
NORTH BAY-MATTAWA CONSERVATION AUTHORITY

Mandatory Maintenance Inspection Program



Procedural Document

December 2014

MANDATORY MAINTENANCE INSPECTION PROGRAM OVERVIEW

Onsite sewage systems (commonly known as septic systems) are intended to collect, treat, and dispose of sewage. The establishment, operation and maintenance of a septic system is a prescribed drinking water threat under O. Reg. 287/07 of the Clean Water Act. When located in vulnerable areas where the threat could be significant, septic systems regulated by the Building Code are now subject to mandatory maintenance inspections once every five years to ensure they are in substantial compliance with the operation and maintenance requirements (OBC; 8.9).

Systems with a design flow of up to 10,000 litres/day are subject to regulations under Ontario's Building Code Act and Building Code (O. Reg. 350/06) and are overseen by local principal authority which is the NBMCA in the District of Nipissing and The District of Parry Sound. Any onsite sewage system with a design flow larger than 10,000 litres/day must be operated under terms specified in an environmental compliance approval administered by the Ministry of the Environment and Climate Change. Large treatment systems typically service facilities such as schools, campgrounds and larger businesses.

The Ontario Building Code (Reg. 350/06) was amended by Regulation 315/10 to establish and govern onsite sewage system maintenance inspection programs to support the implementation of the Clean Water Act and the Lake Simcoe Protection Act. The new provisions for mandatory inspection programs in Division C, Section 1.10 came into force in January 2011. This section of the Building Code covers three sewage system maintenance inspection programs:

- a) Mandatory maintenance inspection programs for vulnerable areas identified in an assessment report or source protection plan where a sewage system is or would be a significant drinking water threat, as part of the implementation of the Clean Water Act.
- b) Mandatory maintenance inspection programs for specific sections of the Lake Simcoe shoreline and watershed, as part of the implementation of the Lake Simcoe Protection Plan.
- c) Discretionary maintenance inspection programs, where the principal authority can choose to designate part or its entire jurisdiction as requiring a periodic maintenance inspection.

The focus of this section is Mandatory maintenance inspections for vulnerable areas for the protection of drinking water sources. Guidelines for conducting maintenance inspection programs are provided Appendix 1: Onsite Sewage System Maintenance Inspections (MMAH 2011).

Maintenance inspections can be undertaken by inspectors appointed by the principal authorities (the local agency charged with enforcement of legislation related to small onsite sewage systems governed by the Ontario Building Code; the NBMCA in Nipissing and Parry Sound Districts) only. The details of the inspection procedure are at the discretion of the agency conducting the program.

With respect to the establishment and administration of mandatory sewage inspection programs for vulnerable areas, the Ontario Building Code Division C, Section 1.10.2.3. specifically states:

- (1) Subject to Article 1.10.2.5., an inspector shall inspect all sewage systems located in whole or in part in the areas set out in Sentence (2) for compliance with the requirements of section 8.9 of Division B.
- (2) The areas referred to in sentence (1) are:
 - “(b) areas within a vulnerable area that are located in a source protection area and that are identified in the most recent of the following documents as the areas where an activity described in sentence (4) is or would be a significant drinking water threat:
 - i. The assessment report for the source protection area, as initially approved under the Clean Water Act, 2006 or as most recently approved following any updating under the Act, or
 - ii. The source protection plan for the source protection area, as initially approved under the Clean water Act, 2006 or as most recently approved following any amendments or reviews under the Act.”

The specific areas were outlined and defined in the North Bay-Mattawa Source Protection Area; Assessment Report was approved and posted on the Environmental Registry on May 30, 2011.

DETERMINING AREAS SUBJECT TO MANDATORY MAINTENANCE INSPECTIONS

Sewage systems subject to mandatory maintenance inspections are those located where they are or would be a significant drinking water threat. This determination considers whether the system is in a vulnerable area, the vulnerability score at the system’s location, and the circumstances related to the system. In most cases, septic systems are considered a significant drinking water threat only in wellhead protection areas (WPAs) and/or intake protection zones (IPZs) with a vulnerability score of 10. These areas are relatively small. However, there are situations in which septic systems may contribute to an existing issue of impaired water quality and the resulting vulnerable area could be quite extensive. (i.e. issue contributing area of Callander Bay causing blue green algae outbreaks) In both cases, all sewage systems subject to the program must be inspected.

The North Bay-Mattawa Source Protection Authority (SPA) coordinated the development of the Assessment Report and the Source Protection Plan (SP Plan) to protect the sources of five municipal drinking water systems in the watershed and the cluster of individual wells in Trout Creek.. The five municipal drinking water systems are Callander intake, Powassan wells, South River intake, Mattawa wells, and North Bay intake. The municipal drinking water systems where septic systems are considered a significant drinking water threat and where a vulnerability score of 10 was assessed are Callander intake and Powassan wells. The original assessment report identified 831 existing on-site sewage systems located in the Municipalities of Callander, Chisholm, East Ferris, Powassan, Trout Creek and North Bay that were affected by the Mandatory Maintenance Inspection Program (MMIP).. In 2014 the Ministry of the Environment made a decision approving Powassan’s request to remove Trout Creek properties from the source protection plan and the assessment report. After the removal of the Trout Creek properties there remained 601 existing sewage systems subject to the mandatory maintenance inspection program.

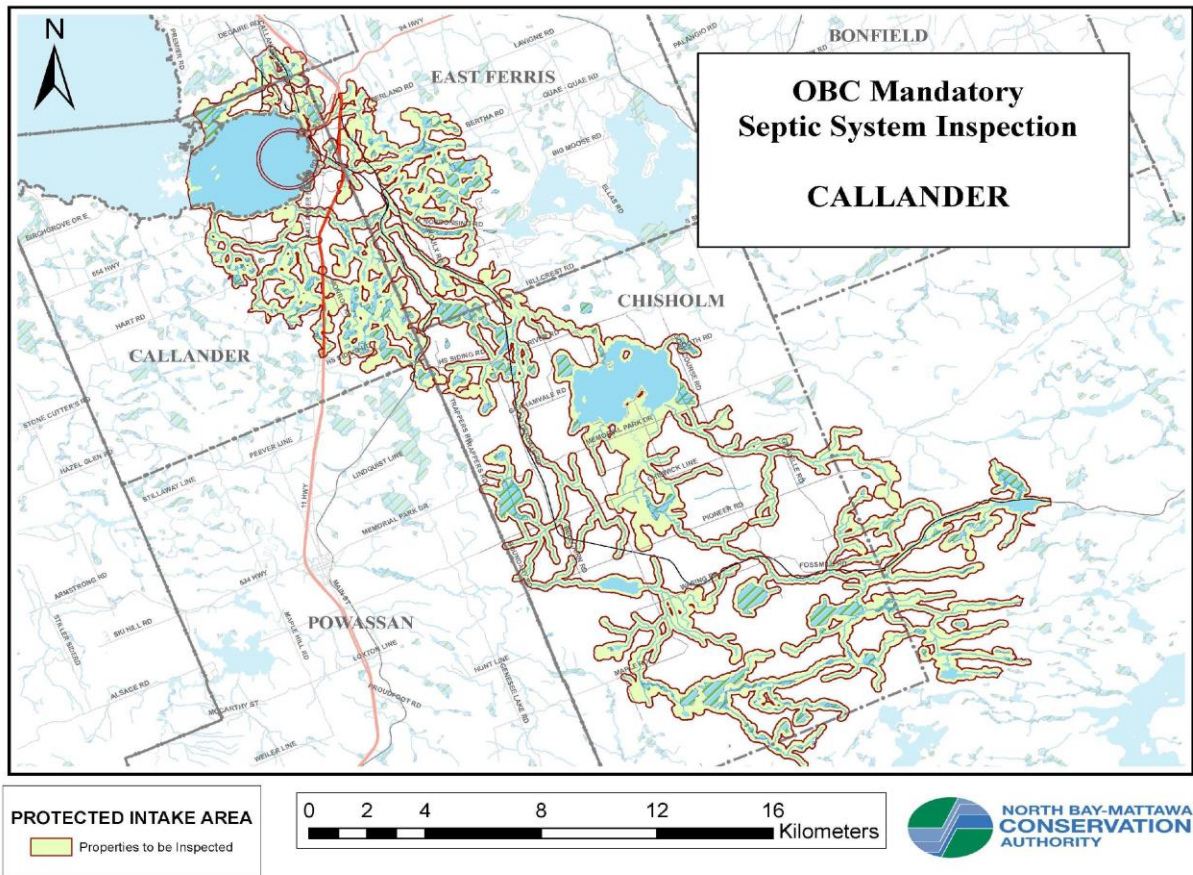
Table 1; Below identifies the number of properties that were identified as being wholly or partially within the Source Protection areas as identified in the updated Assessment Report. The NBMCA maintains a map of the source protection areas identifying the areas that are subject to the MMI program. The electronic version of the map is scalable to a resolution that assists in identifying whether the sewage system on a specific property is within the source protection area as identified in the Assessment report and the Source Protection plan..

Table 1: Number of properties affected, organized by municipality

Municipality	Number of Properties
Callander	260
Chisholm	243
East Ferris	95
Powassan	2
North Bay	1
Total Properties	601

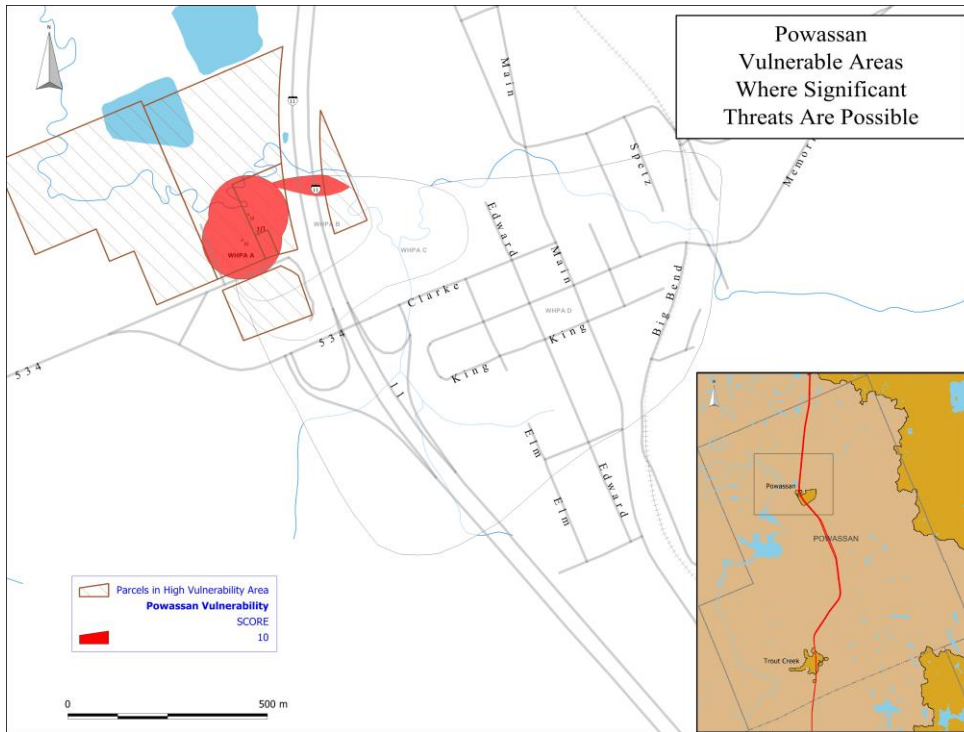
As the first five year cycle progresses, during the inspections it was identified that 15 additional properties that were included in the MMI program database had existing sewage systems that were located outside of the MMI program area. Therefore the potential number of systems that are subject to the MMI program has been reduced to 586 systems. Figures 1, and 2 below are map representations of the areas affected by the MMI program in the North Bay-Mattawa Source Protection Area.

Figure 1: Callander Bay - Issue Contributing Area (ICA)



In figure 1 above, the red line outlining the shaded areas on the map represent a 120 metres setback from a feature such as a watercourse, wetland complex or similar feature that is considered a tributary to the main water body where the municipal drinking water intake is located.

Figure 2: Powassan Wellhead Protection Area (WPA)



The area identified in Figure 2 that is shaded in red represents the setback to the municipal drinking water wells in Powassan using the technical criteria; a two year path of travel of a potential contaminant through the ground.

HOW TO IMPLEMENT MANDATORY MAINTENANCE INSPECTION PROGRAMS

The Building Code Act, 1992, requires that the principal authority with jurisdiction over Part 8 of Division B of the Building Code (the construction, operation and maintenance of all sewage systems), take on the responsibility of establishing and conducting maintenance inspection programs. In most cases this principal authority will be the local municipality. In unorganized territories and some municipalities, the administration and enforcement of Part 8 of the Building Code may be assigned to a Board of Health or conservation authority. Where a municipality has delegated the responsibility to a conservation authority or Board of Health by an agreement, it may be necessary to determine if the existing wording of the agreement would address the mandatory maintenance inspection program or if additional clauses may need to be negotiated to delegate this added task.

The Ontario Building Code gives principal authorities the power to implement their sewage system inspection programs using a number of different approaches. This section will outline some of these potential implementation options. The NBMCA has chosen to proceed with the In-house inspection program.

IN-HOUSE INSPECTION PROGRAM

After establishing the parameters of the program, the principal authority must appoint personnel qualified according to the requirements of Section 3.1 of Division C of the Building Code to carry out sewage system maintenance inspections. Under the Code, qualified inspectors are individuals who have successfully completed the examination program administered by the Ministry of Municipal Affairs and Housing, related to the Building Code and *Building Code Act*.

Qualified inspectors are permitted to carry out sewage maintenance inspections, sign inspection reports, issue orders (including unsafe orders and emergency orders to remediate dangerous

situations), and enter property to conduct an inspection. Qualified inspectors may include individuals from within the organization, such as the Chief Building Official and supporting staff.

The Building Code also authorizes intern inspectors who are not fully qualified under the Building Code to conduct inspections of onsite sewage systems under mandatory and discretionary inspection programs. These inspectors must be supervised by a Chief Building Official or qualified inspector and cannot issue any orders.

THIRD-PARTY INSPECTION PROGRAM

As an alternative to retaining existing staff members to conduct inspections, principal authorities may choose to accept third---party inspection certificates prepared by a qualified person. Under the Building Code (section 1.10.2.5, Division C) municipalities have the authority to accept approved inspection certificates completed by qualified third parties. In accordance with section 1.10.1.3 (3), qualified third parties include designers and installers of onsite sewage systems holding a Building Code identification Number, architects, and professional engineers. Principal authorities may decide to require property owners to contract a qualified company to conduct the inspection and complete a third---party inspection certificate. Third--- party inspection certificate forms are available through the Ministry of Municipal Affairs and Housing website, and should be issued by principal authorities.

Principal authorities may also opt to establish a contract with a qualified consulting or engineering firm to complete the inspection program. Authorities should retain firms with experience in onsite sewage design and inspections. Contracts should be established with firms meeting the section 1.10.1.3(3) qualification requirements of Division C of the Building Code. Establishing a contract with a firm requires the firm to take on the responsibility for completing all of the inspections for the municipality over an established period of time.

REQUIREMENT TO MONITOR IMPLEMENTATION IN SOURCE PROTECTION PLAN

Source protection plans include policies to track the implementation of policies addressing significant drinking water threats, including septic system maintenance inspection programs, and to gauge their effectiveness. More specifically, these monitoring policies help ensure that the established program is effectively addressing the risks to sources of drinking water, by providing the source protection authority access to documentation and data relating to the inspection program. Access to information about the maintenance inspection programs (e.g. total number of systems, number of systems inspected, number of orders to remediate) is important for tracking the effectiveness of the policy, and planning for future policy development. Principal authorities should work cooperatively with their local source protection authority to track the effectiveness of the established program and monitor implementation.

INSPECTION METHOD

During an inspection, inspectors should aim to identify any defects or failures in the treatment system. An equally important goal of the maintenance inspection should be to determine the risk of future malfunction or failure in the system. Following an inspection, principal authorities should be able to confidently determine if the system is in compliance with the operation and maintenance requirements outlined in the Building Code (section 8.9 of Division B). The six steps of the inspection process, as shown on Figure 2, are detailed later in this section.

WHAT CONSTITUTES AN INSPECTION?

When carrying out the inspection, inspectors implement a tiered approach, and conduct the assessment in phases. Initial (Phase I) inspections are to be non---intrusive, and should thus avoid significant disturbance to the system. In the first phase of the inspection, inspectors may want to obtain the latest records available in order to locate the system's components, and identify any apparent signs of malfunction or risk of failure. In many instances, the completion of a Phase I inspection will be sufficient to determine compliance with the standards outlined in the Building Code. When a Phase I inspection indicates that a system is at risk of future failure, or when the initial inspection does not reveal an obvious reason for an existing malfunction, a

second, more intrusive inspection will be necessary. This Phase II inspection should determine the cause behind observed problems and suggest remedial actions to bring the system into compliance with the Building Code. The following section outlines a series of progressive steps to consider when establishing and administering a sewage system maintenance inspection program. Figure 2 summarizes the steps for setting up and implementing an inspection program..

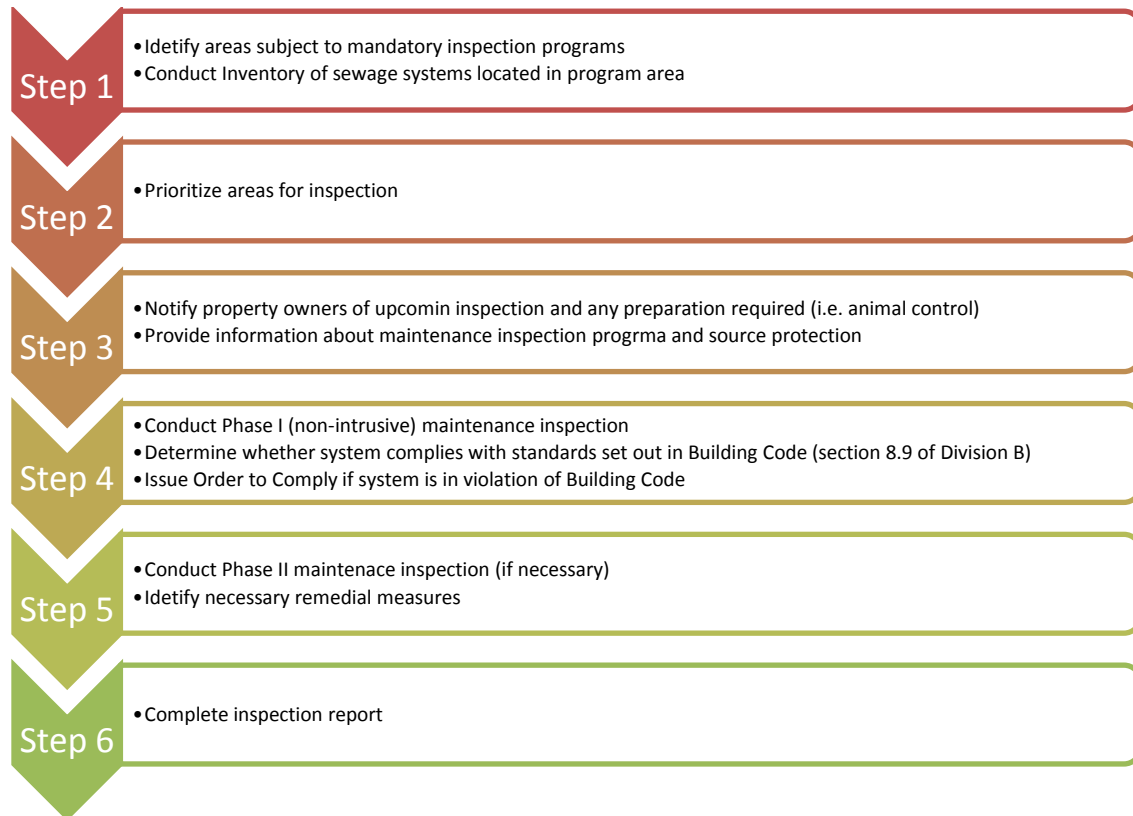


Figure 2: Steps of implementation of a maintenance inspection program

STEP 1: IDENTIFICATION OF SEWAGE SYSTEM MAINTENANCE INSPECTION PROGRAM AREAS AND SEWAGE SYSTEM INVENTORY

Following identification of program areas, principal authorities should locate the individual sewage systems situated in each area. A review of the following items may assist authorities with the identification of mandatory program areas and individual sewage systems:

- Assessment Reports, in consultation with the local source protection authority, to determine septic systems identified as part of the Assessment Report threat enumeration
- permit applications submitted under the *Building Code Act, 1992*
- certificates of approval or use permits issued under the *Environmental Protection Act*
- orders issued under the *Building Code Act, 1992*
- records of problems and complaints regarding sewage systems
- water use records
- maintenance inspection reports (for systems that require the existence of a service agreement as a condition of use, or for systems previously inspected by the principal authority);
- lists of properties with residential or other uses not serviced by either municipal services or sewage works administered by the Ministry of the Environment
- field surveys

STEP 2: PRIORITIZATION OF AREAS FOR INSPECTION

After identifying areas subject to inspection programs, local enforcement bodies may want to prioritize the areas based on their risk to sources of drinking water. Maps of surface water intakes and WHPAs (documented in Assessment Reports), as well as records of known groundwater or surface water contamination related to sewage may be helpful in this regard. Suggestions for prioritizing systems based on risk:

- systems in proximity to municipal drinking water wells or surface intakes
- areas with existing ground or surface water contamination issues
- older systems and systems without records

STEP 3: INSPECTION NOTIFICATION

Notifying property owners of planned inspections will give them an opportunity to gather records that may assist the inspector with the process. Notifications sent well in advance of planned inspection dates will also allow property owners to have their systems pumped, undertake remedial work prior to the assessment, and be onsite on the day of the evaluation.

When drafting notifications, the NBMCA includes details such as associated fees, procedural information, the legislative authority for the inspection program, and a contact name to whom property owners can direct questions. Educational materials related to source protection is also distributed to homeowners with this notification.. Find the sample notification letter in Appendix 2.

STEP 4: PHASE I INSPECTION

A Phase I inspection should be a non-intrusive process that aims to establish compliance with the Building Code (section 8.9 of Division B). Ultimately, the inspector should identify any existing defects in the system, and potential risks that may trigger future malfunctions. When conducting the Phase I, the inspector will conduct a comprehensive review of any available records that provide information about the specific components of the system. During the Phase I inspection, the inspector should aim to determine:

- the type of occupancy to determine the source and type of the sanitary sewage
- the source of water supply (municipal, well, lake, etc.)
- the approximate volume of sewage generated
- the use of special devices such as garbage grinders or water softeners
- the general nature of the system (class, components, type, layout, etc.)
- the location of the system's components with respect to wells, surface water, and other environmental features
- the size, material and condition of the septic tank, or the holding tank
- the frequency of tank pump-out and the last time the tank was cleaned
- any indication of sewage system failure, including:
 - evidence of backup of effluent or signs of hydraulic failure (breakout of sewage, wetting conditions in the leaching bed area)
 - condition of surface vegetation
 - odour problems
- documentation of previous effluent sampling test results where required (i.e., under Article 8.9.2.4. of the Building Code).

A Phase I inspection may sufficiently establish compliance with the Building Code. When the Phase I inspection indicates a defect or failure of the system, a Phase II inspection is required.

STEP 5: PHASE II INSPECTION

Phase II inspections should be conducted when the inspector determines that the system is at risk of future malfunction or failure following the completion of the Phase I inspection. A Phase II inspection may also be necessary when the inspector identifies a malfunction or failure in the system, but cannot readily identify the cause for the failure. The inspector may consider this list of matters when undertaking the Phase II investigation:

- the depth of the sludge layer and the distance from the top of the sludge layer and the outlet tee
- the thickness of the scum layers
- the distance between the bottom of the scum/grease layer and the bottom of the outlet tee
- the distance between the top of the scum layer and the top of the outlet tee;
- the physical condition of the inlet and outlet
- the condition of the effluent filter, if utilized

For sewage systems utilizing treatment units, Phase II inspections may also include a review of these items:

- the existence of a maintenance agreement and the date of latest servicing
- the test results of a new round of effluent sampling (if otherwise required by the Building Code, or by an authorization issued by the BMEC)
- operational problems or system malfunction before or, at the time of inspection

When used in sewage systems, distribution boxes, dosing tanks and pumps may be inspected to determine their condition and functionality. Phase II inspections of leaching beds may also consider:

- clearance distances to environmental features, wells and surface water
- soil type and its approximated permeability
- additional sources of hydraulic loading (e.g. surface discharge, roof drains)
- evidence of sewage ponding
- encroachments into the leaching bed area (e.g. building additions, patios, driveways, pools, etc.)
- trees and deep rooting shrubs in the vicinity of the bed

Blockages in the leaching bed and pollution sources may be identified by measures including:

- evaluation of in-home plumbing and estimates of water usage,
- conducting a leak diagnostics,
- conducting a flow trial,
- conducting a dye tracing test, or

- excavating a cross section of the leaching bed.

STEP 6: INSPECTION REPORTS

Following the inspections, principal authorities should create records that include this information:

- identification of the property attended
- identification of any information collected as part of the inspection
- status of deficiencies noted in previous inspections
- deficiencies identified during the current visit
- the legislative authority for the inspection program
- enforcement action taken

These records may be useful when undertaking future inspections. For a sample inspection report, see Appendix 3.

INSPECTOR QUALIFICATION REQUIREMENTS FOR IN-HOUSE MAINTENANCE INSPECTIONS

Building Inspectors who are qualified under the requirements of Section 3.1 of Division C of the Building Code and who are employed and appointed by the principal authority having jurisdiction over Part 8 (sewage system) of the Building Code may:

- carry out sewage system maintenance inspections;
- sign inspection reports;
- issue orders (including unsafe orders and emergency orders to remediate dangerous situations); and,
- enter property to conduct inspections

The Building Code Act in 15.10.1(1) assigns the authority for an inspector to enter upon lands and into buildings without warrant for the purposes of a maintenance inspection.

The NBMCA employs five individuals who hold the necessary qualifications in order to be able to conduct mandatory maintenance inspections. Currently two of the qualified inspectors are utilized for inspections within the program. Both inspector works out of the main NBMCA office located in North Bay, Ontario.

TIMELINES FOR MAINTENANCE INSPECTIONS

The Building Code also establishes timelines for the execution of mandatory maintenance inspections. Inspections for existing septic systems identified as significant threats should be completed no later than five years after the approval of a local Assessment Report. The local North Bay Mattawa Assessment Report was approved on May 30, 2011 and therefore the inspections must be completed by May 30, 2016, a five year cycle of inspections. Onsite sewage treatment systems installed on or after the publication of a local source protection plan will need to be inspected within five years of their construction. Furthermore, all onsite sewage treatment systems will need to be inspected every five years on a recurring basis, following the initial inspection.

All the properties subject to the Mandatory maintenance inspection program are identified in the MMI database. The MMI Database is entitled " MANDATORY MAINTENANCE INSPECTIONS.accdb" and is located on the NBMCA's computer network at the following address; [R:\access\OBC\](#). The following timetable was identified by the program staff.

Year	Inspections	Declining total	Municipalities
1	120	481	Callander, East Ferris
2	120	361	Callander Chisholm,
3	120	241	Callander, East Ferris
4	120	121	Chisholm
5	121	0	Chisholm, North Bay, Powassan

During the first 5 year cycle of which we are entering year 5 the timetable has changed to the following:

Year	Inspections	Declining total	Municipalities
1	89	497	Callander
2	143	354	Chisholm, East Ferris
3	57	297	Callander, East Ferris
4	115	182	Callander, Chisholm, East Ferris
5	182	0	Callander, Chisholm, East Ferris, North Bay, Powassan

Every effort will be made to even the inspection numbers between the future five year cycles to gain a more evenly distributed workload for the program.

For new properties that are developed in the MMI program area, the mandatory maintenance inspections will be required on systems five years after the issuance of the Notice of Completion for those systems. Those properties will be used to try and obtain a more even distribution of inspections where possible over the future five year cycles.

COST RECOVERY FUNDING MODEL

The Mandatory Maintenance Inspection Program is based on a user pay; full cost recovery funding model. The collection of the fees is based on options that were presented to each municipality. The three options offered were as follows;

- **Option 1 Municipality Funded Program**

This option is the most cost effective of the three options proposed. In this option each effected Municipality will be invoiced for the cost per year in their municipality each year over a five year period. The recovery of these costs will be at the discretion of each municipality. This option guaranteed the collection of revenues for the program and minimizes the potential issues of difficult collections for the NBMCA and Municipality.

- **Option 2 Landowner/Operator Funded Program**

Each property owner will be invoiced \$ 240.00 by the NBMCA for the inspection conducted. All invoices that are not settled within 90 days will be transferred to the Municipality as an invoice; the municipality will then utilize the provisions allotted them through the Building Code Act, Section 8.(1) to collect the funds outstanding.

- **Option 3 A Blended Approach**

The Municipality may wish to choose a blended approach; the municipality may wish to pay to the program a set amount in order than the fee charged to the property owner is of a lesser amount. Each property owner will be invoiced the difference between the inspection fee, as noted above in option 2, and the amount paid by the municipality for the inspection. As an example a municipality may choose to pay to the Program 50 % of the anticipated costs, each property owner would then be invoiced \$120.00 (50% reduction) per inspection as opposed to the full \$240 fee. Similarly as

Option 2 All invoices that are not settled within 90 days will be transferred to the Municipality as an invoice.

The municipalities responded with their choice of option selected. They are as follows:

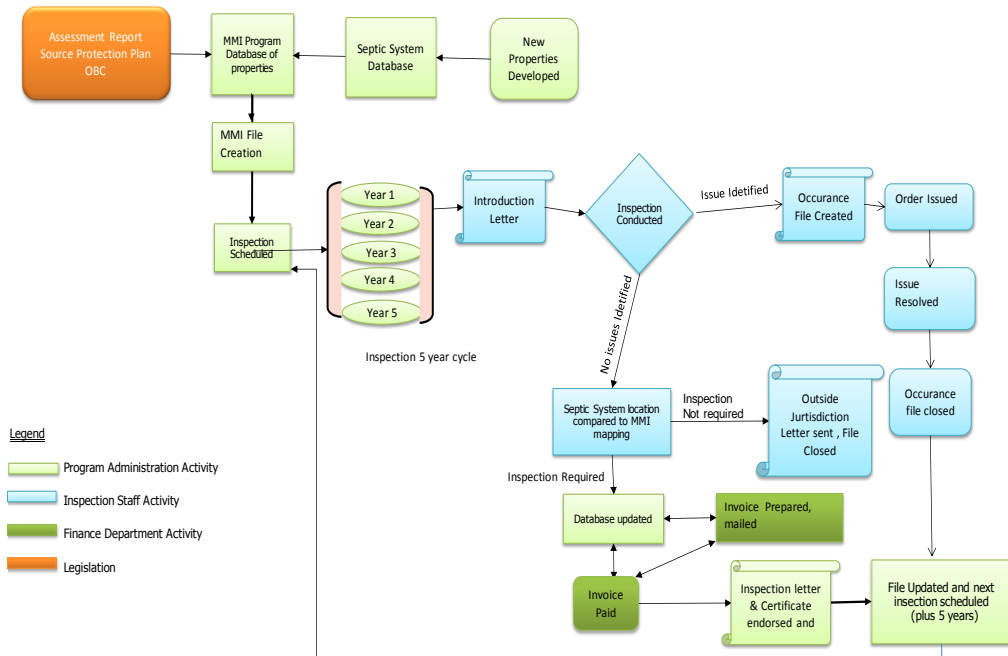
Municipality	Option Chosen	Cost per Inspection
Callander	2	\$240.00
Chisholm	1	\$215.00
East Ferris	2	\$240.00
North Bay	2	\$240.00
Powassan	2	\$240.00

PROGRAM ASSOCIATED COSTS USED TO DETERMINE FEES TO BE CHARGED

The established fees were based on the anticipated and actual expenses of the program; these expenses include but are not limited to activities as follows;

1. Administrative fees including staff supervision and program management
2. Salaries for staff to conduct the chosen number of inspections each year,
3. Staff benefits
4. Vehicles and Gasoline allowances
5. Staff Training & Certification
6. Office related expenses and office equipment
7. Bank charges
8. Audit Charges
9. Legal Fees

Mandatory Maintenance Inspection Property File Flowchart



CONSEQUENCES OF FAILING TO ESTABLISH A MANDATORY SEWAGE SYSTEM MAINTENANCE INSPECTION PROGRAM UNDER THE BUILDING CODE

The NBMCA as the principal authority under the Building Code, the Building Code requires that they implement an inspection program for onsite sewage systems located in vulnerable areas where there are significant drinking water threats. If the NBMCA fails to establish a mandatory inspection program under the Building Code, it may be in contravention of the Building Code Act. The Building Code Act states that any corporation that contravenes the Act or regulations made under the Act is guilty of an offence. If a corporation such as the NBMCA fails to comply with the requirements of the Building Code, they may be found guilty of an offence. If convicted of an offence, the NBMCA may face a maximum penalty of \$100,000 for a first offence, and \$200,000 for a subsequent offence. In addition to these penalties, the court may make an order prohibiting the continuation or repetition of the offence by the authority convicted.