



2016 Sewage System Re-inspection Program

Prepared For Tay Valley Township
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Contents

Executive Summary	5
1 Introduction	6
2 Program Implementation	7
2.1 Inspection Schedule	7
2.2 Property Selection Protocol	8
2.3 Distribution of Request for Participation	9
2.4 Scheduling	9
3 Results and Discussion	10
3.1 Distribution of Sewage System Re-inspections	10
3.2 Class of Sewage System	11
3.3 Class 4 and Class 5 Systems	13
3.4 Class 1, 2, and 3 Systems	13
3.5 Wells and Drinking Water	13
3.6 Tank Inspection	14
3.7 Separation Distances	16
3.8 Sewage System Status	17
3.9 Follow-up and Enforcement	19
3.10 Education Seminars	20
4 Recommendations	20
5 Conclusions	20

Figures, Tables, Illustration:

Figure 1 Properties Inspected per Lake	10
Figure 2 Property Use	11
Figure 3 System Class	12
Figure 4 Water Source	14
Figure 5 Tank Material	15
Figure 6 Separation Distance –Tank and Leaching Bed to Water	16
Figure 7 System Status	18
Table 1 Discretionary Inspection Schedule	7
Table 2 10 Year Discretionary Inspection Schedule	8
Table 3 Property variance	9
Table 4 System Deficiencies*	19

Illustration 1: Concrete Corrosion 15

Appendices

Appendix A Homeowner Package 22
Appendix B Description of a Site Inspection 32
Appendix C Ontario Building Code References 34
Appendix D Program Authority 35
Appendix E Property Selection Protocol 36

Executive Summary

During the 2016 Discretionary Re-inspection program 74 properties were inspected on Adam, Bennett, Bob's, Long, Otty and Pike Lakes, plus 8 properties on Big Rideau, Black, Christie, and Little Sliver Lakes through the Voluntary program, for a total of 82 properties with 97 site visits. There are an additional 31 follow-up site visits required, for a total of 128 inspections to be completed by July of 2017.

Participants were asked to return the questionnaire, included in the property owner information package, to the Mississippi Rideau Septic System Office (MRSSO). Once received, the administration staff entered the questionnaire in our database as being returned. If an appointment was not booked, the property owner would be contacted via phone or email to notify them of an inspection date, one week in advance. Properties included in the Discretionary program were notified of their appointment in the property owner package and were given the opportunity to arrange a new appointment, if required.

The inspections began on July 4, 2016 and the last inspection was completed on November 16, 2016. Most of the inspections were completed in July and August; the months when cottagers are most likely to be present.

The table on the right identifies the number of inspections completed per Lake. As a result of the program, 39 systems were identified as having no concern, 36 systems requiring remedial work, 4 system replacements required and 3 requiring more information.

The MRSSO attended the Black Lake AGM.

In conclusion the MRSSO was able to:

- Conduct 97 septic re-inspections in 2016
- Meet 63 waterfront property owners on-site and provide information regarding the maintenance and operation of their sewage system;
- One unsafe sewage systems have already been replaced

Lake	Properties
Mandatory	
Adam	29
Bennett	7
Bob's	5
Long	7
Otty	1
Pike	25
Voluntary	
Big Rideau	2
Black	2
Christie	2
Little Silver	2
Total	82

1 Introduction

A working sewage system is an integral part of any home or cottage not serviced by the municipal sewer. As such, proper maintenance and operation of the sewage system is essential to the continued life of the system. A Septic Re-Inspection Program provides:

1. Participants with information and advice regarding the proper operation and maintenance of their septic system;
2. A proactive approach to identifying risks to human health or the natural environment
3. A database of inspected existing septic systems that can be used as planning tool for municipalities

Malfunctioning on-site sewage systems can have both human health and environmental impacts beyond the property on which it is located. Nutrient and bacteria-rich effluent can travel through soil and rock fractures to surface water bodies, and ground water sources. Contamination of surface water can cause excessive aquatic plant growth, depletion of oxygen in lakes, and impact the natural habitat for aquatic species. Ground water contamination can cause illness and even death. This makes it crucial that property owners be aware of the location and operation of their septic system. Under the Ontario Building Code it is the property owner's responsibility to ensure that their sewage system is working properly, not only for their health, but also that of the surrounding community and environment.

The Tay Valley Township has led the way locally for the sewage system re-inspection program as well as other initiatives that work towards protecting the quality of surface and ground water. Since the sewage system re-inspection pilot program on Christie Lake was initiated in 2000, the Township has now inspected approximately 2450 waterfront properties. The program combines the education of the homeowner regarding the maintenance of their sewage system with an inspection component. A follow-up component is also essential to ensure that the program effectively manages identified sewage system problems.

The authority for the MRSSO, and other enforcement agencies, to conduct inspections of potentially unsafe sewage systems is provided by BCA s.15.9(1). The program Authority can be found in Appendix D.

In 2012, Tay Valley Township implemented a Discretionary Re-inspection program on seven lakes within the municipality (Appendix D), at the request of

the Lake Associations. For the 2017 season there will be an 8th Lake included in the Discretionary program; Little Silver Lake, at the request of the Little Silver Lake Property Owner Association. The Voluntary program continues on the remaining lakes and rivers.

The sewage system re-inspection program for 2016 began by selecting properties to be involved, making contact with property owners, and informing them of the inspection to take place. A site visit was made and either a visual inspection took place, or a visual and a tank inspection was completed. An inspection report was filled out and the owner was notified of any deficiencies to be rectified. The results for the 97 inspections completed in 2016 were compiled and this report is the culmination of those efforts.

2 Program Implementation

2.1 Inspection Schedule

In 2012, By-Law No. 2012-009 was passed to implement a Discretionary Re-inspection program for seven lakes. An inspection schedule (Table 1, below) was developed for the remaining properties that qualified for the program. These properties have systems that are 10 years and older and had not been inspected previously. Table 2 provides for the number of re-inspections over the next ten years based on the selection criteria. Voluntary inspections will be based on responses to the property owner packages.

Table 1 *Discretionary Inspection Schedule*

Year 1 (2012)		Year 2 (2013)		Year 3 (2014)		Year 4 (2015)	
Lake	# of Properties	Lake	# of Properties	Lake	# of Properties	Lake	# of Properties
Adams	12	Adams	<i>completed</i>	Adams	<i>completed</i>	Adams	<i>completed</i>
Bennett	10	Bennett	10	Bennett	44	Bennett	23
Bob's	10	Bob's	10	Bob's	19	Bob's	<i>completed</i>
Farren	20	Farren	25	Farren	<i>completed</i>	Farren	<i>completed</i>
Long	14	Long	<i>completed</i>	Long	<i>completed</i>	Long	<i>completed</i>
Otty	10	Otty	28	Otty	<i>completed</i>	Otty	<i>completed</i>
Pike	10	Pike	10	Pike	10	Pike	63
Total = 86		Total = 83		Total = 83		Total = 86	

* property information based on CGIS data in 2011 (best available data)

* undeveloped properties removed

* the number of properties shown represents those that have never been inspected under the program

* the original program began in 2002, therefore the 10 year re-inspection requirement will begin to apply to the mandatory water bodies in 2012, resulting in additional properties on the mandatory water bodies being re-inspected from 2012 forward

* inspections each year will occur first on the properties under the mandatory program, then on properties that are up for re-inspection under the 10-year timeframe, then inspections will occur on properties under the voluntary program to bring the total properties inspected to 200 per year

Table 2 10 Year Discretionary Inspection Schedule

Equalized - Mandatory 10 year Property Selection*

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total
Long	1	8	1	1	8	2	1	12	1	7	42
Farren	2	0	21	1	1	41	9	22	10	21	128
Pike	32	1	34	1	3	58	1	7	19	15	171
Otty	19	1	8	31	31	4	51	11	26	21	203
Adam	2	30	2	0	13	0	2	10	3	5	67
Bob's	19	5	4	41	24	2	4	9	9	12	129
Bennett	64	10	4	25	10	1	34	10	11	1	170
Total	139	55	74	100	90	108	102	81	79	82	910

Equalizing Changes:	Otty 30 from 2018 moved to 2019	Bennett 10 from 2018 to 2019
	Bob's 20 from 2018 to 2019	Farren 14 from 2023 to 2024

*Table developed using information in CGIS as of March 2015. Numbers derived from re-inspection age (≥ 10yrs), permit age (≥ 10yrs) and vacant properties removed (MPAC Property Code 100 Series). Numbers will change due to new development/re-development i.e. new sewage systems.

2.2 Property Selection Protocol

The re-inspection program in Tay Valley Township is a combination of mandatory and voluntary inspections, with the goal of conducting 200 inspections of waterfront properties each year. Three hundred and thirteen information packages (Appendix A) were mailed to prospective participants.

Participants were selected using CGIS, the Township's GIS database program. The lakes involved in the 2016 program were selected in CGIS and lists were produced meeting the following criteria:

- Waterfront properties that either have a septic permit that is 10 years or older or does not have permit information and has not been re-inspected in the past 10 years and is not vacant.

A property selection protocol has been developed (Appendix E) to ensure the accuracy of the property selection process. The accuracy of the 2016 list was 100% based on the responses received from property owners that did not qualify.

The number of properties inspected during the Discretionary program 74 properties were inspected, a total of 19 more than the target of 55. Table 3 shows the variance inspections per lake.

Table 3 Property variance

Lake	Number to inspect	Actual number inspected	Reason for Variance
Adam	30	29	(-1) – 10 years since last re-inspection
Bennett	10	7	(-3) – Permits dated 2006 but systems installed in 2007
Bob's	5	5	
Farren	0	0	
Long	8	7	(-1) - 10 years since last re-inspection
Otty	1	1	
Pike	1	25	(+24) – Equalized the number of inspections between 2015 and 2016

2.3 Distribution of Request for Participation

On June 1, 2016, the initial mail out for the Discretionary program was performed; the voluntary program mail out was conducted on June 1 and August 5100, 2016.

The inspections began on July 4, 2016 and the last inspection was completed on November 16, 2016. Most of the inspections were completed in July and August, the months when cottagers are most likely to be present.

2.4 Scheduling

Once a participant contacted our office, either by returning the questionnaire, calling, faxing, emailing or completing the online questionnaire, the information would be recorded in the database under four different categories:

- Questionnaire returned with appointment
- Questionnaire returned without appointment
- Appointment without a Questionnaire
- Removed from list (permit number or reason recorded)

As stated in our information package (Appendix A) appointments are first come, first served. Once the appointments made by property owners are scheduled, returned questionnaires without appointments are scheduled and the property owner notified of the scheduling at least one week in advance. The MRSSO's goal is to schedule 10 appointments per day. This approach was used for both

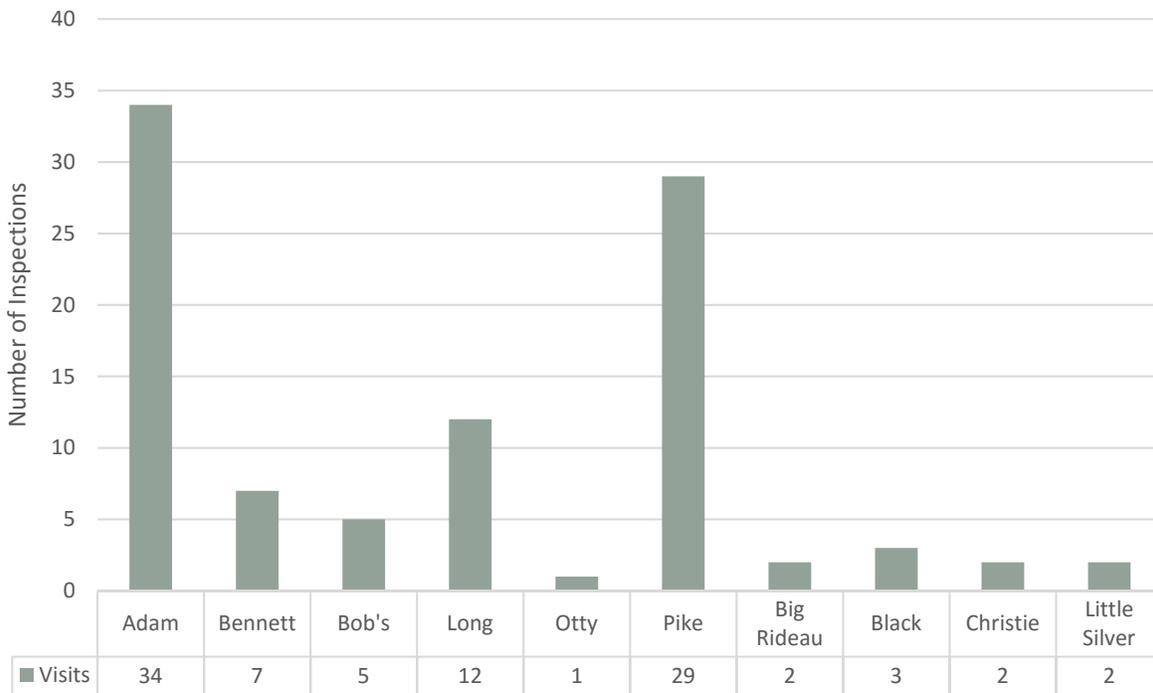
programs, with one change for the Discretionary program; Property owners were provided with a scheduled appointment with the option to change it upon request. Fifty-eight percent of property owners opted to keep the appointment that was scheduled for them. Sixty-three or 77% of property owners were present for the inspection.

3 Results and Discussion

3.1 Distribution of Sewage System Re-inspections

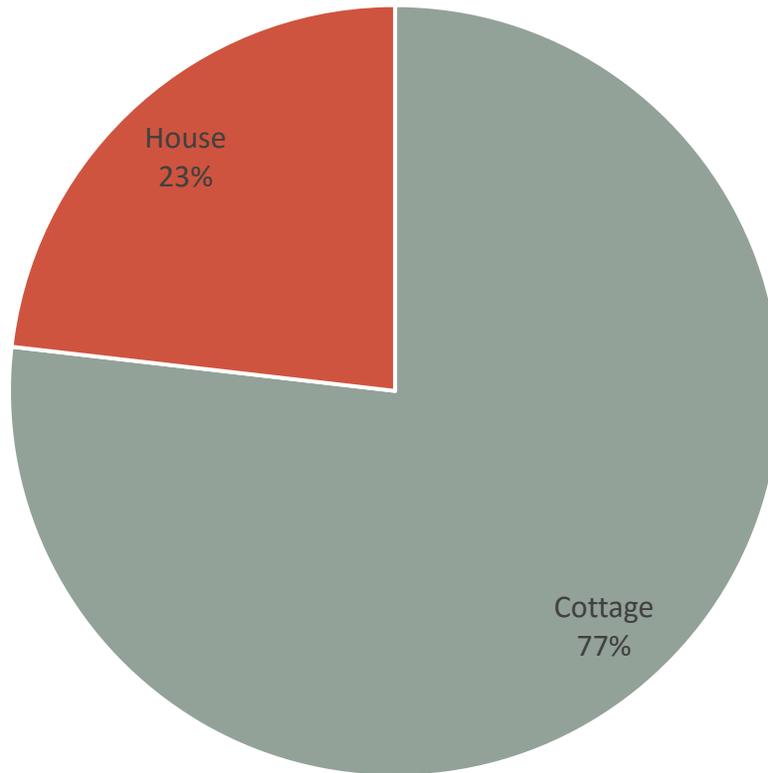
The re-inspection program resulted in 82 properties visited with 97 inspections completed in 2016 on 10 different bodies of water shown below in Figure 1.

Figure 1 Properties Inspected per Lake



From information collected through the questionnaire, records of mailing addresses, and observations at the time of the inspection, the 82 properties inspected were designated to be cottage, house, farm or business. Figure 2 illustrates that 63 of the inspections were completed on cottage properties, 19 on residential properties. While residential properties consistently generate more wastewater and have the potential to contribute more nutrients to the environment, seasonal properties often have older, under sized systems that experience peak flows, which could lead to a greater environmental impact. Therefore, a mix of both seasonal and residential properties is desirable.

Figure 2 **Property Use**



3.2 Class of Sewage System

Five primary classes of wastewater treatment systems are identified in Part 8 of the OBC as outlined below.

Class 1 - Earth Pit, Vault, Pail and Portable Privies, Composting Toilets

Class 2 - Greywater Systems

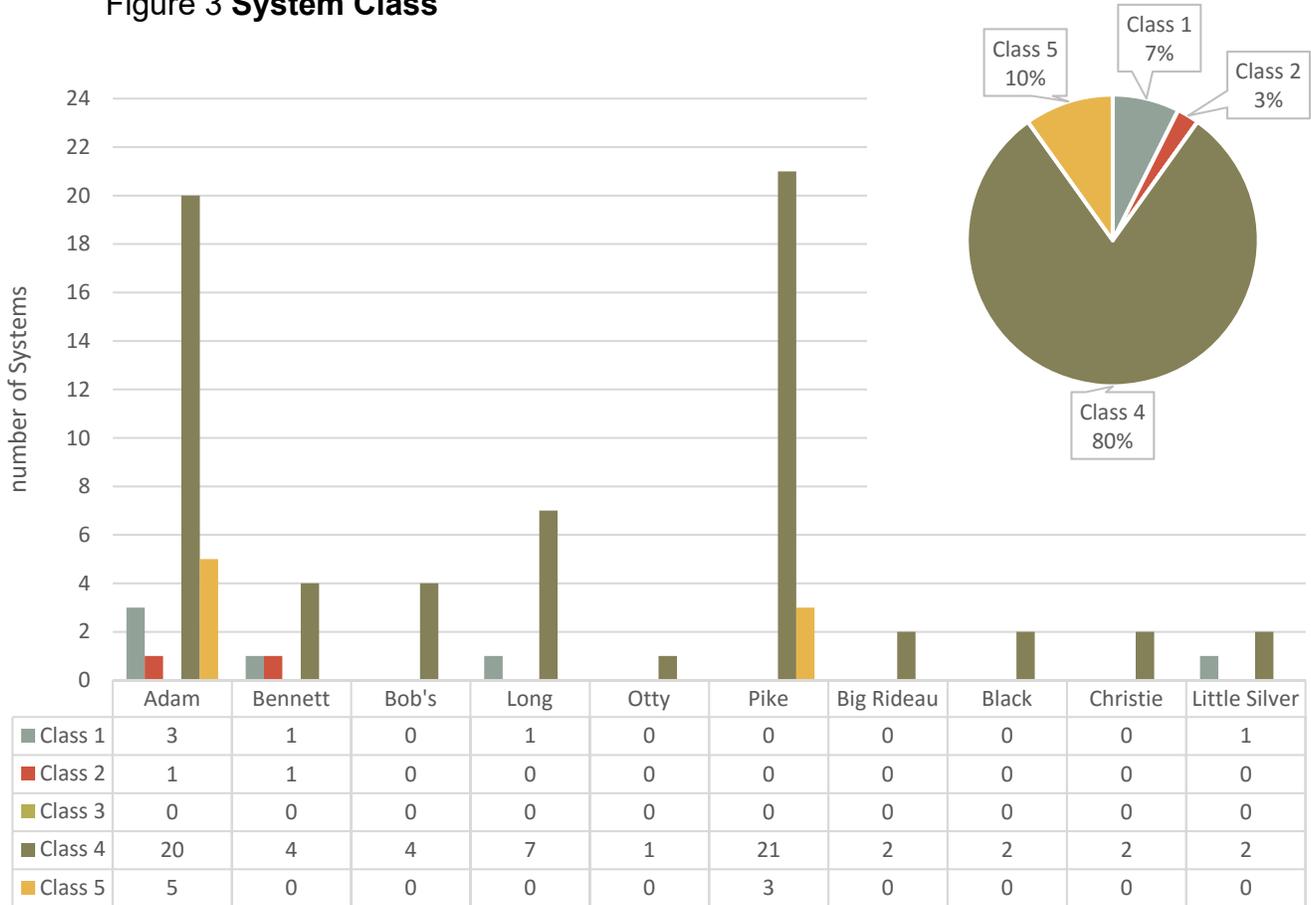
Class 3 - Cesspools

Class 4 – Septic Tank and Leaching Bed

Class 5 – Holding tanks

Figure 3 displays the primary type of on-site wastewater system for each property where it was known, either from the visual inspection, or from information provided by the homeowner.

Figure 3 System Class



It is not uncommon, and many times it is necessary, for properties to have more than one class of system present on the property. For instance, if the primary class of system is a privy, then generally a Class 2 system is required for greywater treatment. It is strongly recommended that property owners with a Class 4 or Class 5 system direct all sources of greywater to that system unless otherwise approved.

3.3 Class 4 and Class 5 Systems

The most prevalent Class of sewage system found was Class 4 on 65 of the properties inspected. Due to the difficulty in determining the type of Class 4 sewage system in use, and the lack of homeowner certainty, we did not distinguish between the different types of Class 4 systems.

Very stringent requirements are identified in the OBC for allowing the installation of a Class 5 system (holding tank). One of those requirements is that it can be installed only when no other type of Class 4 system, meeting the OBC requirements, can be placed on the property. Eight holding tanks were identified during the 2016 re-inspection program.

3.4 Class 1, 2, and 3 Systems

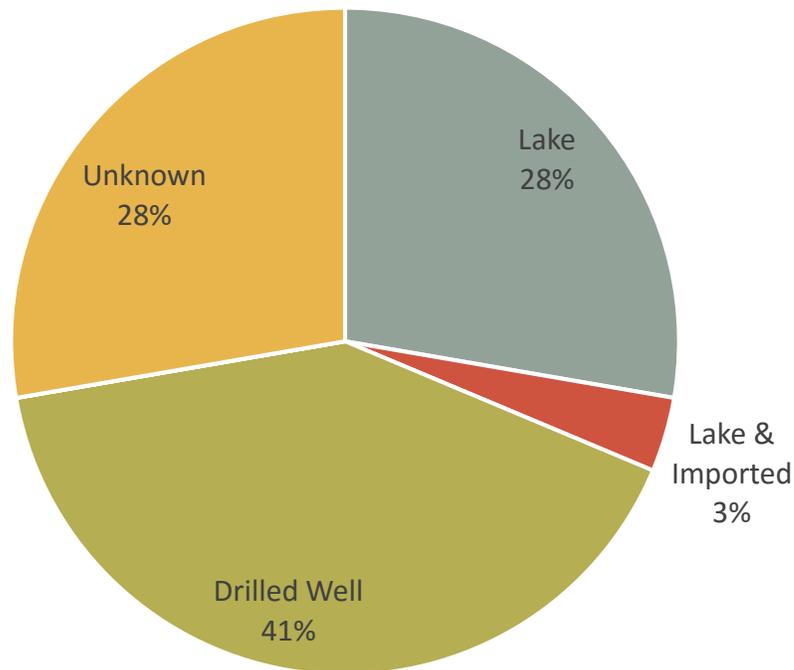
Throughout the inspections, there were 6 Class 1 and 2 Class 2 systems identified. Class 1, 2 and 3 systems are adequate options for protecting the environment when designed and installed correctly. The construction of Class 2 or 3 system requires a permit to construct while a Class 1 does not require a permit, but construction requirements can and are enforced. A Class 3 system can only receive waste from a Class 1. This type of system is most commonly associated with a composting toilet.

Typically, these classes of system do not provide pre-treatment of wastewater prior to entering the ground and therefore should be considered for use in temporary or very low-use conditions. If these systems are located too close to water they can have a significant impact on water quality during seasons of peak use.

3.5 Wells and Drinking Water

Information was collected during the field inspection on the source of drinking water, and water treatment practices of the property owners. During the visual inspection, if a pipe pumping water from the water body was visible, and no well was located, then the water source was assumed to be the lake (or river). If no pipe was visible and a well was located, then the water source was recorded as a well. Water source indicated as “unknown” means the water source could not be determined. Information provided by the property owner is more accurate than that found during the visual inspection, and is preferable to identifying the water source on-site. Figure 4 illustrates the number and type of water supply systems.

Figure 4 Water Source

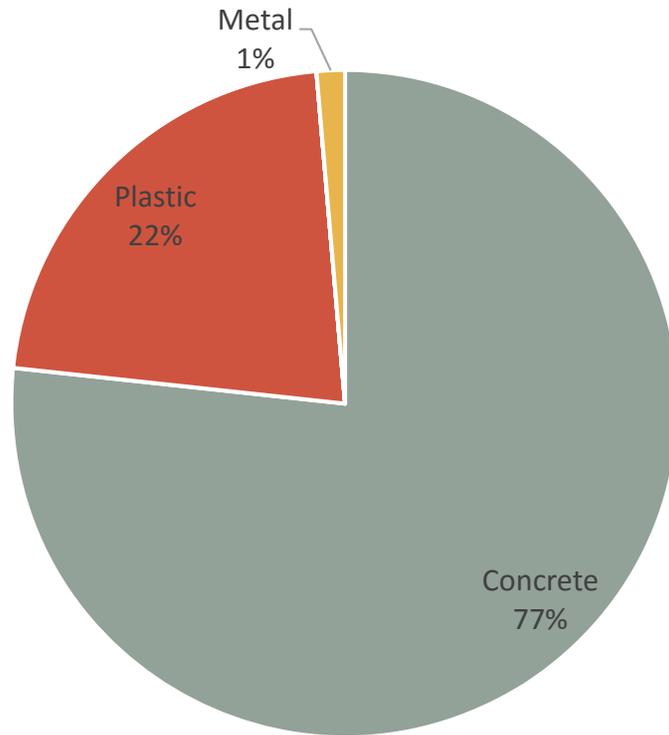


Although The Leeds, Grenville and Lanark Health Unit has free water testing available and water bottles are available for pick up at The Office in Perth, ON, many property owners do not test their drinking water regularly.

3.6 Tank Inspection

The tank material was observed during the tank inspection. If the tank was not uncovered for the re-inspection, the tank material was determined by using a soil probe to locate the tank and to determine the construction material by the sound/feel it created. Of the 82 properties inspected, 73 properties had septic or holding tanks. Figure 5 shows the breakdown for the common tank materials found: concrete, plastic, fiberglass, wood and metal.

Figure 5 Tank Material



As a result of the re-inspection program, it was noticed that **23.2%** of concrete septic tanks had signs of corrosion (Illustration 1). Concrete corrosion can be caused by a build of gases (from normal operation) reacting with the concrete. The corrosion can cause baffles to fall off, effluent to escape around the outlet pipe and the tank to become structurally unsafe.



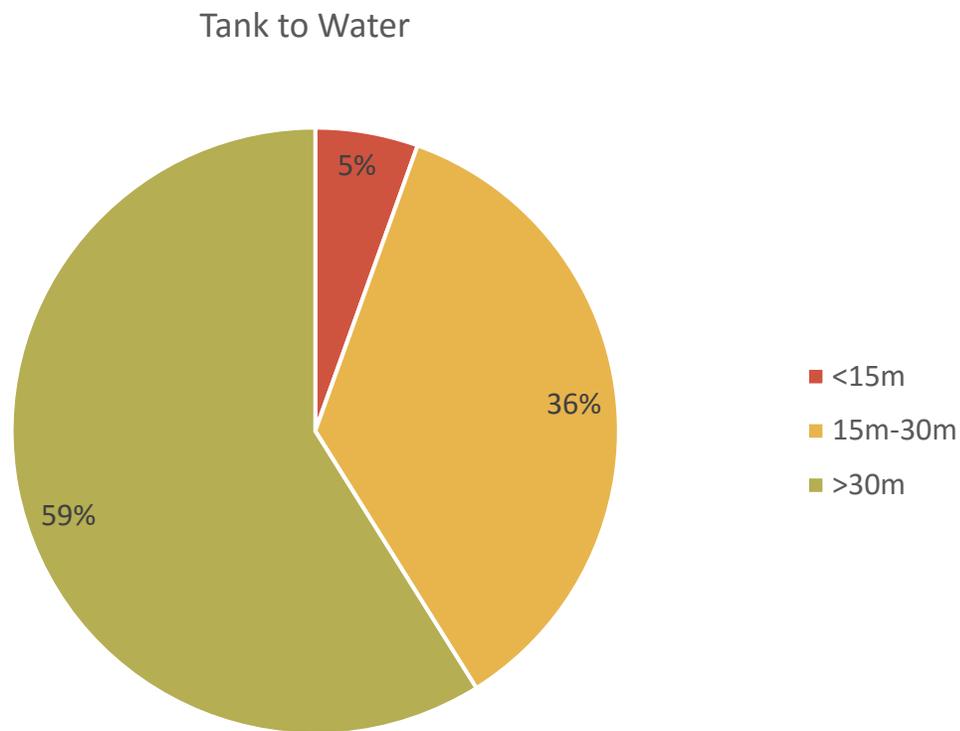
*Illustration 1: Concrete Corrosion
around Outlet Baffle*

3.7 Separation Distances

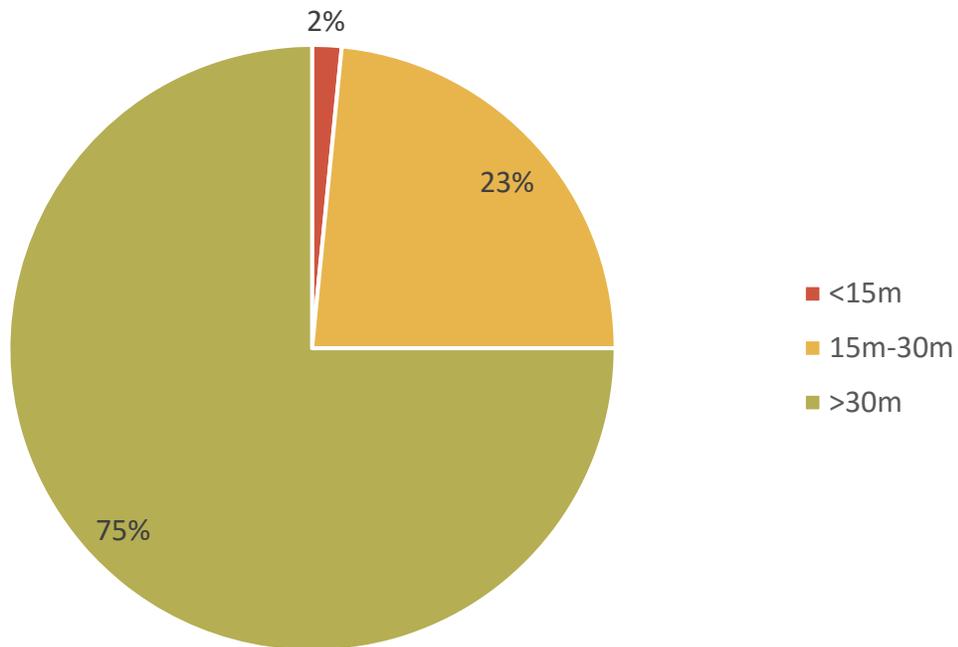
Horizontal separation distances are measured from the dwelling, lot line, well and shoreline to the sewage system components. Figure 6 represents the separation distance measured from septic/holding tanks and leaching bed to the surface water. The measurements were sorted into three categories:

- Less than 15m (<15m) – Does not meet OBC or Official Plan requirements
- Between 15m – 30m – Meets OBC but does not meet Official Plan requirements
- Greater than 30m (>30m) – Exceeds OBC and meets Official Plan requirements

Figure 6 Separation Distance –Tank and Leaching Bed to Water



Leaching Bed to Water



Although a reduced separation distance does not necessarily provide evidence of ground or surface water contamination, it is important to recognize that these systems are present.

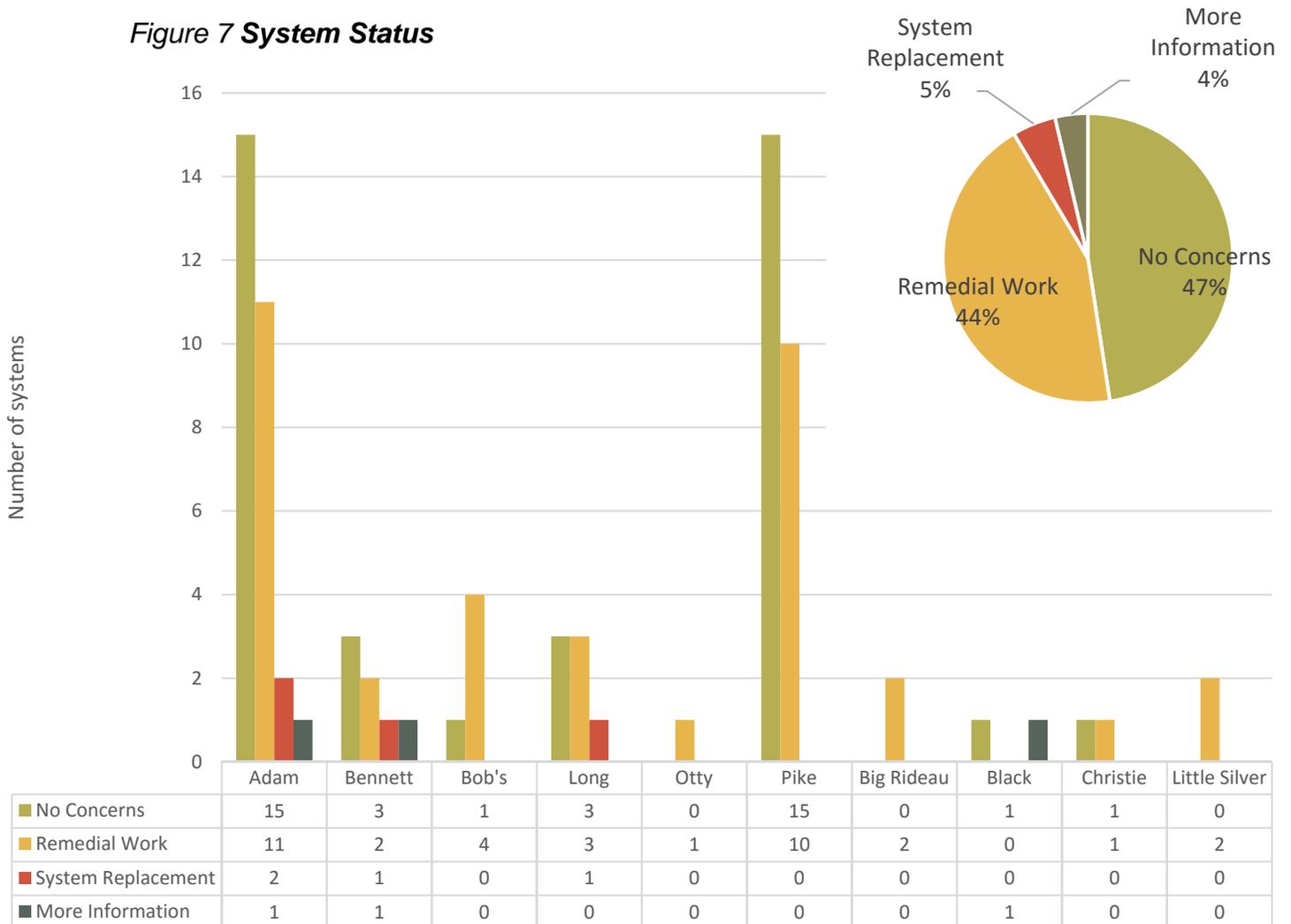
3.8 Sewage System Status

When completing an inspection of the existing sewage system the MRSSO has developed the following terms to identify the overall sewage system status or condition, as shown in Figure 7:

- **No Concern** – At the time of inspection there were no operational and/or maintenance issues identified.
- **Remedial Work Required** – At the time of inspection operational and/or maintenance issues were identified. These issues generally do not require a permit to remedy.
- **More Information Required** – At the time of inspection one or more questions arose regarding the class of system, location of components, water source, pumping, maintenance and/or operation of the system.

- System Replacement Required** – At the time of inspection it was determined that the on-site system was not being maintained or operated properly and was posing or could pose a risk to human health and/or the environment. * **All system replacements were located on properties in the Discretionary program**

Figure 7 System Status



Every septic system requires regular maintenance to ensure it is operating efficiently and safely. System deficiencies are generally classified as a remedial work items. Table 4 illustrates the most common deficiencies found during the re-inspection program.

Table 4 System Deficiencies*

Pump-out required	19
Baffles require maintenance (broken/missing)	9
Effluent above/below operating level of tank	5
High Level Alarm	6
Roots to be removed from system	3
Lush Vegetation – bed area	5
Tank Corrosion	13
Effluent filter requires cleaning	8
Homemade Tank	2
Total	70

*note, some systems have more than one maintenance issue.

3.9 Follow-up and Enforcement

A carbon copy of the re-inspection form, filled out on-site, was left with the property owner or in a visible, protected location (i.e. between doors). As a result, property owners have been able to deal with maintenance or operation issue(s) in a timely manner.

Items that require remedial work under the Discretionary program are now required to be followed up with. Property owners have been requested to provide proof of pump-out and additional inspections have taken place for other items. Of the 46 properties requiring follow up, 15 have been completed. Follow-up inspections include site visits, compliance letters and Order to Complies. The type of enforcement is determined by the severity of the issue. Orders to Comply are issued under the Building Code Act, Division B, Section 8.9 and Division C Section 1.10 of the Ontario Building Code.

Sewage Systems found to be malfunctioning or posing a risk to human health or the environment will require replacement. Of the 4 properties identified in the 2016 program; one system has been replaced and the other 3 replacements are seasonal properties and are to be replaced in the spring/summer of 2017.

3.10 Education Seminars

In 2016 the MRSSO attended Black Lake Annual General Meeting (AGM). The purpose of the MRSSO attending these events is to educate the general public on septic systems and the purpose of the septic re-inspection programs.

At the Black Lake AGM we provided a presentation to the attendees regarding the Re-Inspection Program and participated in a Question & Answer section.

4 Recommendations

Result of the 2016 Recommendations:

- Compile re-inspection results from 2008 -2011 and compare to results from 2012-2017 and provide in 2017 report.
 - Not completed – still in process – projected completion date – February 2017.
- Study potential of conducting inspection based on property owner's pump out schedule
 - Not feasible due to inconsistency in pumping frequency. Best action would be to provide property owner package early enough to allow appointments to be made for 2017 pumping. Also provide flexibility in appointments i.e. if they have been selected in 2017 and their 5-year pumping is set for 2018 – move the inspection to 2018.

5 Conclusions

The 2016 program completed a full inspection on the majority of the properties selected. Approximately 47% of these systems had no concerns. It should be noted that the age of a system was not a significant factor in deficiencies identified. In turn, the diligence of the property owner in regards to the operation and maintenance of their system had a greater impact on the deficiencies identified.

Four properties were re-inspected and determined that system replacement would be required. One system has been replaced and the other 3 replacements are seasonal properties and are to be replaced in the spring/summer of 2017.

Interaction with property owners during the re-inspection program this year was very positive. Over 77% of property owners were able to be present during the

re-inspection. Most of the homeowners encountered were very supportive of the re-inspection program.

97 properties were visited and least 128 inspections will be completed. Over 5% of the systems inspected in the Discretionary program require system replacements. This is up from the average of 2% (0% for 2016) of systems that are identified in a Voluntary program. If it was not for the Discretionary program, these systems may not have been identified for replacement.

Having homeowners excavate their tanks prior to re-inspection will be continued in the 2017 re-inspection season. This enabled a much more efficient re-inspection process.

Continued emphasis will be placed on attending Lake Association functions and offering information seminars to the public regarding changes to the program and the maintenance and operation of sewage systems within the Township. The opportunity to hear the concerns of waterfront properties and address misconceptions regarding sewage systems and the re-inspection programs is beneficial in promoting the proper maintenance and operation of sewage systems and identifying areas of concern.

The 2016 Re-inspection program could not have been a success without the help of many people. I would like to thank the staff at Tay Valley Township for their assistance and resident knowledge of the area. They have been a tremendous help over the past ten years. Also summer students are vital to the success of the re-inspection program as well. They provide assistance to the inspector in the field and administrative assistance in the office; thank you Kathryn Hallett for your enthusiasm and hard work this summer.

The MRSSO's continued commitment to the property owners of Tay Valley Township is to provide fair, accurate and timely service. It is hoped that the momentum of the sewage system re-inspection program continues in the coming years, as it is a valuable asset to the health of the environment and the community.

Appendix A Homeowner Package



THE VOLUNTARY SEWAGE SYSTEM RE-INSPECTION PROGRAM IS AN IMPORTANT PART OF COUNCIL'S ENVIRONMENTAL STRATEGY.

A properly functioning septic system is an integral part of a healthy lake environment. Improperly maintained systems can be a significant contributor of nutrient and bacteriological pollution to an adjacent water body. The Septic Re-Inspection Program is aimed at achieving a better understanding of system function, increasing owner education and preventative measures. The implications of poor maintenance are costly to the owner and to the community. Our program history shows owners are committed to protecting their lake lifestyle, as is the Township.

The Mississippi/Rideau Sewage System Office (MRSSO), on behalf of the Tay Valley Township, will be conducting re-inspections in your area this summer. The MRSSO is a co-operation between the Rideau Valley and the Mississippi Valley Conservation Authorities, contracted to conduct the Sewage Re-Inspection Program. Re-inspections can be scheduled to better accommodate property owners wishing to be on-site. If you wish to be present during the re-inspection of your property, appointments will be made on a first come, first served basis during the dates outlined in the accompanying Program Procedure. In addition, we are asking that you have your sewage tank located and the lids exposed (excavated) prior to the arrival of MRSSO staff. If you require MRSSO staff assistance to locate/excavate the tank a \$20/lid (usually 2 lids) to a maximum of \$40 total will be charged for this service and again invoices will be issued in late fall at the end of the Program.

Please see the attached Septic Re-inspection Procedure for instructions on preparing for the inspection including filling out and returning the enclosed questionnaire.

Your active involvement in the Septic Re-Inspection Program begins with filling in the accompanying questionnaire to the best of your ability. After the re-inspection is completed, advice on proper maintenance will be provided both in person and in the report left onsite. If necessary, the MRSSO will initiate a dialogue and define an action plan with owners of systems deemed to be a concern to the environment or to public health. Owners of systems found to be installed, operating and maintained properly, but which are not in compliance with current requirements of Part 8 of the *Ontario Building Code* will be advised the system is likely to require upgrade or replacement prior to further site development. Funding assistance may be available for septic replacement depending on eligibility criteria.

Any comments regarding the Program in general or Council's strategy can be directed to Noelle Reeve, the Township Planner at (613) 267-5353. Program specifics or questions about your involvement in the Program should be directed to the MRSSO, (613) 253-6000

On behalf of Council, thank you in advance for your co-operation.

Noelle Reeve, Planner

PROGRAM AUTHORITY:

The Province of Ontario has delegated the responsibility to regulate on-site sewage systems (with total daily design flow of less than 10,000 litres per day) to municipalities. The authority to do so was transferred from the Environmental Protection Act to Part 8 of the Ontario Building Code which defines a sewage system as a "building". Implementation of Code requirements is meant to ensure proper installation, operation and maintenance of on-site sewage systems. A sewage system that is discharging effluent onto the surface of the ground, or that has not been maintained or operated in accordance with the Code is determined to be an unsafe "building". Any remedial action required will be addressed pursuant to the Ontario Building Code.

PERSONAL INFORMATION:

Collected as part of the Sewage Re-inspection Program will be used to facilitate communication between the Township, MRSSO and individual owners and will be protected in a confidential manner in accordance with the Municipal Freedom of Information and Protection of Privacy Act. A summary report, containing no owner names, will be prepared for public viewing. Questions about the collection of personal information should be directed to Noelle Reeve

«Owner_1»
«Owner_2»
«Mailing_Address_1»
«CityProvinceCountry», «Postal_Code»

Date

Voluntary Sewage System Re-Inspection Program Procedure

1. The first step in **your voluntary participation is completing and returning the questionnaire**. Please fill in, sign, and return the questionnaire by fax, mail, email or now online, as soon as possible, to the number or address provided. Do not feel as though the form must be fully completed to return it to us; every bit of information is useful.

Classes of Sewage Systems Inspected:

- Class 1-Earth Pit Privy, Composting Toilet...
- Class 2-Greywater Pit
- Class 3-Cesspool- Waste from a Class 1
- Class 4-Septic Tank & Leaching Field
- Class 5-Holding Tank

The intention of the Questionnaire is to provide our office with basic information regarding your sewage system(s) and its location on your property. Unfortunately the township does not have this information for every property.

NEW for 2016 - the Questionnaire can be filled out and returned online at:

<http://mvc.on.ca/mrssl-questionnaire-2016/> . The Questionnaire only needs to be sent in using one of the listed methods above.

2. **Appointments** are not required but can be made between 9 am – 4 pm on a first come, first served basis, by contacting the MRSSO. If an appointment is not arranged, the MRSSO will schedule the re-inspection and notify you one week in advance.
3. The MRSSO requests that you expose both lids on your septic tank (most tanks have 2). **There will be a \$40 (\$20/lid) maximum charge for the MRSSO to assist in locating and excavating the septic tank lids**. This fee will be invoiced upon completion of the re-inspection. **No cost will be incurred if excavation is not required**. The MRSSO will re-cover the tank when the inspection is completed (**at no cost**) unless it is determined that a pump-out is required. The tank inspection includes a visual inspection of the tank components and measurement of sludge and scum in the tank. Please do not pump tank before the re-inspection.

4. The septic re-inspection will include the following items:

- Determining location of all systems
- Measurement of separation distances to key lot features
- Visual inspection of tank structure
- Measurement of tank contents – **Please do not pump tank before inspection.**
- Visual inspection of bed
- Briefing the homeowner on proper system maintenance and operation.

5. A copy of the septic re-inspection report will be left on-site.

The primary role of the MRSSO, as the administrators of the re-inspection program, is to educate property owners about their onsite waste treatment system and any deficiencies with it. Our secondary role is to ensure that unsafe systems are reported to the appropriate Authority, based on the requirements of Part 8 of the Ontario Building Code. You, as the property owner, can expect the re-inspection, communication of results, and all inquiries to be dealt with in a professional manner.

Thank you in advance for your co-operation. We know you share the Township's desire to protect our water resources and ultimately the value of waterfront property around the lakes within the watersheds. Your participation in this program will assist in providing continued enjoyment of a clean, healthy waterfront environment for generations to come.

Yours Truly,



Eric Kohlsmith | Re-inspection Program Coordinator | 613-253-0006 ext. 256 | septic-inquiries@mvc.on.ca

SEWAGE SYSTEM RE-INSPECTION IS AN IMPORTANT PART OF COUNCIL'S ENVIRONMENTAL STRATEGY

For over ten years Tay Valley Township has had a voluntary septic re-inspection program. Mandatory Re-inspections are new in the province and result from changes to the *Ontario Building Code* in January 2011 to implement requirements of the *Clean Water Act*. A properly functioning septic system is an integral part of a healthy lake environment. Improperly maintained systems can be a significant contributor of nutrient and bacteriological pollution to an adjacent water body. The Septic Re-Inspection Program is aimed at achieving a better understanding of system function, increasing owner education and preventative measures. The implications of poor maintenance are costly to the owner and to the community. Our program history shows owners are committed to protecting their lake lifestyle, as is the Township.

In the fall of 2011, the Lake and Property Owner Associations for Adam, Bennett, Bob's, Farren, Long, Otty and Pike Lake requested that Tay Valley Council consider implementing a pilot program of mandatory septic re-inspections on these lakes. As Council agreed to the request, your property is included in the Tay Valley Township Mandatory Septic Re-inspection Program. To protect the water quality of your lake, you may schedule an appointment with the Mississippi Rideau Septic System Office (MRSSO) for the inspection at no cost to you. If you choose, you may be present for the inspection, but if it is not convenient you are not required to be present for the inspection. Alternatively, you may hire a third party certified inspection service to do the inspection.

Please see the attached Septic Re-inspection Procedure for instructions on preparing for the inspection including filling out and returning the enclosed questionnaire.

Your active involvement in the Septic Re-Inspection Program begins with filling in the accompanying questionnaire to the best of your ability. After the re-inspection is completed, advice on proper maintenance will be provided both in person and in the report left onsite. If necessary, the MRSSO will initiate a dialogue and define an action plan with owners of systems deemed to be a concern to the environment or to public health. Owners of systems found to be installed, operating and maintained properly, but which are not in compliance with current requirements of Part 8 of the *Ontario Building Code* will be advised the system is likely to require upgrade or replacement prior to further site development. Funding assistance may be available for septic replacement depending on eligibility criteria.

Any comments regarding the Program in general or Council's strategy can be directed to Noelle Reeve, the Township Planner, at (613) 267-5353 ext. 128. Program specifics or questions about your involvement in the Program should be directed to Eric Kohlsmith, at the MRSSO, (613) 259-2421 ext. 256.

On behalf of Council, thank you in advance for your co-operation.

Noelle Reeve, Planner
Tay Valley Township

PROGRAM AUTHORITY:

The Province of Ontario has delegated the responsibility to regulate on-site sewage systems (with total daily design flow of less than 10,000 litres per day) to municipalities. The authority to do so is found in Part 8 of the *Ontario Building Code* which defines a sewage system as a "building". A sewage system that is discharging effluent onto the surface of the ground, or that has not been maintained or operated in accordance with the *Code* is determined to be an unsafe "building". Any remedial action required will be addressed pursuant to the *Ontario Building Code*.

PERSONAL INFORMATION:

Information collected as part of the Septic Re-inspection Program will be used to facilitate communication between the Township, MRSSO and individual owners and will be protected in a confidential manner in accordance with the *Municipal Freedom of Information and Protection of Privacy Act*. A summary report, containing no owner names or addresses, will be prepared for public viewing. Questions about the collection of personal information should be directed to Noelle Reeve.

Name

Address

Date

Mandatory Sewage System Re-Inspection Program Procedure

1. The first step is to complete and return the questionnaire. Please fill in, sign, and return the questionnaire by fax, mail, email or now online, as soon as possible, to the number or address provided. Do not feel as though the form must be fully completed to return it to us; every bit of information is useful.

The intention of the Questionnaire is to provide our office with basic information regarding your sewage system(s) and its location on your property. Unfortunately the township does not have this information for every property.

The Questionnaire can be filled out and returned online at:

<http://mvc.on.ca/mrso-questionnaire-2016/>. The Questionnaire only needs to be sent in using one of the listed methods above.

2. The re-inspection of your property will be conducted on 7/19/2016. Please contact our office if you would like to arrange an alternative inspection appointment.
3. The MRSSO requests that you expose both lids on your septic tank (most tanks have 2). There will be a \$40 (\$20/lid) maximum charge for the MRSSO to assist in locating and excavating the septic tank lids. This fee will be invoiced upon completion of the re-inspection. No cost will be incurred if excavation is not required. The MRSSO will re-cover the tank when the inspection is completed (at no cost) unless it is determined that a pump-out is required. The tank inspection includes a visual inspection of the tank components and measurement of sludge and scum in the tank. Please do not pump tank before the re-inspection.

Classes of Sewage Systems Inspected:

Class 1-Earth Pit Privy, Composting Toilet...
Class 2-Greywater Pit
Class 3-Cesspool- Waste from a Class 1
Class 4-Septic Tank & Leaching Field
Class 5-Holding Tank

4. The septic re-inspection will include the following items:

- Determining location of all systems
- Measurement of separation distances to key lot features
- Visual inspection of tank structure
- Measurement of tank contents – **Please do not pump tank before inspection.**
- Visual inspection of bed
- Briefing the homeowner on proper system maintenance and operation.

5. A copy of the septic re-inspection report will be left on-site.

6. If you choose not to have the MRSSO conduct the re-inspection of your sewage system, please contact our office for more information regarding Third Party inspections. **The cost of these inspections is at the discretion of the Third Party Inspector and the cost is not covered under the Township program. Administration fees will apply.**

The primary role of the MRSSO, as the administrators of the re-inspection program, is to educate property owners about their onsite waste treatment system and any deficiencies with it. Our secondary role is to ensure that unsafe systems are reported to the appropriate Authority, based on the requirements of Part 8 of the Ontario Building Code. You, as the property owner, can expect the re-inspection, communication of results, and all inquiries to be dealt with in a professional manner.

Thank you in advance for your co-operation. We know you share the Township's desire to protect our water resources and ultimately the value of waterfront property around the lakes within the watersheds. Your participation in this program will assist in providing continued enjoyment of a clean, healthy waterfront environment for generations to come.

Yours Truly,



Eric Kohlsmith | Re-inspection Program Coordinator | 613-253-0006 ext. 256 | septic-inquiries@mvc.on.ca

Questionnaire

Please fill out as much information as possible, **as best as you can**, and return to the above address. Old septic or well records are excellent resources for the more technical questions. Mark any applicable boxes. If you select 'Other' please specify. Please use the space noted as '**Correction**' to correct any of the supplied information. On the reverse, please identify the location of your septic system and other property features. Please **sign** the form to verify the information that has been provided.

Property Owner	Auto Filled	<i>Correction – New Property Owner, Spelling of Name...</i>			
Mailing Address	Auto Filled	<i>Correction – New Mailing Address...</i>			
Telephone Number () ()	Alternate Number () ()	Email Address			
Re- Inspection Property Location	Auto Filled			Length of Ownership	Lake Name
				Auto Filled	
	Property Size		# Bedrooms	Floor Area	
Roll Number	Auto Filled				
Property Use	Residential <input type="checkbox"/>	Cottage/Seasonal <input type="checkbox"/>	Commercial <input type="checkbox"/>	Farm <input type="checkbox"/>	Other <input type="checkbox"/>
Directions to Property	Do you require assistance locating/excavating your tank?*				
	Yes <input type="checkbox"/>		No <input type="checkbox"/>		
General Location of Tank	* There is a maximum charge of \$40 for this service				
Sewage System Type	Class 1 <input type="checkbox"/> Privy(Outhouse)	Class 2 <input type="checkbox"/> Greywater pit	Class 3 <input type="checkbox"/> Cesspool	Class 4 <input type="checkbox"/> Septic Tank & Leaching Field	Class 5 <input type="checkbox"/> Holding Tank
Tank Information	Concrete <input type="checkbox"/>	Plastic <input type="checkbox"/>	Fiberglass <input type="checkbox"/>	Metal <input type="checkbox"/>	Sewage Pump Yes <input type="checkbox"/> No <input type="checkbox"/>
					Is Pump in Septic Tank? Yes <input type="checkbox"/> No <input type="checkbox"/>
Date of Last Pump out				Pump Out Frequency	
Greywater Pit Structure	Earth <input type="checkbox"/>	Rock <input type="checkbox"/>	Wood <input type="checkbox"/>	Other-	
Privy Pit Structure	Earth <input type="checkbox"/>	Rock <input type="checkbox"/>	Wood <input type="checkbox"/>	Other-	
Date System(s) Installed				Sewage System Permit #	
Water Source	Drilled <input type="checkbox"/>	Dug <input type="checkbox"/>	Lake <input type="checkbox"/>	Imported <input type="checkbox"/>	Drinking Water Treatment Yes <input type="checkbox"/> No <input type="checkbox"/>
				Type of Treatment	

Participant Signature: _____ Participant Name: _____
(Signature) (Please Print)

Appendix B *Description of a Site Inspection*

Tank Inspection

The septic tank is located first by visually inspecting the property for signs of a system, using metal probes and information provided by the property owner. Once the tank was located both the inlet and outlet access ports are uncovered, and the soil placed on a tarp for tidiness. The lids are removed using a crow bar to 'crack' it open, or break the seal which forms over time if it is a concrete lid. The lids are lifted off with a 'J-hook', a long handled hook which allows two people, on either side of the lid to safely and easily lift off the heavy lid.

A visual inspection of the tank condition is made, and a measurement of the solids content is taken. A sludge judge is used for to take the measurement and is essentially a clear plastic tube with a ball valve on the bottom and 1 foot increments marked on the side of the tube. The judge is lowered into the first chamber of the tank and a cross section of the contents in the tank is obtained. The judge is then pulled out of the tank and the depth of the solids is noted. Often the ball valve plugs up and the contents run out of the bottom. In that case the solids in the bottom are felt by a change in density and the depth is noted.

A visual inspection of the baffles is done as well as a check that the partition wall is in working order. If the solids in the second chamber are as high as the first chamber it can be an indication that the partition wall has suffered some damage. We also check for roots in the tank, and look for the presence of effluent filters before replacing the lids and restoring the area to its original condition.

One of the most frequent questions a homeowner asks is "How often should I pump my tank?" Most government documents and information publications suggest that a septic tank should be pumped out every 3-5 years. Another resource is the OBC, which requires that a septic tank be pumped out when the sludge and scum occupy 1/3 of the working capacity of the tank (8.9.3.4.(1)). This will prevent the sewage from traveling too quickly through the septic tank, not allowing the solids and fats to properly separate from the effluent. To give the homeowner, on an individual basis, an estimation of the frequency for pumping out their septic tank, the depth of sludge and scum was measured during the tank inspection.

Estimated Septic Tank Pumping Interval in Years

Tank Size (L)	Household Size (Number of People)									
	1	2	3	4	5	6	7	8	9	10
1,890	5.8	2.6	1.5	1.0	0.7	0.4	0.3	0.2	0.1	
2,840 (≈2,700)	9.1	4.2	2.6	1.8	1.3	1.0	0.7	0.6	0.4	0.3
3,790 (≈3,600)	12.4	5.9	3.7	2.6	2.0	1.5	1.2	1.0	0.8	0.7
4,730	15.6	7.5	4.8	3.4	2.6	2.0	1.7	1.4	1.2	1.0
5,670	18.9	9.1	5.9	4.2	3.3	2.6	2.1	1.8	1.5	1.3
6,620	22.1	10.7	6.9	5.0	3.9	3.1	2.6	2.2	1.9	1.6
7,570	25.4	12.4	8.0	5.9	4.5	3.7	3.1	2.6	2.2	2.0
8,520	28.6	14.0	9.1	6.7	5.2	4.2	3.5	3.0	2.6	2.3
9,460	31.9	15.6	10.2	7.5	5.9	4.8	4.0	4.0	3.0	2.6

Visual Re-Inspection

The visual re-inspection consists of a walk around the property looking for water sources, sewage systems or any suspicious things such as pipes to the surface. Measurements are taken between the sewage system components and water bodies, as well as to water sources. A GPS reading is taken at the shoreline, all sewage system components, and wells.

The operation or failure of the bed was assessed by looking for conditions of lush vegetation, wet areas, surface discharge, tree or root growth, side slopes and erosion control.

Appendix C Ontario Building Code References

System Classification

Class 1 – all privies (portable, earth pit, vault, chemical, incinerating and composting).

Class 2 – a greywater system

Class 3 – a cesspool

Class 4 – a leaching bed system

Class 5 – a holding tank

8.1.2.1(1)

Minimum Clearances for Classes 1, 2 and 3

8.2.1.5(1)	Horizontal distance (m) from a well with watertight casing to a depth of at least 6m	Horizontal distance (m) from a spring used as a source of potable water or well other than a well with watertight casing to a depth less than 6m	Horizontal distance (m) from lake, river, pond, stream, reservoir or spring not used as a source of potable water	Minimum horizontal distance to property line
<i>Earth Pit Privy</i>	15	30	15	3
<i>Privy Vault</i> <i>Pail Privy</i>	10	15	10	3
<i>Greywater System</i>	10	15	15	3
<i>Cesspool</i>	30	60	15	3

Minimum Clearances for Treatment Units

Structure	1.5m
Well	15m
Lake	15m
Pond	15m
Reservoir	15m
River	15m
Spring	15m
Stream	15m
Property Line	3m

Minimum Clearances for Distributing Piping

Structure	5m
Well with a watertight casing to a depth of 6m	15m
Any other well	30m
Lake	15m
Pond	15m
Reservoir	15m
River	15m
A spring not used as a source of potable water	15m
Stream	15m
Property Line	3m

Minimum Clearances for Holding Tanks

Structure	1.5m
Well with a watertight casing to a depth of 6m	15m
Any other well	15m
Spring	15m
Property Line	3m

Appendix D Program Authority

Voluntary

The *Building Code Act* (BCA)(1992), and Part 8 of the Ontario Building Code (OBC) regulates the design, construction, operation and maintenance of sewage systems. The OBC however, has powers which only extend to those systems with a design flow of less than 10,000 Litres/day, serving no more than one lot. Systems which do not fall within these parameters are regulated by the Ministry of the Environment, under the *Ontario Water Resources Act*.

The authority for the Mississippi Valley Conservation and Rideau Valley Conservation Authority, and other enforcement agencies, to conduct inspections of potentially unsafe sewage systems is provided by BCA s.15.9(1). This act provides inspectors with the right of entry onto land “to determine whether a building is unsafe”, under part 1 of the OBC an on-site sewage system is treated as a building and BCA s.15.9(3) deems a sewage system to be “unsafe” if it is not maintained or operated in accordance with the BCA and the OBC. BCA s.18 outlines the powers that an inspector may exercise for the purposes of carrying out an inspection. If the inspector finds the system to be “unsafe”, he or she may make an order under BCA s.15.9(4) setting out the steps necessary to render the building safe, and may require that the steps be taken within a certain period of time. This enforcement for the Tay Valley Township will be carried out by their Chief Building Official (CBO) or his/her appointed representative.

Further authority will be given with amendments proposed to the BCA under the *Clean Water Act, 2005*, this act was passed on October 18, 2006 and will help protect drinking water sources for all Ontarians.

A visual inspection of the sewage system can determine if the system is “unsafe”, defined in OBC 8.9.1.2 as a breakout of effluent onto the surface, contamination of a well or of a surface water source. Clearance distances to the well and surface water from the sewage system can also be verified by a visual inspection. To determine if the system is being maintained and operated in accordance with the OBC and the BCA, a thorough inspection of the tank is necessary.

Mandatory

See Tay Valley Township By-Law # 2012-009

Tay Valley Township:

Voluntary Septic Re-Inspection Property Selection Protocol

Contents

<i>Purpose:</i> _____	38
<i>Point Form Overview</i> _____	39
<i>Detailed Standard Operating Procedure</i> _____	40
<i>Property Selection Example:</i> _____	44
<i>Identified Issues and Corrective Steps:</i> _____	45

6 Purpose:

The following protocol was developed to describe the current property selection procedure and identify any issues with the procedure. The Protocol shall be updated when required or at least once a year as indicated in the file name

Property Selection Protocol mm-dd-yyyy.docx

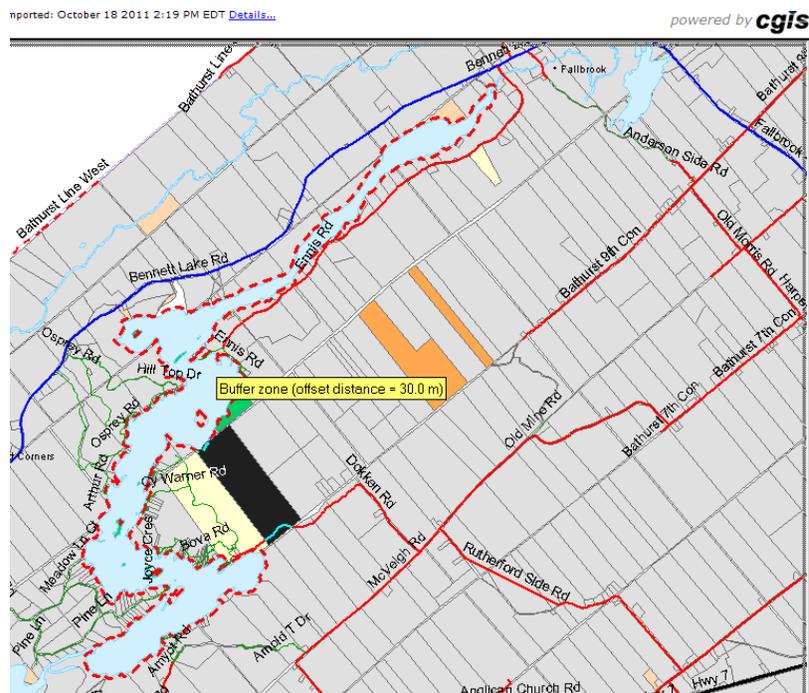
7 Point Form Overview

Instructions on how to select targeted properties using SLIM:

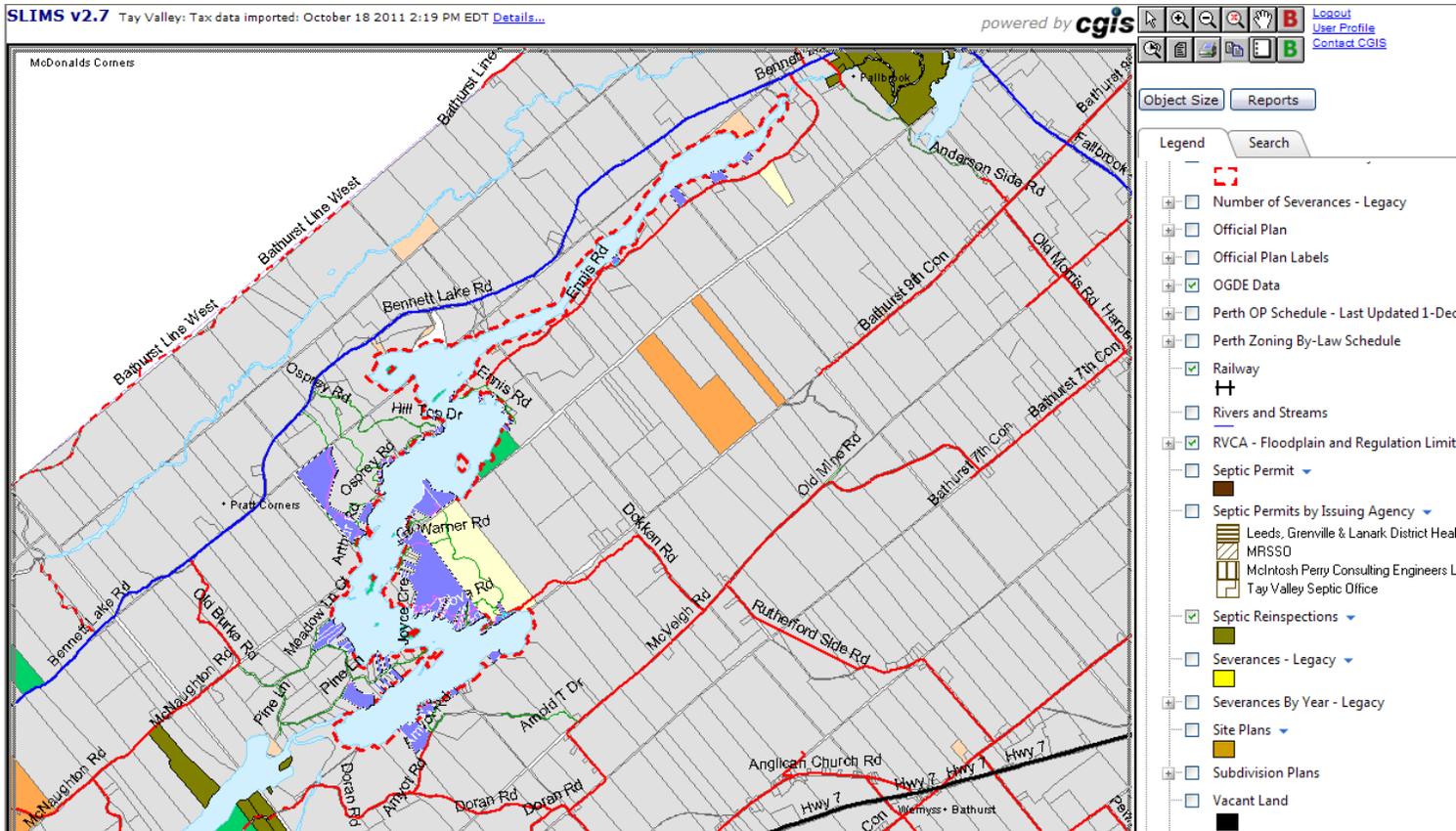
1. Start in May of current Year
2. Select a lake using the Lake Rotation Table
3. Log into SLIMS and create 30 meter buffer around a selected lake
4. Highlight desired layer and select within. i.e. Re-inspection...
5. Run mail list report (or custom report) and download into and Excel Workbook
6. Use roll numbers from worksheet to conduct search for properties that do not meet search criteria
7. Repeat steps 3 thru 6 to obtain the following information:
 - 1) septic permit >10 year ago
 - 2) has no permit
 - 3) has not been re-inspected
 - 4) the property is not vacant
8. Complete the same process for other lakes.
9. Sort worksheets from step 7 to create Master Mail-out worksheet.

8 Detailed Standard Operating Procedure

- Starts in May of current year
- Septic permit information and septic re-inspections are updated by CGIS twice annually – generally January and July
- The selection process starts with the lake rotation table.
- After lakes are selected the process is based on information provided to CGIS
- This buffer selection process is based on one provided by CGIS upon our request for assistance and is as follows:
 - Log into SLIMS and zoom to whatever Lake you are working on
 - Ensure the SLIMS Selection Mode is set to Intersection:
 - Right click on the map – Help – Preferences
 - Change Selection Mode to Intersection, if it's not already set
 - Turn on the Septic Reinspections layer
 - Select the lake you'd like to find the properties on
 - Create a buffer of, for example, 10 meters – 30m used - if that's far enough.



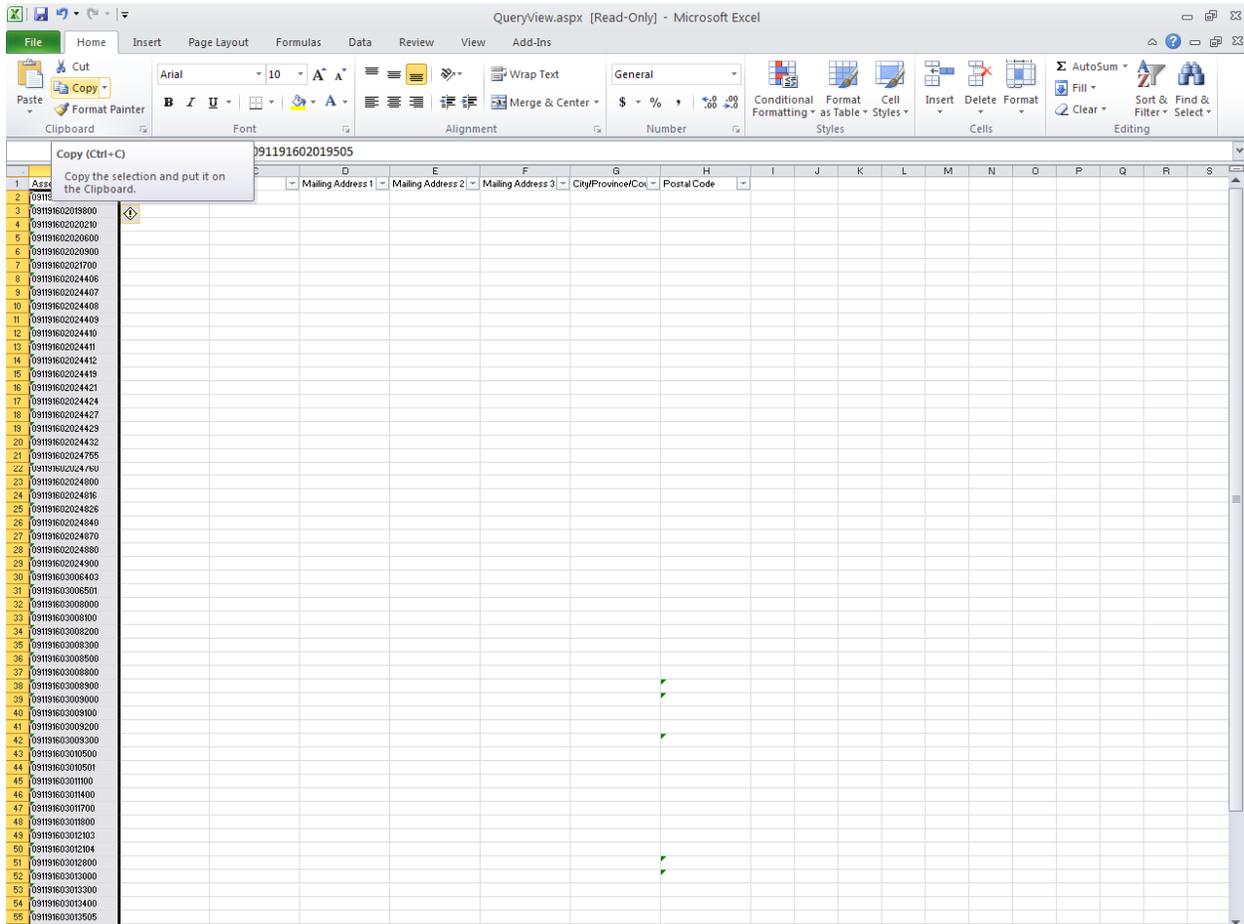
- Select the buffer:
 - Right click on the map – Select – Within



- Highlight the Septic Reinspection layer from the list, press OK (this will highlight all the properties that already have inspections done on that lake)

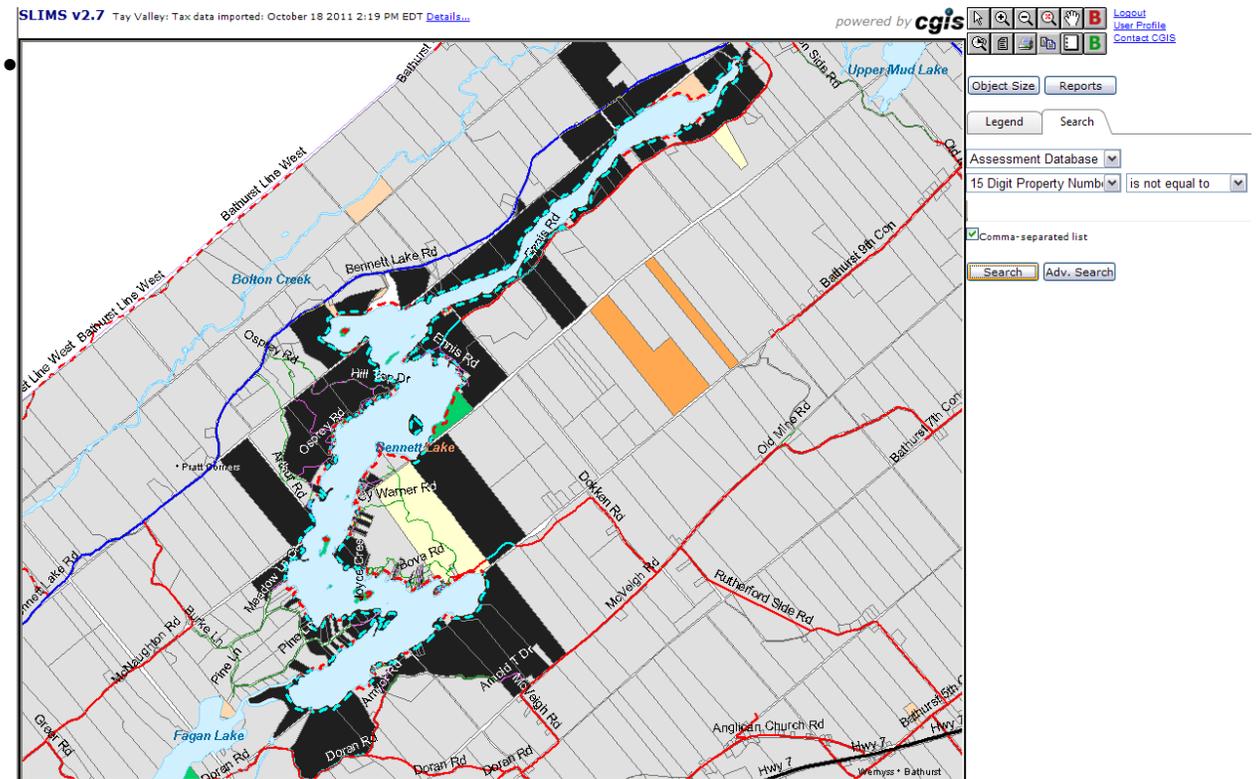
- Run a Mail list report, or custom report

- Click the download results, and open in Excel
- Highlight column A (15 digit property numbers) and COPY



- Back in SLIMS
- Highlight the buffer again
 - Right click on the map – Select – Within
 - Highlight the Parcels layer from the list, press OK
- Under Search – paste the 15 digit property number list in the search box
 - Change the search criteria from “Contains” to “is not equal to”
- Check off the “comma separated list” box

- Press the Search button
- When the Search Results window comes up, check off the “Only show records that link to the selected features on map” box
- The Search Results will now display ONLY the parcels on that lake that DO NOT have a septic inspection registered with that 15-digit property number”



- The process is repeated to create lists based on the following parameters:
 - Total Parcels
 - Septic Permit
 - Re-Inspection
 - MPAC Property Codes (Vacant Property)
- Lists are then sorted against each other to obtain the end result – waterfront properties that either have a septic permit that is 10yrs or greater or does not have permit information, has not been re-inspected in the past, and is not vacant.
- The process is completed for the other lakes.

A Master Mail out Excel Workbook is then created from the individual Excel Workbooks.

9 Property Selection Example:

For example our search for Bennett lake resulted in:

- 214 total parcels within 30m of the lake (waterfront)
- 180 parcels either have a septic permit that is 10yrs or greater or does not have permit information
- 128 parcels have not been re-inspected in the past
- 91 properties are not vacant (MPAC property codes are used to determine if a property is vacant)

***Therefore on Bennett Lake, 91 parcels are waterfront properties that either have a septic permit that is 10yrs or greater or does not have permit information, has not been re-inspected in the past, and is not vacant.**

10 Identified Issues and Corrective Steps:

The following table lists current issues and corrective steps the MRSSO has identified, with the current selection process. An amended protocol will be created once all comments have been received.

Current Procedure	Identified Issue	Corrective Step
<i>Starts in May of current year</i>	Timeline to narrow	Selection process should begin in March to allow for cross-referencing of hard copy material – i.e. property files
<i>Septic permit information and septic re-inspections are updated by CGIS twice annually – generally January and July</i>	Report on Roll Numbers that do not link to a property should be requested to ensure accuracy of data	<ul style="list-style-type: none"> ○ Requested report from CGIS on Oct. 19/11 on incorrect Roll numbers to be researched and corrected by the next CGIS update (January 2016). ○ Have roll numbers auto filled in database to prevent entry error. ○ Research cost of an online CGIS based data form for permit and re-inspection entry. ○ Create a report of properties with septic permits but no permit number – work with Tay Valley to fill in gaps – co-op student may be utilized - We will look into ability to have student assistance for task.
<i>After lakes are selected the process is based on information provided to CGIS</i>	Property selection currently is not accurate	Other solutions should correct issue
<i>Right click on the map – Select – Within</i>	It has been noted that this can result in varying results when selecting – Bennett lake varied from 214 to 208 parcels within the buffer.	Consulted with CGIS on Oct. 19/11 regarding issue.
<i>Lists are then sorted against each other to obtain the end result...</i>	Lists are sorted using the sort A-Z function in Excel and then duplicates are removed manually – the manual removal can cause an inaccurate list.	<ul style="list-style-type: none"> ○ Two identical files should be created and items sorted and removed and then compared for accuracy ○ Research other means in sorting or gathering data to eliminate the manual procedure.

