



## Exploring Lessons Learned with Municipal Re-inspection Programs for Residential On-site Wastewater Systems in Ontario

### EXECUTIVE SUMMARY

This research project explored successes, challenges, and lessons learned with municipal re-inspection programs for residential on-site wastewater (septic) systems (i.e. sewage system maintenance inspection programs) in Ontario. The findings from this study indicate that on-site wastewater system re-inspection programs help mitigate threats to human health and the natural environment. When managed properly, these programs contribute to regional social, economic, and environmental sustainability. In order to ensure programs are successful, it is necessary for re-inspection program managers to educate on-site wastewater system owners about the continual role they must play regarding maintenance. Furthermore, addressing the financial concerns and limitations of residents through mechanisms such as financial assistance programs were found to be important in easing the costs associated with required repairs and replacements. Re-inspection program managers are encouraged to design and implement their programs based on the needs of their jurisdiction. This can be achieved through learning from other models, setting objectives for the program, and setting parameters to measure success.

### ISSUE

This research was initiated by the Federation of Ontario Cottagers' Associations, due to concerns brought forward by their membership of over 50,000 property owners regarding the state of their rural communities' onsite wastewater systems. There was a clear need to share the knowledge about how septic maintenance programs and inspections are being done, why they're done, whether the programs are seen to be effective (and the metrics used to evaluate efficacy), and how much these types of programs cost. To date, these programs have been delivered in an uneven manner across rural Ontario – leaving citizen groups, taxpayers, and municipal councils requiring more information.

In Ontario on-site wastewater (also known as septic or sewage) system re-inspection programs are managed at the municipal level as required in section 8.9, Division B, of the Ontario Building

Code for systems that function at less than 10,000 litres per day<sup>1</sup>. The 2012 Ontario Building Code (OBC) (O.Reg 315/10) states that mandatory septic re-inspections must occur every five years within provincial source protection areas (as defined by the *Clean Water Act, 2006*), including within a defined proximity to wellhead protection areas (WHPAs) or within 100m of Lake Simcoe shoreline, tributaries or ponds. The OBC is governed by the Ministry of Municipal Affairs and Housing (MMAH). Many municipalities have also pursued implementing discretionary programs beyond WHPAs or if their jurisdictions do not meet the criteria for mandated programs.

If on-site septic system effluent does not undergo treatment it has the potential to contaminate drinking water sources and negatively impact the natural environment. When pathogens found in the effluent are introduced to a local water source, waterborne diseases could be contracted<sup>2</sup>. Further, excess nutrients, including phosphorus, found in human wastewater, can accumulate in waterbodies, triggering an imbalance in aquatic ecosystems<sup>3</sup>. Therefore, if the density of onsite septic systems in a given area is high, the surrounding water resources may be at greater risk of pollution<sup>4</sup>.

## BACKGROUND

This project analysed municipal re-inspection programs for residential on-site wastewater systems (also known as septic or sewage systems) within four case study areas in southern/near north' Ontario, including: the Township of Leeds and the Thousand Islands, Municipality of Callander, Township of Rideau Lakes, and the Township of Tiny. The focus of this research was on the policy and governance of these programs, and the intended audience was municipal staff and elected officials considering a re-inspection program.

Key informant interviews were conducted in summer 2018 with municipal, conservation authority, and resident representatives, on the challenges and successes of re-inspection programs in their local area (main findings are summarized in Figure 1). It was found that on-site septic system re-inspection programs help mitigate human and environmental threats, and are relatively cost effective, when considering the negative impacts of malfunctioning systems on the regional, municipal, and household level.

Challenges with respect to the management of on-site wastewater re-inspection programs are greatly impacted by limited human resources. In order to conduct these programs, program managers require capacity. Council support influences the capacity for re-inspection programs. There is also a financial fear fostered by on-site wastewater system owners about the affordability of the re-inspection along with the costs of any potential repairs, upgrades, or replacements of their infrastructure. On-site wastewater re-inspection programs contribute to

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<sup>1</sup> Ministry of Municipal Affairs and Housing, 2011

<sup>2</sup> World Health Organization, 2006

<sup>3</sup> Crossman et al., 2016

<sup>4</sup> Michigan Department of Environmental Quality, 2004

regional long-term social, environmental, and economic sustainability. Water related recreation, resource use and engagement are economic drivers in the case study communities. Thus, ensuring water quality is not threatened, through routine on-site septic re-inspections, can be a worthwhile investment if done correctly. The re-inspection programs were noted by case study informants as important for reducing risks and liabilities regarding safe drinking water. Moreover, if managed properly, on-site wastewater re-inspection programs are a precautionary measure for the protection of homeowners’ property and surrounding natural environment.

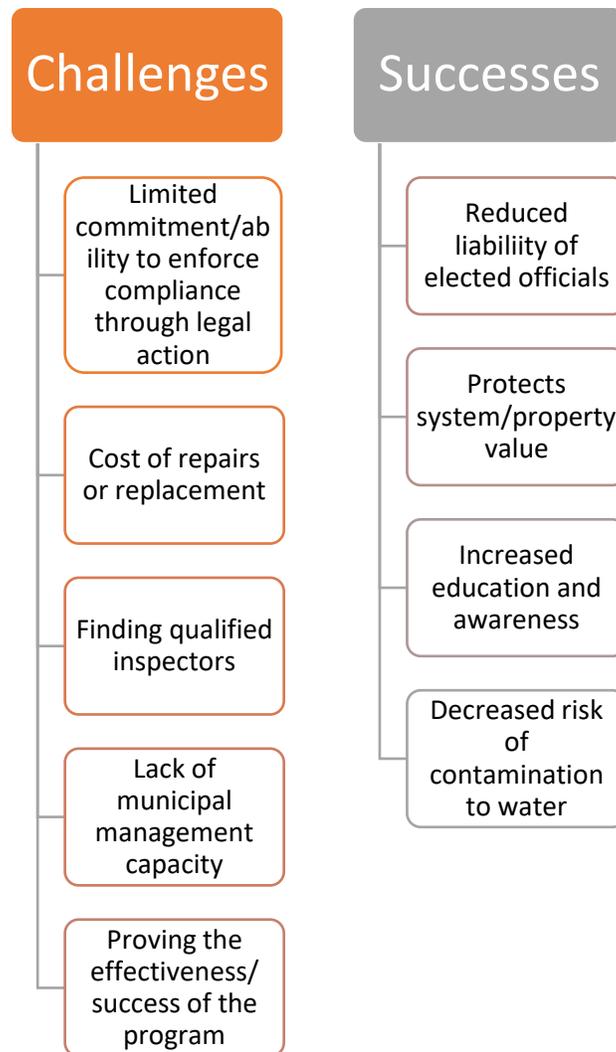


Figure 1. Common Challenges and Successes

## RECOMMENDATIONS

Authorities seeking to design and implement an on-site septic system re-inspection program are encouraged not to re-invent the wheel. Rather, to engage in an industry-wide conversation about how these programs can be completed efficiently and collaboratively. In doing so, local community context, and available resources should be considered. In many cases, the benefits

of on-site septic re-inspection programs outweigh the costs or risks of not implementing. It was noted these types of programs also reduce liability for elected officials. On-site septic reinspection programs do not find failure or deficiencies that do not already exist. Therefore, these programs are a precautionary measure to protect drinking and surface water quality, and the functioning and lifespan of septic systems. Below are the main lessons learned from this research:

- **Education and outreach:** Educating on-site septic system owners about the importance of regular re-inspections, and ongoing maintenance, is crucial in ensuring local water quality remains acceptable for humans and the surrounding environment. For example, many residents travel to their cottage or second home from urban areas, where sewage services are provided through municipal infrastructure, and not by private on-site septic systems. This introduces a knowledge gap by where the residents do not understand that what they put down their drains and pipes impacts the level of quality to which their septic systems may function. Inviting the resident to be present for the inspection is a great way to educate them. In many cases, program success is greatly dependent on finding the capacity to facilitate educational opportunities for residents both during the re-inspection as well as via public events. Working with residents on good venues/collaborators for education and outreach events is important.
- **Financial Support:** Addressing residents' concerns related to the affordability of the re-inspection along with the costs of any potential repairs, upgrades, or replacements of their infrastructure, is important for buy-in and compliance. Assistance programs are one way that principal authorities can aid their residents. One example of assistance programs is township-issued low interest loans. In some situations, mandatory on-site septic re-inspection programs were deemed essential since the voluntary programs reached a saturation point. If these re-inspections were made mandatory rather than discretionary, aiding residents could potentially decrease resident pushback in applicable jurisdictions.
- **Choosing the right program for your municipality:** It was found it is important to determine the right model for your municipality (including financing options), by learning from other models, setting objectives for the program, and setting parameters to measure success.

**For more information, resources (i.e., example by-laws, agreements, and operating documents) and four detailed case studies on re-inspection programs in Ontario, visit the project's website: <http://rplc-capr.ca/septic-maintenance-project/>**

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