

Sewage System FAQ



DEFINITION OF SEWAGE SYSTEM

Sewage system means,

- (CLASS 1) a chemical toilet, an incinerating toilet, a recirculating toilet, a self-contained portable toilet and all forms of privy, including a portable privy, an earth pit privy, a pail privy, a privy vault and a composting toilet system,
- (CLASS 2) a greywater system,
- (CLASS 3) a cesspool,
- (CLASS 4) a leaching bed system, or
- (CLASS 5) a system that requires or uses a holding tank for the retention of hauled sewage at the site where it is produced before its collection by a hauled sewage system,

where these,

- have a design capacity of 10,000 litres per day or less,
- have, in total, a design capacity of 10,000 litres per day or less, where more than one of these are located on a lot or parcel of land, and
- are located wholly within the boundaries of the lot or parcel of land on which is located the building or buildings they serve.

SEWAGE SYSTEM CLASS

- Class 1 (outhouse, composting toilets....)
 - exempt from requiring a permit
 - Construction standards must be respected
- Class 2 (greywater system)
 - Permit required
- Class 3 (cesspool)
 - Most commonly used for Composting Toilet discharge
 - Also used for cleaning outhouse pit
 - Permit required
- Class 4 (Septic Tank and Leaching Field)
 - Most common type of system
 - Conventional to Advance treatment of bacteria and nutrients
 - Permit required
- Class 5 (Holding Tank)
 - Must meet one of 4 criteria before approved for installation
 - Permit required

PERMIT PROCESS

WHAT TYPE OF WORK REQUIRES A PERMIT?

- The installation of a new system on a vacant property
- The entire replacement of an existing system
- The repair or alteration to an existing (changing pipes, tank(s), adding mantle to an existing system).
- Rule of thumb - if a sewage system component is exposed, cut or replaced a permit may be required. Contact the local Principal Authority for more information.

WHO CAN DESIGN/INSTALL?

- Under the Building Code there are four options:
 1. Property Owner is exempt from qualification
 - a. may design and install a sewage system on **their own property**.
 2. A Sewage system installer is an individual with qualifications as outlined in the Building Code are registered with the Ministry.
 - a. Installers may **only design for themselves**.
 3. A Qualified Designer is an individual with qualifications as outlined in the Building Code and are registered with the Ministry.
 4. Professional Engineer or Architect may design a system and are exempt from qualification and registration with the Building Code.

HOW TO DETERMINE IF SOMEONE IS QUALIFIED?

- Qualified Designers and Installers are required to write and pass standardized exams administered by Humber College on-behalf of the Ministry of Municipal Affairs.
- After passing the required exams, the practitioner shall register their Building Code Identification Number (BCIN) through the Ministries Qualification and Registration Tracking System registration program (QuARTS)
 - QuARTS is a public registry that can be searched using an individuals name, business name or BCIN number.
 - If an individual is qualified and has paid their registration fee, they will appear as current in QUARTS
 - QuARTS - <https://www.iaccess.gov.on.ca/BCINSearchWeb/search.html>

TYPES OF INSPECTIONS?

- readiness to *construct the sewage system*
 - Prior to approval – “First”
 - Review of sewage system design with a site visit to inspect soil test pits and observe site conditions, and
 - After approval – “Sub-Grade”
 - Inspect excavated area to ensure it confirms to approval

- substantial completion of the installation of the *sewage system* before the commencement of backfilling,
 - all components are installed and connected
- substantial completion of site grading
 - The system has been backfilled and graded to meet the requirements of the Building Code
 - This inspection is “Additional” under the Building Code and therefore not completed by all Principal Authorities

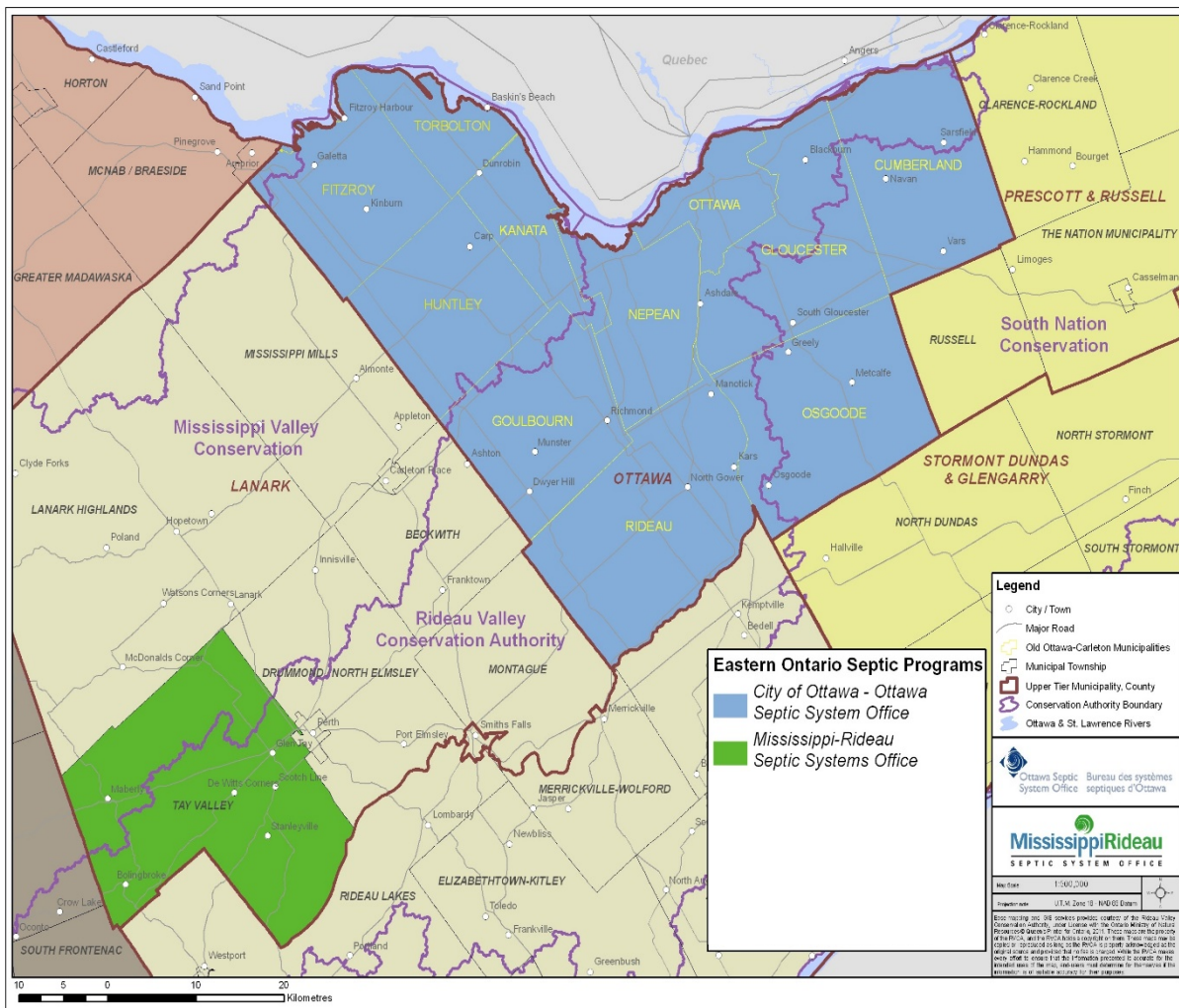
WHO APPROVES SYSTEMS

- The approval of sewage systems depends on the municipality you are located in. Municipalities can enforce the provisions of the Act and the building related to sewage systems, or enter into an agreement with a Principal Authorities to delegate the enforcement of the provisions of this Act and the Building Code related to sewage systems
- A Principal Authority is:
 - the Crown,
 - the council of a municipality,
 - an upper-tier municipality that has entered into an agreement under subsection 3 (5), 6.1 (1) or 6.2 (1),
 - a board of health that has been prescribed for the purposes of subsection 3.1 (1) or has entered into an agreement under subsection 6.1 (2) or (3) or 6.2 (2),
 - a planning board that has been prescribed for the purposes of subsection 3.1 (1), or
 - a conservation authority that has been prescribed for the purposes of subsection 3.1 (1) or has entered into an agreement under subsection 6.2 (2);

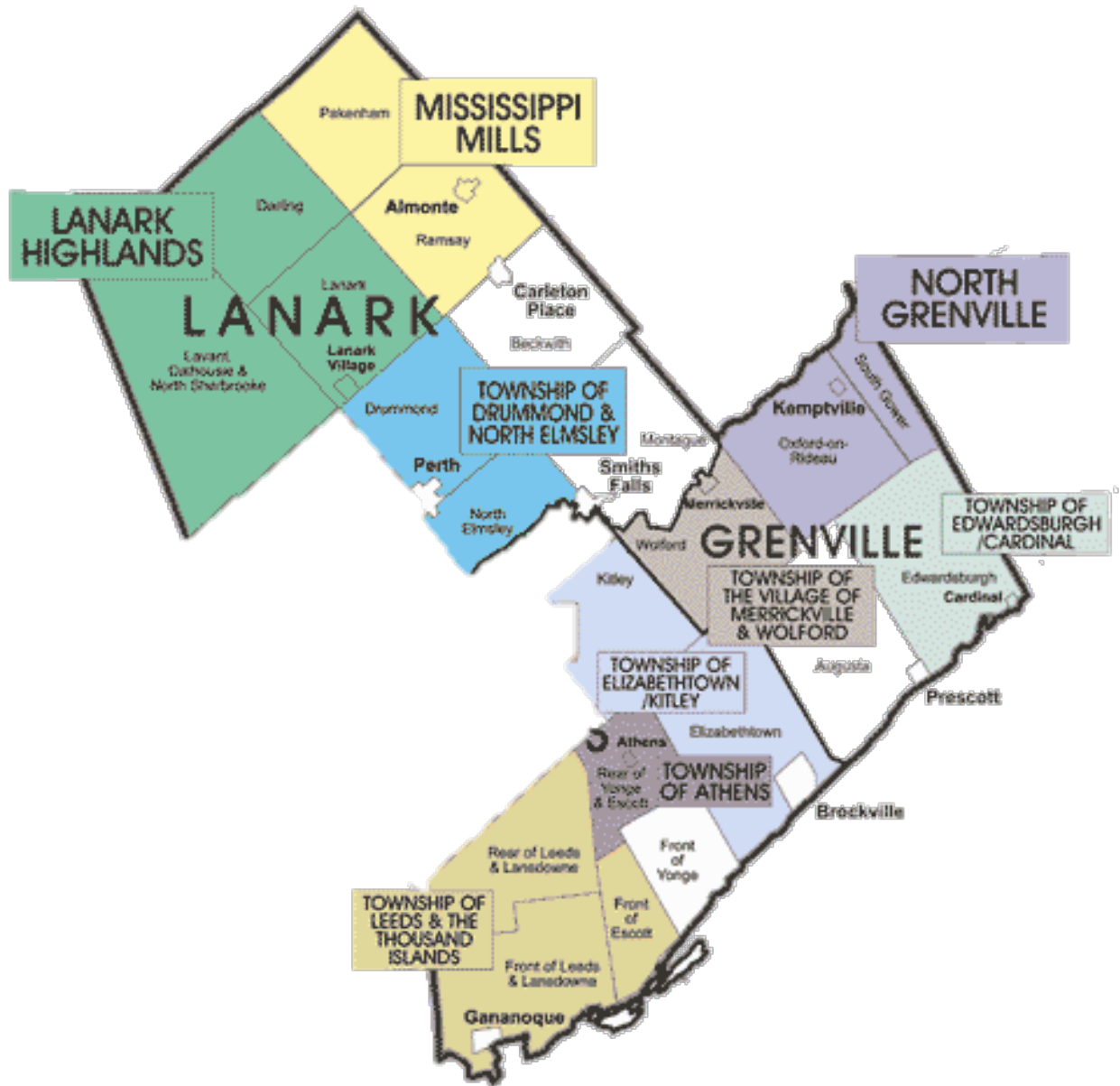
PRINCIPAL AUTHORITY FOR SEWAGE SYSTEMS BY AREA:

- Location: City of Ottawa
 - Principal Authority: Ottawa Septic System Office (Rideau Valley Conservation Authority)

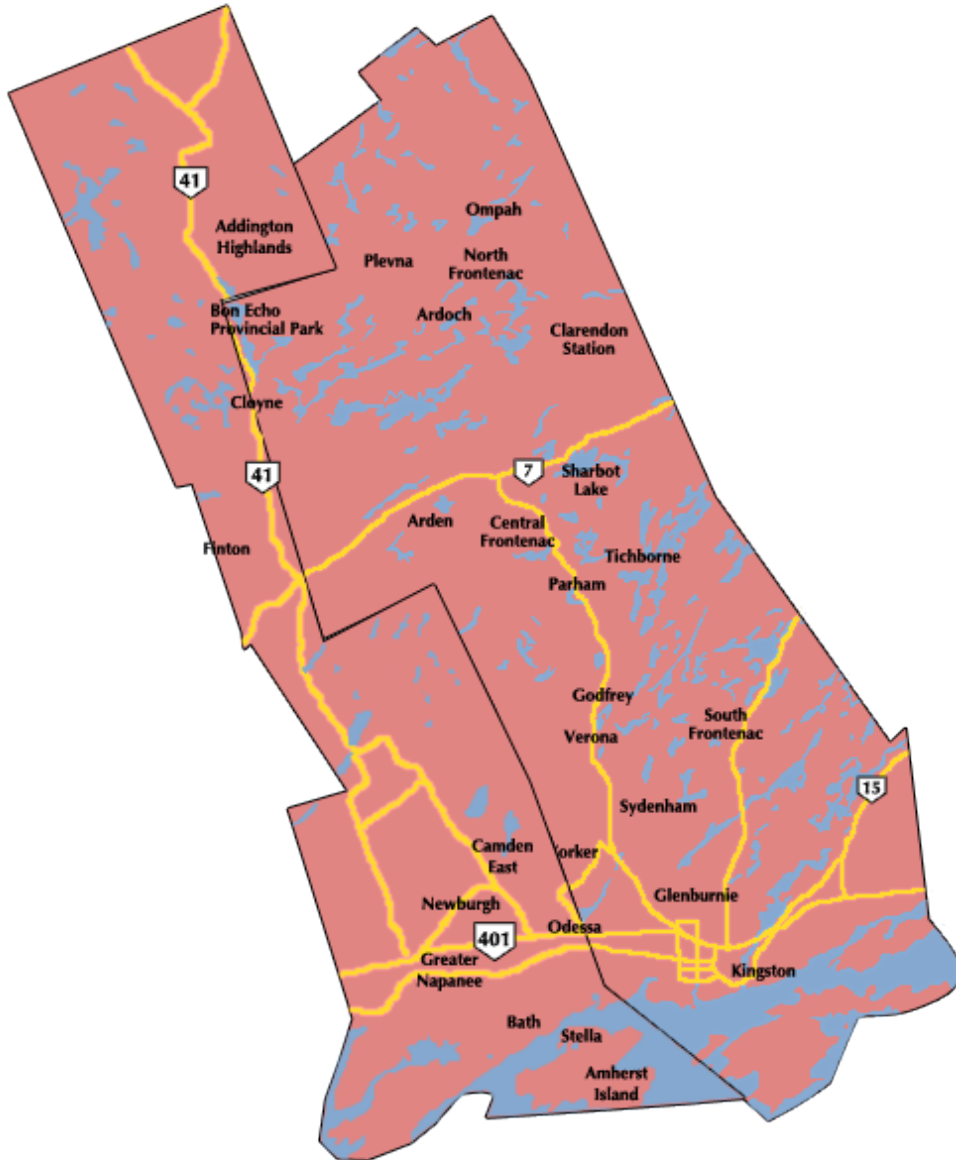
- Location: Tay Valley Township
 - Principal Authority: Mississippi Rideau Septic System Office (Mississippi and Rideau Valley Conservation Authority)



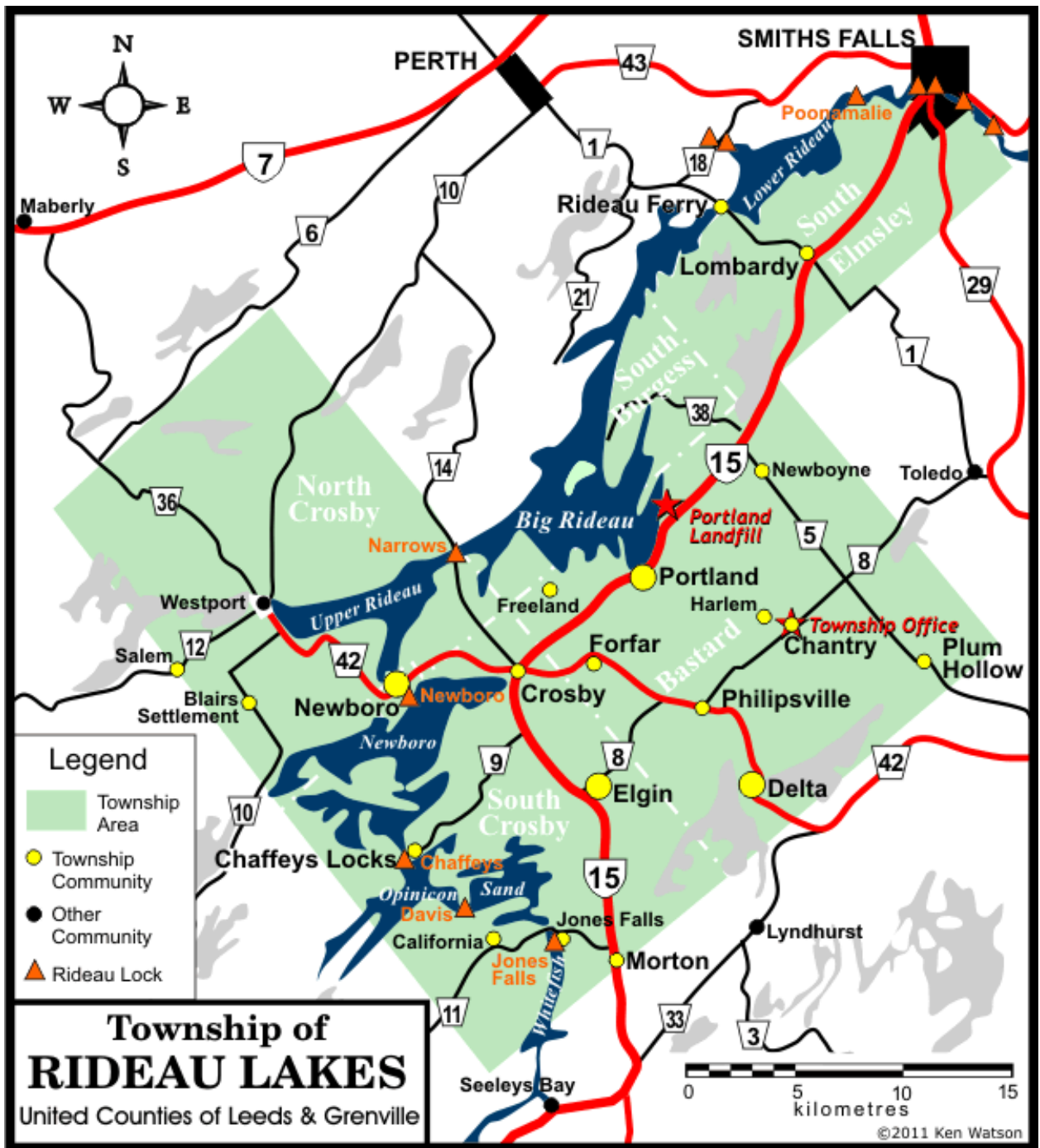
- Location: Lanark County (except for Tay Valley) and United Counties of Leeds and Grenville (except Rideau Lakes Township)
 - Principal Authority: Leeds Grenville Lanark District Health Unit



- Location: Kingston, Frontenac County, Lennox and Addington County
 - Principal Authority: KFL&A Public Health



- Location: Township of Rideau Lakes
 - Principal Authority: Township of Rideau Lakes



SEPTIC SYSTEMS

WHAT IS THE DIFFERENCE BETWEEN A CONVENTIONAL SYSTEM AND AN ADVANCED TREATMENT UNIT?

- Conventional systems utilize pre-treatment tank (septic tank) and distribution field, whereas an advance system utilizes a pre-treatment tank, treatment unit (aerobic or filtration) and a smaller distribution field.
- In conventional septic systems, 30–50 percent of the wastewater treatment is done in the septic tank and 50–70 percent is done in the soil (ref. US EPA, Chapter 4.6.1)
- In advanced treatment systems, 90 percent of the wastewater treatment is done in the pre-treatment tank and advanced treatment unit and 10 percent is done in the soil (ref. US EPA, Chapter 4.6.1).
- For more information visit - <https://www.rvca.ca/rvca-publications/resources/>

WHEN ARE ADVANCED TREATMENT SYSTEMS REQUIRED?

- Based on sub-division (Tayside Estates) or local by-law requirements
- Insufficient area and/or soil on an existing lot
- When an environmentally conscious property owner wants a longer lasting system with a smaller foot print – area and environmentally

WHAT ARE THE REQUIREMENTS FOR SEPTIC SYSTEMS ON ISLANDS?

- The only difference with a system on an island is the Principal Authority may require a pumping agreement for a class 4 (septic tank systems) to ensure the system can be maintained and operated correctly. The building code requires pumping agreements for a Class 5 (holding tank) systems, regardless of location.

WHAT IS THE LIFE EXPECTANCY OF SEPTIC SYSTEMS?

- All sewage systems will fail. Naturally occurring biomat builds up between the sand stone layer in a septic bed. Initially biomat provides treatment of the effluent, but over time will thicken and turn black, clogging the soil, which prevents effluent from percolating into the soils.
- Conventional systems:
 - Residential – 20 to 30 years
 - Seasonal – 20+ years – depending on the use and biomat accumulation
- Advance treatment systems:
 - Residential and seasonal – 20+years – believed systems will last much longer since 80-90% of treatment is taking place in the unit and not the soil. Biomat development is reduced and therefore the soil clogging potential is drastically reduced.

SEPTIC TANK ADDITIVES

- The Mississippi Rideau Septic System Office (MRSSO) does not recommend the use of additives in a sewage system. The proper maintenance and operation of a system is sufficient for a functional system. If an issue arises during regular maintenance or operation, the cause should be identified and corrected.

PUMPING FREQUENCY FOR SEPTIC SYSTEMS ON SEASONAL AND ON PERMANENT PROPERTIES?

- The experience of the MRSSO is that ALL systems, regardless of use, generally need to be pumped every 3 to 5 years.
- Although seasonal systems have much less use than residential, the lack of use is the cause for frequent pumping. With the lack of use, especially during winter months, the bacteria in the tank goes through periods of dormancy and therefore material will build up in the tank instead of breaking down.

WHAT ARE THE MOST COMMON SEPTIC SYSTEM PROBLEMS?

- The most common problem the MRSSO encounters during a re-inspection:
 - Class 1 – outhouse pits not sealed at the base, composting toilet drainage directed to the surface of the ground
 - Class 2 – greywater directed to the surface of the ground
 - Class 4 – not being pumped out, baffles missing, improper vegetative cover
 - Class 5 – no high-level alarm, non-confirming greywater pits,

WHAT CAN A PROPERTY OWNER LEARN ABOUT THEIR SYSTEM BY BEING PRESENT DURING A PUMP-OUT?

- A property owner can learn:
 - What the normal operating level of their system is – this helps with determining if there is an issue down the road.
 - How the system operates.
 - If there are issues with material being put in the system – hygiene products, cigarette ashes, excessive toilet paper, fats/oils and or greases ...
 - Assess the operation of the field bed – effluent draining back into the tank
 - Assess the condition of the tank – concrete corrosion, baffles, partition wall.

SEPTIC REINSPECTION

VOLUNTARY VS MANDATORY SEPTIC SYSTEM?

- Two types of Mandatory Maintenance Inspection programs
 - Mandatory
 - Source Water Protection areas and Lake Simcoe Within 100 metres of the Lake Simcoe shoreline and within 100 metres of other lakes, ponds and permanent rivers or streams in the Lake Simcoe watershed, with some exceptions, and
 - In “vulnerable areas” located in source water protection areas
 - Two phase inspection process

- Discretionary
 - Principal authorities have authority to establish
 - Applies to all on-site sewage systems in the area affected by the program
 - Class 1 to 5 sewage systems
 - Inspection process developed by Principal Authority
- Voluntary Programs
 - Property owners are not required to participate
 - Program can be conducted and administered by variety of interest groups
 - Inspection process developed by program administrator

WHICH SEPTIC REINSPECTION PROGRAM IS MORE EFFECTIVE/LOCATES MORE PROBLEMS?

- Mandatory system is more effective as all properties and all systems are inspected.

VEGETATIVE BUFFER

HOW DOES A VEGETATIVE BUFFER HELP?

- Vegetative buffer around and downstream of the sewage system help to remove or attenuate nutrients from the sewage system – along with all the others benefits of a vegetative buffer.

BUILDING CODE

RECENT CHANGES IN THE BUILDING CODE WHICH RELATE TO SEPTIC SYSTEMS?

- Currently the Building Code is going through an amendment process – which is generally completed every 5 years.
- The confirmed changes to Part 8 (Sewage Systems) deal with the integration of a “gravel-less”(a u-shaped chamber used in the place of stone and pipe) conventional bed system into the code.
 - Separation distances and/or treatment standards will remain unchanged.
 - Additional proposed changes can be viewed on the Ministries website: <http://www.mah.gov.on.ca/Page7393.aspx>

WHAT ACTION MIGHT TRIGGER A REVIEW OF YOUR PROPERTY’S SEPTIC PERMIT?

- Review of the performance of a sewage system is required:
 - If there is an increase in the number of bedrooms, fixture units (sinks, showers, toilets....) or 15% (or more) increase in finished floor area, over and above the current foot print.
 - When a sewage system does not comply with Section 8.9 of the Building Code – Maintenance and Operation.
 - These reviews are generally complaint driven.