has a large experience with wastewater and drinking water treatment. She was designing wastewater and drinking water treatment systems during over 20 years for a private company using membrane filtration technologies. She is at BNQ since September 2020 and she is involved with water and wastewater programs, and other programs related to environment.



Martin Burger: I grew up on a farm in Niagara. I graduated from the Royal Military College of Canada with a B.Eng. and a M. Eng. in civil engineering with a specialty in geotechnical engineering. As a young military engineering officer in the Canadian Armed Forces I was involved in establishing infrastructure for troops deployed in UN operations which included onsite wastewater treatment plants. After completion of over thirteen years in the military I partnered with a friend and established a heavy civil construction company in Kingston. I obtained my Part 8 installers BCIN and expanded the scope of the company to include installation of onsite wastewater treatment systems of all types and sizes. In 2012 I began Groundwork Engineering Limited in Kingston. Onsite wastewater system design, assessments and monitoring are a major portion of our business. I am passionate about sound design to ensure protection of the environment and improving approvals. I thoroughly enjoy the outdoors and spend as much time as I can at my cabin near Barry's Bay.



Matt Doyle: Matt Doyle is the Part 8 On-site Sewage System Specialist for the Township of South Frontenac. He holds a Bachelor of Science in Molecular Biology & Genetics and a Bachelor of Applied Sciences in Public Health & Safety. Matt has been working as a regulator in the on-site sewage system industry since 2010, starting with KFL&A Public Health and then accepting his current position at the Township in 2021. He enjoys the challenge of working in the industry as it modernizes and the regulations start to catch up with the available products and solutions. Matt joined OOWA's Membership Committee last year and continues to advocate for OOWA as an excellent resource for education and networking.



Mike Varty: Michael Varty is the Director of Rural Development Services at EnVision Consultants and has worked in the field on on-site wastewater engineering for 20 years. Michael's technical career has spanned projects related to the design, construction supervision, inspection, and monitoring of large and small on-site wastewater disposal systems for residential, commercial, and industrial applications; completion of rural servicing studies for rural subdivision developments; peer review services for lower and upper tier municipalities; hydrogeological investigations for rural water supplies and water balance studies; groundwater mounding studies; and lake capacity assessments.

Michael is an active member within the Ontario On-Site Wastewater Association (OOWA) and is a former member of its Board of Directors. He has delivered numerous presentations throughout Ontario on a wide array of onsite wastewater topics, including at OOWA annual conferences and regional meetings. Michael has functioned as a guest speaker for Ryerson University's Wastewater Treatment Systems course, which is part of the Occupational and Public Health Program. Michael has also been recognized as an expert witness relating to decentralized wastewater by the Ontario Municipal Board (OMB) on multiple occasions.



Paisley McDowell: Paisley is a Water Resources Engineer, specializing in onsite sewage works, at EnVision Consultants Ltd. Paisley's experience includes design, permitting, and construction supervision of onsite sewage servicing and disposal systems for large and small residential, commercial and institutional developments. Paisley has extensive experience executing Sewage System Maintenance Inspection Programs, working with thirteen Municipalities and over 10,000 properties. She is a board member of the Ontario Onsite Wastewater Association and collaborates with Association members on the Onsite Technical Committee.



Paul Villeneuve:

2024 Convention Presenters



Roddy Bolivar: Roddy Bolivar, P.Eng. is, currently, the Stormwater Solutions Lead for Make-Way Environmental Technologies. Roddy's background includes time as a municipal manager responsible for servicing policies and rural servicing planning. On behalf of OOWA, he has prepared and participated in several of OOWA's Provincial policy advocacy and comment initiatives including regarding municipal responsibility agreements.



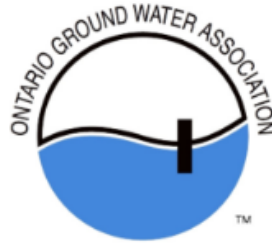
Terry Davidson: Terry K. Davidson, P.Eng., graduated in Engineering from the University of Guelph in 1987. Currently as Director of Engineering & Regulations at Rideau Valley Conservation Authority (RVCA), his responsibilities include Chief Building Official for Part 8 (Sewage Systems) for the City of Ottawa and Tay Valley Township; Director for Section 28, Conservation Authorities Act and Director of Engineering in the RVCA watershed. Prior to joining the Conservation Authority, he was employed with OMAFRA as a Soil Conservation Engineer. He came to the RVCA in 1990 as Manager of the Clean-Up Rural Beaches Program (CURB), a program run in association with the Ontario Ministry of the Environment, Conservation and Parks. Terry was appointed Director of the septic approvals program in 1995 within the City of Ottawa and transitioned to CBO for Part 8, OBC in 1998. He has also served as the Ottawa Manager of the Ontario Rural Wastewater Centre, an industry learning and training centre set up in co-operation with the University of Guelph at the RVCA's Baxter Conservation Area. Terry was instrumental in forming the Ontario Onsite Wastewater Association and was the inaugural President. Terry was a key author and technical advisor for the development of Septic Smart I & II that provides provincial wide information on the function, care, and maintenance of septic systems for landowners. In his "spare" time Terry is a Director with the Ottawa-Carleton Soil & Crop Improvement Association and operates a cash crop farm (corn, soybeans, wheat) near Kinburn in the City of Ottawa.



Thomas Keane: I have completed various on-site sewage system design and site grading design projects in Municipalities across the Province of Ontario, in accordance with Part 8 of the Ontario Building Code (OBC) and the Ministry of the Environment, Conservation and Parks (MECP). I have 15 years of experience in the design and management of on-site sewage system projects under the Ontario Building Code (OBC), including design and project management for sewage system design projects that require Environmental Compliance Approvals (ECA) through the Ministry of the Environment, Conservation and Parks (MECP). This work includes project management and coordination, sewage system design, construction inspections, existing sewage system assessments, site grading plans and CAD drafting.

2024 Convention Exhibitors





Design Considerations for Effluent Dosing to Large Leaching Beds

Continued from Cover Page

4. Dose Volume: What is the specified diameter of perforated piping in the bed and how does that impact the recommended dose volume?
5. Forcemain diameter and velocity: The larger the leaching bed, the larger the dose volumes and associated L/s pumping rate. Velocity through the discharge forcemains should be calculated and should be between 0.5 m/s – 3.0 m/s.
6. Pump flow rate: The pump's L/s must be sufficient for the design flow, to deliver a dose volume in a time of 15 minutes or less, and ideally at a flow rate that is within the optimum operating range for the pump. Is a large dose volume triggering the need for a very large pump? Could the design and layout of the bed be optimized to reduce the necessary pump size?
7. Elevation: Depending on site topography, there may be elevation differences between leaching bed zones, which must be considered in the calculations.
8. Pumping distance: Similarly, depending on the specific layout of the bed, there may be differences in pumping distance to different zones of the bed which must be considered in the calculations.

The following are three specific examples of large leaching bed systems that illustrate the application of these considerations during the design.

Example Site 1:

The subject property consists of a year-round retirement community with a design flow of 180,000 L/day for the leaching bed, which consists of an inground absorption trench. The approximate dimensions of the leaching bed are 260 m by 61 m, with a total of 8,064 m of 75 mm diameter perforated PVC distribution piping. The bed layout consists of 6 independently dosed zones. Within each of the 6 zones, the bed consists of 6 cells and each cell has 8 runs of distribution piping at 28 m in length.

The calculated dose volume to each of the 6 zones in the leaching bed was based on approximately 75% of the internal volume of distribution piping in not more than 15 minutes. Each zone has a distribution pipe length of 1,344 m and a pipe diameter of 75 mm, which results in a minimum dose volume of 4,435 L per zone. This is a relatively large dose volume and it requires a pump flow rate of approximately 5 L/s to be dosed in 15 minutes or less. For this design, we elected to use timer controls to manage the dosing.

The dosing tank is equipped with 6 submersible effluent pumps that operate as 3 sets of duplex pumps. Each pump has a dedicated 75 mm diameter forcemain that doses effluent to one of the 6 distribution boxes in the leaching bed. Each pair of duplex pumps operates in alternating arrangement (i.e., Pumps 1, 3, 5 turn on simultaneously, then Pumps 2, 4, 6 on the next dosing cycle). The site is relatively flat which eliminated any significant elevation differences between the zones of the bed, but the calculations had to account for difference in the pumping distance from the dosing tank, which ranged from 68 m to 143 m and resulted in flow rates ranging from 6.3 to 6.6 L/s at TDH values ranging from 8.7 to 12.2 m.

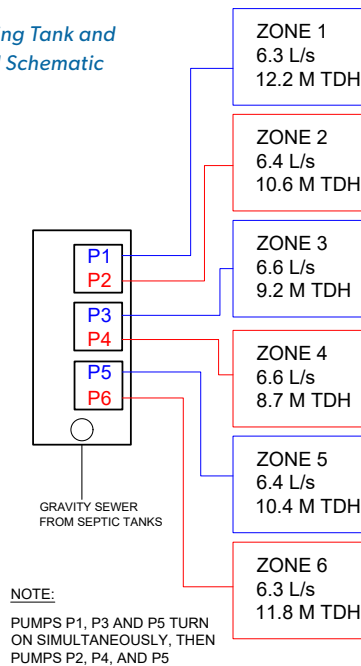
Pump operation is controlled by a water level transducer in



Photo Credit: Jazmyne Woolley

the dosing tank which is connected to the control panel for accurate dosing. The transducer reads the water level in the tank and triggers the pump to turn on at a specified elevation, based on the volume within the tank. Since each dose cycle will trigger three pumps to run simultaneously, the total dose volume for each pump cycle is approximately 14,500 L. This is achieved using a timer that is set to run for 12 minutes on, followed by 1 hour and 48 minutes off. The dosing tank is also equipped with a high water alarm float, and a low level float that functions as a redundant off switch, should there be any issues with the transducer control.

Figure 1: Dosing Tank and Leaching Bed Schematic



Example Site 2:

This example is a seasonal campground with design flow of 150,000 L/day for the treatment system and an inground Type A Dispersal Bed. The dispersal bed has a stone area of 3,061 m² (73 m x 42 m) and is constructed inground in native sand material. The stone layer is equipped with a total of 2,808 m of 75 mm diameter perforated PVC distribution piping. The bed layout consists of 3 independently dosed zones. Each of the 3 zones consists of 6 cells and each cell contains 8 runs of distribution piping, each 19.5 m in length.

Similar to Site 1, the calculated dose volume and flow rate to each of the 3 zones in the dispersal bed is based on approximately 75% of the internal volume of distribution piping, to be delivered in not more than 15 minutes. Each zone has a distribution pipe length of 936 m and a proposed pipe diameter of 75 mm, which results in a minimum dose volume of approximately 3,000 L per zone. This volume requires a pump flow rate of at least 3.3 L/s to be dosed in 15 minutes or less.

For this design, there is a flow balancing component incorporated into the overall design, so we chose to use demand dosing for the dispersal bed. The dosing tank is to be equipped with 3 submersible effluent pumps, and each pump doses effluent through a dedicated 50 mm diameter forcemain to one of 3 distribution boxes in the bed. The pumps operate on demand using float controls, with the float height set to provide a dose volume of 3,000 L. The pumps are set to alternate so that each zone of the bed is dosed in sequence (i.e. Pump 1, then Pump 2, then Pump 3).

Example Site 3

This example is another seasonal campground with a design flow of 175,000 L/day for the treatment system and leaching bed. The leaching bed consists of 3,600 m of shallow buried trenches over an area of approximately 49 m x 161 m. The shallow buried trench layout consists of 6 independently dosed zones. Each zone contains 6 cells, and each cell contains 4 runs of distribution piping 25 m in length. Each trench consists of a 38 mm diameter pressurized PVC distribution pipe with 3 mm spray orifices every 0.9 m of trench length.

Because this design is for a shallow buried trench leaching bed, there are additional considerations related to pressurized distribution that were not discussed in either of the previous examples, including:

- The requirement to maintain a minimum of 600 mm pressure head at the distal end of each lateral.
- Additional losses from the orifices in the distribution pipes.
- Additional losses through the automatic distribution valves.

The dosing tank is equipped with 6 submersible effluent pumps that operate as 3 sets of duplex pumps. Each pump has a dedicated 75 mm forcemain that doses effluent to one of 6 automatic distribution valves in the bed. The pumps are timer controlled, and are configured such that each pair of pumps will dose at the same time, with each pair operating in a sequence (i.e., Pump 1 & Pump 2, Pump 3 & Pump 4, Pump 5 & Pump 6).

For each pump cycle, each of the 6 automatic distribution valves will dose one of its 6 outlets at a time. As a result, the pumps will be required to run often, in order to cycle through each outlet from the valve. The recommended timer setting on the control panel is 3 minutes and 18 seconds on, followed by 6 minutes and 42 seconds off. This results in a pump cycle being triggered once every 10 minutes. For each pair of duplex pumps, this would mean the pair is triggered once every 30 minutes, and each zone of the bed would be fully dosed in a 3 hour period (i.e. 6 doses at 30 minute intervals).

Similar to the example described above as Site 1, pump operation is controlled by a water level transducer in the dosing tank which is connected to the control panel for accurate dosing. The dosing tank is also equipped with a high water alarm float, and a low level redundant off float.

Summary

Large leaching beds require careful consideration of many factors that are not necessarily applicable to smaller systems. As illustrated in the foregoing examples, there are different ways to dose a leaching bed in order to best optimize effluent dosing and distribution.

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MEMBERZ

Profile Questionnaire

Lindsay Wolfenberg

Account/Business Development Manager

Name of Organization: Clearford Waterworks Inc.

Owners: Privately-owned

Services/Mandate: Clearford is the largest operator of privately owned communal private water and wastewater treatment facilities in Ontario employing over 60 operators to maintain and operate 375 systems across over 250 sites. To compliment and support our operations, we have:

- In-house dedicated Compliance group
- Specialized Engineering group
- Site performance group

Clearford is committed to a different model of sustainability—one that seeks local solutions that protect public health and environment through environmental stewardship, reliable, compliance operations and cost-effective services.

Service Area: Ontario

Number of Years in Role: Clearford has been in operation for over 25 years, I have worked for Clearford (and previously ASI Water prior to the acquisition in 2019) for 10 years.

What got you started in the onsite wastewater industry?

Previously I was in Environmental Consulting as a Field Technician where we were awarded a project to inspect a large majority of the aging onsite septic systems in Wainfleet. Through this project, I wrote my Part 8 and Building Code exams to obtain my BCIN certification for inspections. I wanted to move into a Project Management role so when the opportunity arose to join ASI Water, I took it knowing that the water and wastewater industry was only going to grow as more development moved outside city centers.

Give us one reason/secret for your success.

I think a big reason for my success is my ability to pivot and find a path through issues even when it seems like there isn't one. Situations and circumstances are fluid and always changing so being able to navigate through various issues effectively has been



LINDSAY WOLFENBERG
Clearford Waterworks Inc.

beneficial to both the company and our clients. I also strive to be transparent in my client relationships, building a level of trust so that when issues do arise, we are open about the problem and work through to a solution that is in everyone's best interest. What was the most challenging onsite job you worked on or participated in?

The longer-range land development jobs can be challenging for several reasons. One being that there are a lot of players involved from developers, contractors, consultants, equipment manufacturers, regulators, condo management etc. and we tend to have to help the various groups understand what's needed to operate the systems effectively from lower population/lower flows on start up through to growth and ultimate design build-out. We find that depending on which group is purchasing the equipment (ie Developer, Contractor, Consultant or owner etc.) essential aspects can be overlooked during the equipment ordering phase to cut costs, however these are necessary for proper operations.

If you could change one thing about the onsite/ decentralized industry, what would it be?

The general notion that onsite systems don't work as well as municipal and can't treat to the same standards. In our side of the business, we deal with highly engineered treatment systems that are designed to treat to strict standards for direct discharge to the environment. I think decentralized systems can play a big role in effective and responsible development in more rural areas where municipal or big pipe solutions are not viable or cost effective.

Where do you see the onsite industry going?

I think in the past few years the industry has made leaps and bounds on the level of acceptance and understanding when it comes to alternative options to municipal servicing for growing communities. This includes open discussions with Regulators and Developers. With the increased need for housing growth, I think we will see a hybridized approach to servicing developments utilizing decentralized systems.

On-site Wastewater Industry Association Underway

In January of 1999, a meeting in Guelph was held between the University of Guelph and stakeholders from the septic industry. The purpose of this meeting was to introduce the industry to the initiative under taken by the University of Guelph to establish On-Site training centres in Ontario (the Ontario Rural Wastewater Centre). At this and previous meetings industry representatives expressed a need for an association that would represent all sectors of the industry. Discussions with the two existing associations in Ontario concluded that the Ontario On-Site Wastewater Association would work to represent the entire industry and would work in close coordination and cooperation with both OASIS and the Concrete Precasters Association of Ontario. To ensure this end, both OASIS and the Precasters are represented on the Board of Directors. The new association will draw its members not only from installers, haulers and precasters but from regulators, government officials, engineers, designers, soil scientists and researchers.

The advantages of one organization representing all stakeholders in the on-site wastewater industry can be far reaching. The January meeting concluded with agreement on the following summary list of association objectives:

- ▶ **Act** as a liaison with the provincial government to affect changes with the regulations governing the on-site wastewater industry.
- ▶ **Educate** the public concerning the value and role of their septic systems.
- ▶ **Provide** a communication forum between all stakeholders concerned with the on-site wastewater industry.
- ▶ **Establish** standards for personnel involved in the installation and maintenance of on-site systems.

An interim board of directors has been established (see side bar). Elections will be held at the Ontario On-Site Association's first general meeting to be held in April 2000 at a conference being organized by the Ontario Rural Wastewater Centre (ORWC).

The membership fee could be used to provide numerous services to its members such as:

Regular Member — This category would make up the largest portion of the association, and would consist of installers, engineers, designers, sewage haulers, soil scientist, manufacturers, etc.

Regulator Member — The member would have to be employed by a municipality, conservation authority, county health unit, or municipal government.

Associate Member — This category would be for existing organizations to actively participate in the umbrella association.



January 6, 1999 meeting of on-site industry members.

- ▶ this quarterly newsletter
- ▶ annual conference (reduced rate for members)
- ▶ government lobbying for changes to the Code
- ▶ professional accreditation for the industry
- ▶ press releases for public education
- ▶ an annual directory of suppliers, manufacturers and installers
- ▶ membership in the "National Onsite Wastewater Recycling Association, Inc.", the international organization for the onsite industry.

The membership fee for the association will be used for numerous projects as determined by the Board of Directors.

The development team is proposing that you join free of charge (enclosed application form), until January 1, 2000. Creation of the organization will help everyone involved with the industry. Its success depends on your involvement - please join! If you have any questions, please contact:

Terry Davidson
Rideau Valley Conservation Authority
1127 Mill Street Manotick, ON K4M 1A5
(613) 692-0160 ext. 107
tkdpeng@rideauvalley.on.ca

Interim Board of Directors

Jim Aitkin

- ▶ OASIS

Al Brown

- ▶ Sand Filtration Inc.

Alex Campbell

- ▶ R.J. Burnside & Associates Ltd.

David Cooke

- ▶ Public Health Inspector

Terry Davidson

- ▶ Rideau Valley Conservation Authority

Craig Jowett

- ▶ Waterloo Biofilter Systems Inc.

Doug Joy

- ▶ University of Guelph

Philippe Masuy

- ▶ Ecoflo Ontario

Doug Robinson

- ▶ CFAO

Bill Seabrook

- ▶ Green Valley Environmental

Ahmed Sharaf

- ▶ MMAH

Presenting OOWA's New Brand!

By: Bill Goodale, Tatham Eng, Township of Tiny Sewage System Inspector, OOWA Vice President
Kelly Andrews, OOWA Operations Coordinator



1999



2006



2012



2019

When OOWA was established in 1999 the Association's logo featured a privy (outhouse) with a crescent moon to boot. The prominently green logo used an upward gradient into a dark blue colour, assumingly to represent earth and water, two very important environmental aspects that sewage systems can affect. This logo remained until 2006 when a new font, colours, and water feature transformed the logo. The privy from the original logo remained in the 2006 version but it was moved and replaced what would have been the "i" in Onsite.

In 2012, there was a minor change that removed the outhouse altogether and put back the letter "i" in "Onsite". That version has remained until today with one exception. During the years 2019 and 2020, we featured a "limited edition" logo for our 20th anniversary. Since then, we have switched back to the regular logo, with only a few rare sightings of the anniversary logo over the last five years.

Approximately five years ago, around the same time we opted to celebrate 20 years with our limited edition logo, casual conversations began about a possible OOWA rebrand. A board meeting discussion here, a communications committee discussion there eventually led to officially presenting a rebranding package from Frolic Design to the Board of Directors. Frolic is a local graphic design agency in Peterborough that OOWA retained several years ago to improve the look of our newsletter. We've worked with Sarah and her team on many projects over the years, so it was only fitting that Frolic use their expertise and existing knowledge of OOWA to refresh our brand. With a unanimous endorsement from the Board of Directors staff were tasked with getting the ball rolling on the project. The next step was to form a small task group with long-time members that could help provide the necessary history needed to envision the future of the OOWA brand. The goal was to create a modern logo, with better readability, and incorporate the acronym "OOWA" that we have come to know and love. The acronym was a key piece to this puzzle. It is what our name has evolved to over the past 25 years. Just have a look through this newsletter, even this article, and count how many times you see OOWA compared to Ontario Onsite Wastewater Association. It will surprise you.

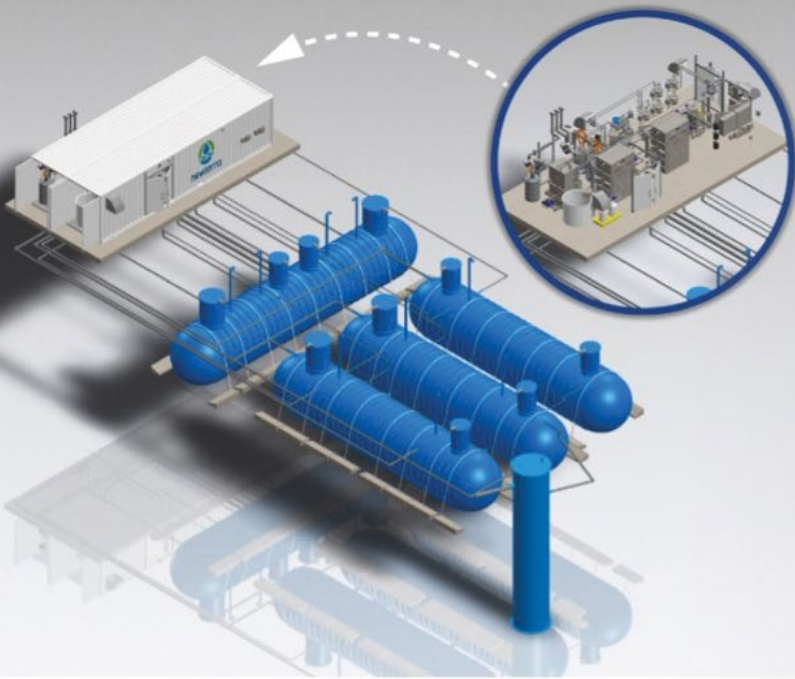
The team at Frolic took us through an exercise to determine the important aspects of OOWA, what it means to our members, to the public, and how we can represent that in our logo. These exercises guided our thinking toward the circular flow that wastewater takes from the drain to treatment (through

the soil) and back around again. We experimented with the colours attempting to deviate away from past logos, but no version looked right unless it contained the original colours that represent the land and waters that we, as an industry, work so hard to protect. After numerous hours, eight iterations, and five meetings involving staff, the team at Frolic and OOWA's group of dedicated volunteers, a final design was given the stamp of approval at the December 13, 2023 BOD meeting. As you can probably imagine a process like this is very subjective and comes with a lot of personal ideas and opinions. Let me tell you, it was no small task to get the logo across the finish line. However, in retrospect, the sometimes-painful process has led to an ultimately better product that we hope everyone will embrace. Drum roll please.....



With the 2024 conference being OOWA's 25th, (yes, we've been doing these things for 25 years!), we thought "what better time than now" to debut our brand-new look. For those that attend the conference, you'll see it on your name badges, the conference signage, in OOWA swag bags, and dribbled throughout the conference proceedings over the coming days. With its official launch at the Annual General Meeting on Sunday, March 3rd, 2024, the transition to our new logo will promptly begin. We're looking forward to showing it off in new social media graphics, stationary, OOWA merchandise, and more consistent event branding through power point templates and more. We can't wait to hear your feedback in person, at the conference, or by reaching out to one of our staff.

If this story inspires you, we are always looking for volunteers on the Communications Committee or any of OOWA's committees. Please reach out to us in person or email info@oowa.org to learn more about becoming involved. Be part of the next 25 years!



Meeting Effluent Requirements Through Membrane Bioreactor Technologies

Nick Romero, P.Eng., M.Eng.
Design Engineer, Municipal Engineering
MTE Consultants

Article originally published August 18, 2022 on MTE blog. It has been reprinted with permission.

Overcoming uncertainties and navigating tricky design constraints are the challenges that our team thrives on.

When we were hired to complete the detailed design of a wastewater treatment plant to service a new warehouse, we saw an opportunity to not only meet the client's strict effluent requirements with membrane bioreactor technology, but to also develop a solution that would streamline operations and mitigate risks.

The Site

Our client's warehouse is being developed on a site that was previously home to a vehicle manufacturing and assembling facility. While the property is located within St. Thomas, it sits outside of the wastewater service area of all the surrounding towns.

The former manufacturing facility did operate on a private onsite wastewater treatment plant, however the plant was decommissioned and demolished as part of the facility's closure. This is where our team comes in! We were retained to design a brand new wastewater treatment plant for the proposed development and acquire the necessary approvals to operate the system.

Wastewater Treatment System Criteria

Since our client's plans for the site involved a new warehouse that would not generate any process water streams, the new plant would only need to treat domestic sewage that is typically generated from toilets, sinks and general housekeeping originating from the facility. Similar to the former plant on the site, the treated effluent would be discharged to Dodd Creek.

Our team identified some criteria for the wastewater treatment system and set up a competitive RFP process for suppliers. We were looking at:

- Costs (capital/operations/maintenance)
- Ability to meet stringent "dry-ditch" effluent requirements
- Tolerance to fluctuations of flows
- Flexibility for expanding the system
- Ease of constructability and installation

Working within Constraints

The warehouse expects around 1,220 employees per day, but could go up to over 3,000 employees per day depending on seasonal demands. Designing the system to meet the Ontario Building Code flow rates and the guidelines set out by the Ministry of the Environment, Conservation and Parks (MECP), we determined the day-to-day fluctuations in flows throughout the year, from 32 to 232 m³/day, while flows during commissioning of the system are expected to be as low as 10 m³/day. Since the wastewater treatment plant will have a capacity greater than 10 m³/day, we were required to obtain Environmental Compliance Approval (ECA).

Expediting Approvals

In order to streamline the ECA approval process, our team was proactive in setting up preliminary discussions with the MECP to discuss the proposed development, wastewater treatment plant concept, and discharge location, as well as to request that 'dry-ditch' criteria be followed for the effluent requirements.

Noting that that the effluent requirements for the previous plant were less stringent than the dry-ditch criteria requirements proposed, and that the discharge flows would be significantly lower than the former plant, the MECP accepted the existing Assimilative Capacity study on Dodd Creek to establish the effluent criteria. Our team was able to obtain ECA approval for the system within three months of submitting our application.



Membrane Bioreactor Treatment System

In designing the wastewater treatment plant, we decided to incorporate a membrane bioreactor treatment system, supplied by Newterra.

Newterra was ultimately chosen as the preferred supplier, as their membrane bioreactor technology not only met the design requirements and constrains of the project, but also provided additional value and benefits.

Membrane bioreactor systems are a combination of an activated sludge biological treatment process with membrane filtration. This system was chosen for its ability to meet stringent effluent requirements, its tolerance to fluctuation of flows, flexibility for expanding the system with modular units, and ease of constructability and installation. The wastewater treatment plant is sized to accommodate the maximum daily design flow of 232 m³/day, while also being equipped to handle a variation of flows as low as 32 m³/day.

Our plant design consists of the following processes:

- Lift Station and Flow-equalization
- Fine Screening
- Biological Treatment
- pH Correction and Alkalinity Addition
- Phosphorous Reduction
- Membrane Filtration
- Effluent Disinfection
- Waste Activated Sludge (WAS) Handling

Taking a Value-Added Approach

Redundancy

From an operations perspective, we developed a strategy to identify redundancy requirements within the plant. Working with the client, we identified components within the system that would benefit from additional redundancy. This included spare aeration blowers (EQ and aeration tanks), spare pumps (aeration and EQ tanks), and fine screening spare parts. Spare equipment will be stored in a heated sea container, easily accessible by operations staff.

Turn-key Method

To facilitate the transition from construction to operations, our client has retained a licensed operator, along with the equipment supplier, to assist with the commissioning of the system, as well as manage operations for the first three months. Due to the low flows anticipated during the first six to nine months of the start-up of the system, continuous monitoring and operational adjustments are anticipated. After the first three months' post start-up, our client will look to secure an Operating Authority for the system.

Expediting Procurement

Due to the COVID-19 pandemic, uncertainties surrounding supply chains led us to identify long-lead items that would significantly impact the schedule of the project. As a result, equipment with long delivery times, including pumps and blowers, were ordered and approved 20 weeks in advance from the proposed construction date to ensure there would be no delays.

Ultimately, our use of a membrane bioreactor, taking careful consideration to redundancy, procurement and a turn-key approach, allowed us to not only solve some of the constraints our client would typically face with a standard package plant, but it also provided further benefits by streamlining operations and mitigating risks associated with maintenance and regulatory requirements.

Construction of the system began in May 2022, while the commissioning and start-up began in August.

Learn more about the author, Nick Romero, on page 24.

MEMBERZ

Profile Questionnaire

Nick Romero, M.Eng., P.Eng.

Design Engineer (Water/Wastewater)

Name of Organization: MTE Consultants

Owners: N/A

Services/Mandate: Civil Engineering

Service Area: Ontario

Number of Years in Operation /Role:

MTE Started in 1985 – 39 years

What got you started in the onsite wastewater industry?

I started my career in the wastewater and water treatment industry, primarily in operations where I operated, managed, and upgraded various systems throughout Ontario. This industry was very appealing to me, especially given all the field experience I gained over the years, included optimizing operations, and upgrading systems to streamline operations and maintenance.

Give us one reason/secret for your success.

Predominately holding an operator's license at the early stages of my career, and getting a lot of field exposure, including performing maintenance on equipment such as pumps, piping, etc., and making operating adjustments to systems to maintain efficiency, and compliance.

What was the most challenging onsite job you worked on or participated in?

A new system for a warehouse in St. Thomas, Ontario which consisted of 1,000 to 3,000 employees per day. Most of the challenging components of the project involved obtaining the ECA approval very quickly for a surface discharge system, including completing the required studies to establish the effluent criteria with the MECP. We were dealing with significant tight deadlines for the project, which introduced a substantial level of complexity to the process. In addition, at that time, we were dealing with uncertainties associated with the supply chain issues introduced by COVID-19. To mitigate any schedule risks, a long lead item equipment procurement strategy was developed, such that all equipment was available when the system was constructed and ready to become operational.



NICK ROMERO
MTE Consultants

If you could change one thing about the onsite/ decentralized industry, what would it be?

With every project, whether it is residential, industrial, or commercial, there is always a discussion around the design flow of the system. As such, given the resources that we are provided, there always seems to be a different view on establishing design flows, whether it is at the municipal or provincial level. There are always some concerns in oversizing a system given the rates and standards that we must follow as designers, which could lead to operational issues. I would like to eventually see a standardized flow rate guidance document, which projects that need to be approved at the municipal or provincial level can follow. This could minimize uncertainty on flows, and hopefully standardize a system, based on actual data, that can be followed for designing a system.

Where do you see the onsite industry going?

Given a lot of push and concern associated with capacity constraints on existing municipal infrastructure, I can see the onsite industry helping to facilitate future development, whether they are used permanently or in the interim until municipal services are available. With this, and the amount of development interest, there may be a time where approvals are streamlined, given that one of the major concerns associated with these projects is associated with timelines.

A Closer Look at Onsite System Control Boxes

By: Sara Heger, Ph.D.

Author's note: Be sure all electrical work is done by the appropriately licensed professional required in your jurisdiction. Often septic system installers must work with electricians to understand the needs of the system being installed.



Article originally published November 7, 2022 by Onsite Installer. It has been reprinted with permission.

Outdoor equipment used in residential wiring must be weatherproof. The two most common types of weatherproof equipment are driptight and watertight.

Driptight equipment seals against water falling vertically. Driptight boxes are usually made of painted sheet metal and have shrouds or shields that deflect rain falling from above. These boxes are not waterproof and should not be used where water can spray or splash on the unit. Driptight boxes are usually used for control or circuit breaker panels.

Watertight boxes seal against water coming from any direction. Individual junction boxes, switch boxes and receptacle boxes will usually be of the watertight type. Watertight boxes are designed to withstand temporary immersion or spray streams from any direction. They are commonly made of cast aluminum, zinc-dipped iron, bronze or heavy plastic, and have threaded entries for watertight fittings and covers sealed by gaskets.

In all cases, electrical components and connections must be properly protected from the elements and from the corrosive environment of the dosing tank. Ideally, this is achieved through use of a National Electrical Manufacturers Association rated box with properly sealed connections. NEMA ratings are standards that are useful in defining the types of environments in which an electrical enclosure can be used. The NEMA rating system is defined by the National Electrical Manufacturer Association, and frequently signifies a fixed enclosure's ability to withstand certain environmental conditions.

In nonhazardous locations, there are several different NEMA ratings for specific enclosure "types," their applications, and the environmental conditions they are designed to protect against, when completely and properly installed. The following provides an overview of the NEMA types. For complete definitions, descriptions and test criteria, see the NEMA Standards Publication No. 250.

NEMA Type	Application
NEMA type 1	Type 1 enclosures are intended for indoor use, primarily to provide a degree of protection against contact with the enclosed equipment in locations where unusual service conditions do not exist.
NEMA type 3R	Type 3 enclosures are intended for outdoor use, primarily to provide a degree of protection against windblown dust, rain, sleet and external ice formation.
NEMA type 4	Type 4 enclosures are intended for indoor or outdoor use, primarily to provide a degree of protection against windblown dust and rain, splashing water, and hose directed water and external ice formation.
NEMA type 4X nonmetallic, corrosion-resistant	Type 4X enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against corrosion, windblown dust, and rain, splashing water, and hose-directed water. Enclosure is manufactured with a synthetic rubber gasket between cover and base. This is ideal for such industries as chemical plants, paper mills and septic systems.

NEMA 4 or 4X with properly sealed connections are the most referenced types in septic system installation.

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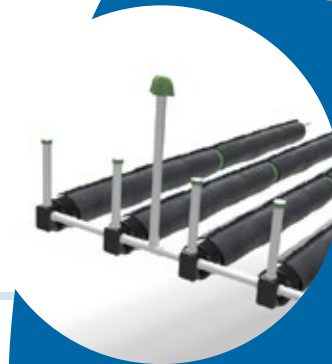
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Stormwater/Rainwater – Roddy: 613.314.7597 roddy@makeway.ca

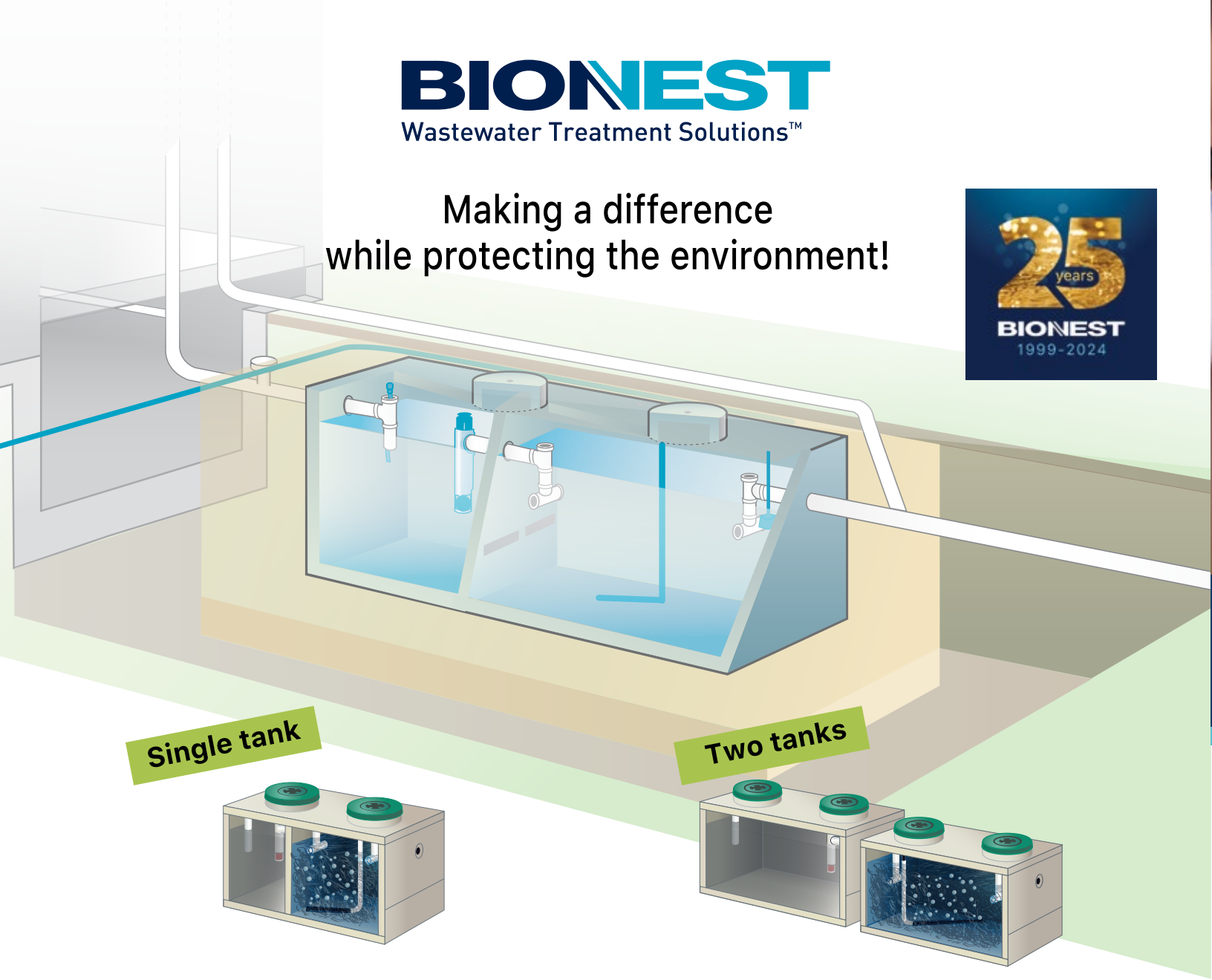
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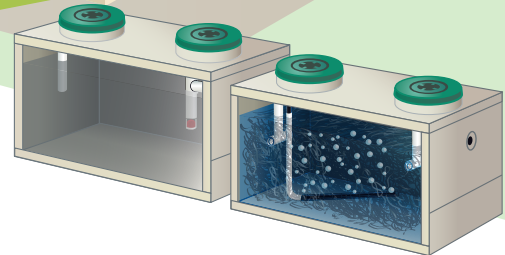
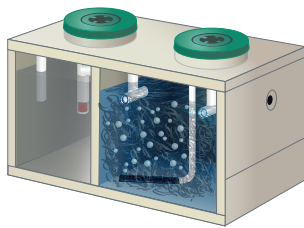
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Cost-Plus and Time and Material Contracts and Claims in Canada

Free Stock photos by Vecteezy

Article originally published September 12, 2023 on Kennaley Construction Law blog. It has been reprinted with permission.

In this article we will explore how Canadian Courts treat claims for payment under “cost-plus” or “time and material” contracts.

The two forms are, of course, similar. In a “cost-plus” arrangement, the hiring party agrees to pay the supplier’s actual costs, plus a fee for profit, while under a time and materials (or “T&M”) contract, the client agrees to pay fixed rates for labour (on an hourly-basis) along with the actual cost of materials supplied. Under a T&M contract, of course, the supplier’s profit is included in the labour rates.

Recently, in *Sjostrom Sheet Metal Ltd. v. Geo A. Kelson Company Limited*, [2023 ONSC 4959 \(CanLII\)](#), Associate Justice Todd Robinson of Ontario’s construction lien Court in Toronto offered a very useful summary of how the law applies in relation to such contacts. In doing so, he referenced a case law review previously conducted by Healey, J. in *Infinity Construction Inc. v. Skyline Executive Acquisitions Inc.*, [2020 ONSC 77 \(CanLii\)](#).

AJ Robinson firstly found that the T&M contract at issue was sufficiently similar to a cost-plus arrangement to apply the case law principles applicable to cost-plus contracts. His Honour then noted that courts will often deny payment on

the basis of an implied term guarding against the “wasteful or uneconomic use of labour and materials”, even where the contracts are “open-ended”. He then confirmed that, generally speaking, where an estimate or budget is provided and unless the contract expressly provides otherwise:

1. a. the supplier of the services or materials must “exercise a degree of diligence” to not incur costs “significantly higher” than the estimate, without prior approval;
2. the supplier should give timely notice to the client if it is going to exceed the estimate; and
3. the final price should be reasonably close to the estimate, based on an assessment of a number of factors, including “the relative sophistication and knowledge of the parties”, how the estimate was given, the knowledge and expertise of the supplier, whether it was relied upon by the client, whether the supplier made it clear that it would not be responsible for exceeding the estimate, whether the supplier provided its rates for labour, equipment rental and materials and whether the client encouraged the supplier to proceed with the work despite knowing (expressly or by implication) that the estimate would be exceeded.

Perhaps more importantly, AJ Robinson noted that the cases place a heavy onus on a supplier to prove the amounts claimed under such a contract. He noted that while the accounts and backup don't need to be kept in any particular way, they must adequately show the quantum of the costs, as well as why they were incurred. If the dispute proceeds to litigation, His Honour noted that the onuses of proof will shift back and forth between the parties: (i) if the supplier shows that it kept proper records with supporting backup, the onus shifts to the client to show that the documents are incorrect or unreliable; and (ii) if the client casts doubt on the records, the onus shifts back to the supplier to satisfy the court that the accounts are, in fact, accurate. His Honour then noted that, upon hearing the supplier's evidence, "If the court is left in doubt, the contractor fails".

As regards the difference between labour and materials, the Court held that while the cost of the materials "may be proved upon evidence somewhat less conclusive, so long as the building is in existence and the system of recording material is capable of providing a substantially accurate result", "the records for the time of workers must be strictly proved since it is difficult to verify after the fact".

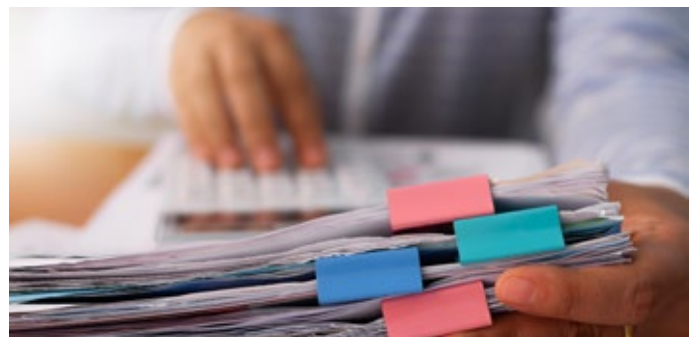
While Sjostrom Sheet Metal and Infinity are both Ontario decisions, Healey J.'s review in Infinity references cases from across Canada. While the laws of the jurisdiction where the contract arose should be considered, we believe the common law principles set out by Associate Justice Robinson are generally applicable across Canada (with the exception of Quebec, where the Quebec Civil Code applies). To be clear, the expressed terms of a contract will generally override the common law principles, so long as they are clear and unambiguous and not void for illegality, unconscionability or on public policy grounds.

It should be noted that where the client is a "consumer" (as would be the case with virtually all contracts for "residential" clients), consumer protection legislation will generally apply to set out the minimum contractual requirements and put statutory limits on the extent to which a true estimate can be exceeded. See Ontario's Consumer Protection Act, 2002, S.O. Alberta's Consumer Protection Act, RSA 2000, c C-26.3 and Quebec's Consumer Protection Act, c. P-40.1, for example in that regard. Certainly, in the residential context, contractors who provide services or materials to consumer clients should ensure that their contracts comply with such legislation.

There are lessons to be learned from all of the above. Clients, of course, should take care in agreeing to cost-plus or T&M contracts, because of the inherent cost uncertainties associated with them. These contracts can be attractive, however, where the design is not certain or where unforeseen conditions are anticipated, such that a fixed price model might not ensure the best possible price. Such contracts are particularly popular in the construction of custom-built homes, for example, where the ultimate price will depend on the finishes and fixtures to be selected by the client.

Where cost-plus or T&M contracts are attractive, clients might consider the standard CCDC-3 form of cost-plus contract as a starting point. The CCDC 5A or 5B forms of construction management contracts might also be used. These can then be amended to meet the needs of the particular project (and to accommodate the payment provisions and particular risks associated with applicable prompt payment and adjudication legislation).

Clients should also take care to ask for an estimate of what the costs will be, and to build in clauses which will require the supplier to give notice, and seek approvals, where the costs are going to exceed that estimate. Finally, clients may want to include a right to audit the supplier's records (although we believe such a right would be implied into most cost-plus and T&M contracts). Both parties may want to build-in a process whereby a selected third-party will be appointed to assess the reasonableness of the charges, in order to avoid significant litigation costs in the event of a dispute



Suppliers (be they contractors or subcontractors) should be careful to only give estimates or budget amounts if they are confident that they will be able to do the work for approximately that amount. Suppliers might also consider expressly stating, in the contract, that they do not warrant or guarantee that the estimate will not be accurate. Regardless, towards avoiding disputes and getting paid, the supplier should give notice if an estimate is going to be exceeded and seek approval or confirmation that the client is nonetheless willing to have the work continue on the cost-plus or T&M basis. Finally, the supplier should keep very detailed records of the costs incurred, to be ready to prove the reasonableness of the costs (with reference to the agreed scope of work) if required. It might be difficult, for example, to prove the reasonableness of time incurred if the supplier's timesheets and records do no more than indicate the time spent, without setting out what was being done on any given day. Having the client approve timesheets on a daily or weekly basis might assist in this regard.

Rob Kennaley **Kennaley Construction Law**

This material is for information purposes and is not intended to provide legal advice in relation to any particular fact situation. Readers who have concerns about any particular circumstance are encouraged to seek independent legal advice in that regard.



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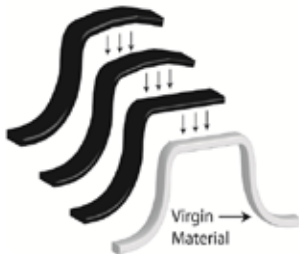
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Annual Committee Report to the Membership

There's much work going on behind the scenes that our members seldom see or hear about. This report details the activities of OOWA's volunteer committee members for the year 2023. You can hear more specific details on our activities over the past year by attending our Annual General Meeting (AGM) on Sunday, March 3rd from 4:15 pm - 5:30 pm.

This year we will offer the ability to attend virtually via ZOOM. Details will be emailed to current members in advance of the AGM.

Communications Committee

The Communications Committee has continued to assist staff with their work in producing the three editions of our print newsletter, 'Onsite' (spring/convention, summer and fall/winter editions).

The Committee has also worked with staff to produce and issue weekly social media posts on all four social media platforms that OOWA is on (Twitter, Facebook, Instagram and LinkedIn). Staff sends out weekly posts for Homeowner Hints and Industry Insights on these platforms.

The Committee continues to support staff to produce the monthly e-bulletin 'OnTrack' that is sent out on the first business day of each month.

The Committee also worked on these initiatives in 2023:

1. Developed a new OOWA brand and logo with Frolic Design.
2. Increased video content on OOWA website and Youtube channel.
3. Maintained and updated OOWA's website.
4. With staff and volunteer support retained 3B Solutions to create a Sewage System Installation video.
5. Investigated the availability of grants for the development of training videos.

Events Committee

In 2023 the Events Committee moved forward with our Regional Meeting series, travelling to six locations across the province. These included Near North & Muskoka (Port Carling), Peterborough, Greater Golden Horseshoe (Dundas), South Western Ontario (London), Eastern Ontario (Kanata) and Central Ontario (Innisfil). Each meeting was well attended and garnered informative conversations about various aspects of Part 8 of the building code during each Panel Discussion.

Partnering with the Ontario Rural Wastewater Centre, OOWA hosted a Soils Course in the Ottawa area instructed by Eric Kohlsmith. This course sold out within 24 hours of registration opening.

In June we hosted a Part 8 Panel Discussion online as part of our ongoing Virtual Panel Discussion series. Attendance is limited to 100 guests and we met capacity once again.

The Events Committee hosted a small social event outside of the Industry Scope of Work and enjoyed a Toronto Blue Jays Game in September. We reserved 50 tickets and sold out within days. Lots of fun was had by all.

As is tradition every year, the Events committee struck a task group to plan the 2024 Annual Convention, inviting members from other committees to join in the planning process. We hope that you enjoy the fruits of our labour this year!

External Relations Committee

The External Relations Committee (ERC) continued to maintain relationships with the Ministry of Municipal Affairs, the Ministry of the Environment, Conservation and Parks (MECP), the Federation of Ontario Cottage Associations (FOCA), the Ontario Building Officials Association (OBOA), the Ontario Environment Industry Association (ONEIA) and the Ontario Association of Sewage Industry Services (OASIS).

The ERC's dedicated Improving Approvals Working Group met with MECP representatives in February, June and September as part of our ongoing dialogue toward improving the Environmental Compliance Approvals (ECA) process for onsite and communal systems. Discussion topics have included: design flows, establishment of effluent limits and objectives, and monitoring. These meetings will continue into 2024.

MMAH is contemplating changes to Part 8 of the OBC. In May 2023, OOWA and other industry representatives participated in a Part 8 Technical Committee to discuss the fourteen code change proposals being considered for the next edition, which is due out at the end of March 2024. OOWA representatives have also established regular, ongoing meetings with MMAH staff as a continued method of stakeholder engagement.

In the Fall of 2023, OOWA staff and volunteers represented the association at the OBOA annual convention, and the NOWRA conference held in Virginia. These efforts are part of our ongoing initiatives to increase awareness and outreach, and establish collaborative partnerships with other industry groups.

Finance Committee

2023 was another exhilarating year for OOWA that saw a very successful first in-person conference since the COVID-19 pandemic and other in-person events and initiatives. The Finance Committee worked with various other committees in the Association to ensure that budgets and spending remained on track. Below are some of the highlights of the year:

- Although OOWA had erred on financial caution and predicted a deficit budget for the 2023 fiscal year, OOWA was able to avoid a deficit and see growth within the Association.
- OOWA delegated surplus funds to different committees to support new initiatives and events to grow the association and give back to its members.
- OOWA was able to send representatives to the NOWRA Conference in Virginia USA and OBOA AMTS in Niagara Falls.
- OOWA provided Regional Round Up Meetings again in the fall at 6 different locations across the province with the support of our sponsors and attendees.
- OOWA's full time staff have done an excellent job with outreach this year in getting support from our sponsors and advertising and growing our membership.
- OOWA has continued to work with Wards Law to assist with bringing our Bylaws and Articles into compliance with the Ontario Not-For-Profit Corporations Act.
- Baker Tilley was retained as auditor for 2023 without competitive proposals.

Governance Committee

2023 saw the Governance Committee meet on an as-required basis with Two (2) areas of focus:

1. Reducing Professional Liability Exposure, continued from 2022.

Disclaimers. The Governance Committee developed a generic disclaimer with the intent that such a disclaimer will be used on a variety of outgoing communications such as Emails, Guidance Documents, Panel Discussion Slide Presentations, Newsletters, OOWA Website, and social media. This disclaimer was developed and subsequently reviewed by legal council and implemented for use in 2023.

2. Aligning OOWA Bylaws and Policy Documentation with the ONCA - Ontario NFP Corporations Act, prior to October 2024 deadline.

OOWA and the ONCA. As a NFP Corporation OOWA is obligated to align our Bylaws to ensure compliance with the ONCA prior to October 2024. Governance has retained Wards Law to review and make recommendations regarding our Bylaws to ensure such compliance occurs. These revised By-Laws have been completed and will be presented at the 2024 AGM for voting and implementation.

Membership Committee

1. For the Part 8 Course attendee promotion members we had a goal of 25% renewing after their first year. We did not quite get there, but 17% have renewed which was 23 new full-time members. Staff turnover and a lack of follow-up likely caused a decline in the percentage from the previous year. The program was revised to be opt-in instead of an opt-out for Part 8 course attendees to ensure we are complying with regulations. Promotional members have had good attendance at OOWA events, and we have recommended to the Events committee to engage new and promotional members at these events. We will continue to operate the program as it increases membership.
2. We launched the member forum before the 2023 convention with initial questions and included gamification codes to drive traffic to it. Topics from the Regional Meeting Part 8 discussions were later added. Usage has not been where we hoped, the forum is not somewhere people think to go to ask questions or may not want to ask questions in a public setting. To succeed the forum also needs increased participation from all members to provide content and respond to posts. Will continue to have the forum available but will not put many resources towards it as it does not seem like something that our members are wanting to use.
3. NAPA Auto Parts was added as a member benefit provider. NAPA is also exhibiting at the 2024 convention. We also published a flyer showing that membership pays for itself if benefits are used.
4. We created standard language for regulators to put on their websites with links to the OOWA website; including verbiage on permit application and find a professional pages. Having regulators link to OOWA increases our members exposure to homeowners.

5. 2023 budget included 545 paid memberships. We achieved this goal with 547 current members:

- a. 2023 Individual Actual 298; 2023 Individual Budget 285
- b. 2023 Multi-Member Actual 190; 2023 Multi-Member Budget 195
- c. 2023 Associate Actual 43; 2023 Associate Budget 40
- d. 2023 Young Professional Actual 16; 2023 Young Professional Budget 25

6) 2024 budget maintained current membership rates:

- a. 2023 Individual \$330
- b. 2023 Multi-Member \$160
- c. 2023 Associate \$230
- d. 2023 Young Professional \$160

Onsite Technical Committee

1. The primary focus of the Onsite Technical Committee (OTC) has been the ongoing development of OOWA's Guidance Documents, including:
 - a. Greywater Systems – task group is in the final stages of this document to provide guidance on the design and construction of Class 2 Greywater Systems.
 - b. Flow Distribution document was updated and finalized based on member feedback.
 - c. Installation FAQ – a new guidance document in progress, to provide answer to FAQs related to installation of sewage systems
 - d. Means of Magnetic Detection – a document to provide guidance on how to comply with OBC requirements for magnetic detection of leaching beds.
 - e. Standardized Forms – a task group is working on set of suggested standardized forms to accompany permit applications.
2. Several OTC members represented industry stakeholders at the MMAH Part 8 Technical Committee to discuss potential changes to Part 8 of the OBC.

Professional Development Committee

The Professional Development (PD) Committee has developed and delivered a new course for the permitting process for onsite system regulators. This initiative addresses a gap in the course offerings that are required for our Registered Professionals Program (RPP) and provides increased opportunities for regulators to access courses that are tailored to Part 8 permitting. This course was delivered at the OOWA 2023 Convention. The PD Committee continues to refine this course, with the aim to deliver it on a recurring basis throughout the province.

Through our partnership with the Ontario Rural Wastewater Centre (ORWC), OOWA has been able to offer additional courses to support the RPP and provides our members with additional opportunities for ongoing professional development. Working with OOWA staff and the Events Committee, OOWA delivered the Advanced Design on Onsite Sewage Systems in Mississauga and the Soils Course in Ottawa.

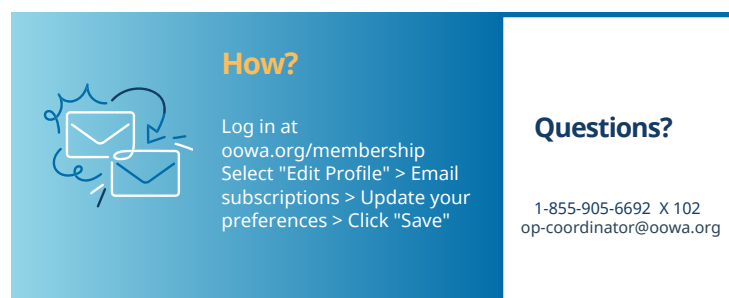
The PD Committee is reviewing the current RPP to ensure that it remains current and relevant to industry professionals and is reasonable and achievable based on the number of course hours required. This review is ongoing and will continue into 2024 to determine if changes to the program are warranted.



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Why?

OOWA is a registered non-profit association in Ontario, and the rules for Ontario non-profits are changing. The Ontario Not-for-profit Corporations Act (ONCA), requires that non-profit organizations obtain explicit consent to email their members. All non-profit organizations must be fully in compliance with the Act by October 19, 2024.



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MEMBERZ

Profile Questionnaire

FABIAN VAN ROMBERG

Building Inspector

Name of Organization: The Town of Innisfil

Owners: N/A

Services/Mandate: Provincial Government / Regulators / Building Inspection

Service Area: Innisfil, ON

Number of Years in Operation /Role:

3 years full-time; 2 years as a student over several contract terms

What got you started in the onsite wastewater industry?

I started at the Town of Innisfil as a Building Co-op student and quickly found that myself being involved with the provincially mandated septic re-inspection program doing onsite inspections. I also found the design, review, and installation of onsite sewage systems very interesting. Since then, I became more and more involved and 5 years later I am one of two inspectors in the Town who performs septic reviews, runs the septic re-inspection program, and carries out septic building inspections.

Give us one reason/secret for your success.

I don't think that I have achieved success just yet. My version of success would include making a positive impact on improving the permit review and inspection process, septic re-inspection program admin, and help to increase the level of education of the general public where on-site sewage systems are concerned. I look forward to continuing that journey towards success over the rest of my career.

What was the most challenging onsite job you worked on or participated in?

The septic re-inspection program has been quite challenging to implement as it is often not very well received by homeowners. The challenge comes when residents don't understand the reason for the program being in place and in general, don't understand how an on-site sewage system works or the maintenance that it requires. We find that this is happening more often as the Town's population grows with an influx of people coming from Cities that are served by municipal sewers. Our key focus over the last few years has been on public education and communication so that we can develop a better understanding of on-site sewage systems within our community.



FABIAN VAN ROMBERG
The Town of Innisfil

If you could change one thing about the onsite/ decentralized industry, what would it be?

I would work on trying to influence regulations and codes (OBC) so that there is more scope for accommodating on-site sewage systems on smaller lots while still maintaining the more important clearance/setback requirements. This may require a review of the current design and setback parameters as outlined in Part 8 of the OBC. I would also promote a 'site plan first' approach so that we can start seeing designs which prioritize the placement of the on-site sewage system first and then consider where to place the building/structures. In this way we ensure that the systems have the space and clearances that they require.

Where do you see the onsite industry going?

As technology becomes more and more advanced, I hope to see on-site sewage systems that produce better treatment with an increased effluent quality while still only requiring a relatively small footprint. I think that dealing with our sewage onsite has a big role to play in the development of our communities (especially in smaller municipalities which continue to grow at a rapid pace) and with a focus on education and communication (public, installers, and regulators) we can keep promoting the use of these sewage systems and outline their importance.

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MEMBER

Profile Questionnaire

Emma Deyo

Technical Sales & Field Support

Name of Organization: Waterloo Biofilter Systems Inc.

Owners: Dan Madon

Services/Mandate: We provide quality onsite wastewater treatment solutions and exceptional customer experiences that protect our water and soil resources.

Service Area: All of North America with focus on Ontario, Canada

Number of Years in Operation /Role:
4 months in this role. Started September 2023

What got you started in the onsite wastewater industry?

Admittedly, I didn't go looking for this industry. I was looking for a summer job in my field of study (biology) that was mostly outside. I found a job with the Mississippi Rideau Septic System Office (MRSSO) doing inspections of in use systems and I loved it. I also found great people within the industry that kept me coming back.

Give us one reason/secret for your success.

Saying yes to the opportunities that present themselves. You never know where something will lead you. In my career(s) so far, I have learned so much about so many different things, from septic systems to environmental monitoring to canine behaviour and learning.

What was the most challenging onsite job you worked on or participated in?

I can't identify one job that was particularly challenging, but I do know that every job has its challenges, that's the fun of our industry. Every site/job has problems that need solving, and every problem that needs solving has a solution if you get creative. What stands out to me about this industry is the collaboration of multiple, sometimes competing, parties that often occurs to solve a problem.



EMMA DEYO
Waterloo Biofilter Systems Inc.

If you could change one thing about the onsite/ decentralized industry, what would it be?

I think it's already changing for the better. We are seeing so many new people enter the industry of all ages and walks of life, which will keep it evolving and improving. I am pleased to be continually meeting new women and men with so much to offer our industry.

Where do you see the onsite industry going?

Getting better every day. We will continuously get larger and stronger to be able to offer onsite wastewater treatment anywhere. Our technology will continue improving to provide high quality treatment of sewage and keep our environment and community safe.



MEDIA RELEASE

FOR IMMEDIATE RELEASE

January 9, 2024, Peterborough

Peterborough Public Health Transferring Delivery of Safe Sewage Program

Municipalities to Assume Responsibility for Permitting & Inspections

Changes are coming to the permitting and inspection process for onsite sewage systems in the City and County of Peterborough. After November 17, 2024, Peterborough Public Health (PPH) will no longer oversee the delivery of these services in the region as responsibility for permitting and inspections are transferred to local municipalities.

“Peterborough Public Health has provided these building inspection services related to onsite sewage systems for over forty years, but we are now only one of eleven public health units offering this service,” said Julie Bromley, Chief Building Official and Manager of Environmental Health for Peterborough Public Health.

Board of Health Chair Councillor Kathryn Wilson said: “This decision by the Board of Health was challenging, given the long-standing positive relationships with residents served by this program and the dedicated work of our staff in this area. The transfer supports a one-stop-shop for residents and builders at municipal building departments and allows Peterborough Public Health to focus on our core work, as mandated by the Ontario Public Health Standards in a period of inadequate provincial funding for our core work.”

Peterborough Public Health is working closely with all municipalities that will return to delivery of this service to ensure a smooth transition for building departments and minimize disruptions to residents and industry experts. The transition will occur over two phases.

Phase 1: Effective **April 1, 2024**, the following municipalities will receive all *new* applications and activities related to onsite sewage systems:

- Township of Cavan Monaghan
- Township of Otonabee-South Monaghan
- Township of Selwyn
- Municipality of Trent Lakes

Phase 2: Effective **November 18, 2024**, the following municipalities will receive all *new* applications and activities related to onsite sewage systems:

- Township of Asphodel-Norwood
- Township of Havelock-Belmont-Methuen
- City of Peterborough

Peterborough Public Health will continue to oversee open permits and applications for all seven local municipalities outlined above until November 17, 2024. After this deadline, any outstanding files will be transferred to the applicable municipality.

The Townships of North Kawartha and Douro-Dummer already oversee activities related to sewage systems. As such, there will be no changes in these municipalities.

Residents who have open applications or permits with Peterborough Public Health will be contacted with further information and direction on closing their application. Questions may be directed to the PPH Safe Sewage Program at (705) 743-1000, ext. 228, and updates are available online at www.peterboroughpublichealth.ca/SafeSewage.

Conference attendees can hear more about Peterborough Public Health's current divestment process, and the completed divestment from Kingston Frontenac Lennox and Addington Public Health (KFL&A) to Township of South Frontenac by attending their presentation on **Tuesday, March 5th at 1:50 p.m.**

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Tips for Installing Septic Systems on Steep Slopes

By: Sara Heger, Ph.D.

In many parts of the U.S. septic professionals face the challenge of steep slopes during system installation. When working on sloping sites, safety is the primary concern.

When installing soil treatment areas (STA) on sites with significant slopes, care must be taken to ensure the safety of the operator and laborer while achieving a level excavation. Be sure to check with your equipment manufacturer regarding the equipment's slope limitations. Check your local codes for maximum slope installation requirements.

Piping

For the sewer line from the house to the septic tank the goal is to have the wastewater flow at a rate of 2 feet per second. If waste flows in the sewer line faster than 2 feet per second, the risk is that water leaves the solids behind in the pipe and causes clogging. On sites with very steep slopes from the structure to the first tank, a slope break may be needed in the pipe to significantly drop the pipe elevation. It is recommended to use smooth drainline connection with hubless drainpipe connections to limit solids being caught in the pipe. In these installations, a clean-out should be installed due to the potential for obstructions.

Soil treatment concerns and equipment choices

Since the bottom of the excavation must be level, care must also be taken that the upslope side of the system does not get too deep in the ground. The installer must identify the elevation(s) of the bottom of the trench or bed in relation

to the limiting condition before construction begins. These elevations are then used throughout the excavation of the trenches to ensure the required separation is maintained.



No matter what method is used to install the system, it's critical to maintain the required vertical separation and in some instances the installation can only be performed by hand. If tracked equipment is used, you will need a pad to dig a level excavation. Wheeled backhoes can self-level using stabilizers. The construction techniques for these sites are greatly impacted by the depth of soil available for excavation. If you have a deep soil profile for sewage treatment you can make a bench by cutting out soil on the upslope of the first trench and placing the excavated material downslope to create a bench for the second trench excavation.

If a shallow system (less than 24 inches from grade) is installed, cutting a bench into the site is difficult if not impossible. On these sites, the installer typically takes the soil from the first trench to create a bench for the second trench down the hill slope. It is often necessary to angle the machine upslope and use stabilizers to prevent it from tipping over. A better option for these sites may be the use of a mini-excavator placed perpendicular to the slope, where the blade is used to support the machine. Soil from the excavation can then be used to create a bench.

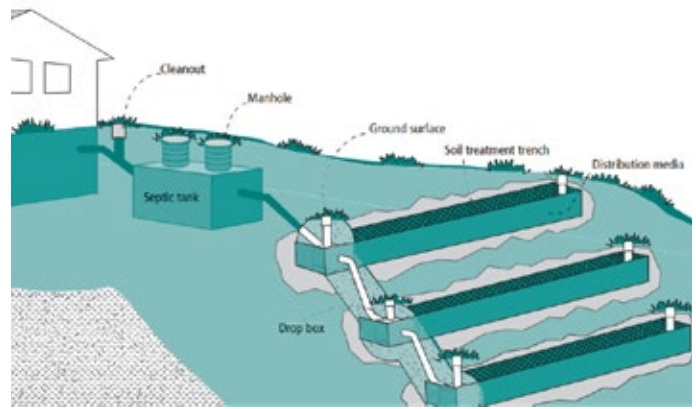


Distribution options

With low-pressure pipe distribution to the STA the laterals all must be level, or the design must account for the differences in elevation. Typically, a gate valve will be used to equalize the flows for the lines at lower elevation.

With drip distribution, pressure-compensating emitters are best suited for slopes as they will equalize the flow for the varying elevations. Pressure-compensating emitters have an internal means of increasing the friction within the emitter, thus increasing friction loss and maintaining a uniform emission rate.

If a gravity trench system is being installed, drop boxes will likely be the best method to step-down the slope. With drop box distribution septic tank effluent flows into the first trench until effluent has ponded and the trench reaches capacity.



Then, the effluent flows into the second trench until it, too, reaches capacity, then into the third. The first trench should be at capacity before effluent is delivered to the second trench. Effluent flows through a watertight pipe from the septic tank to the first drop box. An outlet, near the bottom of the drop box, connects to the distribution pipe of the trench. Another outlet near the top of the drop box connects to a watertight pipe leading to the drop box of the lower trench.

Aside from the order in which effluent reaches them, the trenches function independently, each receiving effluent at the rate it is accepted in that trench. If one is draining more slowly than the others, perhaps because it's in less permeable soil, it will accept less effluent. If one tends to drain quickly, perhaps because it receives more sunlight on the surface and more water is lost through evaporation in the warmer months, it will receive more effluent. Since the trenches are not directly connected, there is no hydraulic head from trench to trench — effluent does not move more quickly into or through the second or third trenches because they are downhill from the first one.

Steep slopes can be challenging but if care is taken during the installation a long-term sustainable solution can be installed.

About the author

Sara Heger, Ph.D., is a researcher and educator in the Onsite Sewage Treatment Program in the Water Resources Center at the University of Minnesota, where she also earned her degrees in agricultural and biosystems engineering and water resource science. She presents at many local and national training events regarding the design, installation and management of septic systems and related research. Heger is the President of the National Onsite Wastewater Recycling Association and she serves on the NSF International Committee on Wastewater Treatment Systems. Ask Heger questions about septic system design, installation, maintenance and operation by sending an email to kim.peterson@colepublishing.com

This article first appeared online at OnsiteInstaller.com on April 4, 2022, published by COLE Publishing, Three Lakes, Wis. It is reprinted by permission.

Part 8, OBC Sewage Design Flows – Are They Correct

Prepared by the Terry K. Davidson, P. Eng., RVCA, Research by Ryan Hiemstra, B. Eng., RVCA

Design Flow Comparison

Raised Fill Based Trench Bed – (OBC vs. CSA)
difference in run length and required loading area



Residential Dwelling Units Example	OBC Design Flow as per Table 8.2.1.3.A [L/day]	CSA B65-12 Design Flow as per Table 5 [L/day]	OBC Trench Length [T=10 min/cm]	CSA Trench Length [T=10 min/cm]	OBC Loading Area for fill-based system [native soil T>50 min/cm]	CSA Loading Area for fill-based system [native soil T>50 min/cm]
3-Bedrooms 17 FU 200m ²	1600	1325	80	66.25	400	331
3-Bedrooms 29 FU 280m ²	2400	1925	120	96.25	600	481
4-Bedrooms 17 FU 200m ²	2000	1600	100	80	500	400
4-Bedrooms 35 FU 320m ²	3200	2325	160	116.25	800	581
5-Bedrooms 41 FU 330m ²	3700	2775	185	138.75	925	693

compared to those installed in the 1970s. On the other hand, the current base flows for residential occupancies have not changed in the code since the 1970s.

We feel it may be warranted to explore an updated approach to the DDSSF so that onsite sewage systems being built today are not needlessly oversized.

The history of design daily sanitary sewage flows (DDSSF) in Ontario dates to the 1950's which first used the concept of DDSF for each bedroom. It wasn't until the early 1980's that the MOE introduced introduced a luxury flow based on 25 fixture units. The current design flow table was incorporated into

This article provides a review of the presentation that I presented at the OOWA 2023 Conference. The presentation questioned the current design daily sanitary sewage flow (DDSSF) used for Part 8 of the Ontario Building Code and discussed some of the aspects of it that need to be updated. The Rideau Valley Conservation Authority (RVCA) has been administering the onsite sewage program for over 27 years in the Ottawa area. In that time, we have witnessed many policy and code changes that have affected the onsite wastewater service industry in Ontario. With the recent Bill 23, "More Homes Built Faster Act, 2022", the Ontario Provincial government hopes to create more opportunities for residential development but with rising costs, landowners and developers have even more challenges to overcome. One that cannot be ignored is the rising costs of onsite sewage systems. This article summarizes the presentation shared in 2023 and discusses the main point made regarding the DDSSF and some of the flaws in this current system.

There are several factors influencing the rising costs like material supply, resource scarcity, labour shortages, fuel prices, and outdated design parameters. The rising cost of onsite sewage systems may be one of the factors leading to the reduced numbers of new rural homes and villages. The RVCA believes that the DDSSF is an outdated system that does not reflect how homes are built and used today. Today, plumbing fixtures like toilets use less than a fifth the amount of water

the OBC on April 6, 1998, and uses Bedrooms, Fixture units over 20, and Total finished floor area over 200m² to calculate DDSSF's. However, the assumptions made using this method have resulted in over conservative estimations of the DDSSF and oversized septic beds.

In Canada, a standard "Installation code for decentralized wastewater systems", has been developed in compliance with Standards Council of Canada requirements for National Standards of Canada. This National Standard of Canada is CSA B65:12 (R2012). The DDSSF's in the CSA Standards B65-12 publish March 2012, (reaffirmed July 2021) uses Bedrooms, Fixture units over 25, and range of finished floor areas base on the number of bedrooms. A comparison of the flowrates is shown on Table 1: Design Flow Comparison.

Comparing Sewage Design Flows

The previous presentation compares the OBC flows vs CSA B65-12 flows. Both assume 2 occupants per bedroom, and both would adjust flow rates for a high number of fixtures and floor area. The differences between the OBC and the CSA includes:

1. CSA assumes that houses with a greater number of occupants will have a lower average flowrate per person.
2. CSA accounts for a greater floor area for dwelling with a higher number of bedrooms in the base calculation
3. CSA has a base threshold of 25 fixture units as opposed to 20 in the OBC.
4. CSA would only increase flow rate by 5 L/day/m² for dwellings with larger floor areas as opposed to 10 L/day/m² in the OBC.

The following table compares the calculated DDSSF using the OBC method versus the CSA B65-12 method; it compares the length of distribution pipe for a trench bed and the loading area based on a raised bed.

The table indicates the advantages of using the CSA B65-12 Technical Standards versus the OBC Part 8 requirements. There has been no indication that the province has investigated our presentation, but in today's housing market, lower DDSSF's would help lower the cost of homes serviced by an onsite wastewater system.

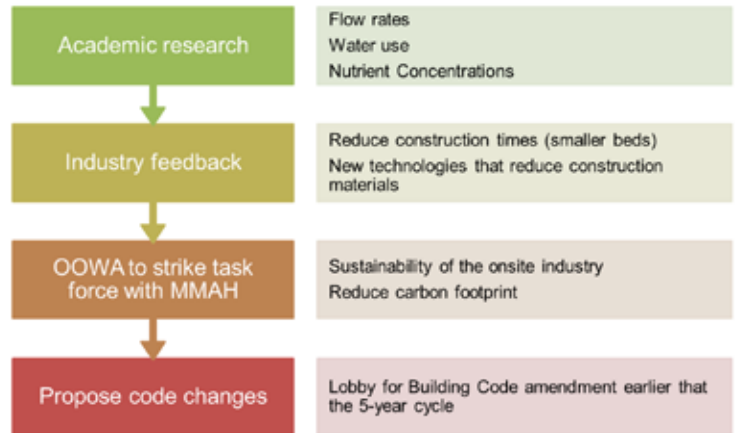
The rational for reducing the DDSF in Ontario is as follows:

- Less space for new development
- Reduced supply of sand materials
- Pressure in every industry to reduce Carbon Footprint
- Less expensive systems
- Quicker construction times
- More water efficient fixture units
- Environment awareness is changing water wastage at home.

It is acknowledged that if there was a reduction in the DDSSF, the concentration of contaminates in the wastewater may be an issue for further research, along with the flow patterns and surge peaks of individual residential onsite sewage systems.

Changing the DDSSF in the OBC Part 8 would require additional investigation and research in wastewater strength, septic tank retention times and a willingness from the province to back track on 20+ years of system design standards. Our presentation suggested next steps involving everyone in the Onsite industry, hopefully you will do your part to encourage a review of the DDSSF.

**Next Steps
Ontario Onsite Wastewater Conference 2023**



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MEMBERZ

Profile Questionnaire

Jake Mulholland

Project Manager

Name of Organization: ESSE Canada

Owners: Rick Esselment

Services/Mandate: Wastewater Residential / Commercial Maintenance, Inspections, and Repairs/Upgrades. By-Law Sewer Sampling & Emergency Spill Sampling.

Service Area: Ontario

Number of Years in Operation /Role: 3 years

What got you started in the onsite wastewater industry?

I attended Mohawk College under a Utility System Operator program, which focused on Oil & Gas with a small section on Wastewater. From there, I took an interest in the Wastewater side of the program and pursued my OIT license eventually leading me to join ESSE Canada.

Give us one reason/secret for your success.

My strong enjoyment for the outdoors & nature creates a purpose for the work I do past just collecting a wage – It makes those cold weather, rainy, and overall non-ideal condition days go smoother as I value the work, I do in hopes of protecting the environment.



JAKE MULHOLLAND
ESSE Canada

What was the most challenging onsite job you worked on or participated in?

In the past year, I onboarded a new commercial site that had numerous on-going issues which were not compliant with the MOE. To bring the system back into compliance I had to organize and conduct numerous projects such as filter bed installation and de-nitrification media disposal and installation.

If you could change one thing about the onsite/ decentralized industry, what would it be?

If I could change one thing, it would be to improve the accessibility of knowledge amongst older systems/practices in the industry. While by default people tend to specialize in specifics amongst their career, the “this is how that works” or the “tricks and tips” tend to be forgotten over the years, which can make working on older infrastructure more difficult than it needs to be.

Where do you see the onsite industry going?

I see the demand for the industry and its services increasing, as the public demand for new housing development continues to take place.

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Reporting Part 8 Application Numbers

By: Eric Kohlsmith, Regulations Inspector, Rideau Valley Conservation Authority (RVCA)

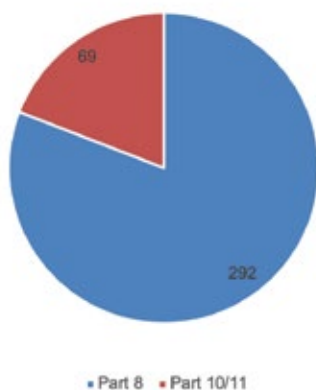
The start of the New Year brings the opportunity to reflect on and review last year's permit numbers as a Principal Authority. The Rideau Valley Conservation Authority (RVCA), as a Principal Authority for Part 8 we responsible for the intake, review, approval, inspection and closing of Part 8 applications in eight municipalities in Eastern Ontario. Tracking the type of permits and the number of permits is completed as a function of the Part 8 application program. Permit numbers are collected and reported in the RVCA annual report provided to the Board of Directors and made available to municipalities and the public. These numbers help demonstrate the workload year-to-year and assist with planning for operational requirements (staffing, vehicles, equipment, etc.)

The RVCA uses the content and process management software OnBase for file creation and tracking. Paper files are also created, but our goal is to work towards an environmentally friendly paperless system. When creating a file for new applications, information from the application form is entered into OnBase; up to 89 data fields depending on the type of application. Most data fields include information from the first four pages of the application (Permit to Construct and Demolish) and design information from other required schedules.

Sewage System Applications

In 2023 our office received a total of 361 applications in seven of our rural municipalities. 292 applications were for either new or replacement sewage systems (Part 8) and 69 applications were for the review of existing systems where a change of use or renovation (Part 10/11) was proposed.

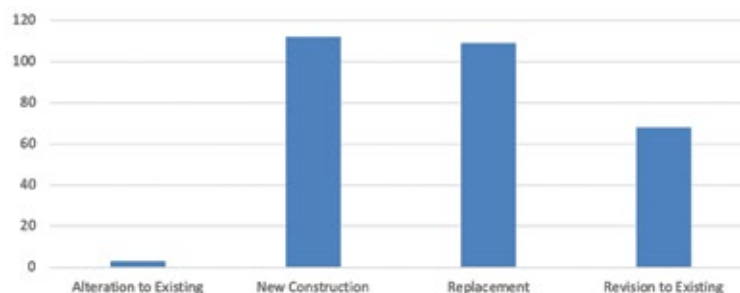
Number of Sewage System Applications



Type of applications

The 292 Part 8 applications are categorized based on Section B "Purpose of application" from the permit application. In 2023 we received three applications for alteration to existing systems, 112 for new construction of systems, 109 for replacement or repair of existing systems, and 68 revisions to existing permits.

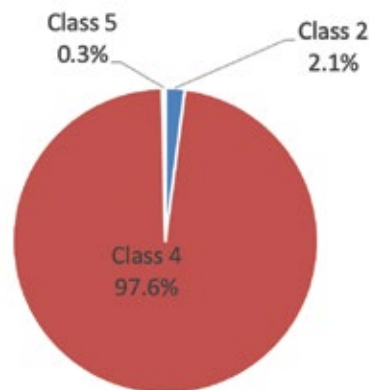
Type of Part 8 Application



Class of Sewage System

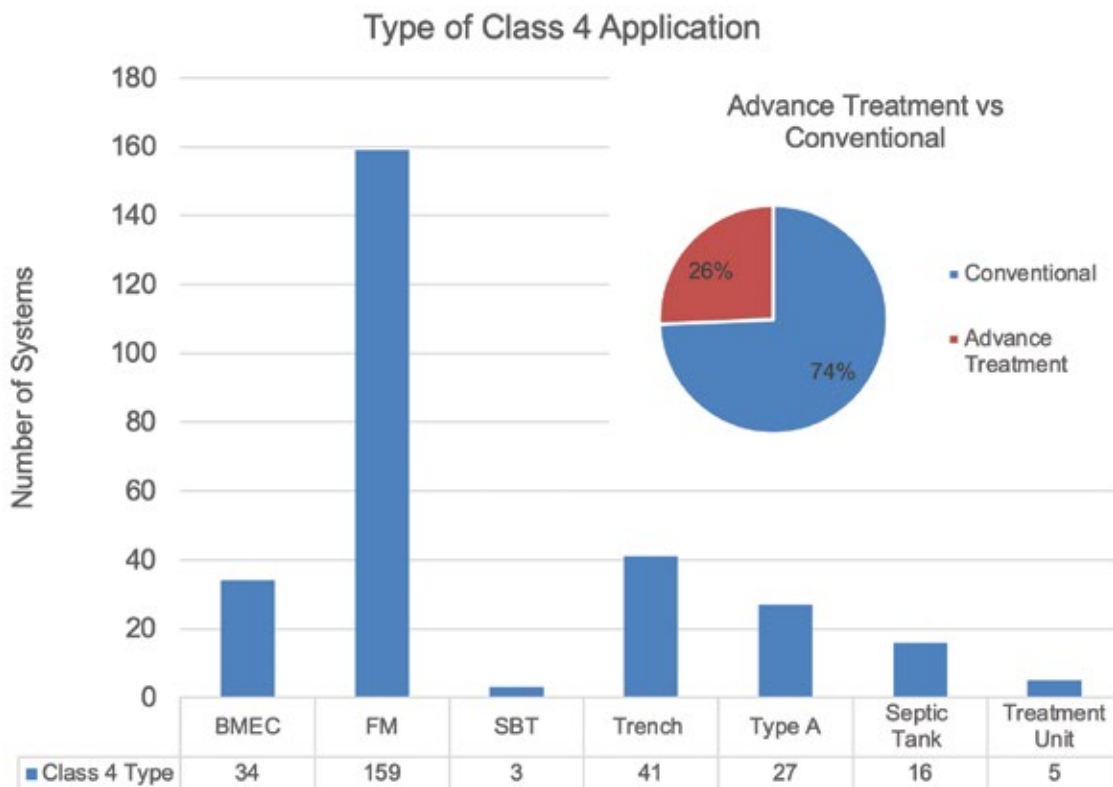
The type of Part 8 application was tracked for the Class of system proposed. We received applications for Class 2, 4, and 5 sewage systems. There were 285 Class 4 applications, six Class 2 applications, and one Class 5 application in 2023. Tracking the type of system shows trends from year-to-year for the type of development taking place. For example, we received six applications for Class 2 systems for new development compared to two applications to replace existing failed systems in 2022.

Class of System



Type of Class 4 Application

The initial review of applications includes recording the type of Class 4 system, including BMEC systems, and the installation of just a septic tank or treatment unit. For our rural municipalities, conventional systems accounted for 74% of the Class 4 applications with Filter Media Beds being the most popular: 159 of the 200 conventional Class 4 systems installed.



Reporting?

“In Ontario there are more than 1.2 million onsite systems”. Reference of this number of sewage system dates back to 2004 and is credited to a presentation by the Ontario Rural Wastewater Centre. How many more onsite systems have been installed in the last 20 years? Based on our 2023 numbers, we received 285 Class 4 applications in 7 municipalities which is approximately 40.7 applications per municipality. If we made the assumption that 40.7 Class 4 applications were submitted for all 444 Ontario municipalities each year for the last 20 years, there would have been 361,416 Class 4 systems in the last 20 years. In reality, this number is severely flawed; thus we are using permit numbers for one year from seven rural municipalities to presumably and supposedly accurately account for the permitting of Class 4 systems for the entire Province over the last 20 years. This assumption does not account for increased numbers in large and growing municipalities. For example there were over 420 applications for the City of Ottawa in 2023. It also includes replacement of existing systems, which would have been in the original 1.2 million. As flawed as the assumed number is, we don’t know how flawed it truly is as there is no Provincial reporting of sewage system applications.

Decisions for future development, regulations and restrictions using onsite treatment as a viable, sustainable option are being made without knowing how many systems and types of systems are installed in the Province. On a side note, reporting Part 8 application information will solve the mystery if any Type B dispersal beds have actually been approved/ installed in the Province.

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OOWA Releases a Sewage System Installation Video!

As part of the Communications committee 2023 Workplan, we are excited to announce the release of OOWA's fourth industry related video resource that covers the basics of installing a conventional septic tank and in-ground filter bed on the shores of Georgian Bay. In this video we walk you through the initial site works, the excavation for and installation of the septic tank, the excavation of the base of the filter bed, the placement of the filter sand, stone, pipe and filter cloth, the steel bars for future detection of the bed and backfilling of the entire system. This video has been created by the Ontario Onsite Wastewater Association in partnership with the property owners, Father and Son Construction, Onsite Septic Solutions, Tatham Engineering, and the Township of Tiny. **Head over to OOWA's YouTube channel to check it out!**

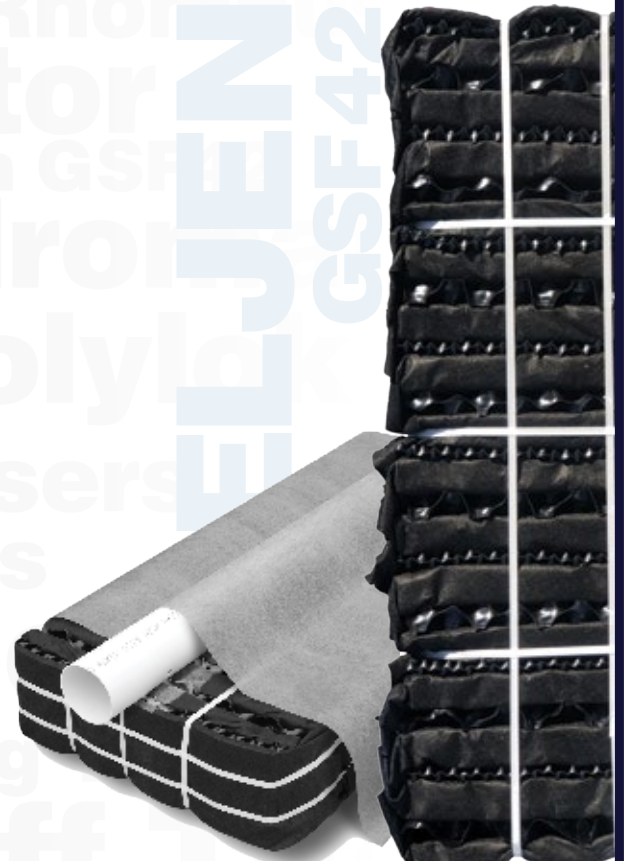
Don't forget to subscribe to our channel to stay up to date with OOWA and industry updates!

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Brian Alves
Elizabeth Angell, Vancouver Island University
Tobin Baker
Robert Bannister
Valérie Bridger, Bionest Technologies Inc.
Damion Bromfield, Gunnell Engineering
Brent Cadman
Fenno Campbell
Jack Comerford, Brock University
Dawson Cook, student
Mason Costa, On Point Drafting and Survey
Jeffrey Crugnale
Kenzie Currie
Robert Currie, Grey-Bruce Plumbing Ltd
Jonathan DeWeerd, Ontario Building Officials Association (OBOA)
Emma Deyo, Waterloo Biofilter Systems Inc.
Steve Filipowicz, Ontario Parks
Ray Foster, Bionest
Gregory J Galante
Jacob Hahn, Municipality of Trent lakes
Mark Heeg, Dynamic Excavating Inc.
Shannon Herman, Township of Asphodel-Norwood
Jeff Hiesl
Victoria Hoffmann, Flow Drawings and Design Inc.
William Holla
Andrew Hooper
Matthew Irving, Township of Muskoka Lakes
Desmond Jarvis, Township of King
Ramanpreet Kaur, Northern college
Robert Kelly, Township of Selwyn
Chase Kempen, City Of Hamilton
Lesley Kennedy, Region of Durham
Michael Lech, Arborrock Outdoor Living Ltd.
Rick Lecompte
Ryan Lightheart, Gunnell Engineering Ltd.
Patrick McMahon, Make-Way Environmental Technologies Inc.
Shayna Meinzinger, University of Waterloo
Tegan Meulemeester
Mike Minor, Franklin Electric
Ramtin Mirshahi, Western University
Jad Mouhanna, Infiltrator Water Technologies
Anu Paul Naduvath, Northern College

Justin Noddle, Justin Wayne Construction
Nathan Parr, Parr Construction
Brock Peel, Canadian Sanitation
Brad Pettersone, Township of Muskoka Lakes
Kathleen Pulfer, Township of Stone Mills
Andrew Quattrociocchi, Township of King
Jennifer Roos, Township of King
Mitch Rowley
Daniel Russell
Aksah Sam, CAWT
Zach Savoie, Crozier Consulting Engineers
Conner Shahan, Paterson Group Inc.
Trevor Spitse, Town of Amherstburg
Lauren Spivak, Lauren Spivak - Architectural Designer
Ben Stadig, Municipality of Meaford
Chad Stewart
Allan Stoll
Dale Theriault, Township of Havelock-Belmont-Methuen
Bruce Tiffin, Tiffin Construction
Travis Toms, Township of Havelock Belmont Methuen
Jason Vang
Jimmy Vang
Zack Vroom
Barbara Waldron, Municipality of Trent lakes
Matthew Wesley, Municipality of Trent lakes
Ruth White, Township of King
Qingshan Yin, Lakehead University

Renewed Members

Bassim Abbassi, Ontario Rural Wastewater Centre
Larry Acchione, Allto Construction Services Ltd.
Nick Acchione, Allto Construction Services Ltd.
Matthew Aldom, Township of North Kawartha
Miguel Almassy, DBO Expert
Yancy Ambing, Town of Bradford West Gwillimbury
Alexandra Anderson, Camping In Ontario/OPCA
Greg Annis, Durham Regional Health Department
Randy Armstrong, Armstrong Pumping Ltd.
Angelo Avolio, Town of Amherstburg
J.P. Babineau, Allto Construction Services Ltd.

Clark Ballantyne, Corporation of the City Of London
Paul Bates, Allto Construction Services Ltd.
Dominic Bauer, Gunnell Engineering Ltd.
Gord Bell, SiteEx Inc.
Doug Bingham, Newmarket Precast Concrete Products Ltd.
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Jeff Blackburn, B. Blackburn Ltd.
Jamie Blakely, Blakely Property Services
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Randy Bossence, Township of Centre Wellington
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Mark Brosowski, Weber Environmental Services
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Ryan Brown, Randy Brown Excavating
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Martin Burger, Groundwork Engineering Limited
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Andy Carter, On Sight Inspection
Randy Charlton, Haldimand County
Greg Cherniak, Township of North Kawartha
Dorian Chlopas, Rowan Environmental Consulting Inc.
Stephen Cobean, Cobide Engineering Inc.
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Michelle Dada Ortiz, MNT Consulting Group Inc.
Terry Davidson, Ottawa Septic System Office
Alex Dekleine, Ottawa Septic System Office
David Denstedt, Muskoka Barging & Construction
Gary Deppe, Polylok
Lesley Desjardins, Western Canada Onsite Wastewater Management Association
Executive Director, Ontario Ground Water Association
Ryan Dobie, Town of Innisfil
Tammy Dobie, Municipality of Meaford
Jessica Doherty, Crozier Consulting Engineers

Members Who Joined or Renewed Their Membership

Between the Dates of October 21, 2023 and January 30, 2024

Jonathan Donaldson, University Of Ottawa
Glenn Dryden, Dryden Excavation Inc.
John Duffy, Van Harten Surveying Inc.
Bibi Easow, FlowSpec Engineering Ltd.
Peter Echlin, Drummond North Elmsley Township
Anne Egan, R.J. Burnside & Associates Limited
Anne Elmhirst, City Of Kawartha Lakes
Marc Ethier, E2TECH Services
John Faris, Faris Excavating Ltd.
David Fondevilla III, FlowSpec Engineering Ltd.
Ray Foster, Bionest
Peter Froehlich, Brooklin Concrete Products
Mike Fulton, Near North Supply
Caroline Garbutt, Town of Huntsville
Andrew Girouard, Greater Napanee
Paolo Giust, Honeywell Works Inc.
Michael Golubovic, Township of Centre Wellington
Susan Gordon, Novatech
Roger Gostlin, R. Gostlin & Son Sand & Gravel
Rene Goulet, Goulet Septic Pumping & Design
Brent Green, Township of Centre Wellington
Steve Greer, GB Excavating
Maggie Grierson, GM BluePlan Engineering
Stefan Gruescu, Claramy Designs Incorporated
Eric Gunnell, Gunnell Engineering Ltd.
Daniel Hagarty, Township of Centre Wellington
Jeremy Hein, Groundwork Engineering Limited
Janet Henneberry, Township of Centre Wellington
Ryan Hiemstra, Ottawa Septic System Office
Kurtis Horn, Haldimand County
Jason Hutton, Ottawa Septic System Office
Nick Ippolito, Town of Innisfil
Mark Jeffrey, Township of North Kawartha
Scott Jeffrey, Peto MacCallum Ltd.
Denise Johnston, Township of Centre Wellington
Thomas Keane, Gunnell Engineering Ltd.
Willis Kerr, Willis Kerr Contracting
Josef Kloepper, Gunnell Engineering Ltd.
Randy Knight, Glen Knight Septic Service
Eric Kohlsmith, Rideau Valley Conservation Authority
Don Krauss, Infiltrator Water Technologies
Natasha Lacasse, Lafarge
Paul Leahy, Leahy Excavation
Perry Leifso, Interpump Supply Ltd.
Elizabeth Lew, Gunnell Engineering Ltd.
Adam Lohonyai, Eximius Engineering Ltd.
Victoria Lucas, EnVision Consultants Ltd.
Stuart Maclaughlin, Groundwork Engineering Limited
Rob MacLellan, Moose Creek Precast Inc.
John (Curtis) Martin, Town of Huntsville
John Martin, Cromar Environmental
Dylan Martin, MXC Excavating Inc.
Paisley McDowell, EnVision Consultants Ltd
Patrick McMahan, Make-Way Environmental Technologies Inc.
Trevor McMahan, Make-Way Environmental Technologies Inc.
Rafael Merante, Town of Innisfil
Scott Metherell, BigRedWorks
Brett Miller, Laurentian Valley Twp.
Gerry Mitchell, Peto MacCallum Ltd
Adrian Molloy, Molloy Contracting Inc.
Sherri Moore, Township Of Oro-Medonte
David Morlock, FlowSpec Engineering Ltd
Jerome Nicholls, Construction & Fill Management
Nico Nirschl, Liberty Pumps
Mason Noble, Township of Centre Wellington
Mark Ongarato, GM BluePlan Engineering
Chris Owen, C.O. Construction Ltd.
Mike Parsons, Dirty Deeds Contracting Inc.
Sean Pattee, Near North Supply
Louise Pattenden, Township of Centre Wellington
Rick Patterson, Drummond North Elmsley Township
Gary Pearson, Pearson Engineering Ltd.
Jackson Penner, Municipality of Meaford
Stacey Pennington, Township of Centre Wellington
William Pottruff, Thunder Bay District Health Unit
Jacob Pruner, Mississippi Rideau Septic System Office
Bri Quinn, Municipality of Dysart et al
Terry Rainone, Terrain Construction Management Inc.
Richard Raison, R R Equipment Rental
Doug Rankin, Slagter Construction
Terry Rees, FOCA - Federation of Ontario Cottage Assoc.
Amanda Renton, Township of Severn
Katherine Rentsch, Crozier Consulting Engineers
Scott Robinson, Unit Precast
Bill Robinson, Robinson Enterprises/SepticCheck.ca
Robert Robinson, Robinson Haulage Inc.
Stephen Ropp, Percon Excavating Inc.
Will Rounds, Corporation of the City Of London
Brian Rudak, Rudak Excavating Inc.
David Ruppert, Ruppert Haulage Inc.
Troy Sampson, Thunder Bay District Health Unit
Brad Schildroth, FlowSpec Engineering Ltd.
Joe Senc, ZOELLER CANADA
Glen Sharp, Francis Thomas Contracting Company Ltd.
Paul Sharp, CONSTRUCTBUILT Inc.
Tom Sibbald, Siteworks Construction
Edward Smith, Ted Smith Construction
Nick Snyder, Township Of Muskoka Lakes
Tracey Spragg, Robinson Enterprises/SepticCheck.ca
Connor Steer, Gunnell Engineering Ltd.
Clayton Stokman, Township of Guelph/Eramosa
Ryan Strachan, Brooklin Concrete
Keith Thomas, Francis Thomas Contracting Company Ltd
Ryan Thomas, Make-Way Environmental Technologies Inc.
Scott Thompson, MTS Environmental Inc.
Bob Thomson, Valley Sanitation Services
Don Thomson, Valley Sanitation Services
Telly Thomson, Valley Sanitation Services
Barrett Tinney, Tinney's Septic Service And Construction
Michael Tinney, Tinney's Septic Service & Construction
Bart Toby, Municipality of Meaford
Travis Toms, Township of Havelock Belmont Methuen
Numair Uppal, OASIS
Fabian Van Romberg, Town of Innisfil
Tyler vanderStam, ESSE Canada
Andrew Vangerven, Van Gerven Excavating
Mike Varty, EnVision Consultants Ltd
Mathew Walters, Walters Custom Works Inc.
Danielle Ward, Adams Brothers Construction
Ryan Weddel, Newmarket Precast Concrete Products Ltd.
Patrick Welch, DW Land Development Services Inc.
Jordan White, Haldimand County
Crystal Willems, Region of Durham
Lindsay Wolfenberg, Clearford Water Systems Inc.
Jazmyne Woolley, R.J. Burnside & Associates Limited
Matt Woudwyk, Cardinal Home Services

Membership Benefits



Membership Benefits

IT PAYS TO BE A MEMBER!

	<p>Perkopolis is a discount program with hundreds of available discounts across the country on things like entertainment, car rentals, hotel stays, electronics, flights, food, wellness and attractions. To sign up, visit www.perkopolis.com and use your email address (that OOWA has on file) to create an account.</p>
	<p>No reservation required! Simply use the code provided by OOWA at time of check out and automatically receive the discounted rates. Save \$7/day and \$90/week when parked in Toronto using the Park'N Fly Valet service, or \$4/day and \$39/week when choosing Toronto Self-Park.</p>
	<p>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 ext. 132 or email at: mcmullen@vergeinsurance.com</p>
	<p>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.</p>
	<p>OOWA members save 10% at Mark's Work Warehouse on the following items and more; Carhart merchandise, Dakota workwear, coveralls and overalls, casual wear, work gloves, and all CSA footwear. Present your card at any location to receive your discount.</p>
	<p>Grand & Toy is your one stop shop for all your office needs including ergonomics, furniture, computer supplies, PPE, Janitorial/Sanitary. 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. Your savings could easily offset OOWA membership dues!</p>
	<p>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</p>
	<p>OOWA members get guaranteed and discounted rates on car and trunk rentals. Reference the business Account Number provided by OOWA when booking a rental vehicle.</p>
	<p>Onsite Installer Magazine is the foremost publication of the onsite wastewater industry. As a member of OOWA you can now get a hard copy delivered to your door at no charge. Keep up to date on the latest technologies, industry trends with interesting system profiles and installer profiles.</p>
	<p>NAPA and Ontario Onsite Wastewater Association are pleased to announce a new partnership and preferred pricing agreement. Are you trying to effectively manage your Fleet amid New Vehicle shortages, and supply chain issues? Did you know that NAPA can help? Contact us today to discuss the needs of your fleet, and how we can support you in keeping your fleet moving.</p>
	<p>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 that you can access membership rates for events and resources provided by our association partners, including the Ontario Association of Septic Industry Service, the Ontario Building Officials Association, and the Ontario Ground Water Association.</p>

Make An Impact

COMMITTEES



Communications

- Develop, review, edit newsletter content
- Maintain website content
- Develop online resources



External Relations

- Develop active relationships and collaborate with government, agencies, industry organizations



Onsite Technical

- Recommend OBC changes
- Develop guidance docs
- Assist with development of educational resources



Events

- Develop, coordinate and deliver all events including annual conference, regional meetings, and training events



Membership

- Ensure value for members
- Source valuable benefits
- Develop member-focused programs



Professional Development

- Anticipate, facilitate and coordinate activities to meet the ongoing training needs of our membership

Become a Volunteer

WHAT'S IN IT FOR ME?

Are you an engaged professional looking to expand your knowledge and expertise? Do you care about improving the onsite wastewater sector? Do you want to collaborate with some of the industry's leading experts? Consider joining one of our volunteer committees or board of directors to grow your influence in the industry.

WHAT'S EXPECTED?

Our committees and board meet once a month (or as needed) via ZOOM to discuss, plan, and implement initiatives stemming from our Strategic Plan. You don't have to commit right away - come as a guest to a meeting to test the (waste)water!



Board Member duties include:

- Provide financial oversight
- Ensure OOWA has adequate resources
- Oversee programs and policies
- Help advance OOWA's mission



— **ONTARIO** —

Onsite Wastewater
Association

Psssstt...
**OOWA
has a
new look.**

Ontario Onsite Wastewater Association went through a recent rebrand. Read more about the whole process on page 21 of this issue.

Revamped
Brand



New Icon



Refreshed
Colourway

