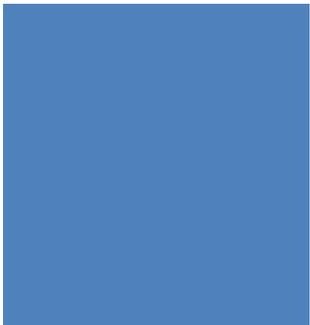


Septic Re-inspection Programs in Ontario

A Guide for Community Groups



Our Vision:
*FOCA envisions thriving and sustainable waterfronts
across Ontario, now and for future generations*



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Overview

Exploring Municipal Re-inspection Programs in Ontario

There are approximately 250,000 rural waterfront properties across Ontario, and most of them rely on on-site wastewater treatment systems (also known as sewage systems or septic systems) to manage their household wastewater.

FOCA's member associations have expressed interest in sharing knowledge about septic systems, how septic maintenance is supported and achieved, and the associated costs, benefits and considerations of municipal re-inspection programs.

In 2018, FOCA initiated a project to explore successes, challenges, and lessons learned with municipal re-inspection programs for residential on-site wastewater systems in Ontario. FOCA initiated the study to assess the effectiveness of existing programs, to equip FOCA members with related knowledge, and to inform rural Councils about options to deliver their own effective re-inspection programs.

A collaborative research team of experts oversaw the project, including representatives from FOCA, the Ontario Onsite Wastewater Association (OOWA), the Canadian Environmental Law Association (CELA), the University of Guelph (UG), and Memorial University (MU).

The Project Research Team included:

- Cameron Curran, MSc (Planning) Student, University of Guelph
- Anne Egan, President, Ontario Onsite Wastewater Association
- Brendan Eidner, MSc (Planning) Student, University of Guelph
- John FitzGibbon, Professor, University of Guelph
- Liz Huff, Director, Rural Ontario Municipal Association
- Theresa McClenaghan, Executive Director and Counsel, Canadian Environmental Law Association
- Sarah Minnes, PhD Candidate, Memorial University of Newfoundland
- Terry Rees, Executive Director, Federation of Ontario Cottagers' Associations
- Hugh Simpson, Adjunct Professor, University of Guelph
- Taylor West, MSc (Planning) Student, University of Guelph



The project was endorsed by the Rural Ontario Municipal Association (ROMA), and received funding from the Rural Policy Learning Commons (RPLC).

Scope of Study:

Field research, a literature review, and case-study interviews were conducted as part of the project, which wrapped up in 2019.

Case studies of rural municipalities' re-inspection programs for residential on-site wastewater systems include the following locations:

- Township of Leeds and the Thousand Islands
- Municipality of Callander
- Township of Rideau Lakes
- Township of Tiny.

Details of the case studies are summarized in a chart created by FOCA. (see pages 16-17), followed by the four complete studies (pages 19-35).

Additional research was conducted concurrently by project team members, including University of Guelph Masters of Planning and Development thesis projects related to on-site wastewater systems, a larger literature and policy scan of septic inspection practices in Canada and the United States, and case studies evaluating the efficacy of septic maintenance programs.

Overall Lessons Learned:

Education is key to a successful municipal re-inspection program.

Volunteer programs are unlikely to reach the systems most in need of re-inspection!

Residents may fear the cost of needed repair will be overwhelming.

Many older systems are not itemized in municipal records.

There will always be some residents in favour of re-inspection programs, and other residents opposed.

Septic re-inspection programs only find failures or deficiencies that already exist.

Municipalities considering a re-inspection program do not need to reinvent the wheel.

<find additional "Notes & Lessons Learned" from the case studies, on page 18>

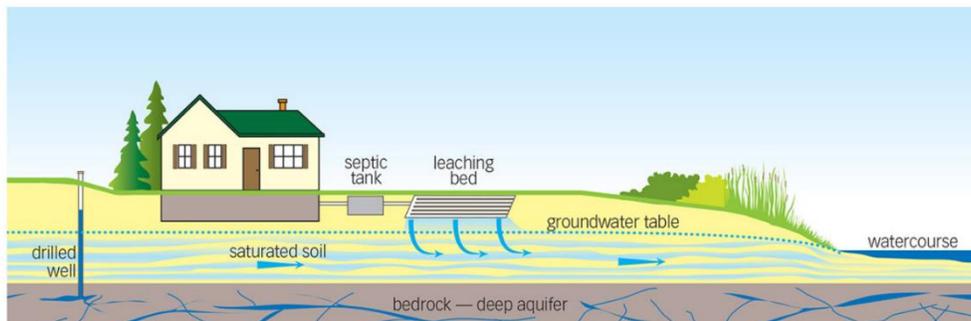
About On-site Wastewater Systems

Most of Ontario's waterfront property owners are not connected to municipal water or sewage pipes, and therefore rely on wells and on-site wastewater treatment systems to manage household wastewater. Rural residential sewage systems are regulated by the Building Code Act, 1992 and the Ontario Building Code (O.Reg. 332/12).

There are **five different classes** of on-site wastewater systems:

1. Outhouse (privy) or composting toilet
2. Leaching pit used for disposal of greywater (from sink, tub, shower, laundry)
3. Cesspool system
4. Septic systems (treatment unit/septic tank plus a leaching bed)
5. Holding tanks.

For most waterfront properties, a **septic system** (Class 4) treats your wastewater below the ground surface on your property. Household drains connect to a septic tank, which is connected to a leaching bed (or filter-bed, tile bed, or weeping-bed) made up of pipes with holes, buried in gravel, surrounded by natural or imported soil.



<source: *Septic Smart* from OMAFRA, page 7. See link on next page.>

For a video description of septic system parts, maintenance, and signs of trouble, watch FOCA's video with an inspector from Peterborough Public Health:

<https://www.youtube.com/watch?v=5VeTGVnkYA4>



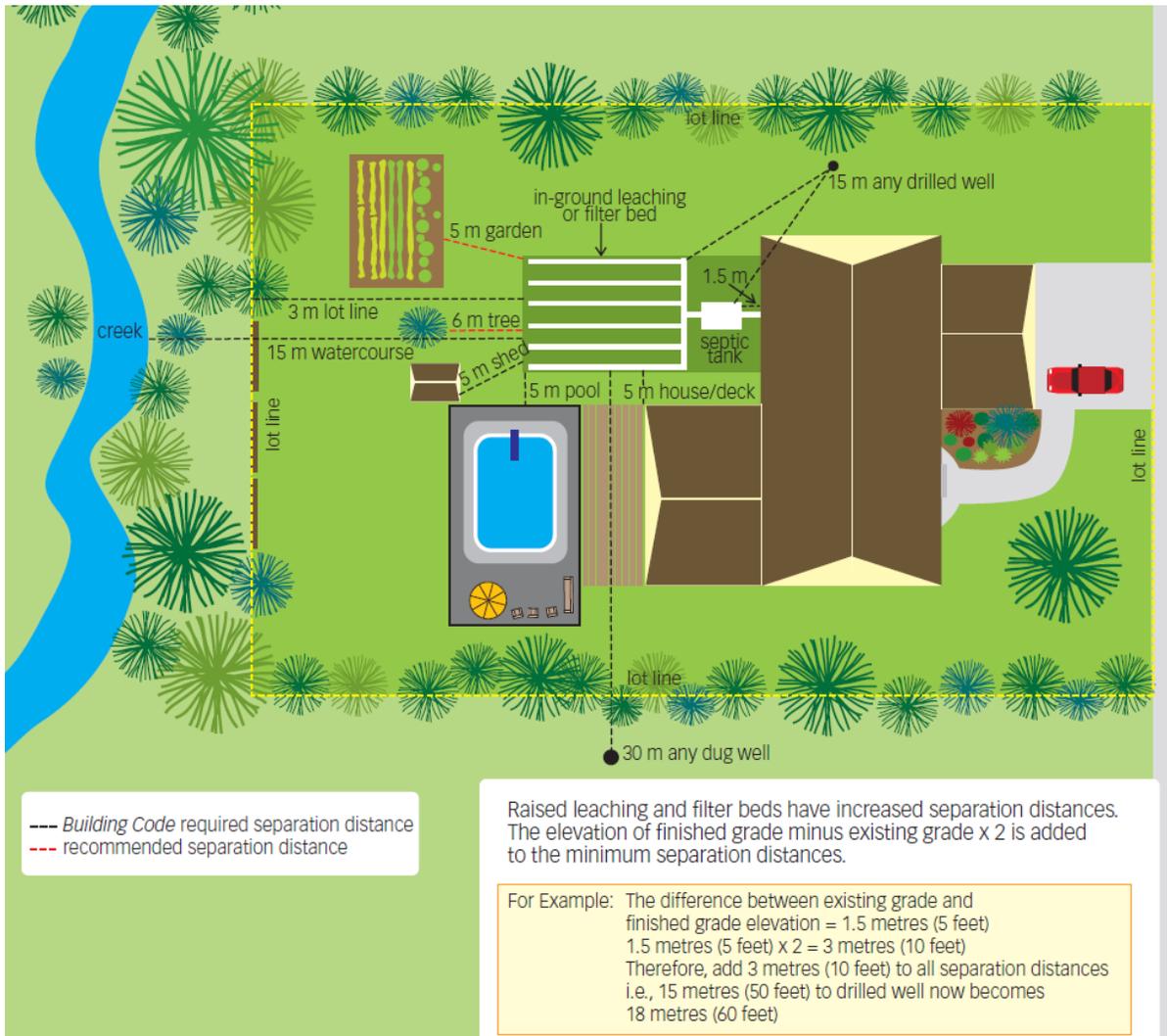
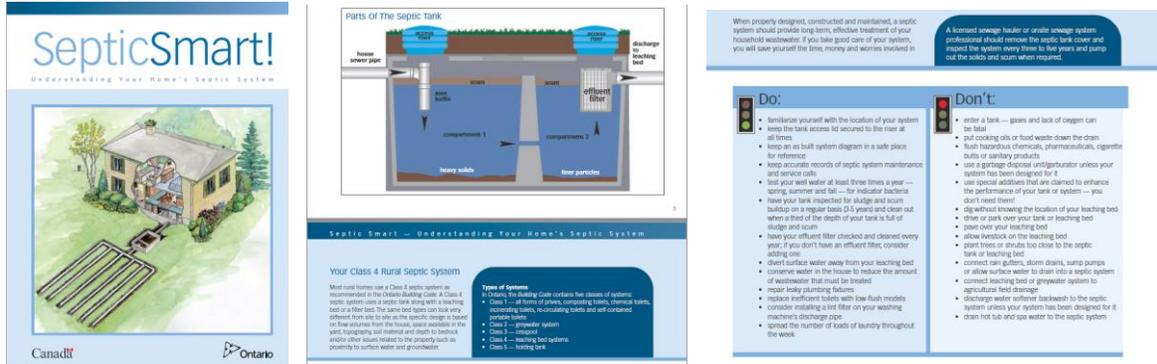
FOCA Cottage Country Septic System Video



FOCA encourages you to share this video link with others in your rural community!

Additional information about septic systems is available from OMAFRA (the Ontario Ministry of Agriculture, Food and Rural Affairs) in the “Septic Smart” 12-page brochure:

http://www.omafra.gov.on.ca/english/environment/facts/sep_smart.htm



Why Septic Systems Matter

Understanding how your septic system works, and the role of ongoing system maintenance, is important to protect public health, lakes and rivers from contaminants, and to protect your investment. FOCA encourages all landowners to look after your septic system to protect your waterfront investment, and as a matter of good environmental stewardship. As OOWA (the Ontario Onsite Wastewater Association) says, “the way you treat your septic system will influence how long the system lasts and how well it functions.” Proper maintenance helps to avoid potentially serious impacts.

Overload/leaking of sewage - A septic system is designed to treat a set volume of wastewater. Every time water goes down the drain into your septic tank, the same amount of liquid leaves the tank and enters the leaching bed. If too much wastewater enters the tank—from extra guests, heavy water use—too much waste is forced out, too soon. Unsettled wastewater can leave the tank too quickly, including solids that can enter the leaching bed and clog up pipes.

Wiped out waste digesters- Sewage is broken down by millions of bacteria and enzymes in your septic tank and the soil within the leaching bed. This bacteria is harmed or killed by cleaning products that are antibacterial, non-biodegradable, chlorine-based and/or full of toxic materials or hazardous products like varnish, paint, pesticides, or gasoline. Without active, healthy bacteria in the septic tank and leaching bed, the sewage system can prematurely fail as well as leach untreated sewage into the groundwater, surface water, and the environment.

Poisoning yourself- Hazardous products dumped down your drain come out of the septic system just like they went in, but now they're in the ground and water with the potential to poison wells & lakes.

Build-up of solids- There's a lot that can't be digested by your septic system. Fats, oils and grease don't break down, and can form a scum layer at the top of your septic tank. Paper products, coffee grounds, hair, tampons, etc., inhibit the work of bacteria, quickly fill tanks, clog the system and hamper their effectiveness. Be proactive and have your tank pumped on a regular interval (say, every 3 to 5 years) to ensure the solids accumulation has not exceeded the operational capacity of the system. This can be an opportunity to have the condition of the tank and bed inspected, too.

Contaminated drinking water and swimming areas- Septic systems were designed with public health in mind, to remove contaminants such as organic solids, bacteria, and viruses, but not to prevent the release of nutrients. If your sewage is leaking, not getting cleaned, or building up, the end result could be untreated water entering wells, ground water or your lake. Your health and the environment are at stake.

Share these “septic slogans” to stay on the right track to a healthy community:

What goes in must come out

To allow wastewater the time it needs to be treated in the tank, conserve water. Ensure the size of your system can handle the quantity of wastewater you create. Many older septic systems may be grossly undersized for the current number of visitors to your cottage on any given day!

It's not a garbage can

Don't put garbage down your drain.

That includes grease, oils, fats, and other non-biodegradable items.

Don't poison your poop processor

Always choose biodegradable, non-toxic shampoos, detergents, soaps, and cleaners. Many household products are loaded weapons for your septic system. Make septic-friendly product choices.

Nutrients not needed

Keep the input of phosphorus to a minimum. Use low-phosphate or phosphate-free cleaners.

An ounce of prevention...

Like all household systems, your wastewater treatment needs to be maintained. Regular maintenance includes ensuring that the tank is less than 33% full of solids (in the first chamber), cleaning the effluent filter at least annually, and visually inspecting the leaching field for liquid break out, odours or other signs of trouble. Excess solids mean it is time for a pump out. Replacing a septic system (and repairing its impacts) is expensive; regular maintenance can keep thousands of dollars in your pocket.

Plants, not trees

Plant with caution in the nutrient-rich area on top of the leaching bed! Do not plant trees or shrubs within three metres of the tank or bed. Roots will seek out and crack your pipes. Shallow-rooted ground covers are ideal.

Location, location, location

Soils play a big role in how water travels from the leaching bed, what contaminants get absorbed/broken down, and how far they travel. Your septic system must be designed for the type of soil around your cottage. Make sure your system meets the rules (Ontario Building Code) that specify how far a septic tank and leaching bed can be built away from buildings, wells, and waterbodies

Find additional online resources: <https://foca.on.ca/septic-systems>

The State of Sewage Systems in Ontario (and some Statistics)

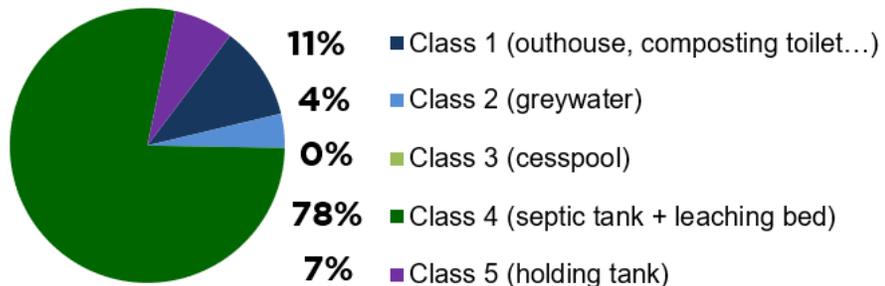
In Ontario, on-site sewage systems are regulated by the Building Code Act, 1992 and the Ontario Building Code (O. Reg. 332/12). Enforcement is carried out by designated Principal Authorities (Municipalities, Conservation Authorities or Health Units). Municipalities may, through an agreement, delegate the responsibility for oversight of septic systems to Conservation Authorities, Health Units or upper-tier municipalities.

Ontario's Building Code was amended by Ontario Regulation 315/10 to provide the legislative authority for on-site sewage system maintenance inspections. Mandatory inspections occur along the shorelines of Lake Simcoe and all provincial source water protection areas, as defined in the Clean Water Act (that is, areas that directly influence municipal water systems, wells or surface water intakes). For these systems, re-inspections are mandated every 5 years, with 3rd-party certificates of compliance being permitted by the principle authority, in some cases. According to provincial data released in 2018, of the 5,048 sewage systems that fit this classification, 95% received mandatory inspections. Less than 2% were found to require major maintenance, while 9% required minor maintenance.

The following pages contain additional anecdotal statistics from industry partners, from various Ontario re-inspection results:

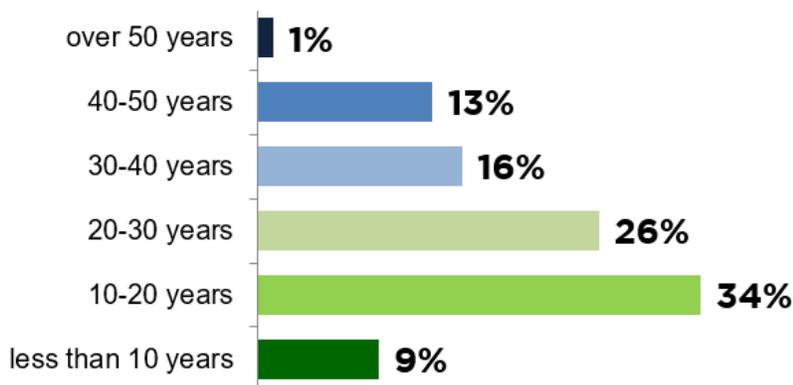
Class of Sewage Systems reinspected by WSP (2018)

N = 1,095



Age of Systems reinspected by WSP (2018)

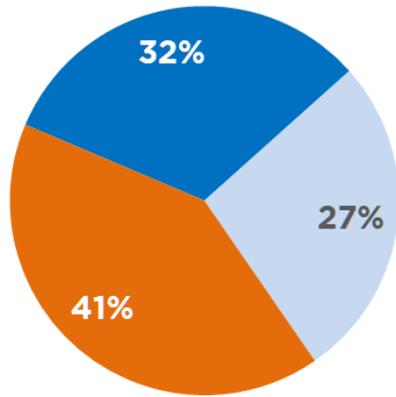
N = 751



<source for the data in these two charts: a presentation by Kathryn Stasiuk of WSP Canada, at the 2019 OOWA Conference>

More Sewage System Notes & Statistics

The following anecdotal data is from sewage system re-inspections conducted in one-time fee-for-service arrangements by ESSE Canada with over 370 clients from 2015 to 2017:



System condition profiles, at the time of inspection:

- no deficiencies of note
- minor deficiencies only
- major deficiencies noted

32% had **no deficiencies** of note or impediments to function or performance

27% had **minor deficiencies**; functional, but repairs/upgrades required to ensure performance

41% had **major deficiencies** in significant/extreme ways that impeded function and performance

Among the systems with major deficiencies, only 14% of them were under 20 years old.

Three-quarters of MAJOR DEFICIENCIES were found in systems over 30 years old.

Major deficiencies included:

- field failure (34%)
- deficient outlet baffle (21%)
- saturated system field (15%)
- heavy tank corrosion and/or structural failure (15%)
- sludge in system field (15%).

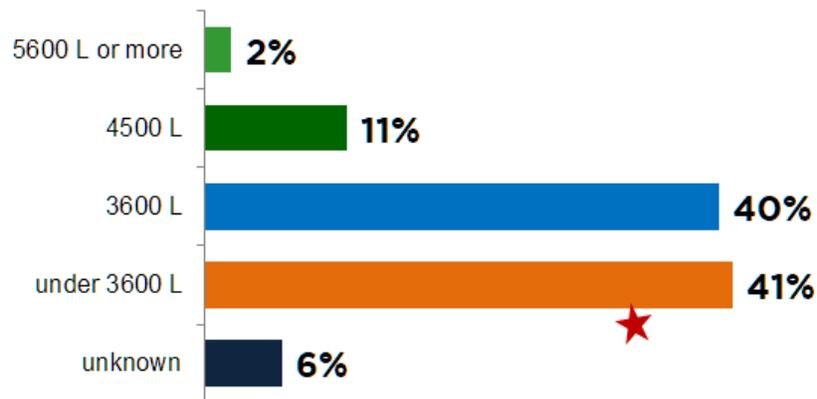


<The above information, and the accompanying image, was presented by Rick Esselment of ESSE Canada, at the 2018 FOCA Spring Seminar. Members may contact FOCA for a PDF copy of the full presentation slides.>

More Sewage System Notes & Statistics...

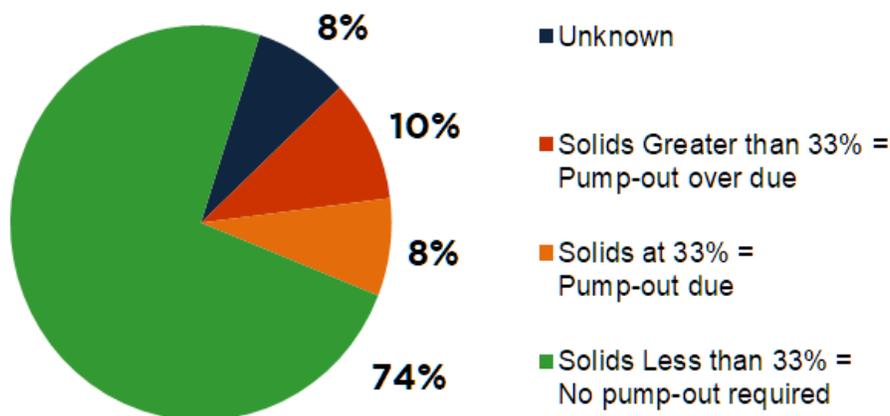
<A second data set presented at the FOCA AGM in 2018 by Rick Esselment, represents approximately 7,667 individual property re-inspections conducted by **WSP Canada** in various townships between 2013 and 2017, as part of mandatory or discretionary sewage system maintenance inspection programs requested by the Townships.>

Municipal Reinspection Tank Volume Profiles:



★ NOTE: current working capacity under the Ontario Building Code is a minimum of 3,600L

Municipal Reinspection Tank Solids Accumulation Profiles:



FOCA notes: the vast majority of systems re-inspected *did NOT* need a pump-out.

More Sewage System Notes & Statistics...

Average cost for septic re-inspections:

~\$100-350 each

FOCA notes that charges to homeowners vary considerably by type of inspection and other conditions. As examples: currently the County of Peterborough charges \$325 per property, Tiny Township charges just under \$100, and Rideau Lakes recovers costs through residential taxes. See page 13 for more about different types of inspections.

<source for the following information: presentation by Kathryn Stasiuk, WSP Canada, at the OOWA Annual Conference, March 2019>

Some Examples of Contraventions Found:

(WSP, Algonquin Highlands re-inspections, 2018)

18%
of Class 1
(outhouse) systems:

were NOT
vermin-proof

6%
of systems
had cracked, broken
or missing tank lids

55%
of Class 5
(holding tank)
systems:

lacked a haulage
agreement!

in **16%** of
Class 4 systems:
solids occupied and/or
exceeded the recommended
33% of tank volume
(i.e., pump out required)

Discretionary Re-inspection Programs WSP Canada conducted:

Township of Algonquin Highlands | 930 Properties (*interim figure*) | (2018)

Orr Lake (Township of Springwater) | 197 Properties | (2017)

Town of South Bruce Peninsula | 5,208 Properties | (2013-2016) > 98.6% participation rate

Mandatory Programs WSP Canada conducted:

Wellington County | 613 Properties | (2015-2017)

Town of Caledon | 36 Properties | (2015-2016)

Septic System Re-inspections: an Overview

<The following information was from Anne Egan, President of OOWA, in a presentation at the FOCA Fall Seminar, October 2018. Members may contact FOCA for a copy of the slides.>

Mandatory Re-inspections:

- happen only in Source Water Protection areas, and areas within 100m of the Lake Simcoe shoreline, tributaries, rivers and ponds
- happen every 5 years
- Principle Authorities (Conservation Authorities, Municipalities, and Health Units) deliver septic reinspection programs where mandated.

Provincial Guidelines for Inspections:

Phase I: non-intrusive; avoids disturbance to the system as a whole; identify information related to the system (field sketch, inventory of system features, source of water supply, potential volume of effluent leaving the system); discussion of current homeowner practices (effluent filter, tank pumping) may be sufficient to establishing compliance.

Phase II: a more detailed inspection; typically intrusive; may include sludge measurements, sewer camera, excavation, load testing, dye testing, etc.

In practice, inspections may involve various increasingly-invasive levels, from records review without a site visit, to lid-on or -off visual inspections, to more involved techniques.

NOTE: In the USA, there are compliance-based inspection programs in Minnesota, Pennsylvania, Arizona, Massachusetts, California and other locations. Septic re-inspection in the US is typically required at the time of property transfer.

Typical septic system maintenance needs discovered during re-inspection includes:

- solids removal from septic tank required
- pump repair/replacement required
- treatment unit maintenance required
- leaching bed flushing/repair/maintenance required.



<Images courtesy Rick Esselment, ESSE Canada>

A Sampling of Sewage System By-Laws in Ontario

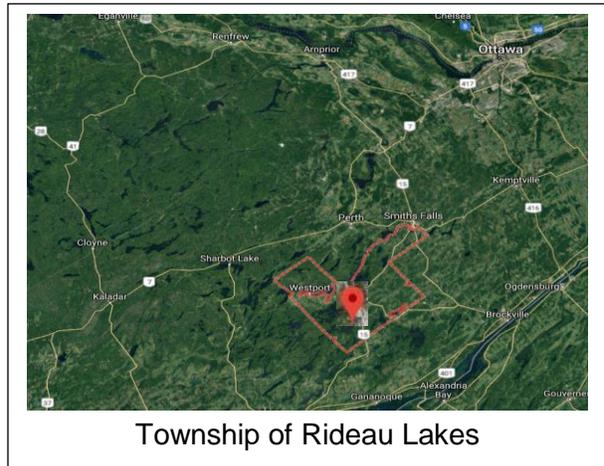
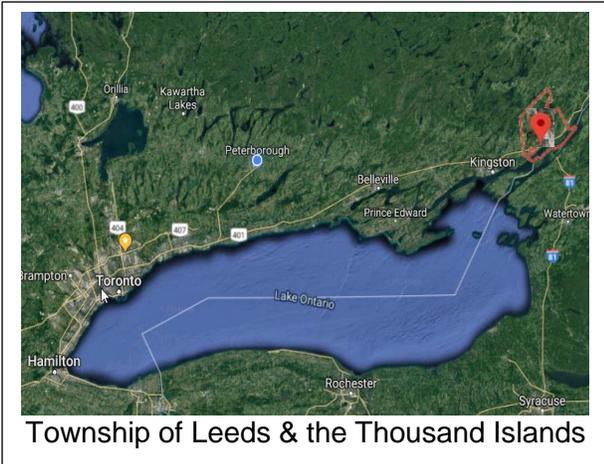
<This list was compiled by the University of Guelph team (see page 3) for a presentation at the Latornell Symposium in 2018. It is not comprehensive, but does include useful examples of By-Laws currently in place across Ontario Municipalities, related to septic systems and/or wells:>

Halton Hills	By-law No.2016-0030	Mandatory Sewage Systems Maintenance
Municipality of Dysart et al.	By-law No. 2017-101	Septic Re-Inspection
Township of Springwater	By-law No. 2015-034	Septic System Re-Inspection Program
Town of Caledon	By-law No. BL-2015-XXX-090	A by-law to implement a sewage system maintenance inspection program
Township of Selwyn	Resolution No. 2017-237	Discretionary Septic Inspection By-law
Township of Wainflet	By-law No. 001-2012	By-law for the regulation of private on-site sewage systems
Township of Midland	By-law No. 2005-51	Sewage System Maintenance Inspection Program
Township of Algonquin Highlands	By-law No. 2018-35	Septic Re-inspection Program
Town of Milton	By-Law No. 123-2011	Amended to include the Sewage System Maintenance Inspection Program
Tay Valley Township	By-law No. 2012-009	Sewage System Maintenance Inspection Programs
Town of Bracebridge	Property Standards By-law	Discretionary Sewage System Maintenance Inspection Program

The University of Guelph team noted that there are also other re-inspection programs underway in these locations, but not necessarily by-laws (at the time of writing):

- Town of Innisfil
- Township of Oro Medonte
- Township of Ramara
- Tiny Township
- Haliburton County (Algonquin Highlands; Dysart et al; Highlands East; Minden Hills).

Septic Re-inspection Programs: Municipal Case Studies



- Summary Chart of Findings pp.16-17
- Summary Notes & Additional Lessons Learned p.18
- Case Study: Leeds & Thousand Islands pp.19-23
- Case Study: Callander pp. 24-27
- Case Study: Rideau Lakes pp. 28-31
- Case Study: Tiny pp. 32-35

Septic Re-inspection: Municipal Case Studies

The project team conducted 4 separate Case Studies of Ontario municipal septic re-inspection programs. **The full reports follow this Summary Chart, which was compiled by FOCA:**

	Twp. of Leeds and the Thousand Islands	Municipality of Callander	Rideau Lakes Township	Tiny Township
Location (Counties)	United Counties of Leeds & Grenville (in eastern Ontario)	Adjacent to North Bay, on south-eastern shore of Lake Nipissing	Rideau Lakes (north of Kingston, south of Perth, in eastern Ontario)	South shores of Georgian Bay
Population (2016)	9,465 (StatsCan)	3,863 (StatsCan)	10,207 (StatsCan)	11,787 “fulltime residents”
# of Household sewage systems	5,578	235 properties; systems within 120 meters of a watercourse flowing into Callander Bay (source protection area)	6,258 (the entire township is privately-serviced)	Total 9,712 housing units; 49.6% are seasonal All are serviced by private on-site wastewater systems
Re-inspection program since	2009 (plus pilot project in 2006)	2011	2008-2015: voluntary 2016 on: combination of some mandatory + some voluntary inspections	2002
By-law? (since)	Yes #17-030 (Dec.2008)	Not for re-inspection; Yes #2015-1479 regulates septic tank pump-outs every 3-5 years (since 2011)	Yes #2018-14 (April 2018)	Yes #02-018 (April 2002)
Project delivery partners	District Health Unit (pilot with Lake Association)	North-Bay Mattawa Conservation Authority staff (qualified septic inspectors)	Mississippi Rideau Septic System Office	Private engineering firm contractor (C.C. Tatham & Associates Ltd) reporting to Council via annual report
Mandatory?	Yes	Yes	Some (see below), prioritizing waterfront properties – lakes are selected annually by Council resolution	Yes
# inspections (period)	150-200 (per year)	All 235 within a rolling 5-year period	Since 2016, ~100 mandatory + 50 voluntary inspections per year	1,236 done in 2017 Once every 6 years (unless in a source protection area, then every 5 years as mandated by OBC/Clean Water Act)
Notification	-by mail, -date inspection be completed -choice of inspector: Health Unit, Township, or licensed sewage installer	-by mail, usually Spring -resident book appointment time with inspector, or else inspection time set for them	-by mail, 1-2 mo. prior -includes inspection date (can re-schedule) -questionnaire to return or do online (location, last pump out...)	...

Summary Chart of Re-inspection Case Studies, continued

...	Twp. of Leeds and the Thousand Islands	Municipality of Callander	Rideau Lakes Township	Tiny Township
Re-inspection Compliance:	-if no response after follow-up, Health Unit can proceed & fine resident, but this has never been pursued	-inspectors have power to enter property to perform the inspection without a warrant; they may bring OPP escort (that fee added to municipal property tax bill)	-have not had any outright refusal	"has not had any cases where re-inspections were refused"
Type of Inspection:	Visual – surface only	Visual, non-invasive only	Primarily visual inspection of bed. Tank-open and interior inspection of tank. Soil probe checks amount of bed cover and soil saturation. Inspection camera used, if warranted.	Visual inspection by contractor. Separate septic tank pump out by third party licensed sewage hauler hired by the property owners.
Report to homeowner?	"Pass" – completion certificate issued to owner	Notified 1-2 weeks after inspection.		Notified in person if at the inspection; pass/fail results shared by mail afterward
Re-inspection Charges / Program Cost to Municipality:	Homeowner pays ~\$200	Resident pays \$140 (was \$240 in first round)	\$15,000 per year costs to the Municipality; cost recovery through residential taxes, so no charge at time of inspection	\$92.55 per system Inspection, plus septic tank pump-out fee arranged directly by resident with a pumping company
If work is required:	Cost of new building permit is rebated from your inspection cost	Timelines are given for needed repairs. Then, an Order to Comply is issued. Then a Summons is ordered and the system owner can be taken to court.	Re-inspection failure triggers a secondary review by the Township. Township can issue Order to Comply or Order Not To Occupy, if necessary.	Letter: list of actions based on failed components of the inspection, timeline/ deadline for solution implementation. Township will follow-up, eventually issuing an Order to Comply and court settlement.
Grants/loans?	Township is considering a loan program	No, but "NBMCFA frequently receives public inquiries looking for grants or low interest loan programs..."	Rideau Valley Conservation Authority has a rural clean water program – maximum \$1,000.	
Outcomes:		1.7% of inspected systems (in first 5 year cycle) had malfunctions requiring further action	In 2017: 59 of 127 systems required remedial work; 4 systems required replacement; 9 needed more information	268 deficiencies noted, of 1,236 inspections conducted in 2017

Notes and additional lessons learned from the Case Studies:

(These are in addition to the lessons already itemized on page 4 of this report)

- **Outreach and education** efforts increase homeowners' awareness of responsibility for proper functioning of septic systems. Public meetings have been an important tool for raising awareness and facilitating compliance with inspection programs.
- In Rideau Lakes and Tiny Township, the **local lake associations** played an important role in moving council to institute the mandatory re-inspection program, tying it to concerns such as beach closures due to high e-coli levels, or recent blue green algae outbreaks. Protecting "water quality for recreational purposes" is seen as an important economic, social and political driver in both Rideau Lakes and Tiny Townships.
- Most **failed inspections** (visual-only) were due to overuse, improper maintenance, driving vehicles over the distribution bed, planting trees over leaching beds (enabling root damage), hooking up a water softener to the septic systems, and age and/or improper installation of the septic system.
- It is most beneficial if homeowners are enabled to schedule an appointment time with the inspector, and to **be present** during the re-inspection.
- Hiring **external inspection officers** can be beneficial to the Municipality, as it allows property owners to feel comfortable the inspector has a neutral interest or intent. The Municipality can then take a more neutral approach to enforcement.
- Catching a potential system failure **before a catastrophe** is preferred.
- Some include the "**septic Dos and Don'ts**" sheet from OOWA in the mailed notice of re-inspection. (Download a PDF copy at: <https://www.oowa.org/consumer-information/how-a-septic-system-works/>)
- Re-inspection programs require human resources; how many **qualified inspectors** are available in one area?
- While the goal may be to review all the sewage systems in the Municipality, **priority areas** (considered most likely to have defective systems, or where consequences of defective systems are most severe, i.e., waterfront), may be reviewed first.
- Re-inspection programs **reduce risk/liability** for the Township (re: drinking water protection in source protection area) According to the Township of Rideau Valley, the **benefits** of the septic re-inspection program outweigh **costs** to the Municipality.
- Townships are loath to pursue costly **legal action** against their residents for failure to comply with septic re-inspections.
- If a septic system must be replaced, homeowners do have **other treatment options**.
- Properly maintained sewage systems are seen as **an asset for property value**, particularly when performed before a property sale.

Exploring Lessons Learned with Municipal Re-inspection Programs for Residential On-site Wastewater Systems in Ontario: *Spotlight on the Township of Leeds and the Thousand Islands' Sewage System Re-Inspection Program*

Background

The Township of Leeds and the Thousand Islands (i.e. the Township) is a rural municipality located in Eastern Ontario (see Figure 1) and is within the United Counties of Leeds and Grenville, with a population of 9,465 residents [1]. The Township is made up of diverse hamlets, villages, and rural lands, that host built and natural assets including: the 1000 Islands and St. Lawrence Seaway; the UNESCO designated Rideau Canal and lock system; and the Frontenac Arch Biosphere [2]. The Township has approximately 9,300 permanent residents, as well as thousands of seasonal residents, that make up 5,858 households [3]. Approximately 5,578 households in the Township rely on residential sewage systems for their sewage needs.

This case study provides an overview of the Township's sewage system re-inspection program. In preparation for this profile, three key informants were interviewed in order to fully understand the details of the program, benefits, challenges, and lessons learned.



Figure 1. Location of Township of Leeds and the Thousand Islands [4]

History of the Septic Re-inspection Program

The sewage system re-inspection program in the Township started in 2009, in partnership with the Leeds, Grenville and Lanark District Health Unit (i.e. the Health Unit) [5]. Prior to the official launch of the mandatory inspection program in 2009, there was a pilot project in 2006, with support from the Charleston Lake Association. Though informants indicated there has never been any major concerns within the Township in relation to sewage systems, the potential impact that these systems could have on water systems was a catalyst to implementing the re-inspection program. It was explained:

“Since 2006, when we started the first pilot project on septic systems, they were concerned about their biggest resource in this municipality, and that is their surface water bodies, the lakes, the rivers. And so, cottage associations and area residents who know that certain people have upgraded and yet other people, they haven’t done anything in a lot of years, that’s where some of the concern comes from.” (Health Unit Representative)

The tragedy in Walkerton, Ontario in 2000 where 7 people died and thousands became ill due to a contaminated drinking water supply [6], also was noted by a Municipal Elected Official Representative as raising awareness amongst municipal elected officials on water quality issues. It was further explained regarding motivations for the program:

“We wanted to make sure that people can continue to enjoy those, not just this generation but the next ones, and in order to really do that, is to go back and look at some of these septic systems to make sure that they’re actually functioning the way they’re supposed to.” (Municipal Representative)

This program is currently mandatory.

Re-Inspection Program Details

In December 2008 the Township of Leeds and the Thousand Islands, under the power of Section 8 of the *Municipal Act, 2011*, implemented a septic re-inspection program by-law ([by-law 17-030](#)). This by-law outlines the Township's mandatory inspection program. In the Township there are two types of mandatory inspections. The first type of mandatory re-inspection program is dictated mandatory under the Ontario Building Code (due to policies made in the local source protection plan, which was created under the *Clean Water Act, 2006*). The village of Lansdowne (approximately 280 households and 5 commercial/recreation/ industrial users), draws it's drinking water from municipal wells. These wells are protected under the *Clean Water Act (2006)*. Under this legislation, source protection plans have been made for the area, and Well Head Protection Areas (WHPAs) have been defined. Mandatory re-inspections every 5 years are required for those septic beds that fall within the WHPA to this municipal water supply [7]. Re-inspections of these systems (currently two) are a priority for the Township.

The other sewage system re-inspection program in the Township was made mandatory under the powers of the Ontario Building Code and the *Municipal Act, 2011*, but is implemented at the discretion of the Township. This program targets areas deemed to have potential risk to human and/or environmental health. Priority locations for re-inspections include the villages and hamlets where there are small lots and high density, resulting in wells and sewage systems being in close proximity. Furthermore, priority is given to waterfront properties, especially those with systems close to the St. Lawrence River [7]. Approximately 150-200 re-inspections are performed each year (depending on the areas chosen and staff availability). Where and how many re-inspections are performed annually is ultimately decided by Township council.

Property owners are notified of the date they must have their re-inspection completed by via mail. The Township gives property owners the choice of who they would like to perform the re-inspection. These choices include: Leeds, Grenville & Lanark District, Health Unit; the Township; or a licensed sewage installer. The letter package includes a list of Leeds, Grenville and Lanark District Health Unit approved qualified inspectors in the area [5]. If the resident does not respond to the initial letter, 2-3 additional letters are sent out. If there is still no response or a resident refuses a re-inspection, the Health Unit does have the option of doing the re-inspection without consent and fining the resident. However, this avenue has never been pursued.

Re-inspections are solely visual, looking for surface characteristics and obvious signs of failures of septic tanks and/or beds. The re-inspections are performed using Provincially developed guidance documents (see Further Resources section below). This form is left with the resident so that they are informed about what was found. At the end of the re-inspection, if the system passes, the inspector usually will inform the resident that the "pass" on the system does not guarantee the longevity of the system, however, the current report provides a current synopsis of the state of the system based on the visual inspection.

Property owners are required to pay for the re-inspection and any follow up repairs/fees. If there is a remediation or an entirely new system required, the issue ultimately comes back to the Chief Building Official at Leeds, Grenville & Lanark District, Health Unit. The Health Unit then has the power to issue a work order. Depending on the severity of the issue the timeline for action varies. It was explained:

It's going to vary, if it's sewage running out onto the ground then they may be ordered right then and there before you leave the

Leeds 1000 Islands Case Study -3

property to get the pumper here today and get the tank pumped out and keep that tank pumped down, so the sewage isn't coming out onto the ground. And by the way, here's the list of installers I expect to hear something very shortly about a permit to upgrade. If it's something less of an issue like that, e.g. it's a broken baffle on the outlet side, basically say here's what you've got to do, if you don't do it it's going to wreck your system. So, get a hold of somebody that can come and do it. And you know there's no real timeline but generally you hear back from them in a few weeks. So, I think it all depends on what you're dealing with." (Health Unit Representative)

Only once the Health Unit is satisfied the sewage system is in proper working order, will a completion certificate be issued to the property owner [5].

The re-inspection costs approximately \$200. All sewage system permits, and re-inspection records are kept at the Health Unit, with a copy being given to the Township. If remediation or a new system requiring a new



Figure 2. New Tertiary Septic System Installment Following a Failed Inspection of the Previous System [Photo Credit: Liz Huff]

permit is needed, the cost of a new permit is rebated from the cost of the re-inspection. It was explained:

"So, we don't double dip, we'll take what we've got and put it towards. If the permit fees \$700 and you paid me \$200 to have me out, then you owe me \$500 when the permit comes in" (Health Unit Representative).

The Township is also considering a loan program for residents who have no other option for accessing funds for replacing or repairing systems.

After the re-inspections have been completed for the season, the Leeds, Grenville & Lanark District, Health Unit staff meet with the Township to go over how many systems were re-inspected, how many required remedial actions, and how many systems needed replacement. The Township also provides public outreach nights on the re-inspection program. For example, before re-inspections occurred in the village of Seeley's Bay, an information night was held. Additional adhoc education and outreach events occur in conjunction with Conservation Authorities and lake associations.

Lessons Learned

As noted above, there are many benefits to a sewage system (i.e. septic) re-inspection program. However, there are some challenges that can be learned from the Township of Leeds and the Thousand Islands program. For example, it was warned it is not a perfect system, especially when you are only doing visual inspections. It was explained:

"You're looking at surface characteristics, you're looking for obvious signs of failure, obvious issues with the septic tanks and or beds themselves. But that's not to say that if there's no outward sign that it's functioning 100 percent, that the treatments actually happening. But it is a step towards it." (Municipal Representative)

Leeds 1000 Islands Case Study -4

It was noted that mandatory programs are needed and that solely volunteer programs do not reach the systems that need re-inspecting the most. However, it was also mentioned that if the Township ever pursued legal action on those refusing a re-inspection or refusing to comply with needed remediation resulting from the re-inspection, this would be very costly. It was explained:

“And most municipalities don’t have the pockets to do that. Contrary to popular belief, they don’t have the pockets to chase down say 35 properties at that cost, it just doesn’t happen.” (Municipal Representative)

A concern that the re-inspection program addressed is finding (often outdated and malfunctioning) sewage systems not in the Township’s records. It was explained:

“I don’t think that the municipality has a big, big overall problem, but we certainly have areas where we have no idea what’s in the ground and so that’s where the re-inspection programs kick in to look at those, you know, areas that we have concern about that are sensitive, that we have no record of anything, systems are older.” (Health Unit Representative)

One informant explained the importance for municipal staff continuity with these programs, especially for convincing changing councils of the value of the program. In addition, the Health Unit provides an important record keeping function for the Township, however, municipal staff hold essential corporate memory on risk areas and priorities.

One challenge found in Eastern Ontario was finding human resources to perform the re-inspections. It was explained:

“Even our list of those guys who will do septic re-inspections, it’s reduced down to about 10, right now in this area, the other guys just say ‘I don’t have time to go out there and do them, if they call me and need a new system fair enough, but for the amount of time

it takes me and the little bit of money I get out of it. I did a few in the early days but I’m not doing them anymore’. So, you know, now the resources just to do the re-inspections start to drop.” (Health Unit Representative).

Issues with aging demographics of qualified inspectors were also noted. The importance of hands-on college programs was highlighted. A self-created peer support group of Eastern Ontario Chief Building Official’s was noted as an important avenue for sharing knowledge and building capacity on sewage system related issues in the region.

It was warned that there will always be residents both for and against a sewage system re-inspection program:

“There’s pros and cons [on] both sides, I guess. People on the other side just think it’s another sort of money grab. The people who are truly concerned about the health and safety of, not only their property, and their family and the neighbours and so forth, they’re the ones that understand what’s going on. You’re always going to have the opposition to it as well, we get both sides of the coin, it is what it is, I don’t think that will ever change.” (Municipal Representative)

The financial fear of the cost of potential needed repairs or replacement of systems remains one of the most prominent concerns of residents. As mentioned, the Township is considering a loans program to meet this need. Septic rehabilitation loan programs, such as the one in the City of Kawartha Lakes, is being considered. The loan program in the City of Kawartha Lakes does not require the resident to prove income, just prove they have sufficient equity in their home to cover the loan. It was explained:

“What higher purpose is there then to try and help ease residents through the cost trauma of an initiative that will benefit everybody in terms of safe water quality. And think of the liability risks to our municipality if we do have a

serious water quality problem in one of the villages where there's broken holding tanks and systems that haven't been looked at in 50 years."
(Municipal Elected Official Representative)

Currently the benefits of this program outweigh the costs, and that is why Township council chooses to maintain it. The program not only reduces risks and liability at the Township level, but also at the residential level where having properly maintained sewage systems was noted as an asset for property value.

Furthermore, informants explained there are benefits of the sewage system re-inspection program for reducing risks of drinking water contamination and improving/maintaining the quality of surface water. This is particularly important in the Township of Leeds and the Thousand Islands, as the Township's economy relies on water related recreation (e.g., waterfront recreational properties, boating, fishing, etc).

Ensuring this program stays in place is a key objective of the Township and Health Unit staff in order to contribute to the sustainability of the Township.

Further Resources

(contact FOCA for a PDF copy of these additional documents)

- Leeds 1000 Islands Municipal webpage on the sewage system re-inspection program
- By-law to institute a septic re-inspection program in the Township of Leeds and the Thousand Islands
- OOWA: a guide to operating and maintaining your septic system (2013)
- Leeds, Grenville & Lanark District Health Unit -Maintenance Inspection Forms for Class 2 (Grey Water Pit), Class 4 (Sewage System), Class 5 (Holding Tank)
- List (2018) of licensed sewage system installers in the Township of Leeds and the Thousand Islands
- Kawartha Lakes septic rehabilitation program pre-application

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Case Study Prepared by: Sarah Minnes, 2019

Acknowledgements: Thank you to the Township of Leeds and Thousand Islands and those who donated their time to this research. Thank you also to the Rural Policy Learning Commons for their funding of this research.



Exploring Lessons Learned with Municipal Re-inspection Programs
for Residential On-site Wastewater Systems in Ontario:
*Spotlight on the Mandatory Maintenance Inspection Program
Conducted in the **Municipality of Callander***

Background

The Municipality of Callander (i.e., "the Municipality") is located in Northeastern Ontario directly adjacent to the City of North Bay and 332 kilometers north of Toronto [1; 3]. The Municipality is a small town with a population of 3,863 [2]. The Municipality is situated on the south-eastern shore of Lake Nipissing, which provides a venue for four-season activities including swimming, boating, birding, fishing, ice fishing, cross country skiing, snowmobiling, and skating [3].

Within the village of Callander itself, households are on municipally-operated water and wastewater services. Everything outside of the village is privately serviced. In total, 235 properties within the Municipality of Callander are affected by the mandatory maintenance inspection program conducted by the North Bay-Mattawa Conservation Authority (NBMCA) [4].

This case study provides an overview of the mandatory maintenance inspection program



Figure 1. Location of the Municipality of Callander [3]

in the Municipality, which is conducted by the NBMCA. In preparation for this profile, the NBMCA was interviewed and further consulted in order to fully understand the details of the program, benefits, challenges, and lessons learned.

History of the Mandatory Maintenance Inspection Program

During the source protection planning process under the *Clean Water Act (2006)* the Municipality of Callander was recognized as within the source protection area for the North Bay-Mattawa Source Protection Area. The assessment report for this source protection plan identified phosphorus as a contributing factor to the growth of blue green algae in Callander Bay (where the Municipality derives its drinking water from for their municipally operated system). Blue green algae produces a toxin called microcystin that can pose a significant threat to the health and safety of drinking water in the Municipality. Through the source protection planning process, all septic systems within 120 meters of a watercourse that flows into Callander Bay (i.e. the Issue Contributing Area (ICA)) were defined as a "significant threat" to drinking water. As per the Ontario Building Code (OBC) all septic systems labelled as a significant threat to drinking water must be inspected every five years (see Figure 2 for a map of the ICA for Callander) [5].

In addition to this mandatory maintenance inspection program, the Municipality of Callander has a by-law that regulates septic tank pump-outs. This by-law has been in effect since 2011 and requires all residents operating a septic system to verify septic tank pump-outs with the Municipality on a regular basis [7; 8].

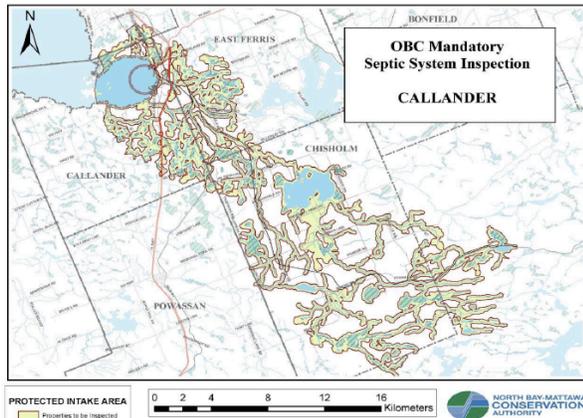


Figure 2. Callander Bay- Issue Contributing Area (ICA) [6]

Inspection Program Details

Under the OBC, NBMCA was appointed as the agency to conduct the septic inspections in the Municipality [5]. Staff from NBMCA who conduct inspections are all fully qualified septic inspectors, as per required for the inspection of sewage systems defined as a significant drinking water threat under the *OBC/Clean Water Act, 2006*. As mentioned, only the properties that are mandatory under the OBC (i.e. those within 120 meters of a watercourse that flows into Callander Bay) are subject to the mandatory maintenance inspection program.

Impacted residents receive a letter (usually in the spring) via the mail informing them that their property will be inspected. The resident has the choice to make an appointment with the inspector, however, if they do not, an inspection time is set for them. The NBMCA Board has the power to set a fee for conducting inspections [5]. Inspections in the Municipality cost the resident \$140. The inspection is a visual, non-invasive inspection and follows Provincial guidelines from the Ministry of Municipal Affairs and Housing.

After the completion of the inspection the inspector takes the inspection form back to the NBMCA office, where the inspection is tracked in an internal GIS database. After the

inspection is logged in the database, the invoice for the inspection is completed and sent out to the resident. All septic permits for the Municipality (even those outside the inspection program area) are stored electronically in a database at the NBMCA office in North Bay. These permits include permits from prior to 1972 when the Health Unit issued and stored septic permits.

Inspections have to be completed every five years according to the OBC. As every septic system within the Callander ICA has to be inspected under the OBC, inspections were completed by sections, ensuring all properties were inspected. The NBMCA has completed the first five-year cycle and now has a schedule for when each system needs to be inspected.

If a resident refuses an inspection, inspectors have the power to enter their property to perform the inspection without a warrant. In the rare case that someone does refuse an inspection or threaten to charge the inspector with trespassing, the inspector has the option of bringing an Ontario Provincial Police escort. If a resident refuses to pay the invoice for their inspection, the fee is added to their municipal property tax bill.

During the first cycle of inspections in the Municipality of Callander there were approximately 1.7% of systems found to have malfunctions requiring further action [4] (see Figure 3 for an example of a system that failed inspection). Most failed inspections are due to overuse, improper maintenance, driving vehicles over the distribution bed, hooking up a water softener to the septic system, and age and/or improper installation. If remediation is required on a system or an entirely new system is needed this cost is the responsibility of the system owner. System owners are notified within 1-2 weeks of the results of their inspection. Depending on the severity of the failure, different timelines for repairs/replacements are given.



Figure 3. Example of a system that received a failed inspection [Photo credit: NBMCA]

It was explained that residents have been given extensions to fix/replace their systems if they had financial constraints, as long as stop gap measures were undertaken to ensure the health and safety of the watershed (e.g. keeping the system pumped out on a frequent basis).

If a system owner refuses to remediate a malfunctioning system or replace a failed system, an Order to Comply is issued. If compliance is not achieved with the Order to Comply, then a summons is ordered, and the system owner can be taken to court in order to comply.

Public meetings have been an important tool for raising awareness and facilitating willful compliance with the inspection program. These efforts increase awareness and understanding of the reasons behind the inspection program and what the program entails.

Lessons Learned

There are many lessons learned from the first cycle of mandatory maintenance inspections in the ICA in the Municipality of Callander. Primarily, the importance of an education program for residents on the inspection program was emphasized. The mandatory maintenance inspection program provides a

vehicle for education and awareness. It was explained:

“We’re going out in the field and we’re teaching people about the operation and maintenance of septic systems. Our inspection may only take 15 minutes because we’ve prepared in advance the background information on the property. At times we may be there for an hour talking to them about septic systems. So that part of it is valuable. I think it’s valuable to the residents of the watershed and it’s important to do.”

(NBMCA Representative)

Giving the resident the option to make an appointment with the inspector, so that they can be home for the inspection, was noted as beneficial. Furthermore, flexibility to accommodate residents who would like inspections performed before a sale of a property was seen as increasing the public’s buy-in of the program. It was explained:

“We have people who prefer to have the inspection done before they sell the property because they see the certificate as a selling feature.” (NBMCA Representative)

Invoicing promptly after the inspection while it was still fresh in the property owner’s mind has had a positive impact on compliance and understanding. Initially, residents objected to the \$240 fee for the inspection. After the first five-year cycle, once baseline information was gathered and the program was in place, the cost of inspection was reduced to \$140. It was noted this reduction made it:

“A lot easier for people to swallow in the second five-year cycle, but there are still some people who object to any fee at all.”

(NBMCA Representative)

The cost of repairing or replacing a septic system at times exceeds the financial abilities of some property owners. A lack of funding is an on-going concern. It was explained:

“NBMCA frequently receives public inquiries looking for grants or low interest loan programs to replace systems. There are

programs to replace systems. There are people in our watershed on fixed incomes who need financial assistance in order to repair or replace their system.”

(NBMCA Representative)

It was suggested that education programs on septic system maintenance are important. Education programs should focus on providing information and tools for residents on detecting the signs of failure and how to properly maintain their system.

The blue green algae issue in the Callander Bay subwatershed is complex and continues to re-occur. Septic systems are only one of the potential sources of phosphorus that is contributing to the growth of blue green algae in Callander Bay.

In addition to phosphorus, there are other factors which contribute to the algae growth. There are some residents who pay for the septic system inspection and see the growth of algae continuing and resent having to take part in the inspection program. Inspectors, while educating the public about proper maintenance of their system, also find themselves explaining the issue of blue green algae. While septic inspections do not solve the algae issue, the inspection program is beneficial for environmental and human health reasons, and as a precautionary measure for the protection of property. It was explained:

“Some of the property owners who find out that their system is failing are grateful. They want to do the right thing environmentally and with upgrading their system, they discover that their property is worth more with a properly functioning system. So, there’s the financial benefit for them, even though in the short term it’s costing them some money.” (NBMCA Representative)

In the end, this mandatory maintenance inspection program will continue through the powers of the Clean Water Act, 2006 and the OBC, as it is an important component for delivering safe and clean municipal drinking water to the region.

Further Resources

(contact FOCA for a PDF copy of these additional documents)

- North Bay-Mattawa Conservation Authority Mandatory Maintenance Inspection Program: Procedural Document
- Municipality of Callander’s Septic Tank Pump-out By-law 2015-1479
- North Bay-Mattawa Conservation Authority Mandatory Septic Inspections Handout (2016-2020)
- SepticSmart! brochure (OMAFRA)

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Case Study Prepared by: Sarah Minnes, 2019

Acknowledgements: Thank you to the North-Bay-Mattawa Conservation Authority for their assistance with this case study. Thank you also to the Rural Policy Learning Commons for their funding for this research.



Exploring Lessons Learned with Municipal Re-inspection Programs for Residential On-site Wastewater Systems in Ontario: Spotlight on the *Township of Rideau Lakes' Septic Re-inspection Program*

Background

The Township of Rideau Lakes (i.e. Rideau Lakes) is a rural municipality located in Eastern Ontario, with a population of 10,207 residents. The township is made up of picturesque villages and hamlets, including Morton, Delta, Elgin, Chaffeys Locks, Jones Falls, Crosby, Newboro, Portland, Philippsville, Lombardy, and Chantry [1]. The township has 6,258 households, all privately-serviced (i.e. there is no publicly operated water or wastewater systems in the Township) [1].

This case study profiles Rideau Lakes' septic re-inspection program. In preparation for this profile, three key informant interviews were conducted in order to fully understand the details of the program, benefits, challenges, and lessons learned.

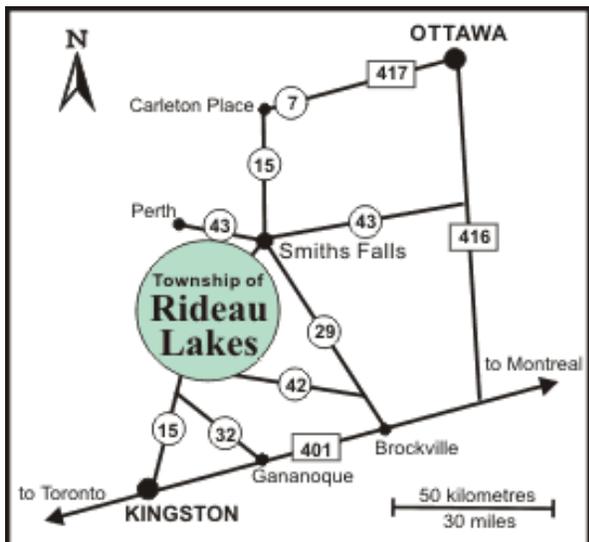


Figure 1. Location of Township of Rideau Lakes [1]

History of the Septic Re-inspection Program

The septic re-inspection program in Rideau Lakes was instituted due to concerns about the impact waterfront properties could have on

surface water quality. Rideau Lakes has an abundance of lakes in their municipality used for multi-purposes, including: recreation, drinking water, habitat for flora and fauna, and providing a sense of place to the Township. It was explained,

“Given we are cottage country, and given the potential link between water quality and septic systems, they [council] just thought it was good value for dollars. Prudent. You know, our program here costs us \$15,000. It is a good investment in terms of trying to protect water quality in the municipality” (Municipal Representative).

The original septic re-inspection program was a voluntary program. This version of the program was implemented from 2008-2015 [2]. It was then realized that Rideau Lakes had reached a saturation point for volunteers for the program, and a mandatory program was needed. It was explained,

“So, everyone either had participated or was not interested in participating in the voluntary program. So, at that point you either have to discontinue the program or move to something where it is mandatory” (Municipal Representative).

It was explained by another informant that there are very active lake associations in Rideau Lakes that pushed council to institute the mandatory program due to concerns such as blue green algae outbreaks in recent years. Protecting the quality of water supplies remain an important economic, social, and political driver in the Township.

Starting in 2016, the Township now implements a hybrid approach, where there are approximately 100 mandatory inspections conducted and a goal to conduct 50 voluntary inspections per year [2].

Re-Inspection Program Details

Rideau Lake's implements their septic re-inspection program through the powers of the Ontario Building Code. Re-inspections are conducted by the Mississippi Rideau Septic System Office. Waterfront properties are prioritized in this program, and the Township has divided lakes into Primary, Secondary and Undeveloped Lakes. The lakes chosen to participate in this program are added by Council resolution annually [2]. It was explained:

"Now we are focussing the mandatory more on a science basis. The lakes with the biggest concern in terms of water quality. So, it has grown over time in terms of our understanding and approach and I think that water quality for recreational purposes remains the primary focus of why council undertakes the program." (Municipal Representative)

Rideau Lakes' septic re-inspection program costs the Township \$15,000 per year. Each year they do approximately 100 re-inspections per year, that each cost roughly \$150 per re-inspection. The Township also has a voluntary program, where they aim to conduct 50 re-inspections per year, and these re-inspections are performed by Development Services Department at the Township [2].

Re-inspections are funded through residential taxes, therefore, there is no cost at the time of re-inspection for the resident.

Re-inspections are primarily visual with the inspector opening up any tanks and an interior inspection of the tank. The interior inspection is followed by a visual inspection of the bed and the use of a soil probe to check the amount of cover over the bed and if there's any saturation within the bed area itself. An inspection camera is used in some cases if it is warranted.

The Mississippi Rideau Septic System Office uses protocols set out by the Ontario Building

Code and keeps all records within their internal database. All paper copies on individual re-inspection reports are sent to the Township, along with a copy of the excel sheet of the completed re-inspections for that year.

In 2017, 123 mandatory re-inspections were conducted, as well as four voluntary re-inspections. Out of these 127 re-inspections, "55 systems were identified as having no concern, 59 requiring remedial work, 4 system replacement required and 9 properties were requested to provide more information" [3, p. 3]. See Figure 2 for an example of an issue requiring remedial action.

If a failure occurs, the resident and the Township are notified immediately about the specifics of the failure according to the Ontario Building Code. At that time, a



Figure 2. Dirty effluent filter requiring remedial action [Photo credit: Mississippi Rideau Septic System Office]

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secondary review is conducted by the Township. The next steps are explained:

"...they will either tell them that they need to correct a specific deficiency or the system as a whole and they need a permit to do that. And if the person is not complying and in good faith not trying to do that, they have the opportunity and orders to comply or orders not to occupy if there is a concern there isn't a reasonable interim solution to get a new system put in place."

(Municipal Representative).

If repairs or replacements of systems are required, this cost falls on the system owner. It was explained:

"The Rideau Valley Conservation Authority has a rural clean water program, but it's a max of \$1,000. So, in some areas that just covers the permit fees, if that. But we try and promote, if it is a cottage, you can put in a grey water system by hand if you needed to, you can do an outhouse, you can do composting, incinerating toilets. So, to be able to use your property, it might cost you three to four thousand dollars ... to be able to go back to using it. Or again, depending on what it is, maybe you have to go to that \$27,000 [new septic system], just because it's a house and you live there, 24/7."

(Conservation Authority Representative)

Thus far the Township has not had an outright refusal, however, if this were to occur it was explained:

"...if there was an outright refusal, they would let us know then we would have to make a determination whether or not we would want to pursue prosecution or enforcement means, because obviously that is going to come at a cost."

(Municipal Representative).

Lessons Learned

Overall the benefits of this program outweigh the costs. It was noted,

"If a system has indeed failed or a system needs remediation it is positive for the

environment and it is positive for human health, that [it] is identified and corrected. There are studies about the value of waterfront properties associated with water quality, so some would suggest the better water quality you have, the better assessment base you have. Therefore, there is a public good and an economic good associated with that."

(Municipal Representative)

This sentiment has been reinforced in the 2018 study conducted by the Federation of Ontario Cottagers' Associations, that found that rural waterfront property owners are significant drivers of economic development in rural communities, and cottages alone account for \$700 million of property tax dollars in Ontario [4].

Those consulted all agreed there are great outreach and education benefits associated with the re-inspection program. The benefits of the mandatory re-inspection program were explained:

"It firstly increased the number of systems that are performing adequately, and it increased the awareness of the responsibility of the homeowner to make sure that things are working and functioning properly."

(Resident Representative)

Strategies to enhance the education component of the re-inspection, such as making appointments with residents and encouraging them to be present for the re-inspection, was seen as beneficial.

A mandatory approach was deemed essential as, there was a saturation point with the voluntary program. A municipal representative also explained there was a benefit for the Township to use the external support of the Mississippi Rideau Septic System Office to conduct the mandatory inspections. It was explained:

"There is value in having an external party to the Township undertaking the inspections. It allows property owners to feel comfortable that the party doing the inspection has no other

interest except for the program and its intent. I think for those that are hesitant or who have a negative impression of the Township due to its role in enforcement, this neutral party approach is beneficial, and likely even more critical under a mandatory program”
(Municipal Representative).

It was urged that municipalities that are considering a re-inspection program do not need to reinvent the wheel. There are resources out there that can help (see the Further Resources section of this case study).

The reality is, the septic re-inspection program does not find failure or deficiencies that do not already exist. Septic re-inspection provides benefits for the homeowner (by way of catching potential failures before it is a catastrophe), as well as benefits economically to the municipality, contributes to the environmental health of watersheds, and the overall sustainability and resilience of rural communities.

Further Resources

(contact FOCA for a PDF copy of these additional documents)

- Township of Rideau Lakes Municipal webpage on Septic Re-inspection Program
- Township of Rideau Lakes Re-inspection Property Owner information package
- Mississippi Rideau Septic System Office
- Sewage System Management Agreement between Rideau Valley Conservation Authority and Township of Rideau Lakes:
- FOCA's Report on Waterfront Property Owners and rural economic development: <https://foca.on.ca/waterfront-property-owners-and-rural-economic-development/>

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Case Study Prepared by: Sarah Minnes, 2019

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Exploring Lessons Learned with Municipal Re-inspection Programs
for Residential On-site Wastewater Systems in Ontario:
*Spotlight on the **Township of Tiny**'s Sewage System Re-inspection Program*

Background

The Corporation of the Township of Tiny, located on the south shores of Georgian Bay is a municipality populated by 11,787 full-time residents. There are five hamlets within the Township: Lafontaine; Perkinsfield; Wyevale; Wyebridge; and Toanche. Additional to these hamlets, the Township of Tiny includes three First Nation islands: Christian; Beckwith; and Hope [1].

The Township of Tiny (Figure 1) has 9,712 housing units, and 49.6% of these dwellings are seasonal [2]. All the households within the Township are serviced by private on-site wastewater systems.

This case study profiles the Township of Tiny's sewage system re-inspection program. In preparation for this profile, two key informants from the Township of Tiny were interviewed in order to fully understand the details of the program, benefits, challenges, and lessons learned.



Figure 1. Location of the Township of Tiny [5]

History of the Septic Re-inspection Program

The Township-wide sewage system re-inspection program within the Township of Tiny was implemented in April 2002 under By-law 02-018 [4].

Cottage associations played a key role in this by-law coming to pass and communicating resident concerns to council in 2001. These concerns included high e-coli levels found at local beaches among other environmental concerns related to compromised water quality. During times of beach closures residents were not able to safely enjoy the several benefits that the Georgian Bay coast has to offer. Including, but not limited to: leisure and recreation, natural heritage features, safe drinking water, and the intrinsic qualities of the region. Protecting beaches was linked to protecting water quality and the prosperity of the region. Particularly with respect to economic, political and social drivers which make the Township of Tiny a viable and popular cottage destination.

The purpose of the re-inspection program is to pro-actively identify and resolve human health hazards and environmental threats associated with poorly functioning sewage systems [4]. To better assess the issue pertaining to the original complaint of closed beaches, the Township of Tiny set out to assess the nearly 10,000 sewage systems in their jurisdiction. Rather than solely focusing on shoreline properties, the program was designed to assess all sewage systems to ensure the goal of the program was met across the entire Township.

Re-Inspection Program Details

The Township of Tiny implemented their sewage system re-inspection program prior to the mandated requirements of the section 8.9 of the Ontario Building Code.

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The re-inspections are conducted by a private engineering firm contracted by the Township (C.C. Tatham & Associates Ltd.), who, reports all program data back to the Township of Tiny through an annual report presented to Council.

The 2019 cost for completing one sewage system re-inspection is \$92.55, which is completed once every six years. Unless the property falls within a municipal well head protection area, then it is every 5 years as mandated by the Ontario Building Code/*Clean Water Act*, 2006. Moreover, a septic tank pump-out fee is required additional to the \$92.55 and that component is arranged directly by the resident with a septic tank pumping company.

Re-inspections involve a visual inspection as well as a septic tank pump out. The visual inspection is conducted by the C. Tatham & Associates Ltd contractor whereas the septic tank pump out is completed by a licensed sewage hauler. In 2017, a total of 1,236 sewage system re-inspections were conducted. Of that total, 268 deficiencies were identified during the initial site inspection [4].

When a re-inspection fails, the homeowner or resident is made aware of the problem. If repairs or replacements of systems are required, this cost falls on the system owner. If the homeowner is present for the re-inspection, the findings of the investigation are shared. However, the official results (pass or fail) are shared when they are mailed to the resident in a follow-up letter. If there is a failure found, the official results letter will outline a list of actions based on the failed components of the re-inspection, and a timeline/deadline for solution implementation. If the homeowner fails to meet these requirements, actions will be taken by the Township on an individual basis to come up with a solution to the problem. If compliance still does not occur, eventually, an order to comply is issued so the matter can be settled through the Ontario Court of Justice.

If seasonal residents are not present all year then it may be more difficult to address the problems that their sewage systems might be causing.

The Township of Tiny has not had any cases where re-inspections were refused, rather they have been generally well-accepted by residents. However, there have been situations where a resident does not agree with the program, but actions were not made to cease the Township from conducting the re-inspection.

If a sewage system is leaking or posing an imminent threat to the natural environment, then the Township takes immediate action to ensure an inspection is conducted, and that remediation authorities, such as the Ministry of the Environment, Conservation and Parks, are notified.

Lessons Learned

The sewage system re-inspection program within the Township of Tiny has proven to serve as a beneficial tool for ensuring human health and the natural environment are protected for future generations. It was explained:

"Piece of mind is important -- to know where systems are located and that they are being assessed on a regular basis is key. We have eliminated the uncertainty and the thought that 'My neighbour has a system that was installed 50 years ago, and I don't think anybody's ever looked at it' ... well that's not the case. We look at all of these systems every six years, and make sure that they're functioning properly."

(Municipal Contractor Representative)

The Township of Tiny includes educational content along with the annual letter they send out to their residents to help make homeowners aware of the importance of a healthy sewage system.

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They find the most effective method for reaching their seasonal residents is through the mail. For example, the Township includes the 'Septic Dos and Don'ts' sheet provided by the Ontario On-site Wastewater Association with their letter (see Further Resources section below for more information). The Township also directs residents to the Ontario Rural Wastewater Centre for more available information such as the SepticSmart! literature (see Further Resources section below for more information).

The importance of inter-organizational collaboration with respect to sewage system re-inspection programs is emphasized by program officials at the Township of Tiny. The Severn Sound Environmental Association (S.S.E.A) is a partner organization that the Township relies on for educating residents and system owners on the negative impacts malfunctioning sewage systems can have on the natural environment, as well as consequences they can generate with respect to human health. By gaining control of the inventory of sewage systems that are within the Township of Tiny, and their status of functionality, risk mitigation against future system failures can be addressed.

Many examples of problems exist with respect to failing sewage systems. Examples of decaying concrete tanks have been found within the Township. This is primarily caused by a buildup of hydrogen sulphide gas in the tank and the result is commonly referred to as "rotten concrete".

The next major issue causing many re-inspection failures is related to the leaching bed and the improper human activities that occur on and around them. Residents have planted trees on top of leaching beds, enabling roots to damage and alter the shallow-buried trench distribution piping. Furthermore, parking vehicles atop of the leaching bed compacts the soils beneath the surface, causing pour spaces to collapse. This relates to the last example of issues with

respect to failing systems. Clogged leaching beds impede the septic tank to discharge liquid to the field, causing a septic tank backup. Combined with a failing system pumps, this could end in catastrophe and is very much avoidable.

By ensuring the sewage systems are following the requirements of the Ontario Building Code, the Township is able to validate other types of building permits. For example, by knowing the location of a Class 4 system leaching bed, requests received to build a nearby garage can be assessed based on the setback requirements within the Ontario Building Code. It saves the Township time and money to have the sewage system infrastructure inventoried for these purposes.

The Township of Tiny's sewage system re-inspection program is an important tool for ensuring local water resources are protected for the long-term. Safe drinking water and healthy watercourses are promoted through the continuation of this program.

Further Resources

(contact FOCA for a PDF copy of these additional documents)

- Township of Tiny's webpage on the Septic Re-inspection Program
- Township of Tiny's By-law to implement the Township-wide Septic System Re-Inspection Program (By-law 02-018)
- Ontario On-site Wastewater Association "Septic Do's and Don'ts" info sheet
- SepticSmart! brochure (OMAFRA)
- FOCA (2018) Waterfront property owners and rural economic development: <https://foca.on.ca/waterfront-property-owners-and-rural-economic-development/>

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References

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2. Corporation of the Township of Tiny website - *Parks and Recreation Master Plan*.
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Case Study Prepared by:

Cameron Curran, 2019

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Final Thoughts from FOCA

Septic systems are an important part of your rural property, and—when properly maintained—are an appropriate means of treating on-site wastewater in rural Ontario.

WHAT CAN YOU DO?

1. Maintain your own septic system appropriately.

Find an expert in your region – consult OOWA’s growing online map of designated professionals in southern Ontario:



<https://oowa.org/oowa2/interactive-directory-map/>

2. Get on the FOCA Elert (e-news) list for information and monthly cottage-country updates: http://bit.ly/FOCA_Elert
3. Watch FOCA’s video about septic systems (see link, page 5) and read this additional FOCA publication: <https://foca.on.ca/shoreline-owners-guide-to-healthy-waterfronts/>
4. Share all these resources with friends and neighbours at your waterbody.
5. Now that you’ve got lots to share, consider holding a “Septic Savvy” workshop for your rural community.
6. Engage your municipality in the discussion. Remember: you don’t need to re-invent the wheel! Refer to this publication, and get more municipal tips in FOCA’s Guide to Municipal Engagement for Lake Associations: <https://foca.on.ca/municipal-engagement-guide/>.

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