# *On-Site Sewage System Re-Inspection Program 2021 Annual Report*

***Prepared for:*** *The Township of Muskoka Lakes*

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**Introduction:**

The Ontario Building Code and The Building Code Act, 1992 regulates the design, construction, and renovation of on-site sewage systems with capacities of 10,000 litres/day or less. In addition to enforcement of design and construction, The Ontario Building Code has established enforcement for maintenance. Which is why the Ministry of Municipal affairs and the Ministry of Environment has made the outline for the program (MMAH, 2011). The enforcement of the on-site sewage system provisions for the Township of Muskoka Lakes is the responsibility of the municipality. On-site sewage system maintenance is an issue of property standards, environmental health, and human health.

Lake health has been a hot topic of conversation with lots of residents in this area. Residents in the Township want their lakes to stay safe from phosphorus and E.coli. This is where the Sewage System Re-inspection Program fits in. Since the Township of Muskoka Lakes runs this program every summer, problems are now being acknowledged and fixed before they result in deteriorating the health of the lake systems. This is why they focus on sensitive areas by inspecting properties close to streams, lakes and rivers; where untreated effluent has less opportunity to be filtered through surrounding soils.

In addition to environmental health, a properly functioning sewage system is important for maintaining human health. “Everything that goes down the drain – every shower drop, toilet flush, kitchen drain - flows to the septic system. There are many contaminants in wastewater - bacteria, viruses, parasites - that can affect your health and the environment. If contaminants reach your drinking water supply, they can cause diseases or other health or environmental problems” (NBMCA, 2018).

For the summer of 2021, the areas selected for Re-inspection was Windermere, Rosseau, Redwood, Foots Bay, and miscellaneous properties around Bala, Minnet and Port Carling. Properties inspected were located on Lake Rosseau, Bass Lake, and Stewart Lake. Miscellaneous properties were located on Indian River/Mirror Lake, Lake Muskoka and Ricketts Lake.  There were 50 open properties from 2017, 2018, and 2019 which were revaluated and some re-inspected. If work was done properties were closed or sent another letter. A total of 428 properties were inspected. With 5 of those being miscellaneous inspections and 58 having no records.

**Methodology**

The type of inspection completed is referred to as a Phase I, or a visual maintenance inspection. According to the MMAH 2011, the purpose of this type of inspection is to:

a) Obtain the most recent information on the system, as well as the size of the building and the number of fixtures and bedrooms that it is servicing;
b) Locate the sewage system’s components;
c) Identify any obvious or outward signs of malfunction or failure; and
d) Identify systems that are at risk of malfunction of failure.

Before the inspection, all available records of the sewage system for each property are gathered. This information is useful to determine the age, location, and sizes of systems. In addition, the re-inspector notes any past issues with the system that have been addressed. For example, if there are past issues with deep-rooted vegetation this can be taken into consideration when inspecting the leaching bed. During the inspection, the re-inspector would normally identify:

a) The type of occupancy to determine the source and type of the sanitary sewage;
b) The source of water supply (municipal, well, lake, etc);
c) The approximate volume of sewage generated;
d) The use of special devices such as garbage grinders or water softeners;
e) The general nature of the system (class, components, type, layout, etc);
f) The location of the system's components with respect to wells, surface water, and other
environmental features;
g) The approximate level of ground water: This may be achieved by
    i. reviewing local maps and records of ground water elevation observed on site or
    nearby properties, including the local assessment report, if available;
    ii. Observing the conditions of the septic tank and the distribution box for indications
    of ground water infiltration;
    iii. Observing the elevation of nearby water body, or evidence of ground water
    infiltration in other subsurface structures; or
h) The size, material and the condition of the septic tank, or the holding tank;
i) The frequency of tank pump-out and the last time the tank was cleaned;
j) Any indication of sewage system failure, including:
    i. Evidence of backup of effluent;
    ii. Signs of hydraulic failure (breakout of sewage, wetting conditions in the leaching
    bed area);
    iii. Condition of surface vegetation; and
    iv. Odour problems;
k) Documentation of previous effluent sampling test results where required (i.e., under Article

8.9.2.4. of the Building Code). All property owners with treatment units are asked to provide proof of maintenance by sending us their most recent service report. All treatment units are required to have a maintenance contract.

One of the most important aspects of the On-site Sewage System Re-inspection Program is to educate property owners/operators about how the system functions, the obligations for system maintenance and environmental issues related to operation of a sewage system. Proper education can mean the difference between a system functioning properly for over thirty years, or failing and leaching into adjacent waterways twenty years post-installation.

Before the wastewater makes its way back into our natural environment, we want to ensure it is as clean as possible and absent of harmful chemicals, nutrients, viruses, and pathogens. For this to occur, the tank needs a healthy content of bacteria to breakdown the sewage. Any flushed chemicals or anti-bacterial products disrupt the natural breakdown process. This is comparable to the human body ingesting natural and healthy foods versus a high chemical diet of junk food. Excessive flushing of oils and plastics can physically clog the pipes and filtering mediums, slowly causing total system failures.

The main topics that we, as re-inspectors, talked about with property owners are the following:

Providing an individualized pumping schedule. When a system is not pumped frequently, there is a higher risk of sludge and scum making its way into the leaching bed, clogging the system and leading to failure. You can also over-pump your system. If pumped too frequently, the bacteria content of the tank does not have an opportunity to establish causing the natural break down in the tank to stop. This sterile environment reduces the treatment abilities and quality of the effluent leaving the system.

Encouraged habits for system operation include:

i. general water conservation

ii. repair leaky toilets and faucets immediately

iii. spread laundry days over the week

iv. do not use disinfectant soaps no matter how ‘natural’ they are

a) What not to flush into the system:

i. large amounts of harsh chemicals, or other anti-septic or anti-bacterial products

ii. garden pesticides, herbicides, paints, paint cleaners, or pharmaceuticals

iii. bleach pucks, disinfectant soaps, high sudsing detergents or detergents with bleach

iv. inorganic materials such as plastics, cigarette butts, disposable diapers, or sanitary napkins

v. grease, large amounts of oil, or excessive hair gels

Quite often, property owners have questions for the re-inspectors. This one-on-one interaction is the best way to convey useful information. The more the homeowner knows about their system, the better it functions.

**Results:**

A total of 267 properties were inspected on Lake Rosseau in Windemere, and Rosseau.

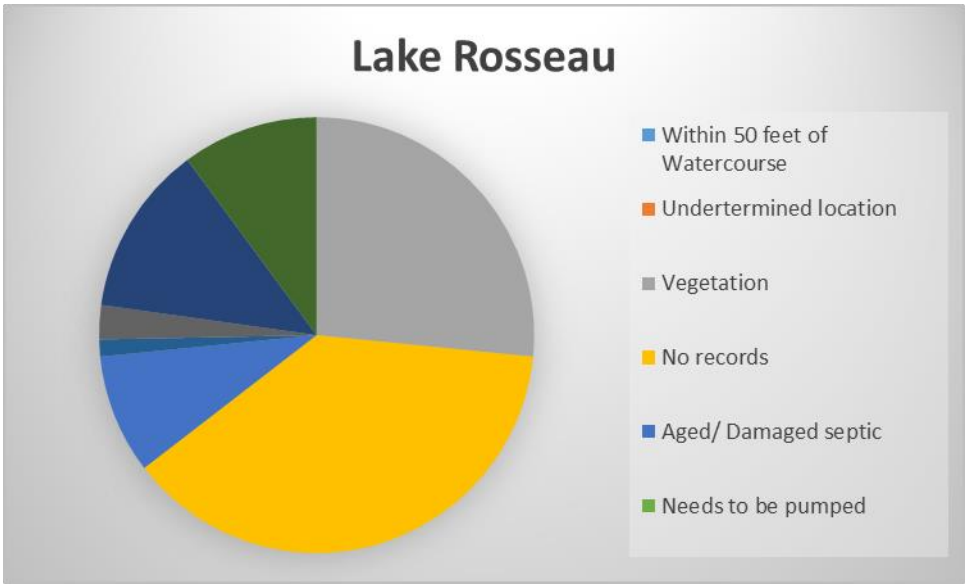


***Diagram One:*** *Lake Rosseau Properties deficiencies*

| **Lake Rosseau** | | |
|---|---|---|
| **Deficiencies** | **# of properties** | **Resolved** |
| Within 50 feet of Watercourse | 0 | 0 |
| Undertermined location | 0 | 0 |
| Vegetation | 21 | 14 |
| No records | 30 | 3 |
| Aged/ Damaged septic | 7 | 5 |
| Needs to be pumped | 0 | 0 |
| Steel tank | 1 | 1 |
| Seepage Issue | 0 | 0 |
| Heavy objects on bed | 2 | 1 |
| Outdoor shower Issues | 0 | 0 |
| No service contract | 10 | 3 |
| Electrical for pump chamber Issues | 8 | 5 |

***Table 1:*** *Lake Rosseau properties deficiencies*

Phase II inspections requested 30. Received to date 3.

There was a total of 129 inspected on Bass Lake in Redwood.

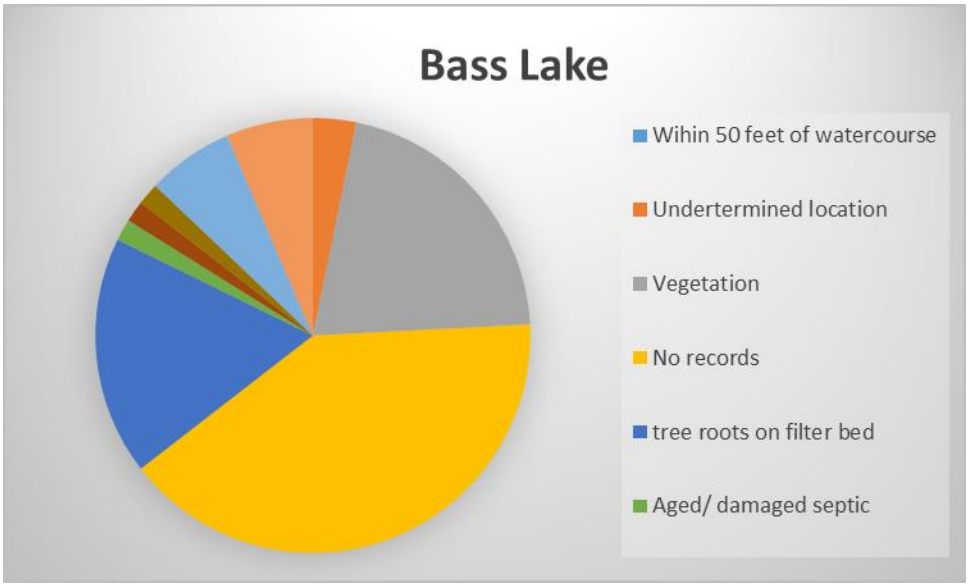


***Diagram 2:*** *Bass Lake Properties deficiencies*

| **Bass lake** | | |
|---|---|---|
| **Deficiencies** | **# of Properties** | **Resolved** |
| Wihin 50 feet of watercourse | 0 | 0 |
| Undertermined location | 2 | 0 |
| Vegetation | 13 | 6 |
| No records | 25 | 2 |
| tree roots on filter bed | 11 | 4 |
| Aged/ damaged septic | 1 | 1 |
| Needs to be pumped | 0 | 0 |
| Steel tank | 1 | 0 |
| Seeage Issue | 0 | 0 |
| Heavy objects on bed | 1 | 1 |
| Outdoor shower Issue | 0 | 0 |
| No service contract | 0 | 0 |
| Electrical for pump chamber Issues | 4 | 2 |
| Unsealed lids | 4 | 2 |

***Table 2:*** *Bass Lake Properties deficiencies*

Phase II inspections requested 27. Received to date 2.

There was a total of 27 properties inspected on Stewart Lake in Foots Bay

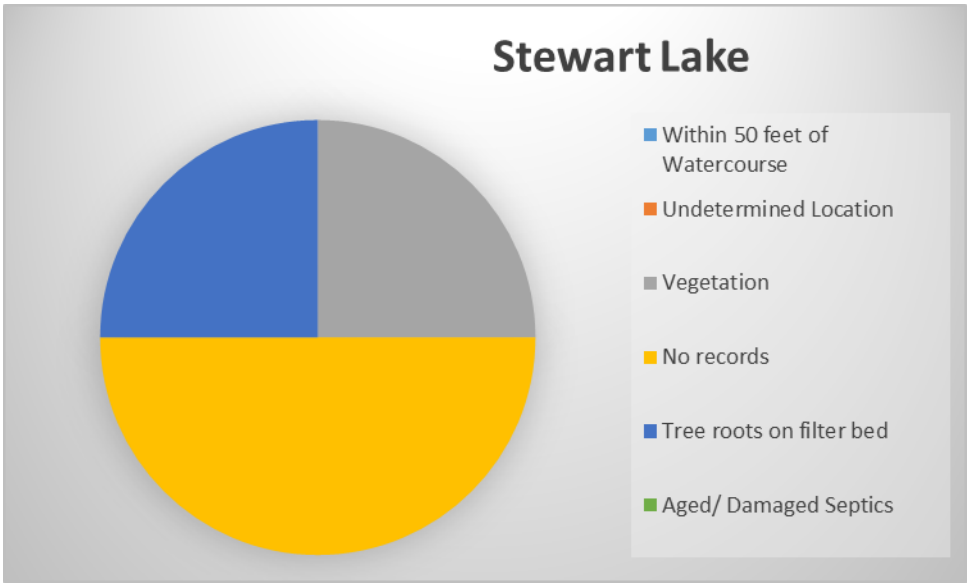


***Diagram 3:*** *Stewart Lake properties deficiencies*

| **Stewart Lake** | | |
|---|---|---|
| **Deficiencies** | **# of Properties** | **Resolved** |
| Within 50 feet of Watercourse | 0 | 0 |
| Undetermined Location | 0 | 0 |
| Vegetation | 2 | 0 |
| No records | 4 | 1 |
| Tree roots on filter bed | 2 | 0 |
| Aged/ Damaged Septics | 0 | 0 |
| Needs to be pumped | 0 | 0 |
| Steel tank | 0 | 0 |
| Seepage Issues | 0 | 0 |
| Heavy Objects on bed | 0 | 0 |
| Outdoor shower | 0 | 0 |
| No service contract | 0 | 0 |
| Electrical for pump chamber Issues | 0 | 0 |
| Unsealed lids | 0 | 0 |

***Table 3:*** *Stewart lake properties deficiencies*

Phase II inspections requested 4. Received to date 1.

From 2017 to 2019 there was a total of 50 open files. A total of 22 or 44% of properties were resolved and closed.

**Conclusion:**

In conclusion, the Septic Re-Inspection program was a success for the 2021 summer. As shown in the numbers presented. Many problems were caught before they resulted in a bigger problem. Knowledge was shared to many property owners about how to properly maintain their system, where there exact location of their tank and filter bed were located, and what not to put down their drain. Both Tyler and I have grown and learned a lot in this short summer. We have grown in knowledge about septic systems and experience when it comes to working with the public. It has allowed us to grow our customer service skills, from answering phone calls, and talking to property owners. Our computers skills have continued to grow. One thing we really improved on from last summer was being more organized. With knowing what was to come we were able to plan ahead, by printing off maps which includes labels, excel spreadsheets of every property in great detail, and a flagging system used for answering emails allowing for every property owner to be dealt with in a timely manner.

**Improvements for future years:**

1) Work more with the Sewage Inspector in order to have orders placed on properties that require them
2) Prepare a schedule of rental properties for inspection
3) Prepare a vegetation letter for certain species of plants that are causing most problems
4) Create a system that allows for notification of properties when their timelines have been reached, in order to ensure further follow up
5) Create a list of septic installers with BCIN numbers in different areas that are qualified and willing to complete phase II inspections

**References:**

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