



# Implementation Resource Guide

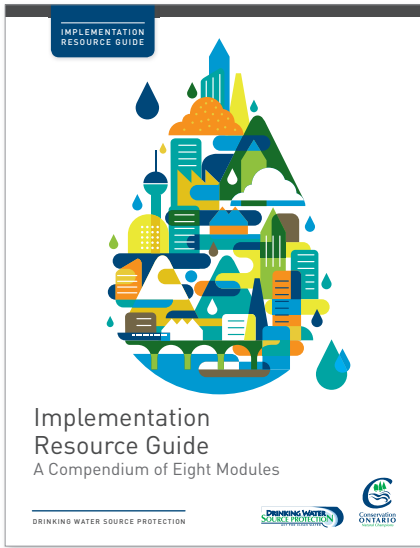
A Compendium of Eight Modules



MODULE 1

# Establishing a Risk Management Office



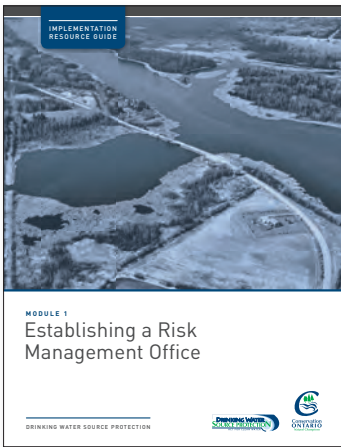


# Implementation Resource Guides

A Compendium of Eight Modules

Look for all eight modules in our Drinking Water Source Protection series. You can find them at [www.conservation-ontario.on.ca](http://www.conservation-ontario.on.ca)

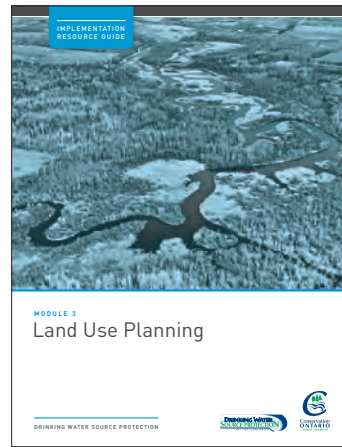
## MODULE 1



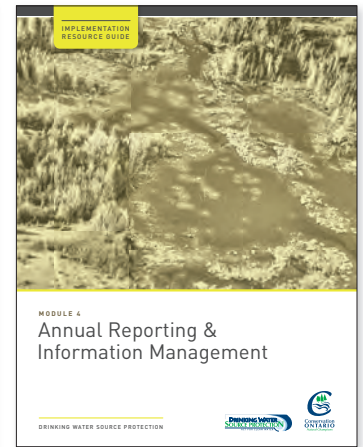
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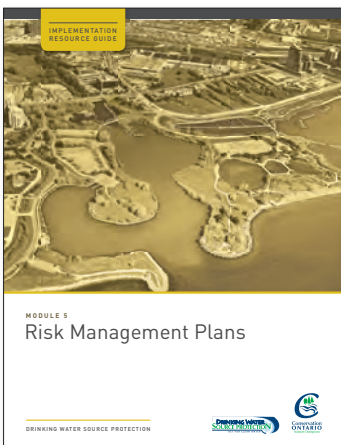
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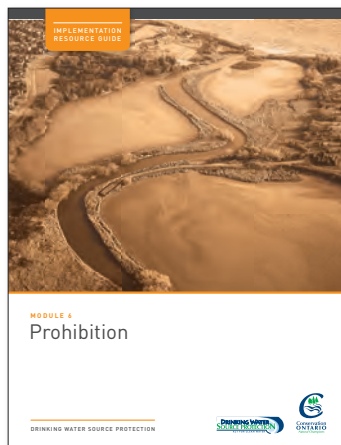
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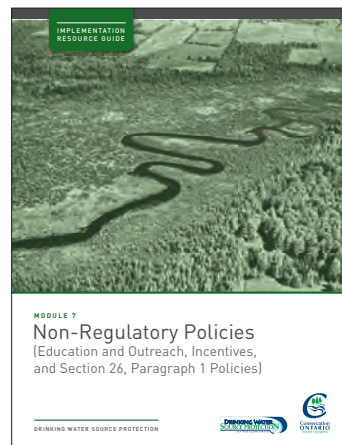
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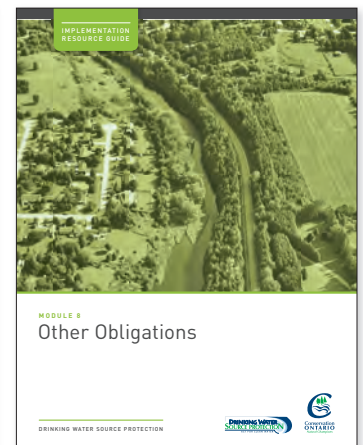
## MODULE 6



## MODULE 7



## MODULE 8



# Module 1: Establishing a Risk Management Office

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## Implementation Resource Guide

06/05/2014

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Note to Reader: This document is one of a series developed by staff at conservation authorities and Conservation Ontario in support of source protection plan implementation. These documents cover a variety of tools related to plan implementation, but not all will apply in your municipality. Consult your local source protection plan to determine which policies are applicable in your municipality. This document has not been reviewed by legal counsel and is not presented as legal advice.



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## A. Municipal Responsibilities

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### i. Municipal Responsibilities Based on the *Clean Water Act*

Municipalities have many responsibilities under the *Clean Water Act, 2006*. This module specifically focuses on establishing a Risk Management Office.

Under Section 47 of the *Clean Water Act*, municipalities are responsible for Part IV enforcement of source protection plan policies. Part IV of the Act includes three important sections:

- Section 57: Prohibition – to be included in an upcoming Module
- Section 58: Risk Management Plans – to be included in an upcoming Module
- Section 59: Restricted Land Use – to be included in an upcoming Module

A municipality may choose to carry out these responsibilities by operating and staffing its own program. Alternatively, municipalities can make arrangements to transfer some or all of their enforcement authority, if they so desire. The various scenarios for enforcing Part IV under the Act are described in Section C: Options for Municipalities.

Part IV under the Act is administered and enforced by a Risk Management Official and Risk Management Inspector. The responsibilities for each position are described in detail in the *Clean Water Act* and are abbreviated in Section 0. Section C discusses options available to municipalities needing to administer and enforce policies relying on Part IV of the Act. Section D lists suggested timelines for ensuring these positions are filled and minimum qualifications for these staff. These suggestions are guidelines only; it will be the responsibility of the implementing body to decide who is qualified to be appointed the Risk Management Official and Risk Management Inspector.

Section 55 of the Act provides municipalities with the flexibility to pass by-laws related to the administration of Part IV policies, including, but not limited to, setting fees for services, inspection programs, forms, and applications. The *Clean Water Act* requires that municipalities conform to the content of source protection plans. This can be done by amending Official Plans and/or by-laws; however, municipalities are not required to pass or amend by-laws or make Official Plan amendments in regards to enforcement of Part IV. Section 40 states that a municipality should amend its Official Plan to conform to significant threat policies in the source protection plan. In terms of Part IV enforcement, a municipality would amend its Official Plan to recognize Section 59 Restricted Land Use as part of the development or building approval process, Ontario Regulation 287/07, Section 62. Part IV is solely enabled through the *Clean Water Act* and the authorities associated with Part IV may be used only in areas where the local Assessment Report identifies significant drinking water threats. For the most part, these will be small areas surrounding municipal drinking water systems.



This module deals specifically with municipal responsibilities as they relate to the administration and enforcement of Part IV. It is important to keep in mind that there might be other policies for which your municipality might have been designated as the implementing body (i.e., land use planning; education, outreach, and incentive programs; and road salt management). In these situations, your municipality will also be responsible for implementation and reporting of these policies.

## ii. **Standard of Care – Ensuring the Protection and Safety of the Users of a Municipal Drinking Water System**

Source protection plans require municipalities to implement measures to protect the source water for their drinking water system, and implementing the policies in the source protection plan is one component of that responsibility. The *Safe Drinking Water Act* includes a statutory standard of care (Section 19) for individuals with oversight responsibilities for municipal drinking water systems, which extend to municipal councilors.

The statutory standard of care related to drinking water ensures that decision-makers are practicing due diligence to protect public health when making decisions about drinking water. For example, the circumstances and actions – what you did or did not do, the questions you asked, the steps taken to address identified risks or problems with your drinking water system – will all be important in determining whether the municipality met its statutory standard of care.

If a municipality refuses to implement Part IV and the municipal water supply becomes contaminated and end users' health is put at risk, the municipal council may have failed to “act honestly, competently and with integrity with a view to ensuring the protection and safety of the users of a municipal drinking water system,” per Section 19 of the *Safe Drinking Water Act*. Therefore, it is important to assess the questions outlined in *Taking Care of Your Drinking Water: A Guide for Members of Municipal Councils*. This document is available at <http://www.ontario.ca/environment-and-energy/taking-care-your-drinking-water-guide-members-municipal-councils>.

Councilors are encouraged to be informed, ask questions, and be vigilant in their important role to protect public health, as the standard of care provision under the *Safe Drinking Water Act*, came into force on December 31, 2012.

## **B. Risk Management Office**

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### **i. What Is a Risk Management Office?**

A Risk Management Office is the staff, structures and processes necessary to administer Part IV of the *Clean Water Act*. This office can take a variety of forms:

1. A separate physical office with its own building or rental unit consisting of new and/or existing staff.
2. New and/or existing staff with offices located in an existing municipal facility.
3. Staff located off-site (e.g. conservation authority office) if the responsibility for enforcing Part IV policies have been delegated to another body (e.g. planning board, source protection authority).

Find an example timeline for establishing the office in Section D.

## ii. Risk Management Official and Inspector

The positions of the Risk Management Official and the Risk Management Inspector are the foundation of the Risk Management Office. The roles of the Risk Management Official and Risk Management Inspector may differ; however, the municipality, or the agency to which the municipality has transferred enforcement, may choose to have one staff member fill both roles or have current staff take on these roles as additional responsibilities.

The Risk Management Officials' responsibilities and authorities are set out under the *Clean Water Act* and include:

- negotiating risk management plans under Section 58
- issuing notices and orders for the establishment of risk management plans
- issuing Section 59 notices for Restricted Land Use
- accepting risk assessments – if the assessment concludes that the activity if engaged in at a location is not a significant drinking water threat, and the Risk Management Official determines that the risk assessment complies with the rules and regulations
- issuing orders under Section 61 to provide the Risk Management Official with a report that describes how an activity is being engaged in and managed
- issuing orders to require a person to grant access to their property
- attending Environmental Review Tribunal hearings
- making records available to the public
- preparing an annual report to the source protection authority

The Risk Management Inspector is responsible for compliance and enforcement duties, and has the following responsibilities and authorities under the *Clean Water Act*:

- conducting inspections and monitoring to ensure Part IV compliance with risk management plans and prohibition policies
- using powers of entry on properties where reasonable
- issuing enforcement orders under Section 63
- prosecuting persons if they commit an offence under Part IV
- obtaining inspection warrants from a court if necessary
- preparing an annual report to the Risk Management Official

- attending Environmental Review Tribunal hearings

Several staffing and office options available to municipalities during the establishment of the Risk Management Office are discussed in Section C.

## C. Options for Municipalities

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### i. Options for Establishing a Risk Management Office

A municipality has several options to consider when deciding whether to retain or delegate its Part IV powers. There is considerable flexibility in the options available to municipalities. For example, the transfer or sharing of authority does not have to include all threats – each agreement can be specific in the types of threats, categories or geographic area they cover.

Figures 1 to 5 illustrate how municipal responsibilities could be delegated. Any dotted lines refer to the responsibility being transferred only in part. In these figures, fees/costs remain the responsibility of all involved because municipalities may incur the costs even after they have transferred their other responsibilities; however, the agency that has enforcement responsibility transferred to them may have to deal with fees.

#### **Option 1: Municipality Chooses to Retain Its Part IV Powers (Figure 1)**

A municipality may choose to retain all enforcement responsibilities under the *Clean Water Act* and operate its own Risk Management Office by:

- sending a current staff member for the Ministry-approved training,
- hiring new staff who have completed the Ministry-approved training, and/or
- hiring new staff and having them complete the Ministry-approved training.

Depending on the workload, several staff may be required. For example, one Risk Management Official and three Risk Management Inspectors may be necessary. However, if the workload requires only one staff member, it may be beneficial to have additional staff complete the Ministry-approved training to ensure your municipality will have a back-up if that staff member leaves the municipality.

A municipal council must pass a motion to appoint these positions and a certificate of appointment must be issued to the Risk Management Official and Risk Management Inspector by the municipal clerk. Appendix F contains an example of this motion.



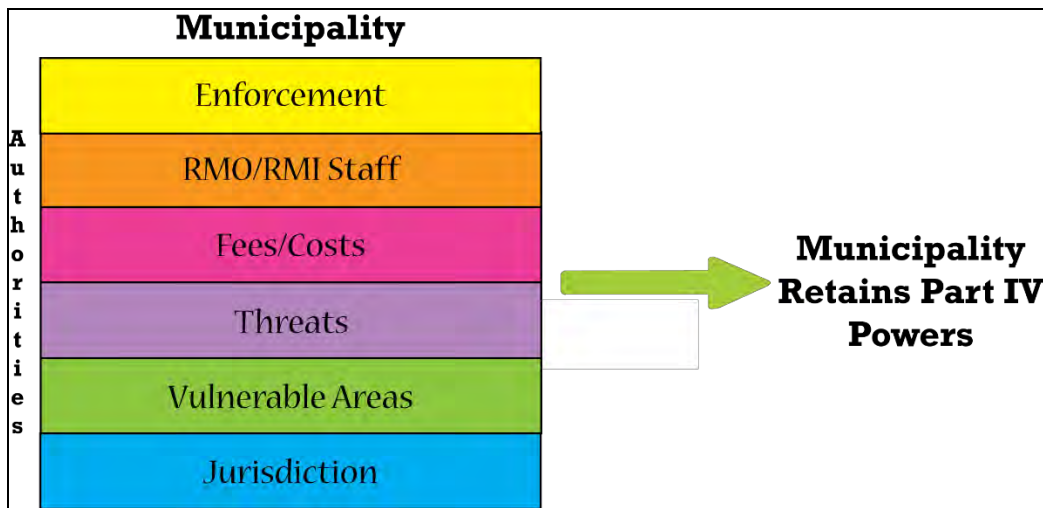


Figure 1: Municipality Retains Part IV Powers

### Option 2: Joint Risk Management Office (Figure 2)

A municipality can enter into an agreement with one or more municipalities that have by-law making authority under the *Municipal Act* around the production, treatment and storage of water; a board of health; a planning board; or a source protection authority. This agreement may contain a number of provisions, including the sharing of Risk Management Officer and Risk Management Inspector staff and associated costs. The cost sharing could be based on a variety of factors, such as the number of significant threats, or the number of properties falling within vulnerable areas in the municipality's boundaries. The Risk Management Officer and Risk Management Inspector would represent all agencies "sharing" the position(s) and would be responsible for enforcement of relevant policies within the boundaries of all partnering municipalities. Appendix A provides an example of an agreement between two or more municipalities for guidance purposes, and municipalities are encouraged to retain and consult with a lawyer should they require legal advice regarding the agreement. Council approval may be required for these agreements since municipal procedures vary across the province.

Shared enforcement authority may be a valid option where:

- individual municipalities do not require full-time Risk Management Official or Risk Management Inspector services,
- significant drinking water threat numbers identified are minimal,
- there are few policies implemented through Part IV,
- local resources or funds are limited, and/or
- Risk Management Official or Risk Management Inspector expertise is unavailable at the municipality.

A Joint Decision Making Committee with representation from each agency may be created to establish rules, by-laws, fee structures, etc. regarding Part IV implementation.

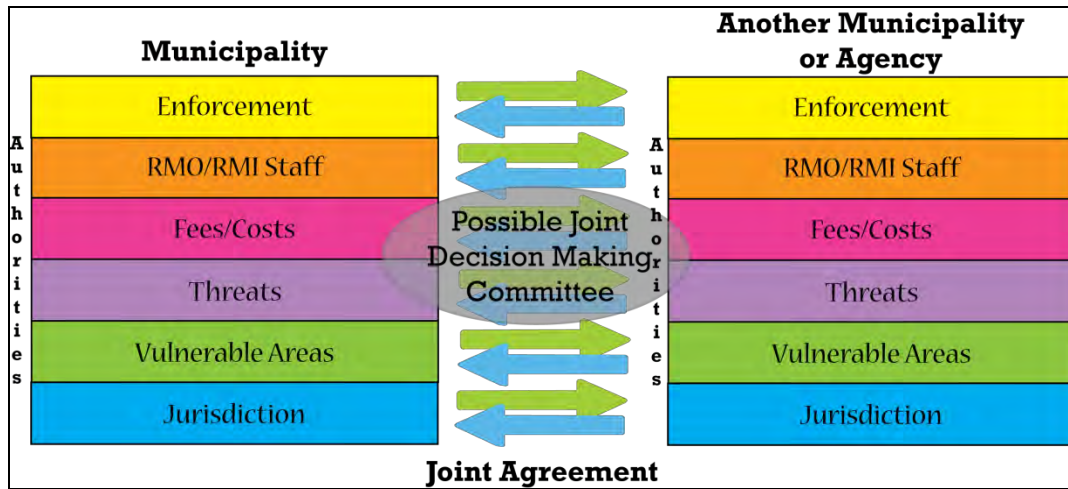


Figure 2: Joint Risk Management Office

### Option 3: Transfer of Enforcement

i. Complete Transfer of Part IV Enforcement Authority: A municipality can transfer its enforcement authority to another municipality, board of health, planning board, or source protection authority (Figure 3). This agreement would allow one of these agencies to be responsible for enforcement of Part IV powers within the municipality's boundaries. This option may be desirable in less-populated areas, remote areas or areas where there are few significant drinking water threats.

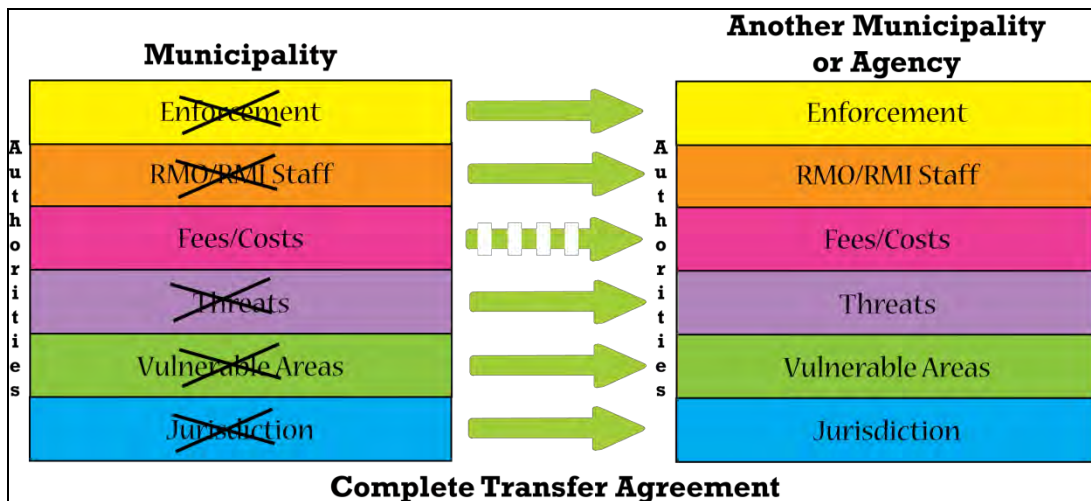


Figure 3: Complete Transfer Agreement

ii. **Partial Transfer of Part IV Authorities for Certain Threats:** Given the wide range of prescribed drinking water quality threats, it is possible that staff at one agency may have familiarity, knowledge and technical expertise related to specific threats. In these situations, it may be most efficient for these agencies to be delegated enforcement authority for specific threats. For example, if a municipality does not have the expertise to enforce chemical threats (i.e. the preparation of a risk management plan for the handling and storage of dense non-aqueous phase liquids), they can transfer the authority for the enforcement of policies related to these threats to another agency, but retain its enforcement authorities for all other threats (Figure 4). Another example would be if a source protection area boundary crosses through the municipality. The municipality may choose to base the transfer agreement on these boundaries so it has enforcement authority in one source protection area and the other agency has enforcement authority in the other source protection area. Find further information on cross-boundary issues in Section G.

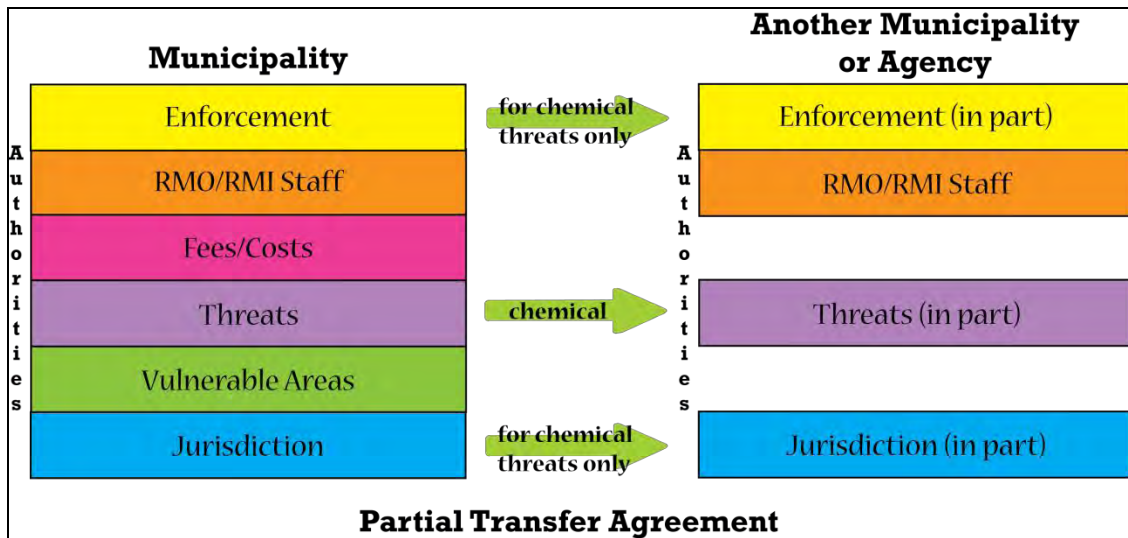


Figure 4: Partial Transfer Agreement

iii. Multiple municipalities can transfer their enforcement authorities and jurisdictions to one agency (local board of health, planning board, or source protection area). In this scenario, this agency would be responsible for enforcing all Part IV policies within the boundaries of these municipalities (Figure 5). A Joint Decision Making Committee is recommended to establish rules, by-laws, fee structures, etc.



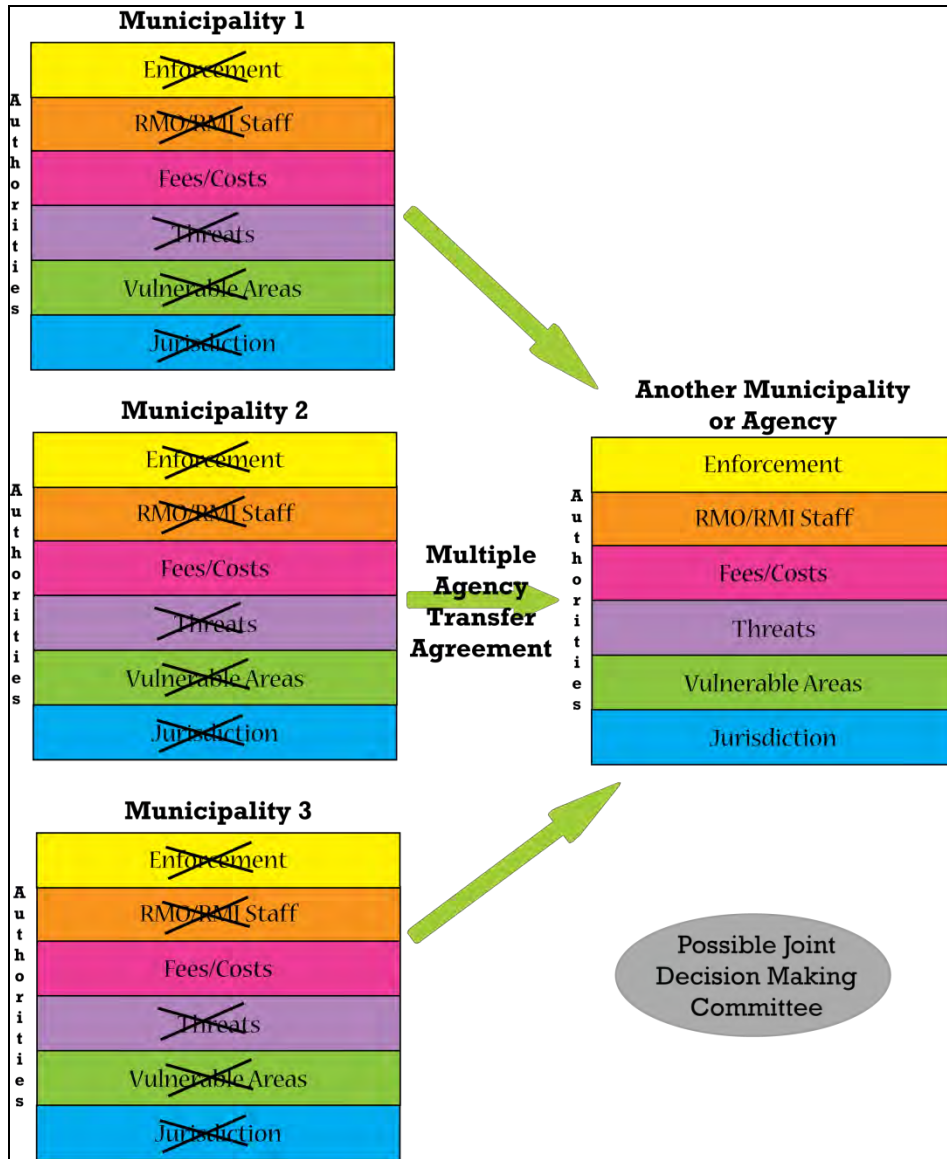


Figure 5: Multiple Agency Transfer Agreement

When Part IV powers have been delegated, the agency responsible for enforcement may enter into an agreement requiring the municipality to pay related costs. The agency responsible for enforcement must issue a certificate of appointment to the Risk Management Officer and Risk Management Inspector. Appendix B provides an example agreement for guidance purposes, and municipalities are encouraged to retain and consult with a lawyer should they require legal advice regarding the agreement.

It is important to note that when a municipality transfers their Part IV powers to another agency or municipality, it must uphold the standard of care set out in Section 19 of the *Clean Water Act*. Please see Section A (ii) of this module for further information.

## ii. Options That Are Not Permitted under the Act

The *Clean Water Act* defaults the Part IV enforcement responsibilities to the Single Tier, Upper Tier or Lower Tier municipality that has by-law making authority under the *Municipal Act* in relation to water production, treatment and storage. For example, a Single Tier municipality such as the City of Toronto, a regional municipality such as York Region, or a local municipality outside of a regional municipality such as the City of Barrie.

Generally, the *Clean Water Act* does not allow a municipality that is responsible for enforcing Part IV to delegate the enforcement responsibilities to counties, since counties do not have the by-law making authority over the production, treatment and storage of water. However, there are a few exceptions to this rule. One example is the County of Oxford, which is defined under the *Municipal Act* as a regional municipality and, therefore, does have enforcement authority under Part IV of the *Clean Water Act*.

## D. Staffing and Administration

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Before determining staffing needs and establishing administration procedures, your municipality should decide whether it intends to retain its Part IV powers or delegate some or all of these authorities. The decision as to whether or not to delegate Part IV authorities should be made by the end of 2013.

### i. When to Hire

The timeline for hiring staff is the decision of the municipality or agency responsible for enforcement. It is strongly suggested that the hiring of staff occur prior to the approval of the source protection plan for your area or region by the Minister of the Environment. It will take some time to establish administrative procedures and for staff to become familiar with the significant drinking water threats and policies he/she will be responsible for enforcing. Hiring staff prior to approval of the plan will ensure that the Risk Management Official and Risk Management Inspector are trained, certified and fully versed in their roles and can begin to implement policies the day the source protection plan is approved. Staff can also be in place as the Risk Management Office is being established so they are involved in all aspects of set-up.

Budgets will need to be reviewed and approved in order to hire staff. If current staff will be utilized as risk management staff, then no hiring process needs to occur. However, depending on the size and scope of the office (see Module 2), new staff members may need to be hired to take on risk management roles. It is expected that source protection plans will be approved beginning in 2013, so hiring a Risk Management Official and Risk Management Inspector may

be required during the 2013 budget year. Some municipalities have already hired risk management staff in preparation for source protection plan approval.



## ii. Guidelines and Training Requirements

To set up a Risk Management Office, the municipality or agency responsible for enforcement must appoint a Risk Management Official and Risk Management Inspector. Before appointment can occur, these individuals must have the prescribed qualifications. This means that they must take a training program approved by the Director of the Source Protection Program Branch of the Ministry of the Environment. Currently, this training is offered through the Ministry of the Environment twice a year – in the spring and autumn. There are limited spaces available and the pre-requisite to this course is a Property Entry course, which is also offered during this time. For more information regarding the *Clean Water Act* training courses, contact the Source Protection Programs Branch of the Ministry of the Environment at [source.protection@ontario.ca](mailto:source.protection@ontario.ca).

For guidance purposes, Appendix C provides a sample job description for a Risk Management Official.

A municipal council may pass a by-law to appoint the Risk Management Official and Risk Management Inspector. Also, a certificate of appointment must be given to the Risk Management Official and Risk Management Inspector with the proper seal and signatures. Find an example in Appendix F.

## iii. Scheduling

Establishing a Risk Management Office requires the completion of several tasks in a specific timeframe (four to five months at minimum, 12 to 15 months or more at maximum) to ensure that staff is ready when the source protection plan is approved. Failure to establish an office prior to source protection plan approval may result in delays of approvals for planning and development applications in the municipality.

Table 1 places potential tasks required to set up a Risk Management Office in order based on the assumption that the source protection plan is approved in August 2013. Note that some source protection plans may not be approved by August 2013. Source protection areas and source protection regions with fewer threats may be approved earlier and source protection areas and source protection regions with more threats, or those that were given an extension may be approved later. Contact your local source protection authority to get current information on possible approval timelines. Should the source protection plan in your source protection area or source protection region be approved at another time, some changes may be made to the order or timing of tasks.

*Table 1: Potential Schedule of Tasks (assuming an August 2013 SPP approval date)*

<b>TASK</b>	<b>TIMELINE (Guideline)</b>
Determine staffing requirements	December 2012
Commence Risk Management Officials and Risk Management Inspectors hiring process, including creation of new staff descriptions	January - April 2013
Hire Risk Management Officials and Risk Management Inspectors	March - June 2013
Develop an application review process/system for screening	March - July 2013
Draft fee schedules	March - July 2013
Draft new by-laws (if required)	March - July 2013
Council resolutions	March - July 2013
Risk Management Official and Risk Management Inspector training by Ministry of the Environment (if necessary)	Spring or Fall 2013
Set up an information/data management system	April - October 2013
Threat verification	April - December 2013
Develop an enforcement program	April - October 2013
Notification to landowners of risk management plans required	September 2013 - February 2014

#### **iv. Calculating Staffing Needs**

Staffing needs will vary throughout the province based on many factors, such as municipality size, types of policies to implement and enforce, number of properties in vulnerable areas, number of threats, types of threats, and any agreements between other agencies. Interim staff may be required to begin office establishment and to determine the scope of the workload and future staffing requirements.

The decision to hire new staff or utilize current staff depends on many variables. Some things to consider:

- current staff availability and workload
- current staff expertise
- number of properties within the vulnerable area with potential significant drinking water threats
- number and types of confirmed threats that require risk management plans or prohibition inspections
- number of policies that use Section 59 Restricted Land Use (related to Section 57 Prohibition and Section 58 risk management plan policies)
- timelines set out in the source protection plan for the establishment of risk management plans
- budget

- new/future development and need for ongoing review and establishment of new risk management plans

When selecting Risk Management staff, consider any additional qualifications that may assist in enforcement. Some examples:

- completion of a degree and/or registration as a professional in a certain field (e.g. geoscientist, engineer, planning, environmental studies)
- experience in a certain field related to threats
- knowledge of standards, acts, by-laws, regulations, etc.
- competencies such as leadership, decision making, project management skills, negotiation, and communication
- experience completing inspections and enforcing regulations/policies/by-laws

For example, one municipality may hire a Risk Management Official and Risk Management Inspector with a vast agricultural background whereas another municipality may hire based on industrial-related knowledge.

It is important to note that when considering Risk Management Official and Risk Management Inspector appointments, source protection plans do not lapse and can be updated or modified. Therefore, the need for a Risk Management Official and Risk Management Inspector may remain indefinitely.

Enabling the use of a Person of Qualifications can be one way to meet a portion of staffing requirements and expertise. A municipality, or other body acting as the enforcement authority, may decide to authorize a Person with Qualifications (as defined in Ontario Regulation 287/07) to certify risk management plans (under Sections 56 or 58 of the *Clean Water Act*) or risk assessments (under Section 60) in place of an Risk Management Official. This action provides another avenue to obtain, where warranted or necessary, the technical expertise required for negotiating and establishing more complex risk management plans and/or for accepting risk assessments. It is important to note that the Person with Qualifications can only be used if a rule has been passed by the enforcement body under Section 55 of the *Clean Water Act*, permitting their use and setting out circumstances under which they can be used.

Appendix D and Appendix E include a sample staffing needs worksheet and an example of a completed worksheet. These worksheets will assist with the calculation of staffing needs for years one to four as well as subsequent years. In Module 2, information on how to calculate threats and scope of workload is discussed in more detail.

## E. By-laws

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### i. General By-laws

Section 55 of the *Clean Water Act, 2006* provides that by-laws, resolutions, and/or regulations may be made regarding the following:

- prescribing classes of risk management plans and risk assessments,
- appointing Risk Management Officer and Risk Management Inspector staff (see Appendix F for an example) \*\*,
- establishing and governing an inspection program,
- providing for applications under Sections 58, 59 and 60 \*\*,
- payment of fees, interest and other penalties as well as refunds of fees \*\*,
- prescribing and providing for the use of forms for risk management plans, acceptance of risk assessments, Section 59 notices, and applications under Sections 58, 59 and 60,
- prescribing circumstances in which a Person with Qualifications may act \*\*.

It will be of benefit to begin passing by-laws, regulations or resolutions in advance of source protection plan approval, specifically for those items marked with asterisks (\*\*) in the previous list. Further details on specific by-laws will be included in the module to which they apply.

According to Section 55 of the *Clean Water Act*:

- If a municipality or board of health is responsible for enforcement, it can pass by-laws.
- If a planning board is responsible for enforcement, it can pass resolutions.
- If a source protection area that is a conservation authority is responsible for enforcement, it can make regulations.
- If a source protection area is responsible for enforcement and is not a conservation authority, it can pass resolutions.
- The Minister may make regulations, applicable in the area in which the municipality, board of health, planning board, source protection area, or the Province of Ontario has jurisdiction for enforcement.

## F. Fees

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### i. Cost Estimates

Costs for implementing and enforcing source protection plans will vary across the province. Costs can be estimated but will vary depending on the Risk Management Office option chosen by your municipality, as well as municipal procedures and budget. Options for cost recovery are listed in the next part of this section.

## ii. Revenue Sources

There are multiple options available to municipalities that can provide revenue to offset enforcement costs. Part 2 of the Report of the Walkerton Inquiry suggests that municipal water rates should cover a portion of the cost of source protection. Some methods for cost recovery:

- charge no fees and absorb all costs through the local levy
- charge no fees and absorb all costs through water rates
- charge reasonable fees for service and absorb the remaining costs through the local levy
- charge reasonable fees for service and absorb the remaining costs through water rates
- apply for grants
- charge a benefiting municipality for the costs associated with protecting their water
- charge the municipality a flat rate per year for enforcing the policies in its municipality with an agreement
- charge the municipality a flat rate per service (i.e. risk management plan application, each risk management plan negotiated, each risk assessment accepted) for enforcing the policies in their municipality with an agreement
- charge the user through the creation of resolutions or by-laws

Charging a fee for service for items is an option; however, the *Clean Water Act* allows municipalities to charge only certain items.

## iii. Part IV Cost Recovery

According to Section 55 of the *Clean Water Act*, municipalities are permitted to charge for activities related directly to Part IV; however, it is not a requirement to charge for these items. The payment of fees can be requested for:

- receiving an application for: risk assessment, risk management plan, Restricted Land Use
- agreeing to or establishing an interim risk management plan or a risk management plan
- issuing a Restricted Land Use notice
- accepting a risk assessment
- requiring the payment of interest when fees are unpaid or are paid after the due date
- requiring the payment of other penalties, including payment of collection costs, when fees are unpaid or are paid after the due date

The total amount of the fees for items in this list cannot exceed reasonable costs of the enforcement body, that is, fees are for cost recovery only. If a fee change is proposed, notice of the proposed fee change must be made in the correct manner and to the appropriate persons as prescribed by Section 109 of the *Clean Water Act*. Fees may be added to the tax roll. Part of the policy on fee structures could include a section on providing refunds where appropriate.



## G. Cross-boundary Issues

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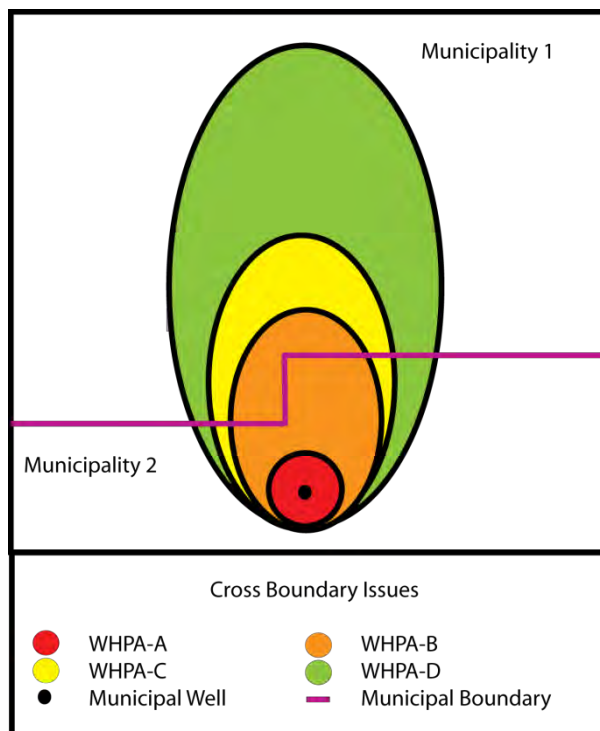
There are a variety of cross-boundary situations that can occur with the implementation of source protection plans. Some of these situations include

- i. one vulnerable area spanning two or more municipalities, and
- ii. one vulnerable area spanning two or more source protection areas.

The following parts discuss these situations and possible solutions.

### i. Municipal Boundaries

When a vulnerable area spans two municipalities, each municipality is responsible to ensure that enforcement of the source protection plan takes place within their municipality. Figure 6 demonstrates the situation.



*Figure 6: Municipal Cross-boundary Issues*

Each municipality can choose to enforce the source protection plan within its own municipality; however, it may be beneficial to enter into an agreement with the other municipality.

This agreement will allow one municipality to enforce the source protection plan policies related to Part IV across the entire vulnerable area. The agreement can include many factors. Two common examples are:

- Both municipalities will share the costs and Risk Management Official and Risk Management Inspector staff and will have joint jurisdiction throughout the vulnerable area; however, one municipality will provide enforcement in that vulnerable area. See Appendix B for an example of an agreement.
- Municipality 2 will transfer its enforcement authority and jurisdiction of that vulnerable area to Municipality 1 – Municipality 1 may charge Municipality 2 all or part of the cost for enforcement of Part IV policies outside of its regular jurisdiction. See Appendix B for an example of an agreement.

Section C discusses these options in more detail.

## **ii. Source Protection Area Boundaries**

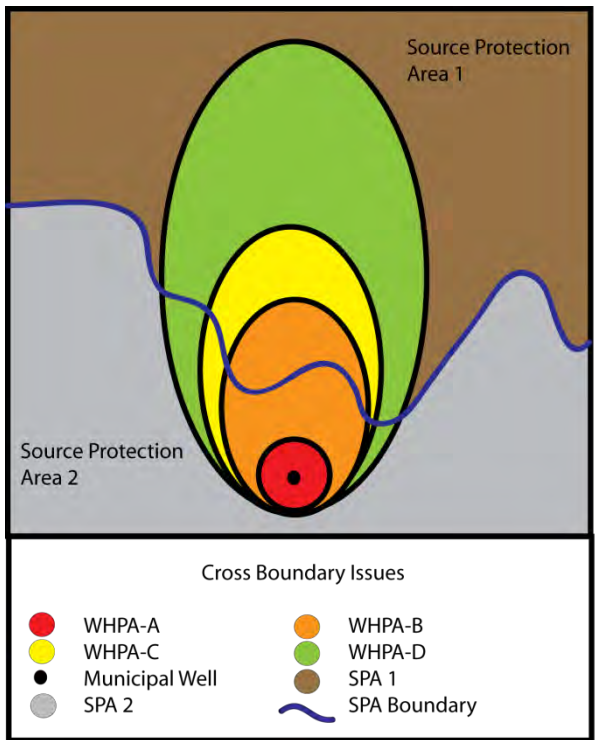
When a vulnerable area spans two different source protection areas, the municipality that contains that vulnerable area is required to implement both source protection plans in the corresponding source protection area. The appropriate source protection plan must be enforced in the corresponding source protection area. Figure 7 demonstrates the situation.

When the source protection committee designates an activity for the purpose of Section 57 or 58, it designates the area where the activity is a significant drinking water threat. The municipality that has enforcement authority in this scenario has a duty to ensure that the significant drinking water threat activities are regulated under Part IV within their boundaries.

The municipality must enforce each of the two source protection plans in the corresponding source protection area; however, it may be beneficial to enter into an agreement with an adjoining municipality or agency that is familiar with one of the source protection areas and allow them to enforce Part IV policies in that source protection area. This agreement will allow a municipality to focus its attention to one source protection plan, which will allow for a more simplified approach.

This option may be preferred if a municipality:

- has multiple, complex source protection plans within its jurisdiction,
- has a large number of significant threat policies that use Part IV tools to manage significant drinking water threats in multiple source protection areas, and/or
- has limited staff resources to enforce Part IV policies.



*Figure 7: Source Protection Area Cross-boundary Issues*

**APPENDIX A: SOURCE PROTECTION PLAN PART IV JOINT ENFORCEMENT AGREEMENT**

THIS AGREEMENT made effective the \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

BETWEEN:

\_\_\_\_\_, a Municipal Corporation in the  
Province of Ontario (“Municipality A”)

OF THE FIRST PART

- and -

\_\_\_\_\_, a Municipal Corporation (or other Agency)  
in the Province of Ontario (“Municipality B” or “Agency B”)

OF THE SECOND PART

WHEREAS Municipality A and Municipality B deem to share enforcement and jurisdictional rights in regards to the Part IV policies in the [NAME] Source Protection Plan for the [NAME] Region/Area and to provide said services jointly within both municipalities on the terms and conditions herein contained;

NOW THEREFORE in consideration of the mutual covenants and promises herein contained, the parties hereby agree as follows:

**DEFINITIONS**

Unless otherwise expressly provided in this Agreement, the words, phrases and expressions in this Agreement shall have the meanings attributed to them as follows:

1. In this Agreement:
  - a) “Act” means the Ontario *Clean Water Act, 2006*, as amended;
  - b) “agreement” means this document;
  - c) “risk management inspector” means a risk management inspector appointed under Part IV of the *Act*
  - d) “risk management official” means the risk management official appointed under Part IV of the *Act*
  - e) “source protection plan” means a drinking water source protection plan prepared under the *Act*

## **INITIAL TERM**

This Agreement shall be for an initial term of 10 years, commencing on the \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

## **RENEWAL**

Following the expiration of the Initial Term, this Agreement shall be renewed for periods of 5 years, provided Municipality A and Municipality B intend to renew the Agreement and they both agree in writing to the renewal not less than six (6) months prior to the expiration of the Initial Term.

## **REQUIREMENTS UNDER THE ACT**

Under section 47 of the *Act*, municipalities are responsible for Part IV enforcement of Source Protection Plans. The councils of two or more municipalities may enter into an agreement to provide joint enforcement within their respective municipalities.

## **ENFORCEMENT AND JURISDICTION**

Municipality A and Municipality B are jointly responsible for the enforcement of this Part in both municipalities and have joint jurisdiction for the enforcement of this Part.

## **FEES**

Municipality A and Municipality B will share the costs incurred in the enforcement of this Part within their respective municipalities.

**RISK MANAGEMENT OFFICIAL AND RISK MANAGEMENT INSPECTOR(S)**

Municipality A and Municipality B shall jointly appoint a Risk Management Official and Risk Management Inspector(s) as are necessary for that purpose.

IN WITNESS WHEREOF the parties hereto have executed these presents as of the day and year first above written.

\_\_\_\_\_  
Signature – Mayor – Municipality A

\_\_\_\_\_  
Signature – Mayor – Municipality B

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature – Municipal Clerk A

\_\_\_\_\_  
Signature – Municipal Clerk B

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date



**APPENDIX B: SOURCE PROTECTION PLAN PART IV ENFORCEMENT  
TRANSFER AGREEMENT**

THIS AGREEMENT made effective the \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

BETWEEN:

\_\_\_\_\_, a Municipal Corporation in the  
Province of Ontario (the “Municipality, A”)

OF THE FIRST PART

- and –

\_\_\_\_\_, a public agency with its head office at the  
Town/City of \_\_\_\_\_, in the Province of Ontario (the “Agency, B”)

OF THE SECOND PART

WHEREAS the Municipality desires to grant to the Agency enforcement and jurisdictional rights in regards to the Source Protection Plan for the \_\_\_\_\_ Region/Area to provide said services within the Municipality on the terms and conditions herein contained;

NOW THEREFORE in consideration of the mutual covenants and promises herein contained, the parties hereby agree as follows:

**DEFINITIONS**

Unless otherwise expressly provided in this Agreement, the words, phrases and expressions in this Agreement shall have the meanings attributed to them as follows:

2. In this Agreement:

- f) “Act” means the Ontario *Clean Water Act, 2006*, as amended;
- g) “agreement” means this document;
- h) “board of health” refers to the Board of Directors of the local area Public Health Unit
- i) “planning board” means a planning board established under section 9 or 10 of the *Planning Act*
- j) “risk management inspector” means a risk management inspector appointed under Part IV of the *Act*
- k) “risk management official” means the risk management official appointed under Part IV of the *Act*

- l) “source protection authority” means a conservation authority or other person or body that, under subsection 4 (2) or section 5 of the Act, is required to exercise and perform the powers and duties of a drinking water source protection authority under the *Act*
- m) “source protection plan” means a drinking water source protection plan prepared under the *Act*

## **INITIAL TERM**

This Agreement shall be for an initial term of 10 years, commencing on the \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

## **RENEWAL**

Following the expiration of the Initial Term, this Agreement shall be renewed for periods of 5 years, provided Agency B gives written notice to Municipality A not less than twelve (12) months prior to the expiration of the Initial Term of its intention to renew the Agreement and Municipality A agrees in writing to the renewal not less than six (6) months prior to the expiration of the Initial Term.

## **REQUIREMENTS UNDER THE ACT**

Under section 47 of the *Act*, municipalities are responsible for Part IV enforcement of Source Protection Plans. A municipality can transfer their enforcement responsibility and jurisdictions to another municipality, a board of health, a planning board, or a source protection authority.

## **ENFORCEMENT AND JURISDICTION**

Agency B that is made responsible for the enforcement of this Part in Municipality A has jurisdiction for the enforcement of this Part in Municipality A with respect to the activities identified in this agreement.

## **FEES**

Agency B that is made responsible for the enforcement of this Part will charge all fees associated with enforcement to Municipality A.

**RISK MANAGEMENT OFFICIAL AND RISK MANAGEMENT INSPECTOR(S)**

Agency B that is made responsible for the enforcement of this Part shall appoint a Risk Management Official and Risk Management Inspector(s) as are necessary for that purpose.

IN WITNESS WHEREOF the parties hereto have executed these presents as of the day and year first above written.

\_\_\_\_\_  
Signature – Mayor – Municipality A

\_\_\_\_\_  
Signature – CAO – Agency B

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature – Municipal Clerk A

\_\_\_\_\_  
Signature – Authorizing Officer B

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

## **APPENDIX C: RISK MANAGEMENT OFFICIAL JOB DESCRIPTION**

*NOTE: This is an example of a Risk Management Official job description. Some responsibilities and qualifications may not be applicable to all municipalities and items can be added and/or removed as required.*

### **JOB TITLE**

Risk Management Official

### **REPORTS TO**

Chief Administrative Officer

### **SUBORDINATE POSITIONS**

Risk Management Inspector  
Public Works Secretary

### **SUMMARY OF FUNCTION**

The Risk Management Official is responsible for performing the statutory duties of the position as prescribed under Part IV of the *Clean Water Act, 2006*, which includes negotiating risk management plans; the issuance of permits, orders, notices, and reports on related activities with various stakeholders; and providing technical support and guidance for sustainable land use planning, infrastructure management and operation of drinking water systems, to protect the quality and quantity of municipal drinking water.

### **MAJOR RESPONSIBILITIES**

#### **Risk Management Official Functions:**

- Oversees risk assessments, inspections and implementation of risk management plans for existing and new land uses activities as the Risk Management Official under Part IV of the *Clean Water Act, 2006*.
- Negotiates risk management plans with business owners, residents and others on significant drinking water threats, as prescribed under the applicable Source Protection Plan.
- Issues, tracks and monitors permits issued under Part IV of the *Clean Water Act, 2006*.
- Issues orders and notices to protect drinking water.
- Appears for the enforcing agency as an expert witness at Ontario Municipal Board, Environmental Tribunals or other related hearings.
- Works with local municipal Chief Building Officials and Planning staff to identify program needs to meet *Clean Water Act, 2006* requirements.

- Prepares reports for the Source Protection Authority to meet the monitoring and reporting needs required under the *Clean Water Act, 2006*.

### **Business/Program Planning and Budget Functions:**

- Assists in developing annual business/work plans and in developing service plans and staffing proposals.
- Provides input into budget and business plan development, policies and procedures.
- Provides input into the development of policies and procedures for fee recovery.
- Assists in the development and implementation of appropriate service level standards and performance metrics for continuous program improvement and manages performance and activities to meet or exceed targets.

### **Human Resource Management & Team Responsibilities:**

- Supervises staff, including recruitment, selection, hiring, scheduling, assigning and monitoring work, determining training and development needs, coaching and mentoring, conducting performance appraisals, and determining/recommending disciplinary action up to and including dismissal in accordance with collective agreements, policies and practices.
- Ensures that operating staff work in a safe manner and utilize all required health and safety equipment and protective devices and follow all measures and procedures as required by the *Occupational Health and Safety Act* and regulations and appropriate policies.

### **Liaison, Communication and Customer Service Activities:**

- Conducts presentations, workshops and other activities to staff, residents, local municipalities, businesses, and other stakeholders to foster collaboration and promotion of ongoing initiatives and to inform them on risks and measures required to protect drinking water sources and monitoring activities.
- Collaborates on communication, education and outreach programs with local and neighbouring municipal Planning, Public Works and Chief Building Officials, Provincial Ministries, Conservation Authorities, Source Protection Committees and other external agencies.
- Liaises, fosters and maintains positive working relationships with internal staff, external stakeholders, government and non-government agencies and the public.
- Develops requirements for special projects and/or investigations and supervises consultants and contractors engaged for studies and projects.
- Promotes program deliverables and objectives with presentations or technical papers at conferences, seminars, and workshops.
- Provides input to or prepares reports, briefing notes, presentations, statistics, and analysis.

- Participates on committees, meetings, task forces, work groups, and special projects, as directed.

### **Other Duties:**

- Performs other duties as required to meet program objectives.

### **QUALIFICATIONS**

- Successful completion of a University Degree in Science, Environmental Studies, Engineering, or a related discipline.
- Successful completion of the provincial certifications for Risk Management Official (Part IV) and Section 88 Property Entry training or ability to obtain within six months of appointment.
- Minimum five years experience in municipal, conservation or similar environment with demonstrated supervisory or leadership experience.
- Valid Ontario Class “G” driver’s license.
- Working knowledge of all aspects of the *Clean Water Act, 2006* including supporting technical rules, Part IV powers and related regulations.
- Working knowledge of the *Occupational Health and Safety Act*.
- Working knowledge of best management practices, industrial environmental management systems, responsible care, and pollution prevention programs.
- Demonstrated knowledge of relevant Standards, Acts, Bylaws, Regulations and guidelines, as they pertain to water including environmental assessment and protection, hydrogeology, municipal planning, and well asset management.
- Demonstrated management competencies including leadership, results/achievement focus, human resources management, financial management, business planning, decision making/judgment, representation and professionalism, and job knowledge.
- Contemporary staff supervisory skills including knowledge of collective agreement administration and interpretation, labour relations principles and practices, and relevant employment legislation.
- Demonstrated project management skills to lead a project or work group, organize numerous tasks, set priorities and meet deadlines.
- Demonstrated negotiation, diplomacy and communication skills to support issues resolution.
- Strong report writing, research, and analytical skills to meet program objectives and work to tight deadlines.
- Computer literacy and proficiency utilizing word processing, spreadsheet, data base and presentation software, and use of computerized work management systems.
- Ability to operate GPS hardware.
- Ability to interpret geo-technical data, engineering drawings and technical/legal



documents.

- Ability to work outside regular business hours, as required.
- Registration as a Professional Geoscientist (P. Geo) with the Association of Professional Geoscientists of Ontario or a Professional Engineer (P. Eng) with the Association Professional Engineers Ontario is considered an asset.

## **APPENDIX D: WORKSHEET FOR STAFFING NEEDS OF A RISK MANAGEMENT OFFICE**

### **Instructions for Completing this Worksheet**

Refer to the local Assessment Report to gather information about the various threat categories and the number of threats that were identified for vulnerable areas in the municipality.

Next, review the Source Protection Plan policies to determine if one or more policies in the Source Protection Plan address the threat categories by using Risk Management Plans (Section 58 of the *Clean Water Act*) or Prohibition (Section 57 of the *Clean Water Act*).

For each category on the worksheet complete the requested information.

“SPP policy applies” means that one or more policies in the local Source Protection Plan address this threat category by using either Risk Management Plans (Section 58 of the *Clean Water Act*) or Prohibition (through Section 57 of the *Clean Water Act*). If this is true, then complete the calculations; otherwise, skip to the next category.

If you have threats where policies apply, enter the number of threats in Column 2. You may have details of the land uses related to the threat information in the Assessment Report. If so, complete the detailed calculations where applicable; otherwise perform the general calculation.

In column 4, enter a value in hours of your estimate for the workload involved in reviewing and processing Risk Management Plans for that activity. The range in Column 3 is intended to be a range to guide the selection for what is entered into Column 4.

Next, complete the calculation and enter the total in the box for that category then move on to the next category.

Once all of the category totals have been calculated, use the last page of the worksheet to determine the number of “full time equivalents” (FTEs) that may be needed for the Risk Management Office.

### **Hours Required to Complete a Risk Management Plan**

The range of time stated in Column 3 on the worksheet varies from 10 to 35 hours, which is the time estimated to complete a Risk Management Plan. A minimum value of 10 hours is assumed, which will allow time to: send out a notice; speak to landowners; arrange and conduct a site visit, including travel time; review a proposed Risk Management Plan; negotiate any changes to the proposed Plan; prepare and send an approval letter; and filing and other tasks. For most categories this base amount is increased to allow review time for detailed information included in some proposed plans, such as site drawings, engineering drawings, calculations, or consultant reports.

When choosing a value from Column 3 to enter in Column 4, a value outside of the suggested time range may be used. This may be the case if there is information indicating that negotiating and establishing an Risk Management Plan will take more/less time for activities in the municipality. A shorter timeframe could be achieved if: standardized forms are used; streamlined review processes are implemented; or multiple activities on one property are managed under a single Risk Management Plan. Longer timeframes may be needed in some cases where: the activities are more complex; larger facilities are involved; sending notices or additional procedural steps are necessary to gain compliance; or review of plans by other experts or agencies is needed.

Time spent on administrative tasks, such as responding to general inquiries, attending meetings, education/training, and reporting, is taken into account separately during the calculation of full-time equivalent positions on pages 11 and 12.

### **Calculating Full Time Equivalent Positions**

The number of hours used to calculate the full-time equivalent position figures at the end of the worksheet is 1680. This is based on a 35-hour work week for 52 weeks, less 20 days for statutory holidays and vacation time. The number should be adjusted in the calculations if a different length of work week or base amount of vacation days is used as a standard for the municipality. The administrative calculation could also be adjusted; for example, a higher administrative percentage may be required when the Risk Management Official would have a supervisory role in addition to the duties of reviewing Risk Management Plan files.

It should be noted that some of the administrative and support functions could be performed by staff in the agency other than the Risk Management Official and Risk Management Inspector.

### 3. The application of agricultural source material to land.

SPP policy applies:  Yes (complete calculations below)  No (skip to Category 4)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	All categories		15-30		A

Enter Total A

Hours for Category 3

### 4. The storage of agricultural source material.

SPP policy applies:  Yes (complete calculations below)  No (skip to Category 6)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified		15-30		A
Detailed calculation	Agriculture		15-30		B
	Other		20-30		C

Enter Total A if calculated; otherwise use Total D

Total B + C

Hours for Category 4

### 6. The application of non-agricultural source material to land.

SPP policy applies:  Yes (complete calculations below)  No (skip to Category 7)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified		15-30		A
Detailed calculation	Agriculture		15-30		B
	Other		20-30		C

Enter Total A if calculated; otherwise use Total D

Total B + C

Hours for Category 6

**7. The handling and storage of non-agricultural source material.**

SPP policy applies:  Yes (complete calculations below)  No (skip to Category 8)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified		15-30		A

Detailed calculation	Agriculture		15-30		B
	Other		20-30		C

Total B + C

Enter Total A if calculated; otherwise use Total D

Hours for Category 7
<input type="text"/>

**8. The application of commercial fertilizer to land.**

SPP policy applies:  Yes (complete calculations below)  No (skip to Category 9)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified		10-25		A

Detailed calculation	Agriculture		10-25		B
	Recreational/ Institutional		10-25		C
	Other		10-20		D

Total B + C + D

Enter Total A if calculated; otherwise use Total E

Hours for Category 8
<input type="text"/>

### 9. The handling and storage of commercial fertilizer.

SPP policy applies:  Yes (complete calculations below)  No (skip to Category 10)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified		15-30		A

Detailed calculation	Agriculture		15-25		B
	Commercial/Retail		15-30		C
	Recreational/ Institutional		15-25		D
	Other		15-20		E

Enter Total A if calculated; otherwise use Total F

Total B + C + D + E

Hours for Category 9

### 10. The application of pesticide to land.

SPP policy applies:  Yes (complete calculations below)  No (skip to Category 11)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified		10-25		A

Detailed calculation	Agriculture		10-25		B
	Recreational/ Institutional		10-25		C
	Other		10-20		D

Enter Total A if calculated; otherwise use Total E

Total B + C + D

Hours for Category 10



### 11. The handling and storage of pesticide.

SPP policy applies:  Yes (complete calculations below)  No (skip to Category 12)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified		15-30		A

Detailed calculation	Agriculture		15-25		B
	Commercial/Retail		15-30		C
	Recreational/ Institutional		15-25		D
	Other		15-20		E

Enter Total A if calculated; otherwise use Total F

Total B + C + D + E

Hours for Category 11

### 12. The application of road salt.

SPP policy applies:  Yes (complete calculations below)  No (skip to Category 13)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified		15-30		A

Detailed calculation	Municipal		15-30		B
	Commercial/Retail		15-25		C
	Recreational/ Institutional		15-25		D
	Other		15-20		E

Enter Total A if calculated; otherwise use Total F

Total B + C + D + E

Hours for Category 12

**13. The handling and storage of road salt.**

SPP policy applies:  Yes (complete calculations below)  No (skip to Category 14)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified		15-30		A

Detailed calculation	Municipal		15-30		B
	Commercial/Retail		15-25		C
	Recreational/ Institutional		15-25		D
	Other		15-20		E

Enter Total A if calculated; otherwise use Total F

Total B + C + D + E

F

Hours for Category 13

**14. The storage of snow.**

SPP policy applies:  Yes (complete calculations below)  No (skip to Category 15)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified		15-30		A

Detailed calculation	Municipal		15-30		B
	Commercial/Retail		15-25		C
	Recreational/ Institutional		15-25		D
	Other		15-20		E

Enter Total A if calculated; otherwise use Total F

Total B + C + D + E

F

Hours for Category 14

**15. The handling and storage of fuel.**

SPP policy applies:  Yes (complete calculations below)  No (skip to Category 16)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified		10-35		A

Detailed calculation	Municipal		15-30		B
	Commercial/Retail		20-35		C
	Recreational/ Institutional		15-25		D
	Residential		10-20		E
	Agriculture		10-20		F
	Other		15-20		G

Enter Total A if calculated; otherwise use Total H

Total B + C + D + E + F + G

H

Hours for Category 15

**16. The handling and storage of a Dense non-aqueous phase liquid.**

SPP policy applies:  Yes (complete calculations below)  No (skip to Category 17)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified		10-35		A

Detailed calculation	Industrial		15-35		B
	Commercial/Retail		20-35		C
	Municipal/ Institutional		15-25		D
	Residential		10-20		E
	Other		15-20		F

Enter Total A if calculated; otherwise

Hours for Category 16

Total B + C + D + E + F  use Total G

**17. The handling and storage of an organic solvent.**

SPP policy applies:  Yes (complete calculations below)  No (skip to Category 21)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified		10-35		A

Detailed calculation	Industrial		15-35		B
	Commercial/Retail		20-35		C
	Municipal/Institutional		15-25		D
	Residential		10-20		E
	Other		15-20		F

Enter Total A if calculated; otherwise use Total G

Total B + C + D + E + F

**21. The use of land as livestock grazing or pasturing land, an outdoor confinement area or a farm-animal yard.**

SPP policy applies:  Yes (complete calculations below)  No (skip to Local Threat)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified		15-30		A

Detailed calculation	Agriculture		15-30		B
	Other		20-30		C

Enter Total A if calculated; otherwise use Total D

Total B + C

**Local Threat** \_\_\_\_\_ (specify)

SPP policy applies:  Yes (complete calculations below)  No (skip to Issues)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified		10-35		A

Detailed calculation	Industrial		15-35		B
	Commercial/Retail		15-35		C
	Municipal/ Institutional		15-35		D
	Residential		15-35		E
	Other		15-35		F

Enter Total A if calculated; otherwise use Total G

Total B + C + D + E + F

G

Hours for Local Threat

**Issues** \_\_\_\_\_ (specify)

SPP policy applies:  Yes (complete calculations below)  No

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified		10-35		A

Detailed calculation	Industrial		15-35		B
	Commercial/Retail		15-35		C
	Municipal/ Institutional		15-35		D
	Residential		15-35		E
	Other		15-35		F

Enter Total A if calculated; otherwise use Total G

Total B + C + D + E + F

G

Hours for Issues

## Staffing Needs Calculator

A. Total of Category Boxes from above

$$\begin{array}{l} \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} \\ + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} = \end{array} \quad \boxed{\text{TOTAL A}} \text{ hours}$$

### Year 1

Risk Management Planning	Total A _____ x 20% =	_____ hours
Enforcement of s. 57 Prohibition and s. 58 Risk Management Plan polices by Risk Management Inspector	Total A _____ x 10% =	_____ hours
Screening development applications under s. 59 Restricted Land Use policies	Total A _____ x 10% =	_____ hours
Start-up and threats verification	Total A _____ x 15% =	_____ hours
	Subtotal	_____ hours
Administration (including meetings, training/education, reporting)	Subtotal _____ x 20% =	_____ hours
Year 1 Total	Subtotal + Administration =	_____ hours
<b>Year 1 FTE</b>	Year 1 Total ÷ 1680 hours / FTE =	<b>_____ FTE in Year 1</b>

### Year 2

Risk Management Planning	Total A _____ x 35% =	_____ hours
Enforcement of s. 57 Prohibition and s. 58 Risk Management Plan polices by Risk Management Inspector	Total A _____ x 15% =	_____ hours
Screening development applications under s. 59 Restricted Land Use policies	Total A _____ x 10% =	_____ hours
	Subtotal	_____ hours
Administration (including meetings, training/education, reporting)	Subtotal _____ x 20% =	_____ hours
Year 2 Total	Subtotal + Administration =	_____ hours
<b>Year 2 FTE</b>	Year 2 Total ÷ 1680 hours / FTE =	<b>_____ FTE in Year 2</b>

### Year 3

Risk Management Planning	Total A _____ x 45% =	_____ hours
Enforcement of s. 57 Prohibition and s. 58 Risk Management Plan policies by Risk Management Inspector	Total A _____ x 20% =	_____ hours
Screening development applications under s. 59 Restricted Land Use policies	Total A _____ x 10% =	_____ hours
	Subtotal	_____ hours
Administration (including meetings, training/education, reporting)	Subtotal _____ x 20% =	_____ hours
Year 3 Total	Subtotal + Administration =	_____ hours
<b>Year 3 FTE</b>	Year 3 Total ÷ 1680 hours / FTE =	<b>_____ FTE in Year 3</b>

### Subsequent Years

Risk Management Planning	Total A _____ x 15% =	_____ hours
Enforcement of s. 57 Prohibition and s. 58 Risk Management Plan policies by Risk Management Inspector	Total A _____ x 20% =	_____ hours
Screening development applications under s. 59 Restricted Land Use policies	Total A _____ x 10% =	_____ hours
	Subtotal	_____ hours
Administration (including meetings, training/education, reporting)	Subtotal _____ x 20% =	_____ hours
Subsequent Years Total	Subtotal + Administration =	_____ hours
<b>Subsequent Years FTE</b>	Total ÷ 1680 hours / FTE =	<b>_____ FTE in Other Years</b>

The above calculation for each year assumes that the number of plans processed will increase in both year 2 and year 3 until the deadline is reached for the first Risk Management Plans to be established as indicated in the local Source Protection Plan policies. Subsequent years will entail on-going review of plans for new development, enforcement and any updates for established plans.



The figure of 1680 used to calculate “full time equivalents” (FTEs) is the total number of hours worked in a year if the work week is 35 hours and statutory holidays and vacation time are deducted.

## **APPENDIX E: EXAMPLE WORKSHEET FOR STAFFING NEEDS OF A RISK MANAGEMENT OFFICE**

**(with sample numbers entered)**

### ***Instructions for Completing this Worksheet***

Refer to the local Assessment Report to gather information about the various threat categories and the number of threats that were identified for vulnerable areas in the municipality.

Next, review the Source Protection Plan policies to determine if one or more policies in the Source Protection Plan address the threat categories by using Risk Management Plans (Section 58 of the *Clean Water Act*) or Prohibition (Section 57 of the *Clean Water Act*).

For each category on the worksheet complete the requested information.

“SPP policy applies” means that one or more policies in the local Source Protection Plan address this threat category by using either Risk Management Plans (Section 58 of the *Clean Water Act*) or Prohibition (through Section 57 of the *Clean Water Act*). If this is true, then complete the calculations; otherwise, skip to the next category.

If you have threats where policies apply, enter the number of threats in Column 2. You may have details of the land uses related to the threat information in the Assessment Report. If so, complete the detailed calculations where applicable; otherwise perform the general calculation.

In column 4, enter a value in hours of your estimate for the workload involved in reviewing and processing Risk Management Plans for that activity. The range in Column 3 is intended to be a range to guide the selection for what is entered into Column 4.

Next, complete the calculation and enter the total in the box for that category then move on to the next category.

Once all of the category totals have been calculated, use the last page of the worksheet to determine the number of “full time equivalents” (FTEs) that may be needed for the Risk Management Office.

### ***Hours Required to Complete a Risk Management Plan***

The range of time stated in Column 3 on the worksheet varies from 10 to 35 hours, which is the time estimated to complete a Risk Management Plan. A minimum value of 10 hours is assumed, which will allow time to: send out a notice; speak to landowners; arrange and conduct a site visit, including travel time; review a proposed Risk Management Plan; negotiate any changes to the proposed Plan; prepare and send an approval letter; and filing and other tasks. For most categories this base amount is increased to allow review time for detailed information included in some proposed plans, such as site drawings, engineering drawings, calculations, or consultant reports.

When choosing a value from Column 3 to enter in Column 4, a value outside of the suggested time range may be used. This may be the case if there is information indicating that negotiating and establishing an Risk Management Plan will take more/less time for activities in the municipality. A shorter timeframe could be achieved if: standardized forms are used; streamlined review processes are implemented; or multiple activities on one property are managed under a single Risk Management Plan. Longer timeframes may be needed in some cases where: the activities are more complex; larger facilities are involved; sending notices or additional procedural steps are necessary to gain compliance; or review of plans by other experts or agencies is needed.

Time spent on administrative tasks, such as responding to general inquiries, attending meetings, education/training, and reporting, is taken into account separately during the calculation of full-time equivalent positions on pages 11 and 12.

### ***Calculating Full Time Equivalent Positions***

The number of hours used to calculate the full-time equivalent position figures at the end of the worksheet is 1680. This is based on a 35-hour work week for 52 weeks, less 20 days for statutory holidays and vacation time. The number should be adjusted in the calculations if a different length of work week or base amount of vacation days is used as a standard for the municipality. The administrative calculation could also be adjusted; for example, a higher administrative percentage may be required when the Risk Management Official would have a supervisory role in addition to the duties of reviewing Risk Management Plan files.

It should be noted that some of the administrative and support functions could be performed by staff in the agency other than the Risk Management Official and Risk Management Inspector.

### 3. The application of agricultural source material to land.

SPP policy applies:  Yes (complete calculations below)  No (skip to Category 4)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	All categories	15	15-30	20	A 300

Enter Total A →

Hours for Category 3
300

### 4. The storage of agricultural source material.

SPP policy applies:  Yes (complete calculations below)  No (skip to Category 6)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified	12	15-30	25	A 300
Detailed calculation	Agriculture		15-30		B
	Other		20-30		C

Enter Total A if calculated; otherwise use Total D →

Total B + C

Hours for Category 4
300

### 6. The application of non-agricultural source material to land.

SPP policy applies:  Yes (complete calculations below)  No (skip to Category 7)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified		15-30		A
Detailed calculation	Agriculture		15-30		B
	Other		20-30		C

Enter Total A if calculated; otherwise use Total D →

Total B + C

Hours for Category 6

**7. The handling and storage of non-agricultural source material.**

SPP policy applies:  Yes (complete calculations below)  No (skip to Category 8)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified		15-30		A
Detailed calculation	Agriculture		15-30		B
	Other		20-30		C

Enter Total A if calculated; otherwise use Total D

Total B + C

**Hours for Category 7**

**8. The application of commercial fertilizer to land.**

SPP policy applies:  Yes (complete calculations below)  No (skip to Category 9)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified		10-25		A
Detailed calculation	Agriculture	20	10-25	20	B 400
	Recreational/ Institutional	4	10-25	15	C 60
	Other		10-20		D

Enter Total A if calculated; otherwise use Total E

Total B + C + D

**Hours for Category 8**

### 9. The handling and storage of commercial fertilizer.

SPP policy applies:  Yes (complete calculations below)  No (skip to Category 10)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified		15-30		A

Detailed calculation	Agriculture	10	15-25	20	B 200
	Commercial/Retail	2	15-30	25	C 50
	Recreational/ Institutional	1	15-25	20	D 20
	Other		15-20		E

Total B + C + D + E

F 270

Enter Total A if calculated; otherwise use Total F →

Hours for Category 9  
270

### 10. The application of pesticide to land.

SPP policy applies:  Yes (complete calculations below)  No (skip to Category 11)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified		10-25		A

Detailed calculation	Agriculture		10-25		B
	Recreational/ Institutional		10-25		C
	Other		10-20		D

Total B + C + D

E

Enter Total A if calculated; otherwise use Total E →

Hours for Category 10

### 11. The handling and storage of pesticide.

SPP policy applies:  Yes (complete calculations below)  No (skip to Category 12)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified		15-30		A
Detailed calculation	Agriculture		15-25		B
	Commercial/Retail		15-30		C
	Recreational/ Institutional		15-25		D
	Other		15-20		E

Enter Total A if calculated; otherwise use Total F →

Total B + C + D + E

F

Hours for Category 11

### 12. The application of road salt.

SPP policy applies:  Yes (complete calculations below)  No (skip to Category 13)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified		15-30		A
Detailed calculation	Municipal		15-30		B
	Commercial/Retail		15-25		C
	Recreational/ Institutional		15-25		D
	Other		15-20		E

Enter Total A if calculated; otherwise use Total F →

Total B + C + D + E

F

Hours for Category 12

**13. The handling and storage of road salt.**

SPP policy applies:  Yes (complete calculations below)  No (skip to Category 14)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified		15-30		A

Detailed calculation	Municipal	2	15-30	25	B 50
	Commercial/Retail		15-25		C
	Recreational/ Institutional		15-25		D
	Other		15-20		E

Total B + C + D + E

F 50

Enter Total A if calculated; otherwise use Total F →

Hours for Category 13  
50

**14. The storage of snow.**

SPP policy applies:  Yes (complete calculations below)  No (skip to Category 15)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified		15-30		A

Detailed calculation	Municipal	1	15-30	25	B 25
	Commercial/Retail		15-25		C
	Recreational/ Institutional		15-25		D
	Other		15-20		E

Total B + C + D + E

F 25

Enter Total A if calculated; otherwise use Total F →

Hours for Category 14  
25



### 15. The handling and storage of fuel.

SPP policy applies:  Yes (complete calculations below)  No (skip to Category 16)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified		10-35		A

Detailed calculation	Municipal	2	15-30	20	B 40
	Commercial/Retail	2	20-35	30	C 60
	Recreational/ Institutional		15-25		D
	Residential	12	10-20	10	E 120
	Agriculture	2	10-20	15	F 30
	Other		15-20		G

Total B + C  
+ D + E + F  
+ G

H 250

Enter Total A if calculated; otherwise use Total H →

Hours for Category 15  
250

### 16. The handling and storage of a Dense non-aqueous phase liquid.

SPP policy applies:  Yes (complete calculations below)  No (skip to Category 17)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified		10-35		A

Detailed calculation	Industrial		15-35		B
	Commercial/Retail		20-35		C
	Municipal/ Institutional		15-25		D
	Residential		10-20		E
	Other		15-20		F

Enter Total A if calculated; otherwise

Hours for Category 16

Total B + C + D + E + F  use Total G

**17. The handling and storage of an organic solvent.**

SPP policy applies:  Yes (complete calculations below)  No (skip to Category 21)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified		10-35		A

Detailed calculation	Industrial		15-35		B
	Commercial/Retail		20-35		C
	Municipal/Institutional		15-25		D
	Residential		10-20		E
	Other		15-20		F

Enter Total A if calculated; otherwise use Total G

Total B + C + D + E + F

**21. The use of land as livestock grazing or pasturing land, an outdoor confinement area or a farm-animal yard.**

SPP policy applies:  Yes (complete calculations below)  No (skip to Local Threat)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified	22	15-30	20	A 440

Detailed calculation	Agriculture		15-30		B
	Other		20-30		C

Enter Total A if calculated; otherwise use Total D

Total B + C

**Local Threat** \_\_\_\_\_ (specify)

SPP policy applies:  Yes (complete calculations below)  No (skip to Issues)

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified		10-35		A

Detailed calculation	Industrial		15-35		B
	Commercial/Retail		15-35		C
	Municipal/ Institutional		15-35		D
	Residential		15-35		E
	Other		15-35		F

Total B + C + D + E + F

Enter Total A if calculated; otherwise use Total G



Hours for Local Threat
<input type="text"/>

**Issues** \_\_\_\_\_ (specify)

SPP policy applies:  Yes (complete calculations below)  No

	1 Land Use	2 # of Threats	3 Time range per RM Plan (hours)	4 Staff hours per RM Plan (select from Column 3)	Total staff hours (Column 2 x Column 4)
General calculation	Not specified		10-35		A

Detailed calculation	Industrial		15-35		B
	Commercial/Retail		15-35		C
	Municipal/ Institutional		15-35		D
	Residential		15-35		E
	Other		15-35		F

Total B + C + D + E + F

Enter Total A if calculated; otherwise use Total G



Hours for Issues
<input type="text"/>

## Staffing Needs Calculator

A. Total of Category Boxes from above

$$\begin{array}{r} \underline{300} + \underline{300} + \underline{\quad} + \underline{\quad} + \underline{460} + \underline{270} + \underline{\quad} + \underline{\quad} + \underline{\quad} \\ + \underline{50} + \underline{25} + \underline{250} + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{440} + \underline{\quad} + \underline{\quad} = \end{array} \overset{\text{TOTAL A}}{\underline{2095}} \text{ hours}$$

### Year 1

Risk Management Planning	Total A	<u>2095</u> x 20% =	<u>419</u> hours
Enforcement of s. 57 Prohibition and s. 58 Risk Management Plan polices by Risk Management Inspector	Total A	<u>2095</u> x 10% =	<u>210</u> hours
Screening development applications under s. 59 Restricted Land Use policies	Total A	<u>2095</u> x 10% =	<u>210</u> hours
Start-up and threats verification	Total A	<u>2095</u> x 15% =	<u>315</u> hours
	Subtotal		<u>1154</u> hours
Administration (including meetings, training/education, reporting)	Subtotal	<u>1154</u> x 20% =	<u>231</u> hours
Year 1 Total	Subtotal + Administration =		<u>1385</u> hours
<b>Year 1 FTE</b>	Year 1 Total ÷ 1680 hours / FTE =		<b><u>0.8</u> FTE in Year 1</b>

### Year 2

Risk Management Planning	Total A	<u>2095</u> x 35% =	<u>734</u> hours
Enforcement of s. 57 Prohibition and s. 58 Risk Management Plan polices by Risk Management Inspector	Total A	<u>2095</u> x 15% =	<u>315</u> hours
Screening development applications under s. 59 Restricted Land Use policies	Total A	<u>2095</u> x 10% =	<u>210</u> hours
	Subtotal		<u>1259</u> hours
Administration (including meetings, training/education, reporting)	Subtotal	<u>1259</u> x 20% =	<u>252</u> hours
Year 2 Total	Subtotal + Administration =		<u>1511</u> hours
<b>Year 2 FTE</b>	Year 2 Total ÷ 1680 hours / FTE =		<b><u>0.9</u> FTE in Year 2</b>

### Year 3

Risk Management Planning	Total A	<u>2095</u>	x 45%	=	<u>943</u>	hours
Enforcement of s. 57 Prohibition and s. 58 Risk Management Plan polices by Risk Management Inspector	Total A	<u>2095</u>	x 20%	=	<u>419</u>	hours
Screening development applications under s. 59 Restricted Land Use policies	Total A	<u>2095</u>	x 10%	=	<u>210</u>	hours
	Subtotal				<u>1572</u>	hours
Administration (including meetings, training/education, reporting)	Subtotal	<u>1259</u>	x 20%	=	<u>315</u>	hours
Year 3 Total	Subtotal + Administration =				<u>1887</u>	hours
<b>Year 3 FTE</b>	Year 3 Total ÷ 1680 hours / FTE =				<u><b>1.1</b></u>	<b>FTE in Year 3</b>

### Subsequent Years

Risk Management Planning	Total A	<u>2095</u>	x 15%	=	<u>315</u>	hours
Enforcement of s. 57 Prohibition and s. 58 Risk Management Plan polices by Risk Management Inspector	Total A	<u>2095</u>	x 20%	=	<u>419</u>	hours
Screening development applications under s. 59 Restricted Land Use policies	Total A	<u>2095</u>	x 10%	=	<u>210</u>	hours
	Subtotal				<u>944</u>	hours
Administration (including meetings, training/education, reporting)	Subtotal	<u>1259</u>	x 20%	=	<u>189</u>	hours
Subsequent Years Total	Subtotal + Administration =				<u>1133</u>	hours
<b>Subsequent Years FTE</b>	Total ÷ 1680 hours / FTE =				<u><b>0.7</b></u>	<b>FTE in Other Years</b>

The above calculation for each year assumes that the number of plans processed will increase in both year 2 and year 3 until the deadline is reached for the first Risk Management Plans to be established as indicated in the local Source Protection Plan policies. Subsequent years will entail on-going review of plans for new development, enforcement and any updates for established plans.

The figure of 1680 used to calculate “full time equivalents” (FTEs) is the total number of hours worked in a year if the work week is 35 hours and statutory holidays and vacation time are deducted.

**APPENDIX F: SAMPLE MUNICIPAL BY-LAW FOR APPOINTING A RMO/RMI**

THE MUNICIPALITY OF \_\_\_\_\_

BYLAW NO. \_\_\_\_\_

To appoint a risk management official and risk management inspectors  
for the purpose of the *Clean Water Act, 2006*

WHEREAS subsection 47(1)(b) of the *Clean Water Act, 2006* (the "*Act*"), provides that a municipality that has authority to pass bylaws respecting water production, treatment and storage under the *Municipal Act, 2001* is responsible for the enforcement of Part IV of the *Act* in the municipality;

AND WHEREAS subsection 47(6) of the *Act* provides that a municipality that is responsible for the enforcement of Part IV of the *Act* shall appoint a risk management official and such risk management inspectors as are necessary for that purpose;

Now therefore, the Council of The Municipality of \_\_\_\_\_ enacts as follows:

1. That \_\_\_\_\_ be appointed a risk management official under subsection 47(6) of the *Act*.
2. That \_\_\_\_\_ be appointed an alternate risk management official under subsection 47(6) of the *Act*.
3. That \_\_\_\_\_ be appointed risk management inspectors under subsection 47(6) of the *Act*.

ENACTED AND PASSED this \_\_\_\_ day of \_\_\_\_\_, 201\_.

\_\_\_\_\_  
Municipal Clerk

\_\_\_\_\_  
Mayor

\_\_\_\_\_  
Date

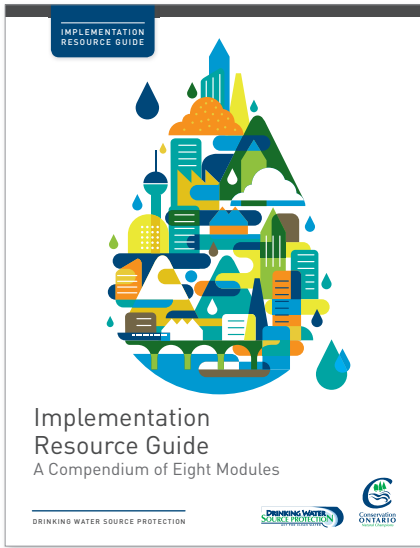
\_\_\_\_\_  
Date



MODULE 2

# Understanding Where Policies Apply



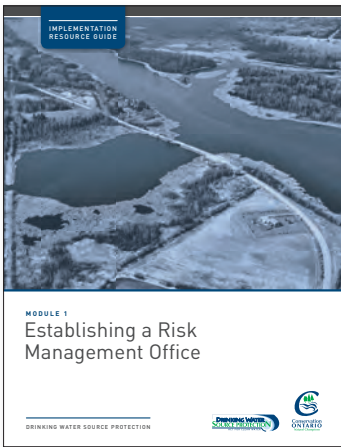


# Implementation Resource Guides

A Compendium of Eight Modules

Look for all eight modules in our Drinking Water Source Protection series. You can find them at [www.conservation-ontario.on.ca](http://www.conservation-ontario.on.ca)

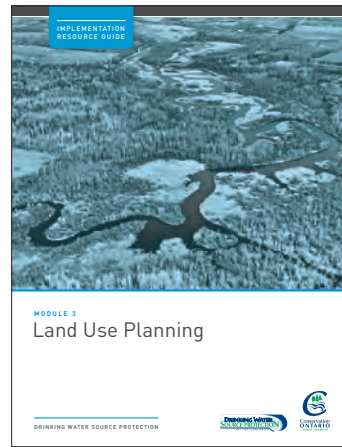
## MODULE 1



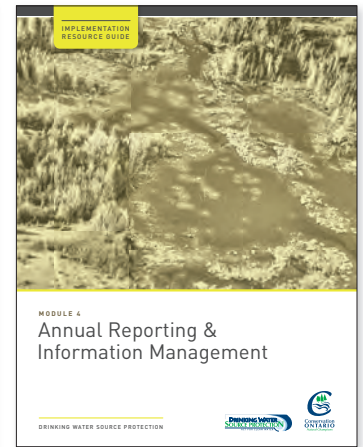
## MODULE 2



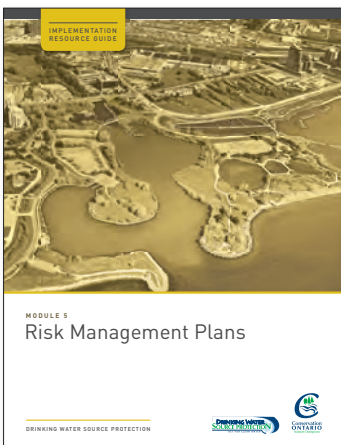
## MODULE 3



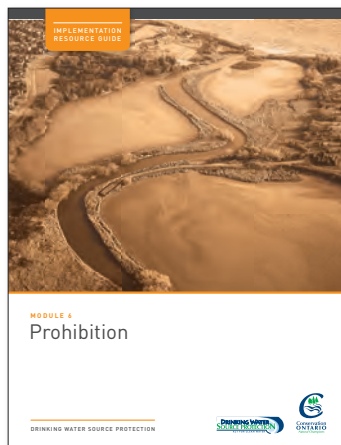
## MODULE 4



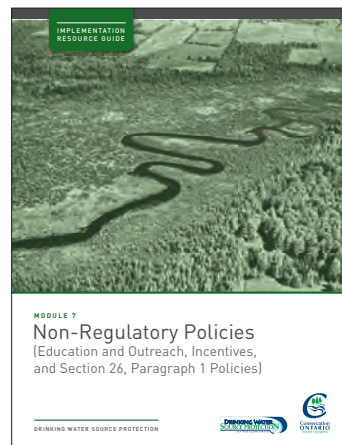
## MODULE 5



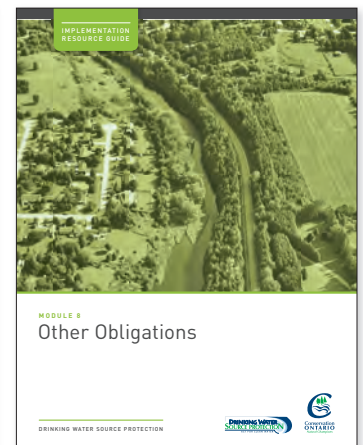
## MODULE 6



## MODULE 7



## MODULE 8





# Module 2: Understanding Where Policies Apply

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## Implementation Resource Guide

06/05/2014

Note to Reader: This document is one of a series developed by staff at conservation authorities and Conservation Ontario in support of source protection plan implementation. These documents cover a variety of tools related to plan implementation, but not all will apply in your municipality. Consult your local source protection plan to determine which policies are applicable in your municipality. This document has not been reviewed by legal counsel and is not presented as legal advice.

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## A. Purpose of This Module

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This module is the second in a series of documents developed for use by municipalities to assist with preparing for the implementation of source protection plans. This module is intended to assist municipal staff, Risk Management Officials and Risk Management Inspectors with implementing the policies in the source protection plan. By the end of this module, you will understand:

- what a vulnerable area is
- how to identify a vulnerable area
- how vulnerability scores are calculated
- what a significant drinking water threat is
- how to identify significant drinking water threats
- how to determine if a source protection plan policy applies

## B. The Need for a Threats Verification

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The threats identification in the Assessment Reports was based on a preliminary understanding of activities which were believed to be taking place at the time of the assessment. These initial threat counts serve as an estimate of the scope of work necessary to implement the source protection plan. Verifying the existence of these threats is therefore the necessary first step in initiating the implementation of the policies of the source protection plan, including initiating the development of Risk Management Plans where they are required.

Consult with your source protection region before undertaking this threats verification to gain a better understanding of the quality of data collected on threats identification in the Assessment Reports.

Some municipalities will have staff in place to begin this exercise prior to approval of the source protection plan, while others may not. For some source protection regions and areas, the threats verification exercise will be straightforward. For others, the process will be more complex.

Timelines for the threats verification will vary depending on the region, number and types of threats; therefore, it is highly advisable to plan ahead for unexpected delays. For example, in large urban areas, the field verification task may be more onerous, and can quickly become outdated as new businesses emerge and others close down.

## C. Data Management

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The process you undertake to verify threats will serve as the basis for the rest of your implementation efforts. How you track your efforts will be important. Refer to Module 4 for further details about ongoing data management and reporting requirements.

## D. Entering Property to Verify Threats

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You may require access to private property to verify significant drinking water threats. Section 88 of the *Clean Water Act, 2006* allows an employee or agent of a source protection authority to enter private property in order to collect data and information that is relevant to the preparation of an Assessment Report, a source protection plan, an interim/annual progress report, or for the purposes of conducting a monitoring program for implementation of source protection plans.

As well, a Risk Management Inspector has inspection and property entry powers, which gives the Inspector authority to access property for the purposes of inspections and collecting data/information. This may include inspecting significant threat activities designated by the source protection plan under Section 57 (which prohibits activities) or Section 58 (requires a Risk Management Plan for the activity).

While the *Clean Water Act* provides powers of entry, it is expected that, under most circumstances, a trained person will enter with the consent of the property owner and will be accompanied by the property owner. Therefore, it is important for anyone likely to be engaged in the verification of threats to complete the Ministry of the Environment mandated training. The Property Entry Training Course, developed by the Ministry, is the model for property entry skills and knowledge taught to persons likely to enter private property for the purposes of compliance with the *Clean Water Act*.

For information on the Ministry of the Environment Property Entry training, contact the Source Protection Programs Branch by email: [sourceprotection@ontario.ca](mailto:sourceprotection@ontario.ca).

## E. Useful Supporting Documents

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### i. Assessment Reports

Assessment Reports are technical documents which describe the local watershed, assess the available water supply, map vulnerable areas and identify threats in these vulnerable areas that pose risks to our drinking water. In some cases, threats were identified through a desktop exercise only. A multi-stakeholder source protection committee, with representation from the public sector, as well as local interests such as farming, business, environmental and public health organizations, municipalities and First Nations in some regions, completed Assessment Reports for the source protection area. The Assessment Reports enumerate significant drinking water threats to determine the extent and scope of threat activities, and this information contributed to the development of policies in source protection plans.

Contact your local source protection authority to request a copy of your local approved Assessment Report.

## ii. Source Protection Plans

Source protection plans contain a series of policies developed by the source protection committee in consultation with the local community to protect municipal drinking water sources from existing and future drinking water threats. The *Clean Water Act* and the Ontario Regulation 287/07 establish the requirements governing the contents of a source protection plan. In particular, Ontario Regulation 287/07 requires that the source protection plan contain the following objectives:

- policies to protect existing and planned drinking water sources, and
- policies for every area where threats could be significant to ensure that the activities identified as significant drinking water threats either never become a significant threat or, if the activity is already taking place, the activity ceases to be a significant threat.

Contact your local source protection authority to request a copy of your local source protection plan.

## iii. Provincial Tables of Drinking Water Threats

The Provincial Tables of Drinking Water Threats document drinking water threats and the level or risk associated with that threat under certain circumstances.

These tables include:

- the prescribed activities that can be identified as threats,
- the circumstances which make them threats,
- the vulnerable areas where those activities can be identified as threats, and
- the level of risk that the threat poses based on the above details.

Find the Provincial Tables of Drinking Water Threats at <http://www.ontario.ca/environment-and-energy/tables-drinking-water-threats>

## iv. Provincial Tables of Circumstances

The Provincial Tables of Circumstances are designed to enable the reference of threats by vulnerable area types (i.e. groundwater, surface water); contaminant type (i.e. chemical, pathogen, DNAPL); vulnerability score; and, threat level (i.e. significant, moderate, low). Based on the possible combinations of vulnerable areas, vulnerability scores and the types of parameters associated with the threats sub-categories, 76 different Provincial Tables of Circumstances are available. These tables contain the same information as the Provincial Tables of Drinking Water Threats, just presented in a different format.

Find the Provincial Tables of Circumstances at <http://www.ontario.ca/ministry-environment>.



## v. Mapping Database

All 19 source protection regions submitted their vulnerability and threats assessment data, in geodatabase format, to the Ministry of the Environment using a tool called the Assessment Report Database. This geodatabase contains a summary of all significant drinking water threats that were identified in vulnerable areas. Each municipality will have received or will be receiving a copy of the geodatabase or geographical information systems data relevant to its jurisdiction from the local source protection authority. You can use this data to integrate source protection information into the mapping programs (e.g., ArcGIS) currently available in your municipality. If your municipality is unable to accept geodatabase or geographical information systems data, contact your local source protection authority to obtain the data in an alternate format.

The Ministry of the Environment also has plans for a province-wide web mapping portal where implementing bodies can find the vulnerable area, vulnerability score and the relevant significant drinking water threats that apply in each area. This portal is scheduled to be launched in 2014. Your local source protection authority will be able to provide information regarding the status of this tool.

## F. Some Terms You Need to Know

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### i. Technical Rules

Throughout this document, reference is made to the Technical Rules. The Technical Rules were developed by the Ministry of the Environment and establish requirements for completing the technical work required to be included in an Assessment Report.

Find the Technical Rules at <http://www.ontario.ca/ministry-environment>.

### ii. The Director

Also in this document, reference will be made to the Director. The Director refers to the Director of Source Protection Programs Branch at the Ministry of the Environment.

## G. Vulnerable Areas and Vulnerability Scoring

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The *Clean Water Act* requires that policies are developed to protect municipal drinking water sources from activities that are or would be significant drinking water threats. The *Clean Water Act* identifies four types of vulnerable areas:

1. Wellhead Protection Areas (WHPAs)
2. Surface Water Intake Protection Zones (IPZs)
3. Highly Vulnerable Aquifers (HVAs)

#### 4. Significant Groundwater Recharge Areas (SGRAs)

##### i. Wellhead Protection Areas

A WHPA is the area of land around a municipal well, the size of which is determined by how quickly water travels underground to the well, in relation to the subsurface geology (rocks and sediments), and water extraction rates. This measurement is generally described in years and referred to as “time of travel.”

The different WHPAs around a municipal well are:

1. WHPA-A: The 100-metre radius around the wellhead.
2. WHPA-B: The area within which the time of travel to the well (within the aquifer) is up to and including two years (excluding WHPA-A).
3. WHPA-C: The area within which the time of travel to the well (within the aquifer) is up to and including five years (excluding WHPA-A and WHPA-B).

- WHPA-C1: In situations where the WHPA was delineated before 2005, a WHPA-C may not have been delineated. In these cases, WHPA-C1 is provided instead. It is the area within which the time of travel to the

well (within the aquifer) is up to and including 10 years (excluding WHPA-A and WHPA-B).

4. WHPA-D: The area within which the time of travel to the well (within the aquifer) is up to and including 25 years (excluding WHPA-A, WHPA-B, WHPA-C and WHPA-C1).
5. WHPA-E: This area is delineated when municipal groundwater supplies are considered to be under the direct influence of surface water (groundwater under the direct influence or GUDI). If a well is designated as GUDI, there is a requirement to determine the point of influence between surface water bodies or natural courses which can deliver surface water to the well in a short amount of time (measured in hours) when compared to a well not under the direct influence of surface water. If the exact point of influence is unknown, the nearest surface water body is assumed to be the point of influence.
6. WHPA-F: Is only delineated when a WHPA-E is delineated, and the well is subject to issues which originate from outside the other parts of the WHPA. The WHPA-F is delineated by following the IPZ-3 Technical Rules.

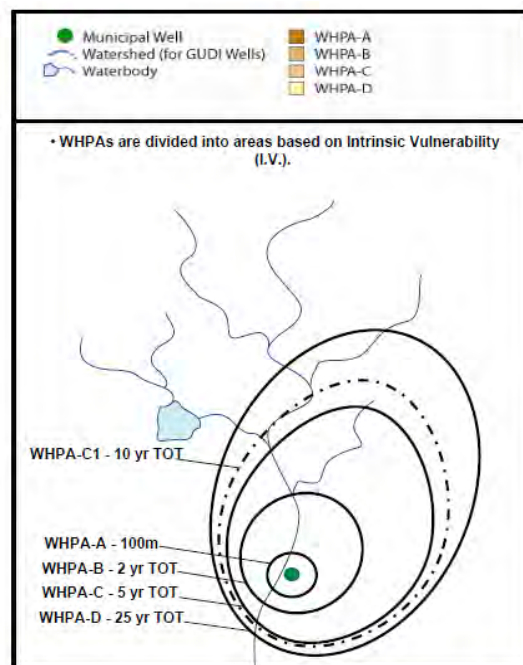
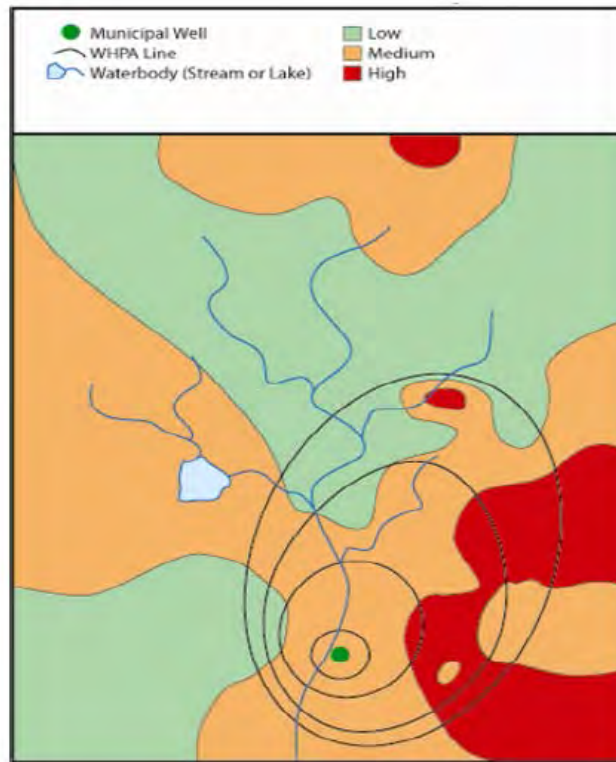


Figure 1: Wellhead Protection Areas (Ministry of Environment, 2012)

Figure 1 provides an example of the four typical WHPAs associated with municipal wells.

## Vulnerability Scoring for Wellhead Protection Areas

Each WHPA is further assessed for the intrinsic vulnerability (natural vulnerability) of the aquifers. The intrinsic vulnerability is evaluated by assessing how the geology, geography, hydrogeology, and soil (among other things) work together to affect the speed at which water moves toward it. The outcome of the intrinsic vulnerability assessment is a map that reports the vulnerability as high, medium or low (Figure 2).



*Figure 2: Intrinsic Vulnerability (Ministry of Environment, 2012)*

Once the intrinsic vulnerability has been evaluated, vulnerability scores can be assigned within the WHPAs. The Technical Rules provide the guidance necessary to take the intrinsic vulnerability (high, medium or low) and translate it to a vulnerability score (based on a 10-point scale).

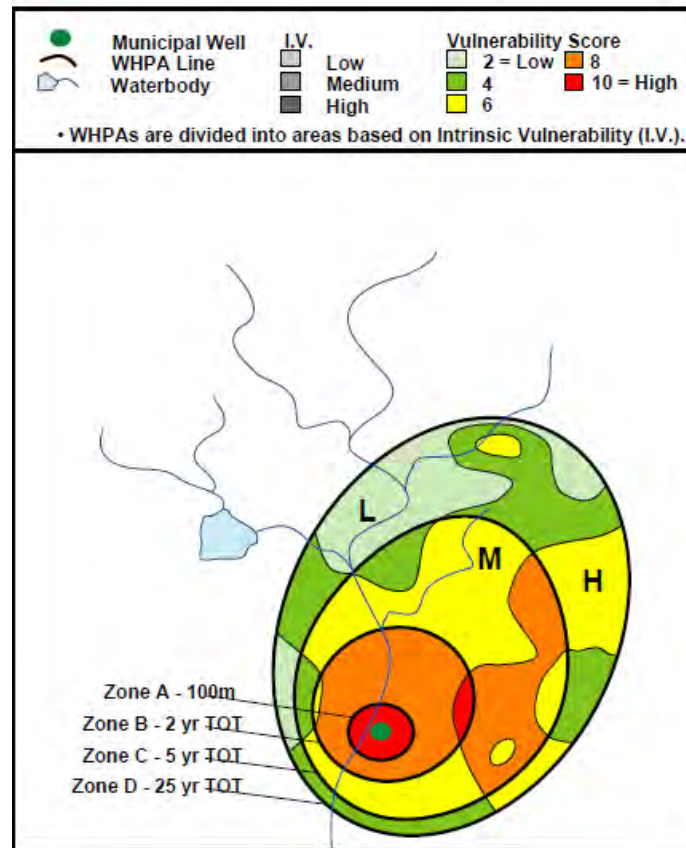
The first step to assigning vulnerability scores is overlaying the WHPAs capture zones onto the intrinsic vulnerability map (Figure 2). Table 1 shows an example of how the Technical Rules establish the relationship between the intrinsic vulnerability and the vulnerability score when using the intrinsic susceptibility index (ISI) or aquifer vulnerability index (AVI) methodology.

Within a WHPA-A, where the intrinsic vulnerability is high, medium or low, the table indicates that a vulnerability score of 10 is to be assigned. Within WHPA-B the table indicates that a vulnerability score of 10 is to be assigned where the intrinsic vulnerability is high, 8 where it is medium and 6 where it is low. A WHPA will have several vulnerability scores assigned within it,

even if the intrinsic vulnerability is the same across the wellhead. Figure 3 illustrates how the intrinsic vulnerability is translated to a vulnerability score using Table 1.

*Table 1: Example Relationship between Vulnerability and Vulnerability Score*

Vulnerability	Vulnerability Score				
	WHPA-A	WHPA-B	WHPA-C	WHPA-C1	WHPA-D
High	10	10	8	8	6
Medium	10	8	6	6	4
Low	10	6	4	4	2



*Figure 3: Relationship between Intrinsic Vulnerability and Vulnerability Scores (Ministry of Environment, 2012)*

The vulnerability scores within the capture zones can be increased if a transport pathway is present. A transport pathway acts as a conduit or direct path for contaminants to get into the underground aquifer, for example, an old well that has not been abandoned properly. Another example of a transport pathway is an open aggregate pit or quarry that has removed the natural protective materials overlaying the municipal aquifer.

Table 2 summarizes the vulnerability scores required for a significant drinking water threat to be present within a WHPA.

*Table 2: Vulnerability Score Required for a Drinking Water Threat to Be Significant in a WHPA*

Threat Type	Vulnerable Area	Vulnerability Score Required for a Significant Threat
Chemical	WHPA- A, B,C,C1,D	8 – 10
	WHPA- E	8.1 – 9
Pathogen	WHPA- A and B	10
	WHPA -E	8 – 9
DNAPL	WHPA- A,B, C, C1	Any score

## ii. Intake Protection Zones

An IPZ is the area of water and land immediately surrounding a surface water intake. It is based on the distance from the intake as well as the minimum response time for the water treatment plant operator to respond to adverse conditions or an emergency. The IPZ also includes the remaining watershed area upstream of the minimum travel time area, or an area where it can be demonstrated through modeling or other methods that a contaminant would reach the intake during an extreme event.

The Technical Rules classify surface water intakes according to the nature of the water source from which they draw water. Different methodologies are prescribed for the delineation of IPZs for each intake classification. Table 3 outlines the four intake classifications as they are outlined in the Technical Rules. In some cases, intakes are classified or re-classified based on other circumstances through approval granted by the Director of the Source Protection Programs Branch of the Ministry of the Environment.

*Table 3: Definitions for Surface Water Intakes as Outlined in the Technical Rules*

Intake Type	Description
A	Intake or the planned intake is or would be located in a Great Lake
B	Intake or the planned intake is or would be located in a connecting channel (e.g. St. Lawrence, St. Mary's, St. Clair, Detroit and Niagara rivers, and the Welland Canal)
C	Intake or the planned intake is or would be located in a river and neither the direction nor velocity of the flow of the water at the intake is affected by a water impoundment structure
D	If the intake is not a Type A, B or C (e.g., intakes located in inland lakes)

For each surface water intake, three IPZs are identified. Table 4 summarizes the methodologies for delineation of the vulnerable areas around a surface water intake.

*Table 4: Methods for Delineating Vulnerable Areas around Surface Water Intakes*

	<b>Intake Type</b>	<b>Delineation</b>
<b>Intake Protection Zone 1 (IPZ-1)</b> The area immediately around the intake.	A and D	Defined by a 1 km radius centered on the crib of the intake (Table 5).
	B	Defined by a semi-circle that has a radius of 1 km extending upstream from the crib of the intake and a rectangle with a length of 2 km centred on the crib of the intake and a width of 100 metres extending downstream from the crib of the intake.
	C	Defined by a semi-circle that has a radius of 200 metres extending upstream from the crib of the intake and a rectangle with a length of 400 metres centred on the crib of the intake and a width of 10 metres downstream of the intake.
Note: The IPZ-1 is a fixed distance from the intake based on the sensitivity analysis of a massive sudden spill in the vicinity of the intake.		
<b>Intake Protection Zone 2 (IPZ-2)</b>	The IPZ-2 is defined as the area that may contribute water to the intake where the time of travel to the intake is equal to or less than the time that is sufficient to allow the operator of the system to respond to an adverse condition in the quality of the surface water. The Technical Rules indicate that a minimum 2-hour time of travel should be used to delineate the IPZ-2 (excluding IPZ-1).	
Note: The IPZ-2 represents the operator response time to shut down the drinking water system in case of a spill.		
<b>Intake Protection Zone 3 (IPZ-3)</b>	For all types of intakes, the IPZ-3 is defined as the area of the water and land that may lead to contaminants reaching an intake during an extreme event such as a one in one hundred year rainfall as determined through modeling or other methods (contaminant transport, boundary approach, combined approach). Significant threats are then identified if it can be shown through modeling that a release of a contaminant during an extreme event may be transported to the intake.  For type C and D intakes not located in Lake Nipissing, Lake Simcoe, Lake St. Clair, or the Ottawa River, the IPZ-3 is defined as the area within each surface water body that may contribute water to the intake within the watershed boundary.	
Note: The IPZ-3 is an area beyond the IPZ-1 and 2 and is delineated differently based on the intake type.		
For all intake types where the IPZ-1, IPZ-2 and IPZ-3 abuts land, a setback of less than or equal to 120 metres or the Conservation Authority Regulation limit is included, whichever, is greater. The set-back is measured from the high water mark of the surface water body that encompasses the area where overland flow drains into the surface water body and the areas of the Conservation Authority Regulation limit along the abutted land.		



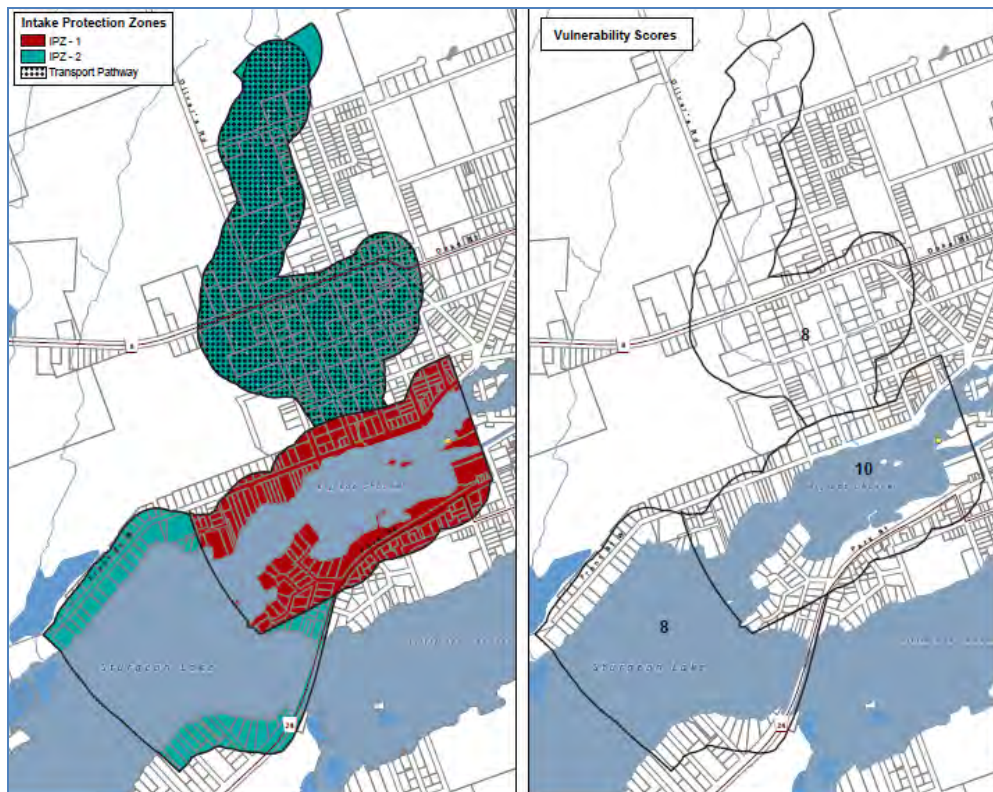
## Vulnerability Scoring for Intake Protection Zones

As was the case with the WHPAs, the vulnerable areas around a surface water intake have also been assigned a vulnerability score (Figure 4, Figure 5, Figure 6).

The vulnerability scores required for an activity to be designated as a significant drinking water threat, taking into consideration the type of threat and the vulnerable area around a surface water intake, are outlined in Table 5. Note Table 5 does not apply when significant drinking water threats are identified under the issue or events based approaches discussed in Sections 9 (II) and (III) respectively. Note also that intakes located in the Great Lakes or connecting channels do not have a vulnerability score associated with their IPZ-3 as per the Technical Rules.

*Table 5: Vulnerability Score Required for a Significant Drinking Water Threat in an IPZ*

Threat Type	Vulnerable Area	Vulnerability Score Required for a Significant Threat
Chemical	IPZ/WHPA-E	8 – 10
Pathogen	IPZ-WHPA-E	8 – 10
DNAPL	IPZ/WHPA-E	10



*Figure 4: Type D Intake Protection Zones 1 and 2 Showing Vulnerability Scores Assigned*



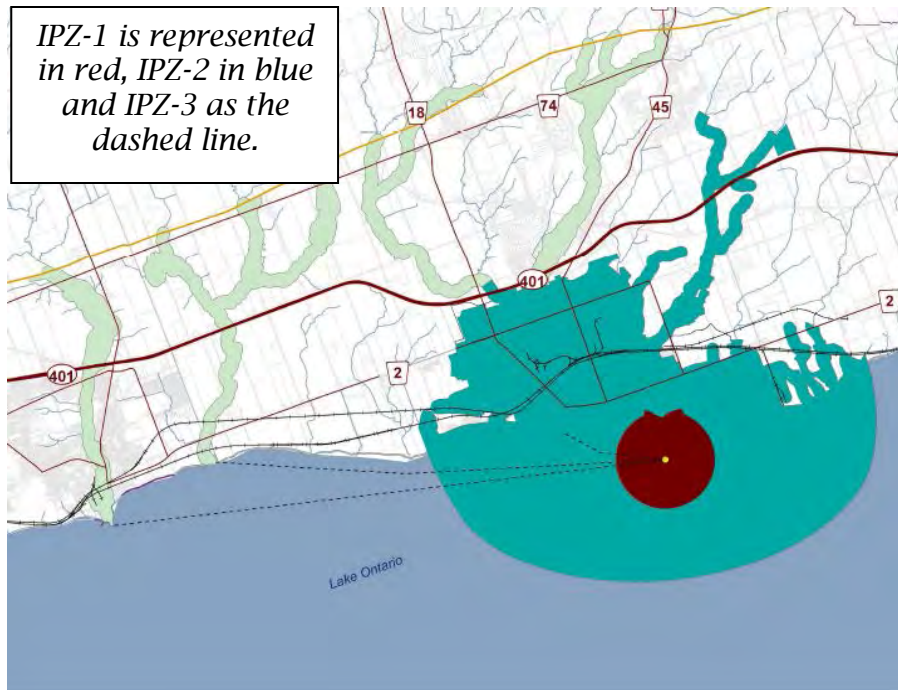


Figure 5: Three Intake Protection Zones for a Type A (Great Lakes) Intake



Figure 6: Vulnerability Scores for Vulnerable Areas around Type A Intake

### iii. Highly Vulnerable Aquifers

Although HVAs are one of four types of vulnerable areas identified under the *Clean Water Act*, significant drinking water threats cannot be found in HVAs, unless an identified issue is present. For an issue to be present in a HVA, the issue contributing area for a municipal system would have been extended to incorporate the HVA. If this is the case, significant threats associated with the issue can be located within the entire delineated issue contributing area. The issue contributing area is discussed in Section 9 (II).

### iv. Significant Groundwater Recharge Areas

Although SGRAs are one of four types of vulnerable areas identified under the *Clean Water Act*, significant drinking water threats cannot be found in SGRAs, unless an identified issue is present. For an issue to be present in a SGRA, the issue contributing area for a municipal system would have been extended to incorporate the SGRA. If this is the case, significant threats associated with the issue can be located within the entire delineated issue contributing area. The issue contributing area is discussed in Section 9 (II).

## H. Threats

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A threat is an activity or condition that adversely affects or has the potential to adversely affect the quality or quantity of any water that is or may be used as a source of drinking water that is prescribed by the Regulations as a drinking water threat. The Province has prescribed 21 threats to municipal drinking water sources. The identified activities or conditions are considered to be chemical, pathogen or dense non-aqueous phase liquid (DNAPL) threats.

Each of the activities prescribed to be drinking water threats under the *Clean Water Act* are those considered to be undertaken by humans. These activities are listed in Ontario Regulation 287/07 and examples of each activity are summarized and sorted by category in Table 7.

Table 6: Prescribed Drinking Water Threats under the Clean Water Act, 2006

Threat #	Prescribed Drinking Water Threat Activity	Examples of Threat
1	The establishment, operation or maintenance of a waste disposal site within the meaning of Part V of the <i>Environmental Protection Act</i> .	Storage of PCBs and other hazardous waste, landfilling of hazardous, non-hazardous, municipal or commercial waste, and land application of untreated septage.
2	The establishment, operation or maintenance of a system that collects, stores, transmits, treats, or disposes of sewage.	Septic systems, stormwater treatment ponds, discharge of industrial effluent, sewage treatment plants, and sanitary sewer systems.
3	The application of agricultural source material to land.	Manure produced by farm animals, and run-off from farm yards and manure storages.
4	The storage of agricultural source material.	
5	The management of agricultural source material.	Facilities that cultivate fish or other aquatic organisms in a controlled environment.
6	The application of non-agricultural source material.	Land application of sewage biosolids or other similar wastes.
7	The handling and storage of non-agricultural source material.	
8	The application of commercial fertilizer to land.	Contaminants of interest include nitrogen and phosphorus.
9	The handling and storage of commercial fertilizer.	
10	The application of pesticide to land.	Pesticides of interest include the chemicals used to control weeds (herbicides), or fungi (fungicides) or those used as a soil fumigant to control fungi, and nematodes and weeds.
11	The handling and storage of pesticide.	
12	The application of road salt.	Contaminants of interest include chloride and sodium.
13	The handling and storage of road salt.	
14	The storage of snow.	Contaminants of interest include chloride, sodium, and petroleum hydrocarbons.
15	The handling and storage of fuel.	Bulk plants or facilities where fuel is manufactured, gas stations and cardlocks or keylocks, marinas, private storage such as farms and contractor yards, and heating

		oil tanks for homes and businesses.
<b>16</b>	The handling and storage of a dense non-aqueous phase liquid.	Dry-cleaning chemicals, paint and spot removers, rug-cleaning fluids, and varnishes.
<b>17</b>	The handling and storage of an organic solvent.	Paints, varnishes, lacquers, adhesives, glues, and degreasing or cleaning agents, and in the production of dyes, polymers, plastics, textiles, and printing inks.
<b>18</b>	The management of run-off that contains chemicals used in the de-icing of aircraft.	Airports using ethylene glycol to de-ice aircrafts.
<b>19 *</b>	An activity that takes water from an aquifer or a surface water body without returning the water taken to the same aquifer or surface water body.	Water taken from Lake Simcoe and discharged into groundwater.
<b>20 *</b>	An activity that reduces the recharge of an aquifer.	Increasing impervious cover (parking lots).
<b>21</b>	The use of land as livestock grazing or pasturing land, an outdoor confinement area or a farm-animal yard.	Fields where livestock graze, and confinement areas outside barns.

*\* This implementation module does not detail the process to identify significant threats for water quantity (threats 19 and 20) as the process is unique for each water quantity threat identified. Water quantity threats are derived through Tier 3 Water Budget studies, in which your municipality was likely involved. To confirm the absence or presence of water quantity threats in your municipality, contact your local source protection authority.*

*Table 7: Summary of Water Quality Threats by Threat Category*

<b>Threat Category</b>	<b>Threat #</b>
<b>Chemical</b>	<b>1,2,3,4,6,7,8,9,10,11,12,13,14,15,17,18,21</b>
<b>Pathogen</b>	<b>2,3,4,5,6,7,21</b>
<b>DNAPL</b>	<b>1,2,16</b>

If an activity is not listed in Table 7, it does not fall within the scope of the *Clean Water Act*. Examples of activities outside the scope of the *Clean Water Act* include geothermal power, pharmaceuticals and personal care products, and disposal of imported fill. However, activities not strictly identified above can be added as “local” threats. See Section 9 (v) for a description of local threats.

The 21 potential threats above can be classified into three categories: low, moderate or significant – based on a calculated risk score. The process for determining a risk score is discussed next.

## I. Approaches for Identifying Significant Drinking Water Threats

There are five ways to identify significant drinking water threats, as prescribed under the *Clean Water Act*:

1. threats based approach
2. issue based approach
3. events based approach
4. conditions based approach
5. local threats based approach

According to the *Clean Water Act*, there must be policies for all activities classified as significant drinking water threats. Policies must address activities that currently occur as well as any activities that may occur in the future.

Each source protection committee is given the option of creating policies for moderate or low drinking water threats. Review your local source protection plan to determine whether or not policies were developed for these threats in your area.

### **i. Threats Based Approach**

The threats based approach is the most common way to identify drinking water threats. The foundation for the threats based approach is the risk score. A risk score is assigned to an activity that is based on a combination of hazard rating (of the specific activity) and vulnerability score (of the area where the activity takes place).

$$\text{Risk Score} = \text{Hazard Rating} \times \text{Vulnerability Score}$$

Hazard ratings are the basis for the circumstances in the Tables of Drinking Water Threats, and are assigned scores on a scale of 2 – 10 by the Ministry of Environment. The scores were assigned by considering a number of factors, including but not limited to toxicity, quantity of contaminant released, and the frequency of association with pathogens.

Recall that the vulnerability score is assigned on a scale of 2 – 10 by considering the intrinsic vulnerability and time of travel.

Table 8 summarizes the risk scores required for an activity or condition to be considered a significant, moderate or low drinking water threat. A risk score of 80 – 100 is required for the activity or condition to be considered a significant drinking water threat.

*Table 8: Summary of Risk Scores Required for Drinking Water Threats*

<b>Threat</b>	<b>Risk Score</b>
Significant	80 – 100
Moderate	60 – 79
Low	41 – 59

*For example, an activity with a hazard rating of 8 that takes place in an area where the vulnerability score is 8 has a risk score of 64.*

*Table 8 identifies it as a moderate threat. An activity assigned a hazard rating of 8 that takes place in an area where the vulnerability score is 10 has a risk score of 80.*

Table 8 identifies it as a significant threat.

The risk scores required to have a significant drinking water threat are built into the Tables of Drinking Water Threats and Tables of Circumstances, meaning you do not need to explicitly calculate the risk score to identify significant drinking water threats. The Tables indicate when a specific circumstance is significant, moderate or low.

## Using the Provincial Tables to Determine Threats

### Tables of Drinking Water Threats

The Province established the Tables of Drinking Water Threats to identify circumstances in which activities are classified as drinking water threats. These tables can be used to identify circumstances where activities are significant threats and to indicate vulnerable areas where activities are or would be significant drinking water threats. To determine these circumstances and areas, it is important to understand how the tables are set up. Find the Tables of Drinking Water Threats at <http://www.ontario.ca/environment-and-energy/tables-drinking-water-threats>

Upper Thames River Conservation Authority has an interactive version of the table also available online:

<http://maps.thamesriver.on.ca/swpCAMaps/threatsLookup/threats/threatsList.aspx>

*Table 9: Layout of the Tables of Drinking Water Threats*

Location in Table	Field
Column 1	Activity (drinking water threat), based on the 19 water quality prescribed drinking water threats.
Column 2	Set of circumstances specific to a drinking water threat, including presence of contaminant parameters, volumes, and release into the environment.
Column 3	Vulnerable area (e.g. WHPA, IPZ)
Columns 4 – 6	Vulnerability scores identifying whether the activity under the set of circumstances is a significant, moderate or low drinking water threat.

## Example: Determining Threats Using the Tables of Drinking Water Threats

### Step 1: Identifying Drinking Water Threat (Table 10, Column 1)

- The establishment, operation or maintenance of a system that collects, transmits, treats or disposes of sewage.

### Step 2: Review the Circumstances (Table 10, Column 2)

- Is the sewage system a stormwater management facility designated to discharge stormwater to land or surface water?
- Is the drainage area associated with the stormwater facility more than 10 hectares but not more than 100 hectares?
- Are the predominant land uses in the area rural, agricultural or low density residential?
- Could the discharge of stormwater result in the presence of lead or one or more of its compounds containing lead in groundwater or surface water?

If you answer “yes” to all of these questions, this circumstance would apply.

### Step 3: Review the location of the activity (i.e., stormwater management facility) (Table 10, Column 3)

- Is the activity in the IPZ-1, IPZ-2, IPZ-3, or WHPA-E?
- Is the activity in the WHPA-A, WHPA-B, WHPA-C, WHPA-C1, or WHPA-D?
- Is the activity in a highly vulnerable aquifer area?
- Is the activity in a significant groundwater recharge area?

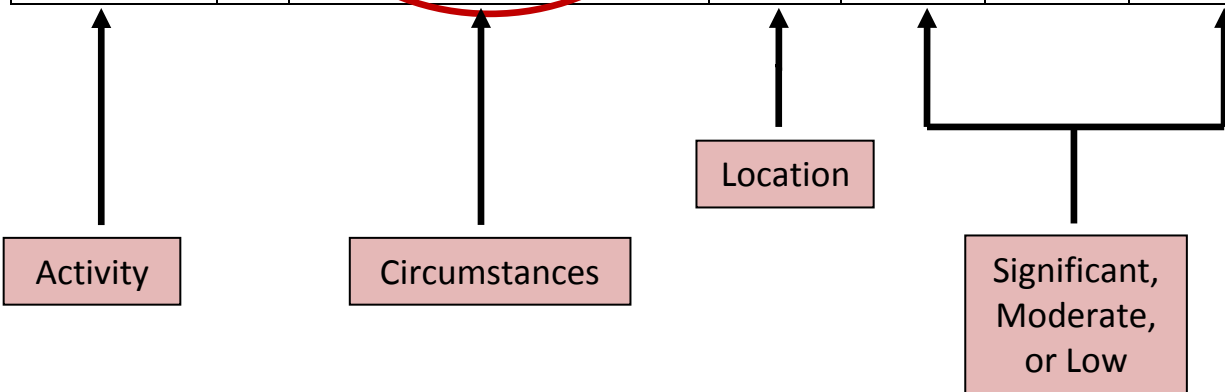
### Step 4: Determine whether the threat is significant, moderate, or low (Table 10, Columns 4-6)

- If the activity is in the IPZ-1, IPZ-2, IPZ-3, or WHPA-E with vulnerability score of 10, the threat is **significant**.
- If the activity is in the IPZ-1, IPZ-2, IPZ-3 or WHPA-E with a vulnerability score of 8 – 9, or WHPA-A, B, C and D with a vulnerability score of 10, the threat is **moderate**.
- If the activity is in the IPZ-1, IPZ-2, IPZ-3, or WHPA-E with a vulnerability score of 4.9 – 7.2, the threat is **low**.



Table 10: Sample from the Tables of Drinking Water Threats

Drinking Water Threats	Reference Number	Under the Following CIRCUMSTANCES	Areas Within Vulnerable Areas	Threat is Significant in Areas with a Vulnerability Score of	Threat is Moderate in Areas with a Vulnerability Score of	Threat is Low in Areas with a Vulnerability Score of
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
The establishment, operation or maintenance of a system that collects, transmits, treats or disposes of sewage.	522	1. The system is a storm water management facility designed to discharge storm water to land or surface water. 2. The drainage associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential. 3. The discharge may result in the presence of Lead or one or more of its compounds containing Lead in groundwater or surface water.	IPZ-1, IPZ-2, IPZ-3, and WHPA-E	10	8-9	4.9-7.2
			WHPA-A, WHPA-B, WHPA-C, WHPA-C1, WHPA-D		10	6-8
			HVA			6
			SGRA			6



### Tables of Circumstances

The Provincial Tables of Circumstances contain the same information as the Tables of Drinking Water Threats, but are presented in a different format. Based on the possible combinations of vulnerable areas and vulnerability scores, 76 different Provincial Tables of Circumstances have been created. The Tables of Circumstances represent all of the different combinations for which there are provincially prescribed threats and circumstances within the Tables of Drinking Water Threats. There are five categories of tables:

1. Chemical tables for groundwater (WHPAs)
2. DNAPL tables for groundwater
3. Pathogen tables for groundwater
4. Chemical and DNAPL tables for surface water (IPZs)
5. Pathogen tables for surface water

Each of the five categories of tables have been further broken down into activities that are significant, moderate, or low drinking water threats depending on the vulnerability score of the

vulnerable area. As Table 11 demonstrates, 12 of the 76 Provincial Tables of Circumstances list circumstances where a threat could be significant (see Table 11).

The Tables of Circumstances were used to generate maps for each drinking water system (included in the Assessment Reports) that relate the vulnerability score for a WHPA or IPZ to the number and types of circumstances in the Tables of Drinking Water Threats. The maps in the Assessment Reports illustrate the areas around the municipal drinking water systems where land use activities either are (for the case of existing activities), or would be (for the case of potential future activities) significant, moderate or low drinking water threats. Embedded in these maps or in the Assessment Reports are tables to direct the reader to the appropriate list of threats that corresponds to the combination of vulnerable area, i.e. WHPA A-E or IPZ 1-3 and vulnerability score (10, 8, 6 or 2).

### **Determining Threats Using the Tables of Circumstances**

Using Figure 7 as an example, the areas where significant, moderate, or low drinking water threats are present is shown for both chemical and pathogen threats. The embedded table demonstrates that, where the vulnerability score is 10 (Red), Provincial Tables 20 and 46 would list the circumstances under which an activity in that area would be considered a chemical or pathogen threat, respectively. The areas where the vulnerability score is 8 (orange) are where the circumstances listed in Provincial Tables 21 (chemical) and 47 (pathogen) would apply. Please note that the colouring used to illustrate the vulnerability scores in this example was not used by all source protection regions. Therefore, the mapping in your Assessment Report(s) may not be exactly the same.

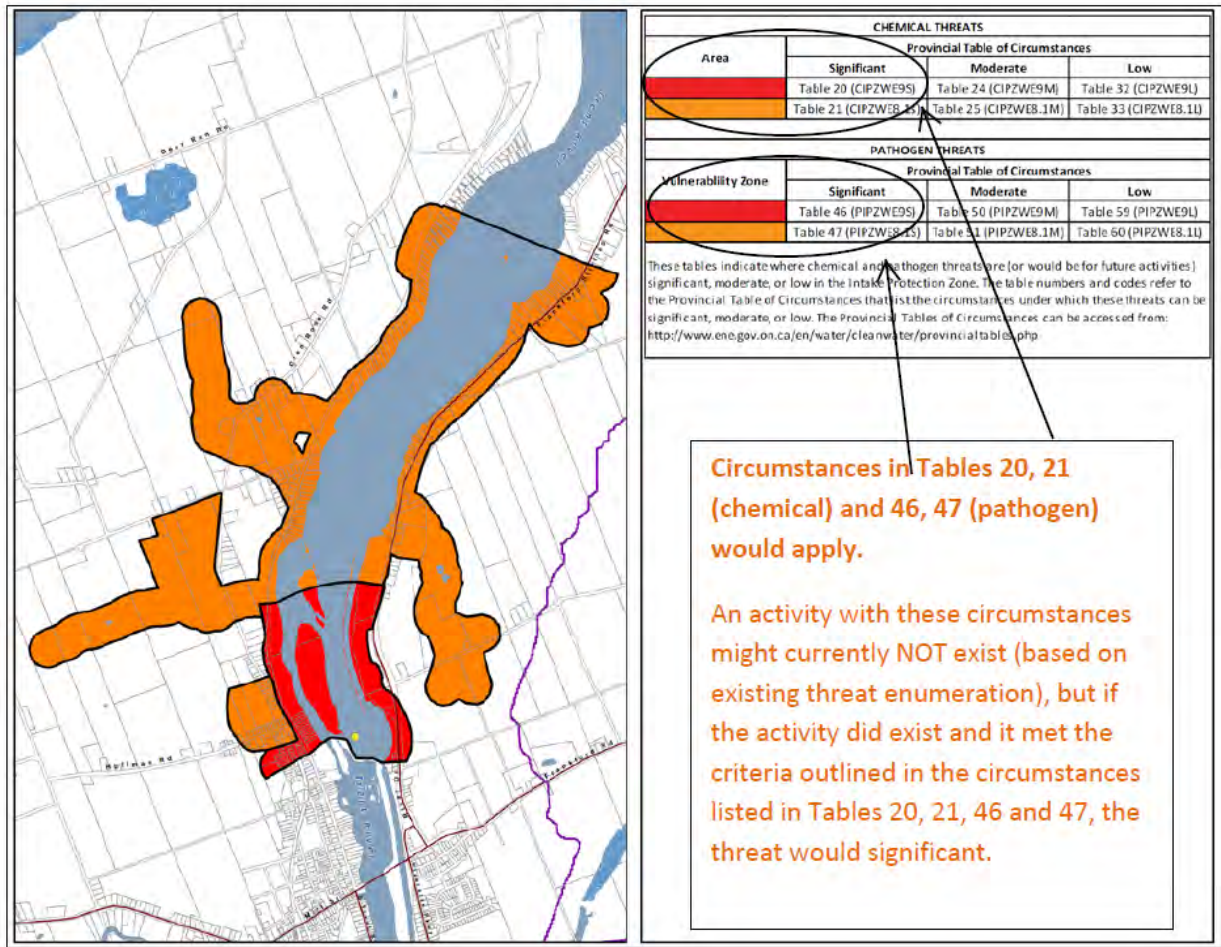
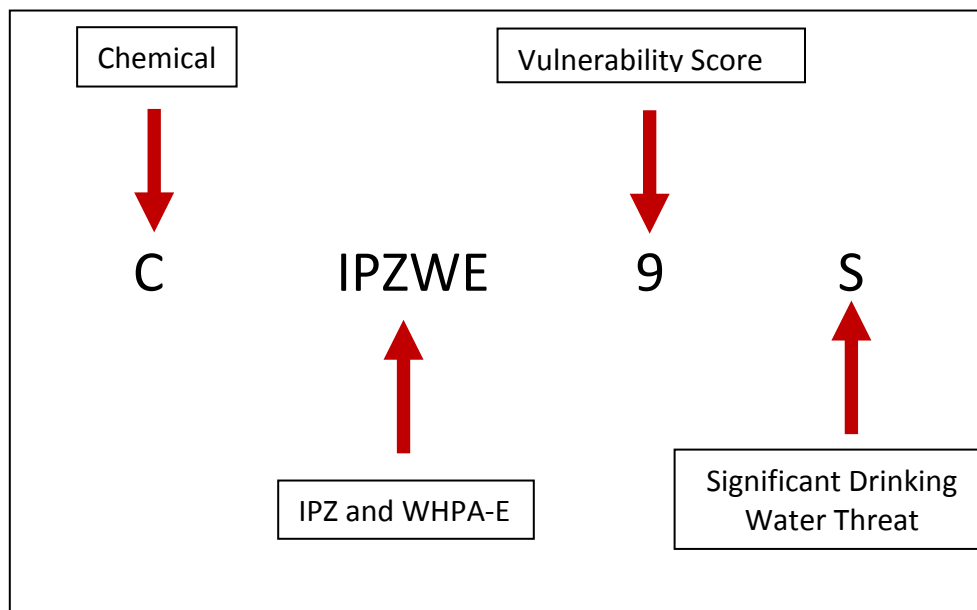


Figure 7: Areas for Significant, Moderate and Low Drinking Water Threats

A numerical code corresponds to each of the Provincial Tables of Circumstances. The code distinguishes between the type of threat (i.e., chemical, pathogen, DNAPL), the location of the activity (i.e., IPZ, WHPA), the vulnerability score, and the classification of the threat (i.e., significant, moderate or low). The Provincial Tables of Circumstances supports the Tables of Drinking Water Threats. As you complete the threat verification exercise, you will work extensively with both sets of Tables. For some threats and vulnerable areas you may find it easier to work with the Provincial Tables of Circumstances, while in other cases it will be easier to work with the Tables of Threats. For example, when screening for significant drinking water threats within WHPA-E, the Tables of Circumstances may be easier as you need to look at only a few pages instead of searching through each threat type in the Tables of Threats.

*Table 11: Provincial Tables of Circumstances Where a Threat Could Be Significant*

TABLE NUMBER	CODE	DESCRIPTION
1	CW10S	Chemicals in a WHPA with a vulnerability score of 10
2	CW8S	Chemicals in a WHPA with a vulnerability score of 8
19	CIPZ10S	Chemicals in an IPZ with a vulnerability of 10
20	CIPZWE9S	Chemicals in an IPZ or WHPA E where the vulnerability score is 9
21	CIPZWE8.1S	Chemicals in an IPZ or WHPA E where the vulnerability score is 8.1
22	CIPZWE8S	Chemicals in an IPZ or WHPA E where the vulnerability score is 8
9	DWAS	DNAPLS in WHPA A, B, C, C1, with any vulnerability
12	PW10S	Pathogens in WHPA A, B with a vulnerability of 10
45	PIPZ10S	Pathogens in an IPZ with a vulnerability of 10
46	PIPZWE9S	Pathogens in an IPZ or WHPA E with a vulnerability of 9
47	PIPZWE8.1S	Pathogens in an IPZ or WHPA E with a vulnerability of 8.1
48	PIPZWE8S	Pathogens in an IPZ or WHPA E with a vulnerability of 8



*Figure 8: Understanding the Provincial Tables of Circumstances Codes (Example 1)*

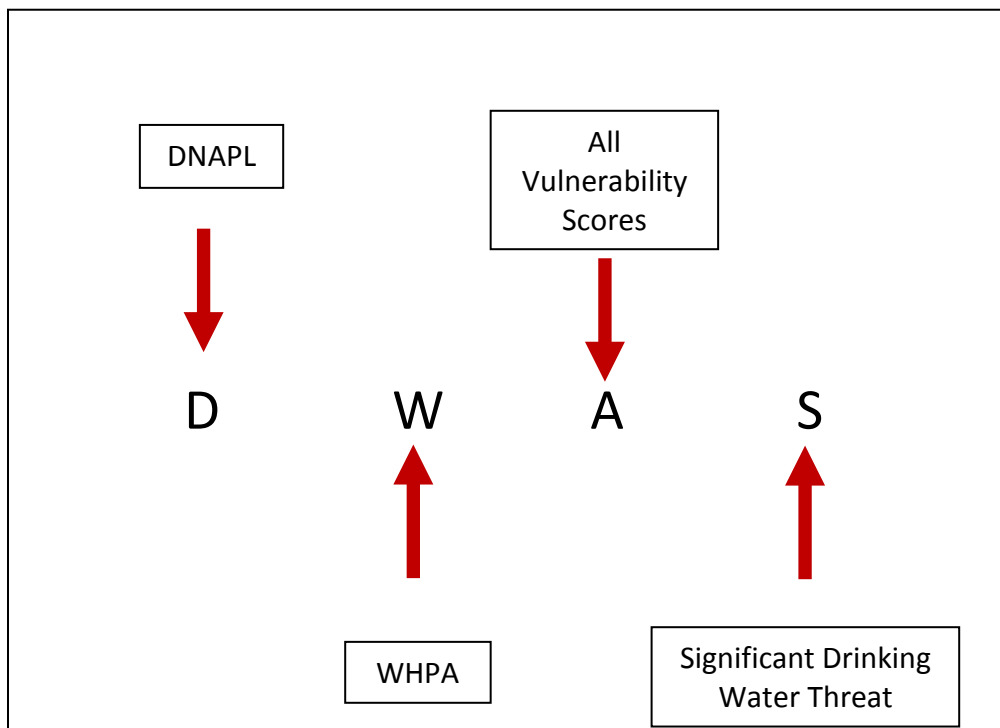


Figure 9: Understanding the Provincial Tables of Circumstances Codes (Example 2)

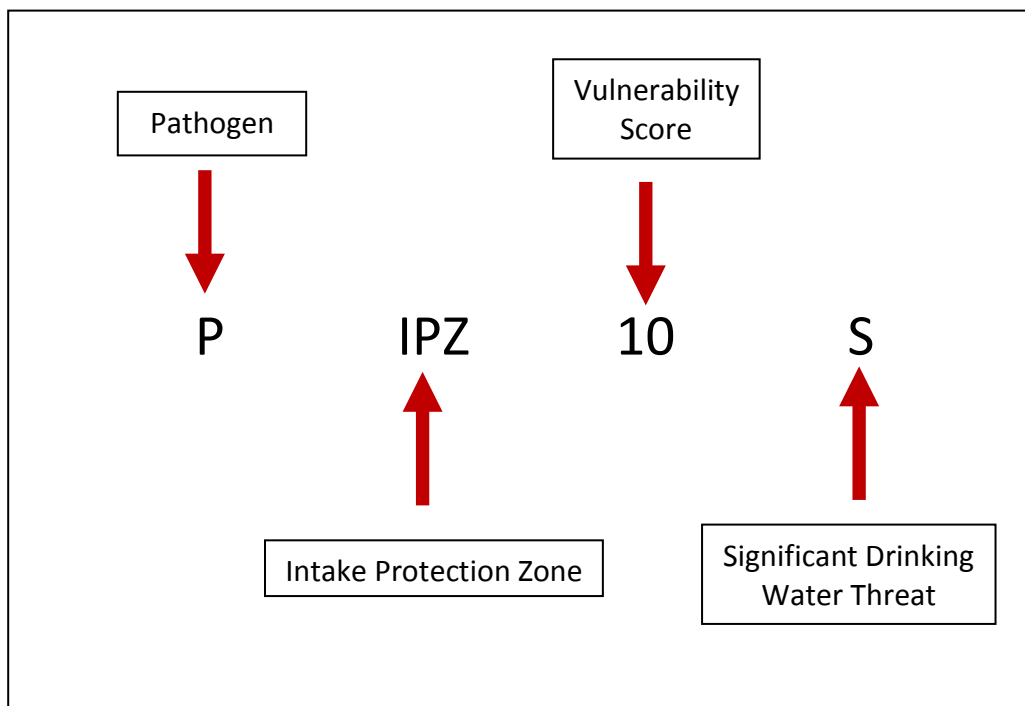


Figure 10: Understanding the Provincial Tables of Circumstances Codes (Example 3)

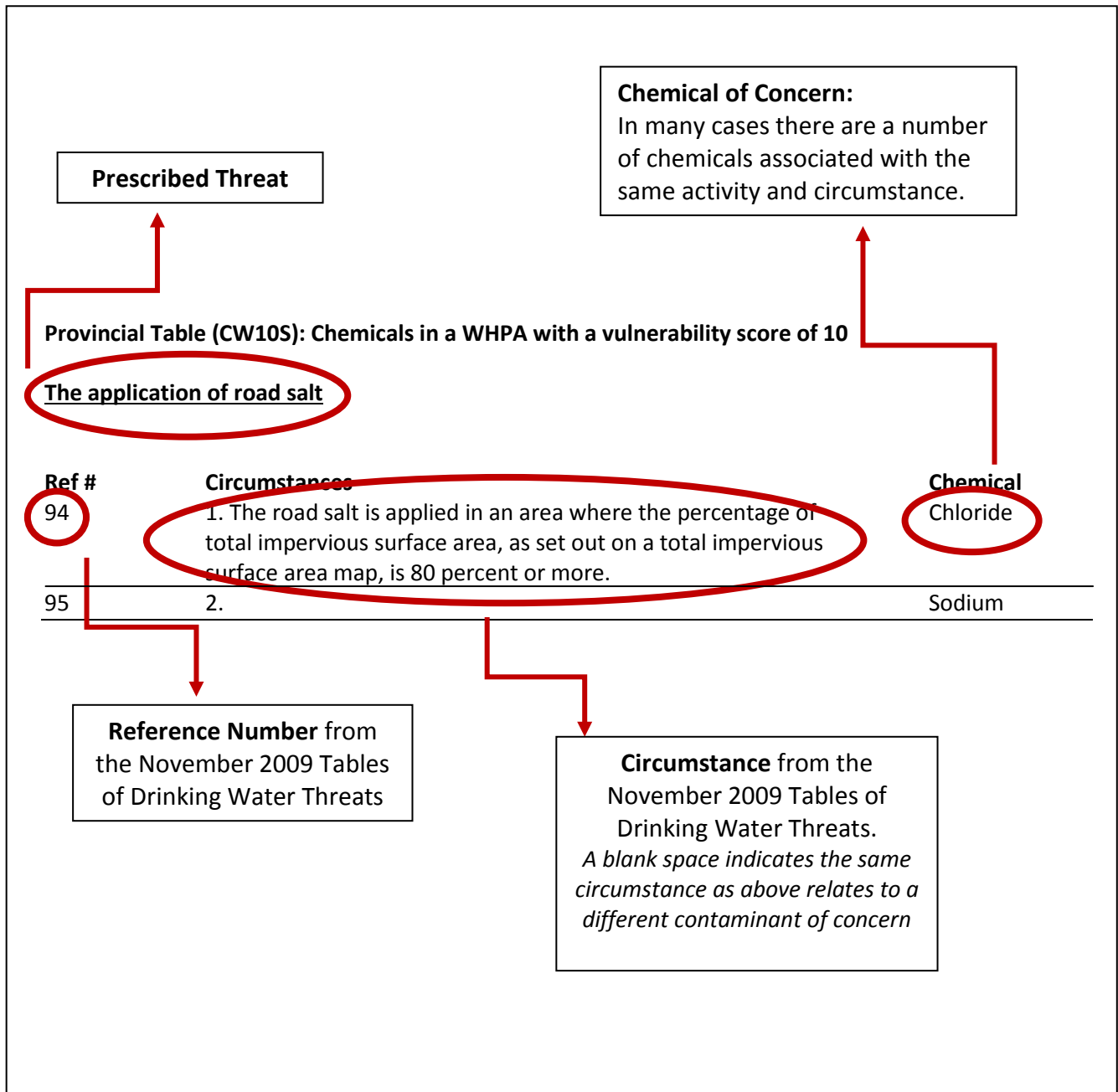


Figure 11: Understanding the Provincial Tables of Circumstances

## ii. Issue Based Approach

An issue is defined under the *Clean Water Act* as an existing water quality problem associated with a municipal drinking water supply (this includes monitoring wells), or evidence of a trend that suggests a deterioration of water quality for one or more parameters. The Assessment Reports will identify any issues for each drinking water system.

The intent of the issues evaluation is to identify chemical or bacterial concentrations in raw drinking water at the drinking water system that will limit the ability of the water to serve as a drinking water source, either now or in the future. The presence of a contaminant in a well or drinking water system is determined through the analysis of available data and reports. To be considered a drinking water issue, a parameter needs to be at a concentration that is above the Ontario Drinking Water Quality Standards, or have an increasing trend that will lead to concentrations being above the standards, in accordance with the Technical Rules. A parameter may not be identified as an issue in cases where it is naturally occurring or effective treatment is in place. For example, both iron and manganese can occur naturally in the environment. Therefore, exceeding the Ontario Drinking Water Standards for these two metals in the data collected from a municipal drinking water system doesn't necessarily identify it as an issue.

The different source protection regions developed a process for identifying issues which met the Technical Rules. Figure 12 outlines an example process used by a few source protection regions to identify an issue. Consult your local Assessment Report for specific details on how issues were identified within your municipality.

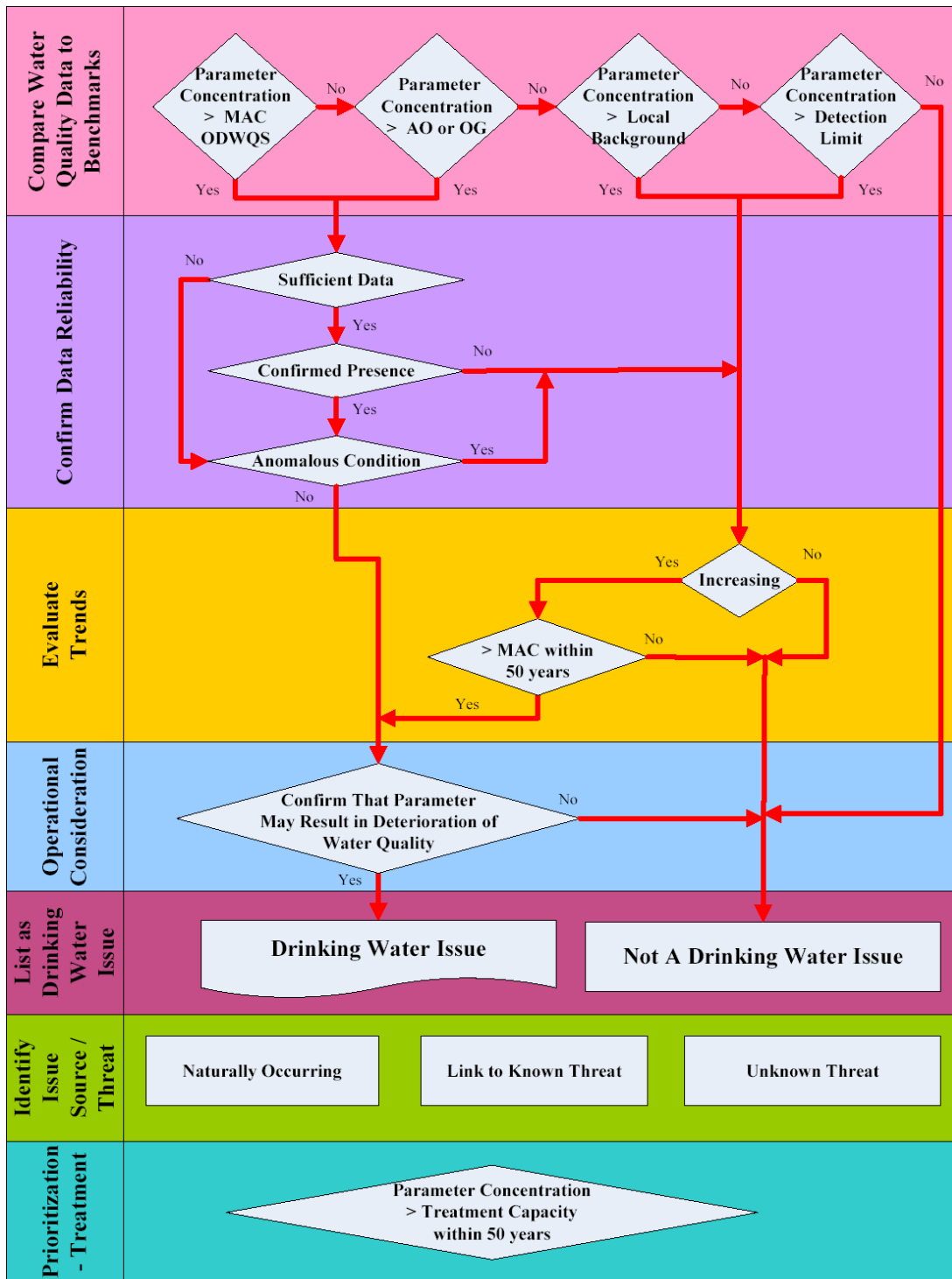


Figure 12: Methodology for Identifying Drinking Water Issues

Note the following acronym definitions in this figure: MAC = Maximum Acceptable Concentration, ODWQS = Ontario Drinking Water Quality Standards, AO = Aesthetic Objective, OG = Operational Guideline.



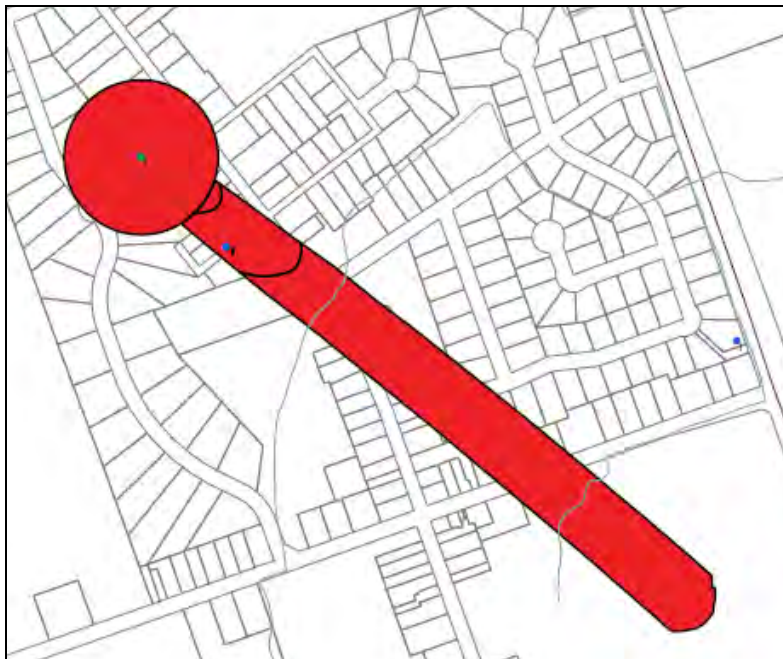
## Issue Contributing Area

An issue contributing area is the area where drinking water threats may contribute to a known drinking water issue. An issue contributing area can occur within a WHPA, an IPZ, and may include a HVA, or a SGRA.

Within issue contributing areas, significant drinking water threats are present anywhere a circumstance for the identified issue is occurring, regardless of the vulnerability score stated to be required in the Tables of Threats or Circumstances.

Step 1: Review available data and reports for evidence that the concentration of a parameter is above the Ontario Drinking Water Quality Standards, or has an increasing trend that will lead to concentrations being above the standards. In this example, it has been determined that a nitrate-nitrogen issue exists.

Step 2: Identify the issue contributing area (Figure 13, Table 12). For this municipal drinking water supply system, the issue contributing areas represents the entire WHPA shown in red.



*Figure 13: Issue Contributing Area of a Municipal Well*

Table 12: Area Where Activities Are or Would Be Significant Drinking Water Threats

THREATS RELATED TO DRINKING WATER ISSUES	
Area	Significant
	Activities prescribed to be drinking water threats that can generate nitrate-nitrogen (NO <sub>3</sub> – N)
This table identifies the activities that are (or would be for future activities) significant drinking water threats within the issue contributing area.	

Step 3: Identify all significant threats within the issue contributing area that are associated with the issue. All circumstances associated with nitrate and nitrogen listed in the Provincial Tables of Threats and Circumstances would trigger the identification of a significant drinking water threat if the activity or condition is present or could be occurring anywhere within the issue contributing area, regardless of the vulnerability score within the different capture zones.

### iii. Events Based Approach

The events based approach uses numerical modeling to identify potential significant threats and delineate the IPZ-3 for certain intakes. Through numerical modeling, spills of potential contaminants are simulated. This model calculates the probability of a spill reaching the intake at a concentration sufficient to trigger a threat by considering factors such as wind speed, water currents and flow rates.

#### Steps to Identify Significant Drinking Water Threats and IPZ-3 Delineation

Step 1: Select extreme events for threat identification and IPZ-3 delineation.

An analysis of wind speeds and river flows is undertaken to develop an extreme event scenario with a joint probability (considering both wind and flow) of approximately a 1-in-100-year storm event.

Step 2: Identify potential significant threats and assign spill scenarios.

Identify specific activities that may result in a contaminant being transported to the intake during an extreme event and the possible deterioration of the drinking water source. If an activity is considered to be a potential significant threat, spill scenarios are developed for the purposes of modeling transport to the intake.

Step 3: Model lake and tributary spills.

Calculate the dilution and reduction in spill concentrations in tributaries between the spill location and the tributary mouth by analytical means, during an extreme event.

Step 4: Identify significant threats and delineate IPZ-3.

Determine whether the spill constitutes a threat to the drinking water source at the intake through a comparison of modeled concentrations at the intake with the Ontario Drinking Water Quality Standard (ODWQS). Concentrations exceeding the ODWQS are typically considered to be a deterioration of the drinking water. If the identified activity is not within an existing IPZ (IPZ-1 or 2), an IPZ-3 is delineated based on the location of the significant threat activities.

Identifying the extent of the IPZ-3 and the associated significant threats is an iterative process. Upon review of step 3 and 4 results, revisit step 1 to ensure additional activities excluded in the first round are still no longer a threat. If the new modeling results indicate that an additional activity should be considered, proceed with steps 3 and 4.

#### **iv. Conditions Based Approach**

A condition represents the contamination of rock, soil, or water resulting from a past activity, such as a fuel spill. A condition must be within a vulnerable area (WHPA, IPZ, HVA, SGRA) and meet certain criteria as outlined in the Technical Rules to be considered a threat. Unless there is evidence that the condition is causing off-site contamination, the condition will not be considered a significant threat as prescribed by the Technical Rules and described in this section.

##### **Criteria to Identify a Condition in the Technical Rules**

1. The presence of a DNAPL in groundwater in a HVA, SGRA, or WHPA.
2. The presence of a single mass more than 100 litres of one or more DNAPLs in surface water in an IPZ.
3. The presence of a contaminant in groundwater in a HVA, SGRA, or WHPA, if the contaminant is listed in Table 2 of the Soil, Groundwater and Sediment Standards and is present at a concentration that exceeds the potable groundwater standard set out for the contaminant in that table.
4. The presence of a contaminant in surface soil in an IPZ, if the contaminant is listed in Table 4 of the Soil, Groundwater and Sediment Standards and is present at a concentration that exceeds the potable groundwater standard set out for the contaminant in that table.
5. The presence of a contaminant in sediment, if the contaminant is listed in Table 1 of the Soil, Groundwater and Sediment Standards and is present at a concentration that exceeds the sediment standard set out for the contaminant in that table.

Conditions are evaluated by calculating a risk score (Table 13). The risk score is calculated by multiplying the hazard rating by the vulnerability score of the vulnerable area in which the condition is located. The hazard rating is higher when there is evidence that the condition is causing offsite contamination or if the condition is on a property where a well, intake, or monitoring well related to a drinking water system is located. The Technical Rules specify that

where there is evidence that the condition is causing offsite contamination, or if the condition is on the same property as the drinking water system well, intake or monitoring well, the hazard rating is 10. In all other situations, the hazard rating is 6 (i.e. if the condition is and will remain contained within the site).

A condition may also be a significant drinking water threat if it is associated with a drinking water issue or if there is evidence that it is causing offsite contamination.

*Table 13: Classification of Threat Levels for Drinking Water Conditions*

Threat Level	Risk Score
Significant	≥ 80
Moderate	60 – 79
Low	41 – 59

### **Steps to Identify a Condition**

Step 1: Review available data and reports for evidence that a past activity is causing contamination offsite. For this example, there is evidence of vinyl chloride contamination as a result of past activities.

Step 2: Identify the hazard score for the condition based on the Technical Rule criteria. For this example, it was determined that the hazard score associated with the vinyl chloride contamination is 10 because of evidence of offsite contamination.

Step 3: Identify the risk score of the condition. Recall that the risk score is equal to the vulnerability score multiplied by the hazard score and Table 14 identifies the areas where the condition would be significant, moderate and low.

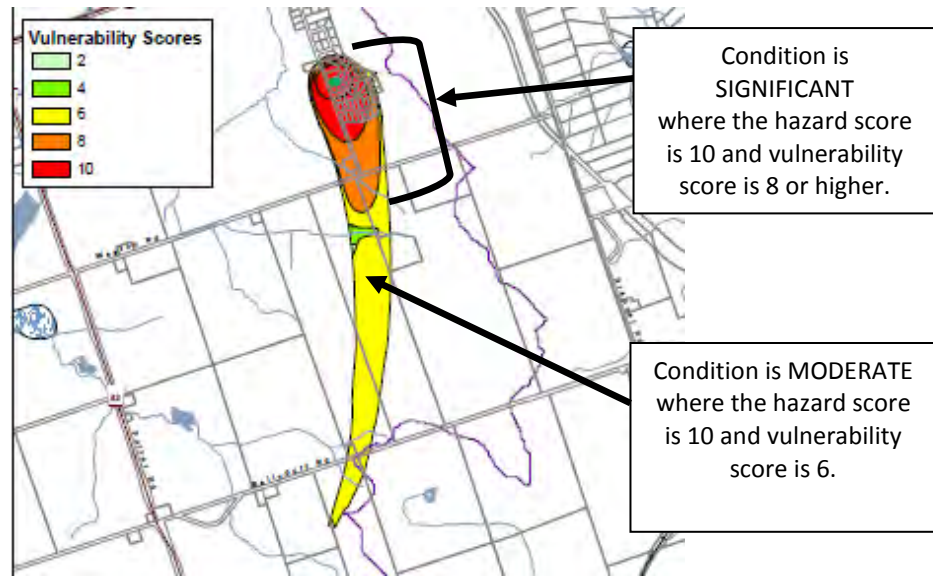


Figure 14: Location of a Condition to Be Classified as a Significant Threat

Table 14: Summary of the Impact of Conditions to Drinking Water Threats

Vulnerability Score	Evidence that the condition is causing offsite contamination and/or condition is on a property or well related to the drinking water system			All other situations		
	Hazard Score	Risk Score	Are or Would Be Conditions Risk	Hazard Score	Risk Score	Are or Would Be Conditions Risk
10	10	100	Significant	6	60	Moderate
8	10	80	Significant	6	48	Low
6	10	60	Moderate	6	36	Negligible Risk
4	10	40	Negligible Risk	6	24	Negligible Risk

**v. Local Threats Based Approach**

Source protection committees had the option to identify local threats as significant where permission was given by the Director of the Source Protection Programs Branch. To be designated as a local threat, three main criteria must be met:

- 1) The source protection committee identified the activity as a potential threat to a municipal drinking water source.
- 2) In the opinion of the Director, the chemical hazard rating of the activity is greater than 4, or the pathogen hazard rating of the activity is greater than 4.
- 3) The risk score for the activity in the vulnerable area is greater than 40, calculated as outlined in the Technical Rules.

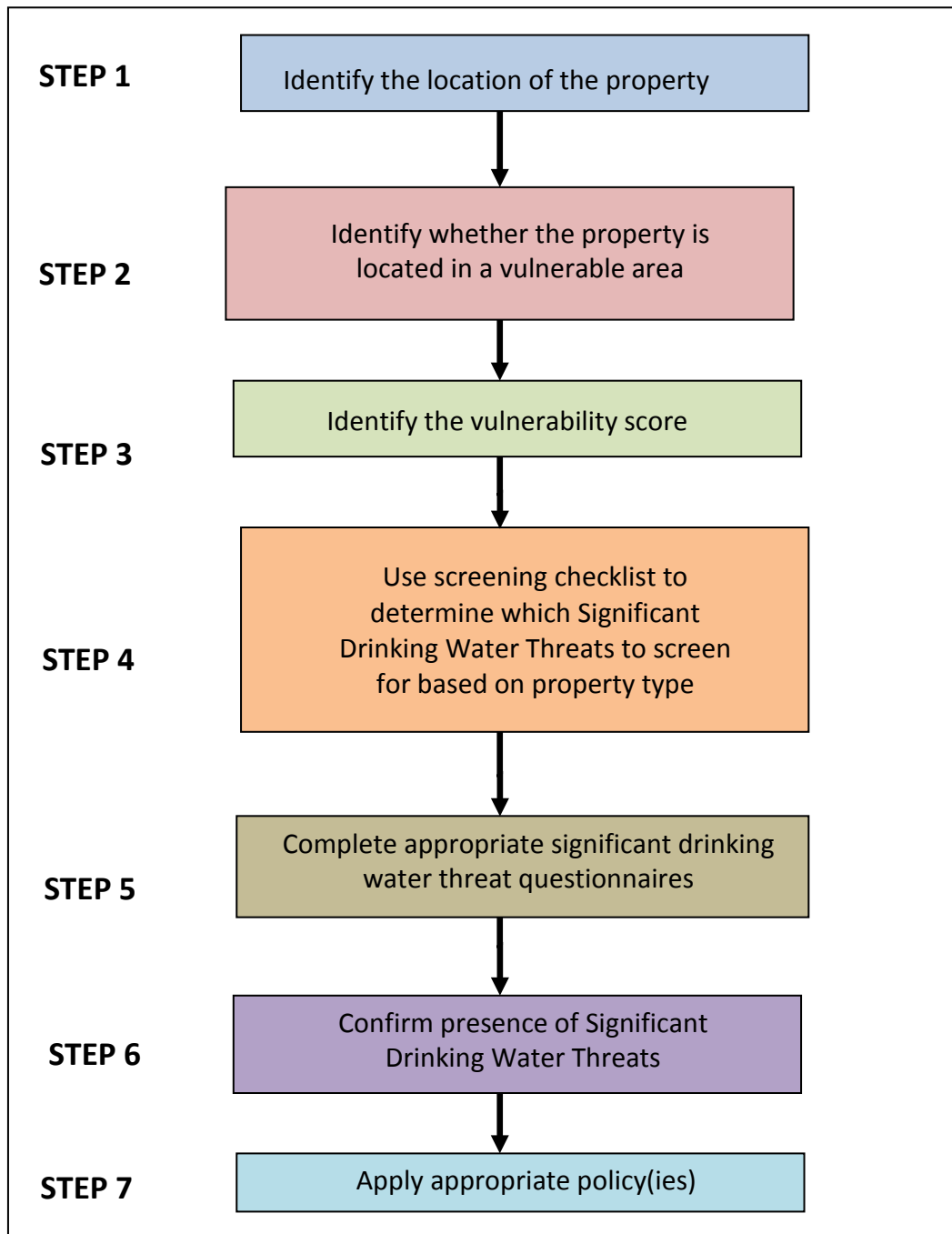
Consult your local source protection plan to determine if your source protection committee was given permission to designate an activity as a local threat.

Appendix 1 provides an example of a local threat in the Otonabee-Peterborough Source Protection Region.

## J. Putting It All Together- Steps for Identifying Threats and Applying Policies

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This section pieces together the information provided to determine if significant drinking water threats are present on a property. The process of determining whether an activity is a significant drinking water threat can be broken into seven key steps (Table 15).



*Figure 15: Steps in Identifying and Confirming Significant Drinking Water Threats*

The first three steps in determining if significant drinking water threats are present onsite involve identifying the location of the property in question in relation to vulnerable area and vulnerability score. Once the property location has been determined, confirm that the property is located within a vulnerable area where significant drinking water threats are possible. Under the *Clean Water Act* significant drinking water threats are only found within WHPAs, IPZs or an issue contributing area, which may include HVAs or SGRAs.

Next, identify the vulnerability score. Within WHPAs and IPZs significant drinking water threats are possible anywhere the vulnerability score is 8 – 10, with the exception of the issue contributing area. Within the issue contributing area, significant drinking water threats are present anywhere a circumstance for the identified threat is met, regardless of the vulnerability score.

Once the property location, vulnerable area and vulnerability score have confirmed that the property is located in an area where significant drinking water threats are possible, identify the significant drinking water threats for which you want to screen. Figure 16 identifies threats commonly found on parcels of land based on the property type. The screening chart groups property types into four broad categories: agricultural, residential, industrial / commercial / institutional, and municipal. Not every property will fall into the four broad classes exclusively. For example, agricultural properties can have a residence and an ancillary commercial business also onsite. If this is the case, you may have to screen by vulnerable area and vulnerability score. Figures 17 and 18 provide quick reference as to what threats are possible depending on the vulnerable area (WHPA or IPZ) vulnerability score.

Once a list of threats to screen for has been narrowed down, the next step is to complete the appropriate significant drinking water threat questionnaires. Questionnaires for each of the 18 water quality drinking threats are located in Appendix 2. The questionnaires have been developed to obtain the information required to determine if a significant drinking water threat exists.

Once the individual threat questionnaires have been completed, the next step is to compare the respondent's answers with the Provincial Tables of Threats and/or the Provincial Tables of Circumstances to determine if a significant drinking water threat exists. Section 9 (I) describes how to use the Tables of Threats and Tables of Circumstances.

If the Tables of Threats and/or Circumstances confirm that a significant drinking water threat is present onsite, the last step is to apply the appropriate source protection plan policy. Contact your local source protection authority to obtain a copy.



Threat		Agricultural Operations	Residential Properties	Industrial, Commercial, Institutional	Municipal Lands
1a	Untreated septage	√			√
1b	Waste disposal sites				√
1c	Mine tailings			√	
2a	Stormwater management			√	√
2b	Wastewater treatment plants/sewer systems				√
2c	Onsite sewage systems		√	√	
2d	Industrial effluent			√	
3	Application of agricultural source material to land	√			
4	Storage of agricultural source material	√			
6	Application of non-agricultural source material	√			
7	Handling and storage of non-agricultural source material	√			
8	Application of commercial fertilizer to land	√	√	√	√
9	Handling and storage of commercial fertilizer	√		√	√
10	Application of pesticides to land	√		√	√
11	Handling and storage of pesticides	√		√	√
12	Application of road salt			√	√
13	Handling and storage of road salt			√	√
14	Storage of snow			√	√
15	Handling and storage of fuel	√	√	√	√
16	Handling and storage of DNAPLs		√	√	√
17	Handling and storage of organic solvents			√	√
18	Aircraft de-icing			√	
21	Livestock grazing, pasturing, outdoor confinement and farm-animal yards	√			

*Figure 16: Screening Chart of Questionnaires to Complete by Property Type*

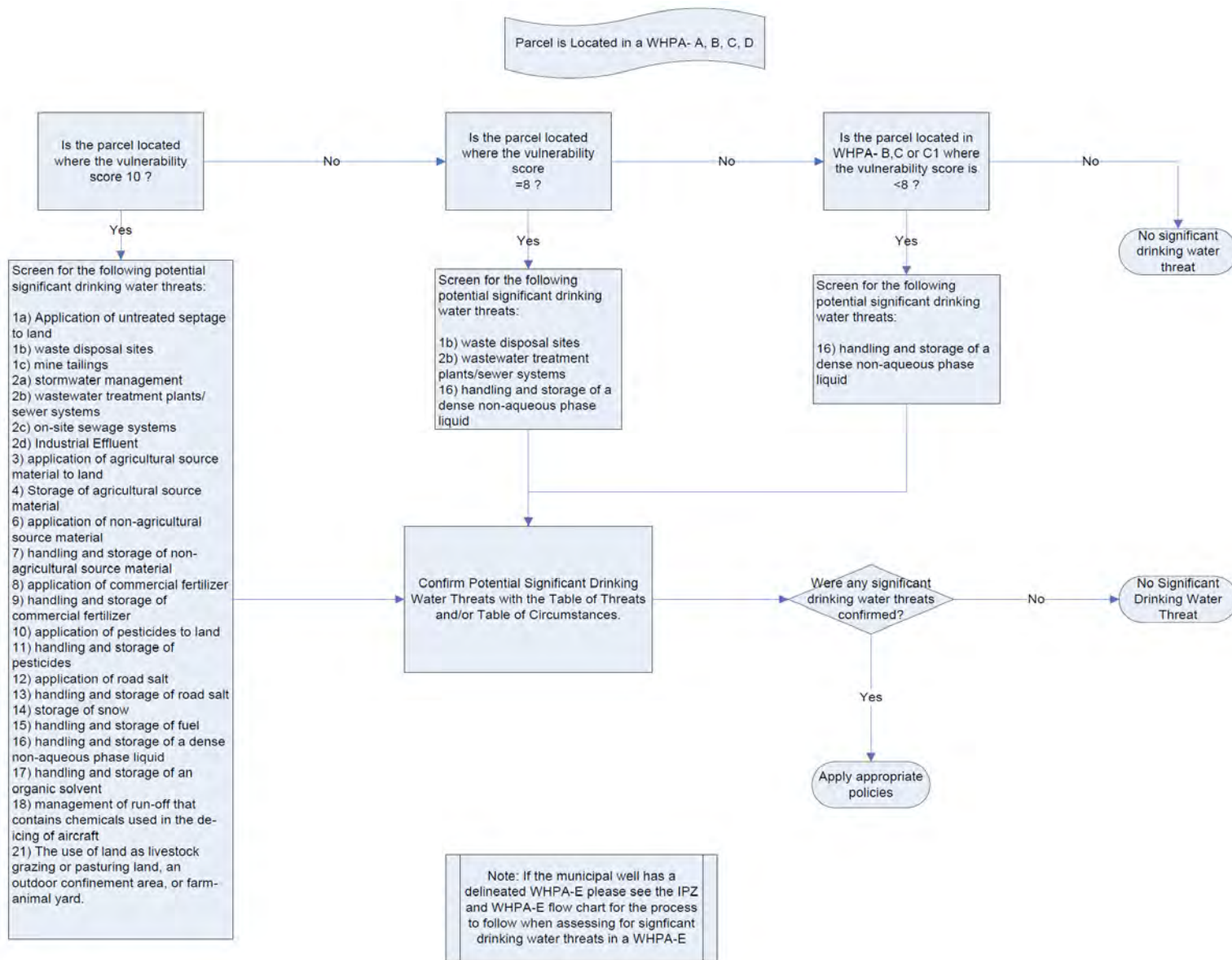


Figure 17: Flow Chart of Threats to Screen for Within a Wellhead Protection Area Based on Vulnerability Score

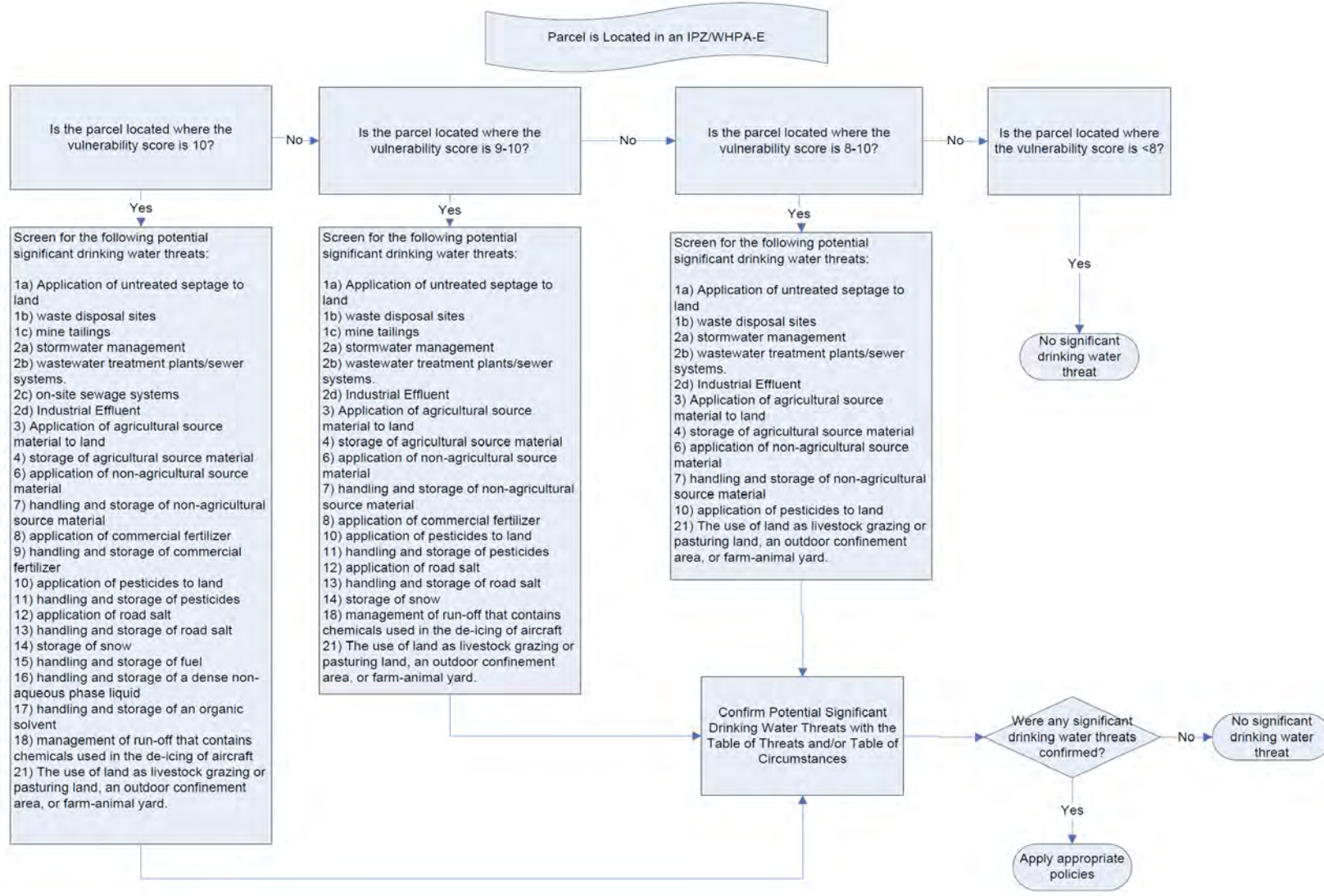


Figure 18: Flow Chart of Threats to Screen for Within IPZ/WHPA-E Based on Vulnerability Score

## K. Case Study

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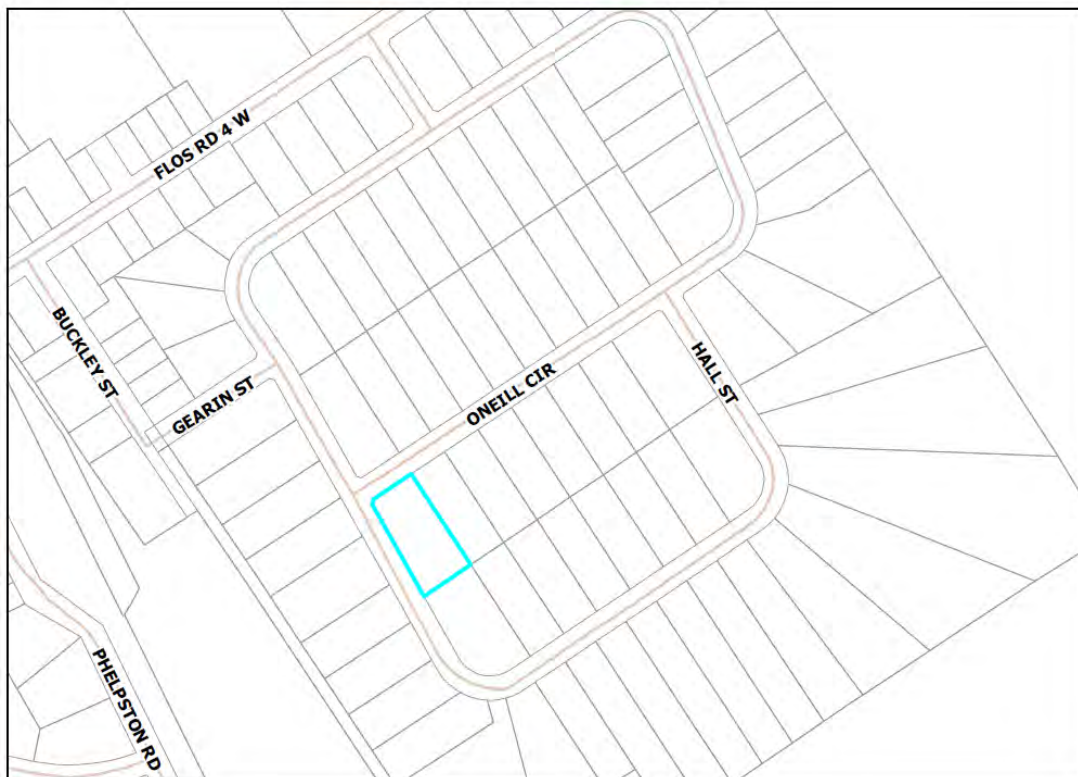
You should now have an understanding of the three components (vulnerable areas, vulnerability score, and threat activities) necessary to determine whether an activity is a significant drinking water quality threat. You can make use of the Tables of Drinking Water Threats or Tables of Circumstances to complete the following fictional exercise.

Let's assume the Assessment Report indicates that an industrial property located at 123 Hall Street has the potential for several significant threats to drinking water. The Assessment Report further indicates that the two significant threat activities, which may be occurring are the handling and storage of an organic solvent (Threat #17), and the handling and storage of fuel (Threat #15).

This section of the module will work through the process of determining whether a significant drinking water threat is present for the fictional property located at 123 Hall Street.

Step 1: Identify the location of the property.

Locate the property using digital mapping software. Figure 19 shows the location of the property outlined in turquoise.



*Figure 19: Case Study Property Location*



Step 2: Identify the location of the property in relation to vulnerable areas.

Check whether the property is located within a vulnerable area where significant drinking water threats are possible (Figure 20).

The technical mapping provided within the Assessment Report indicates that the property is located within a municipal WHPA in capture zone WHPA-A. Digital copies of the technical mapping for your area may already have been or will be provided by your local source protection authority and will also be available through the Ministry of the Environment's Open Portal.



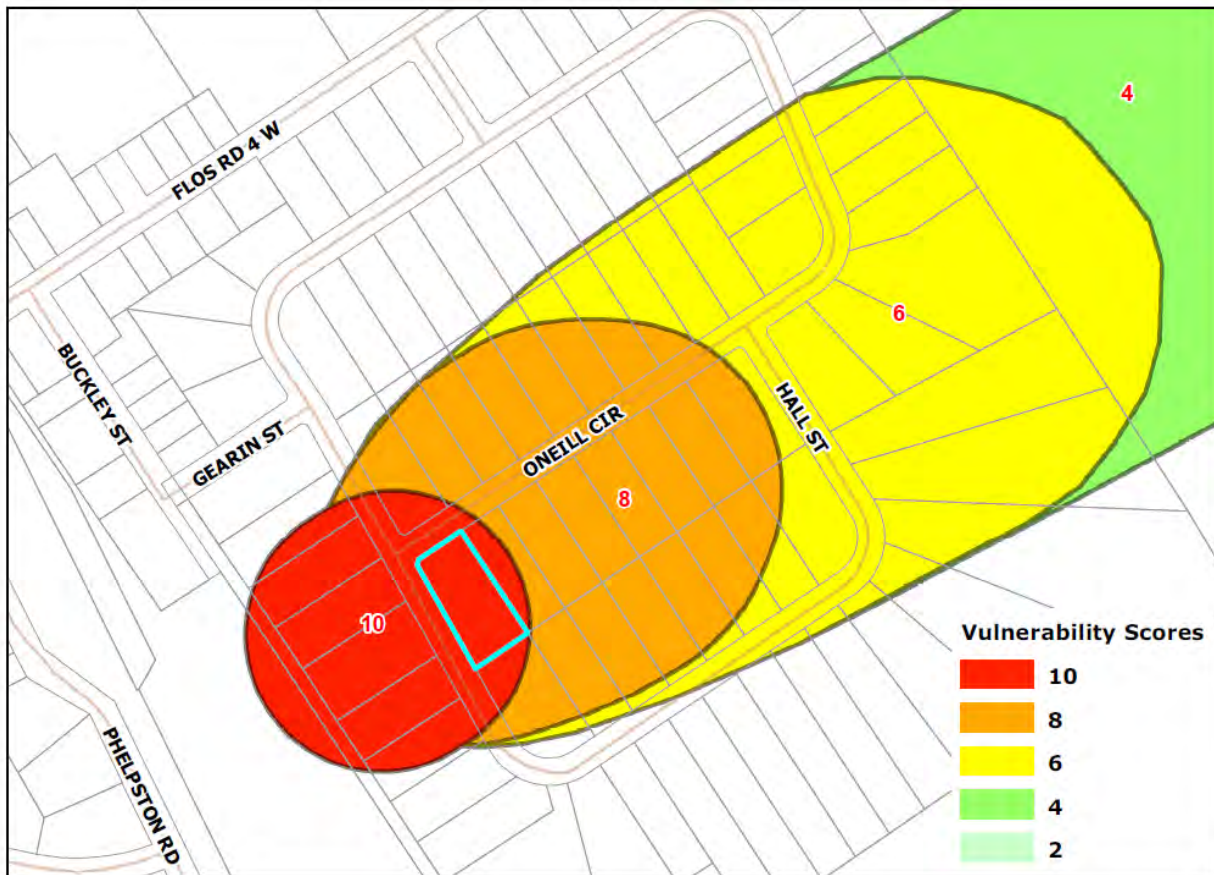
Figure 20: Property Location and Vulnerable Area Map

Step 3: Identify the vulnerability score.

Since the property in question is located within WHPA-A, the vulnerability score is 10 (Figure 21).

It is possible to have multiple vulnerability scores located on one property, as the property may be located in more than one vulnerable area (WHPA-A and B). If this is the case, additional screening efforts to identify the presence of a significant drinking water threat may be required.

Therefore, it will be important to note the location of the significant drinking water threat on the property. Use GPS coordinates to note the exact threat location.



*Figure 21: Property Location and Vulnerability Score Map*

Step 4: Use the screening chart to determine which questionnaires to complete.

To complete this task you will need to use the significant drinking water threat screening chart (Figure 16). The screening chart identifies which threats are possible based on the property type where the activity is located. Figure 16 demonstrates that several potential significant drinking water threats are possible on an industrial property.

You now need to reference the WHPA flowchart ( Figure 17) to determine which threats are possible on the property given the vulnerability score. Since the property is located where the vulnerability score is 10, all threats identified are possible significant threats and should be further investigated.

If multiple vulnerability scores are present on the property, you will need to know where the potential significant drinking water threat is located onsite relative to the vulnerability score. For example, if a fuel tank is located in a WHPA on a property where the vulnerability score is both 10 and 8, you will need to know the location of the fuel tank to proceed. Noting the

location of the threats by GPS coordinates will aid in the decision making process for identifying significant drinking water threats.

If the tank is located where the vulnerability score is 10, there is potential for the fuel tank to be significant drinking water threat, and you will need to complete the questionnaire to determine if the circumstances to be a significant drinking water threat are met. If the fuel tank is located where the vulnerability score is 8, it is not possible for the fuel tank to pose a significant drinking water threat, however it may be a moderate or low threat.

Step 5: Complete the appropriate significant drinking water threat questionnaires.

The basic information gathered from the Assessment Report database, as well as the vulnerability score of the area where the property is located, has confirmed which significant drinking water threats are possible. Since there is potential for all water quality threats to be significant on the property, all surveys in Appendix 2 must be completed. You will need to work with the landowner or tenant (whoever is undertaking the activity) to fill out these questionnaires. This information is used in conjunction with the Ministry of the Environment's Tables of Drinking Water Threats and the Tables of Circumstances to confirm the presence of a significant drinking water threat.

In this example, the completion of these surveys identifies that two significant drinking water threats are likely on the property; handling/storage of organic solvent, and handling/storage of fuel.

Step 6: Confirm the presence of significant drinking water threat(s).

To confirm whether the two activities taking place on the property are indeed significant drinking water threats, you need to refer to the Tables of Drinking Water Threats. The format of the Tables of Drinking Water Threats has already been described.

### **Review:**

What you know:

1. the vulnerable area from Step 2
2. the vulnerability score from Step 3
3. information about the activity from Step 5

Using the feedback provided by the person engaging in the activity, you can confirm whether the circumstances described in Table 15 (Column 2) apply (circumstances for a significant threat related to the handling and storage of fuel).

Table 15: Excerpt from the Tables of Drinking Water Threats

Drinking Water Threats	Reference Number	Under the Following CIRCUMSTANCES	Areas Within Vulnerable Areas	Threat is Significant in Areas with a Vulnerability Score of	Threat is Moderate in Areas with a Vulnerability Score of	Threat is Low in Areas with a Vulnerability Score of
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<b>The handling and storage of fuel</b>	197	1. The below grade handling of liquid fuel in relation to its storage at a bulk plant as defined in Section 1 of O. Reg. 217/01 (Liquid Fuels) made under the <i>Technical Standards and Safety Act, 2000</i> , or a facility that manufactures or refines fuel. 2. The quantity of liquid fuel stored is more than 2,500 litres. 3. A spill of the fuel may result in the presence of BTEX in groundwater or surface water.	IPZ-1, IPZ-2, IPZ-3, and WHPA-E	10	7 - 9	4.8-6.4
			WHPA-A, WHPA-B, WHPA-C, WHPA-C1, WHPA-D	<b>10</b>	8	6
			HVA			6
			SGRA			6

Alternatively, you can simply refer to the Tables of Circumstances for chemicals in a WHPA with a vulnerability score of 10 (CW10S).

Table 16: Excerpt from Provincial Table of Circumstances

Provincial Table (CW10S): Chemicals in a WHPA with a vulnerability score of 10		
Ref #	Circumstances	Chemical
1359	1. The storage of liquid fuel in a tank below grade and at a facility as defined in Section 1 of O. Reg. 213/01 (Fuel Oil) made under the <i>Technical Standards and Safety Act, 2000</i> or a facility as defined in Section BTEX 1 of O. Reg. 217/01 (Liquid Fuels) made under the <i>Technical Standards and Safety Act, 2000</i> , but not including a bulk plant. 2. The fuel is stored in a quantity that is more than 250, but not more than 2,500 litres.	BTEX
1360		Petroleum Hydrocarbons F1(nC6 – nC10)



Step 7: Apply appropriate policy or policies.

The Tables of Drinking Water Threats and the Tables of Circumstances have confirmed the Assessment Report threat enumeration – two significant drinking water threats are occurring on the property:

1. handling and storage of an organic solvent, due to a manufacturing process, and
2. handling and storage of fuel, due to the presence of a back-up power generator.

You should now reference your local source protection plan to confirm which policy(ies) apply to this property and then undertake the necessary steps to implement the policy(ies). The process of actual implementation of the policy(ies) is explained in future modules.

## L. Appendix 1 - Detailed Local Threat Example

### Congregation of Waterfowl Within or Near Surface Water Bodies

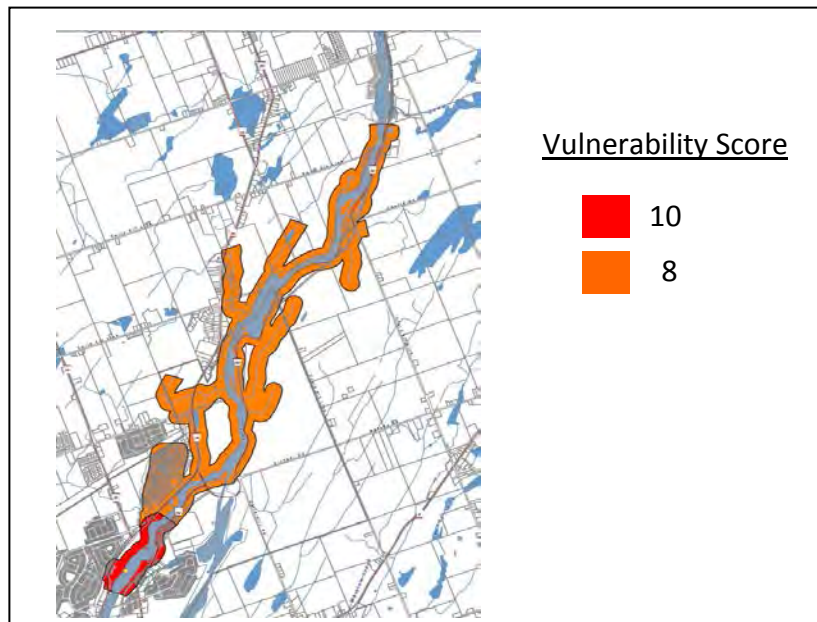
Table 17 provides an example of an activity, hazard rating and circumstances provided by the Director to determine when a local threat is considered significant. In this case, the threat is the congregation of waterfowl within or near surface water bodies in the Otonabee-Peterborough Source Protection Region.

*Table 17: Example of a Local Threat in the Otonabee-Peterborough Region*

Activity	Hazard Rating	Circumstances that make the activity a drinking water threat
Maintaining open areas of mown grass for recreational activities that promote the congregation of waterfowl within or near surface water bodies (for Lakefield and Peterborough IPZs).	10	Congregation of waterfowl results in discharge of pathogens in surface water in an area where there are known drinking water quality impacts from waterfowl within an IPZ.

You will recall that a significant threat is determined through a combination of hazard rating and vulnerability score.

In this instance, the congregation of waterfowl within or near surface water bodies has been identified as a local threat with a hazard rating of 10. Therefore, anywhere the vulnerability score is equal to or greater than 8, the activity would be considered a significant threat ( $8 \times 10 = 80$ ). Figure 22 illustrates the locations of the vulnerable areas (red and orange areas).



*Figure 22: Locations Where Local Threat (Congregation of Waterfowl) Is or Would be Significant*

## M. Appendix 2 – Threat Screening Questionnaires

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## Threat 1a - Application of Untreated Septage to Land

### Contact Information

Contact Name for Property:	
Property Owner:	
Property Address:	
Phone Number:	
Roll Number:	
E-mail:	

*Note: Please see the end of questionnaire for a unit conversion chart.*

### Application and Storage of Nutrients (Managed Lands)

- Is untreated septage applied to land on the property?
  - Yes, please continue
  - No
  
- What is the approximate land area on the property where the untreated septage is applied?
  - Less than 1 hectare
  - 1-10 hectares
  - More than 10 hectares

**Unit Conversion Chart**

Metric	Imperial
1 hectare	2.47 acres
10 hectares	24.71 acres
100 hectares	247.1 acres



## Threat 1b - Waste Disposal Sites

### Contact Information

Contact Name for Property:	
Property Owner:	
Property Address:	
Phone Number:	
Roll Number:	
E-mail:	

*Note: Please see the end of questionnaire for a unit conversion chart.*

### Waste Management

1. Is the property registered through Ontario's Hazardous Waste Information Network?
  - Yes, please provide the registry number if known: \_\_\_\_\_
  - No
  
2. Is the property registered as a waste receiver or waste generator through the MOE?
  - Yes, please provide the registry number if known: \_\_\_\_\_
  - No
  
3. Does the property have an MOE Environmental Compliance Approval/Certificate of Approval for waste storage or waste disposal?
  - Yes, please specify Environmental Compliance Approval/Certificate of Approval type and number (e.g. hazardous waste storage):  
\_\_\_\_\_
  - No

### Land Disposal

4. Is the property currently used for any of the following? (check all that apply) Please answer the additional question if you check any of the boxes.
  - Land disposal of petroleum refining waste. If checked, what is the land/fill area?
    - Less than 1 hectare

# DRINKING WATER SOURCE PROTECTION

ACT FOR CLEAN WATER

- 1-10 hectares
  - More than 10 hectares
  - Land disposal of hazardous waste, liquid industrial waste, or processed liquid industrial waste. If checked, what is the land/fill area?
    - Less than 1 hectare
    - 1-10 hectares
    - More than 10 hectares
  - Land disposal of municipal waste. If checked, what is the land/fill area?
    - Less than 1 hectare
    - 1-10 hectares
    - More than 10 hectares
  - Land disposal of industrial or commercial waste. If checked, what is the land/fill area?
    - Less than 1 hectare
    - 1-10 hectares
    - More than 10 hectares
5. Is the property used for land disposal of liquid industrial waste?
- Yes
  - No, skip to next Section, PCB Waste
6. Are there injection wells for the disposal of liquid industrial waste on the property?
- Yes
  - No, skip to next Section, PCB Waste
7. What is the combined injection rate of all injection wells on the property?
- Less than 380 m<sup>3</sup>/year
  - 380 – 3,799 m<sup>3</sup>/year
  - 3,800 – 37,999 m<sup>3</sup>/year
  - 38,000 – 379,999 m<sup>3</sup>/year
  - 380,000 – 3,799,999 m<sup>3</sup>/year
  - 3,800,000 to 37,999,999 m<sup>3</sup>/year
  - More than 38,000,000 m<sup>3</sup>/year



### PCB Waste

8. Is the property used to store or dispose of PCB waste?
- Yes
  - No, skip to next Section, Hazardous or Liquid Industrial Waste
9. How is the PCB waste stored?
- In a facility or engineered cell below grade
  - In drums, located at or above grade
  - In a storage tank(s) located below grade
  - In a storage tank(s) located partially below grade
  - Outdoors, not in a container
  - Other
    - a. Please specify container: \_\_\_\_\_
    - b. Where is it stored? (Check all that apply)
      - Above grade
      - Below grade
      - Partially above and below grade

### Hazardous or Liquid Industrial Waste

10. Are you subject to the *Toxics Reduction Act*?
- Yes, please continue questionnaire
  - No, skip to question 12
  - Not sure
11. Do you have a Toxics Reduction Plan?
- Yes
  - No
  - Not sure
12. Is hazardous waste or liquid industrial waste stored on the property?
- Yes, please continue questionnaire
  - No, questionnaire has been completed.
13. Where is it stored? (check all that apply)
- Above grade
  - Below grade
  - Partially above and below grade

14. Does the property store or handle small quantities of any of the following hazardous or liquid industrial wastes? (check all that apply) Please answer the additional questions if you check any of the boxes.

- Waste that is a hazardous industrial waste, hazardous waste chemical, ignitable waste, corrosive waste, leachate toxic waste or reactive waste and that is produced in any month in an amount less than 5 kilograms or otherwise accumulated in an amount less than 5 kilograms. If checked, where is the waste stored or handled? (check all that apply)
  - Above grade
  - Below grade
  - Partially above and below gradeIf checked, does the waste contain arsenic, cadmium, mercury, or chromium VI?
  - Yes
  - No
- Waste that is an acute hazardous waste chemical and that is produced in any month in an amount less than 1 kilogram or otherwise accumulated in an amount less than 1 kilogram. If checked, where is the waste stored or handled? (check all that apply)
  - Above grade
  - Below grade
  - Partially above and below gradeIf checked, does the waste contain arsenic, cadmium, mercury, or chromium VI?
  - Yes
  - No
- An empty container or the liner from an empty container that contained hazardous industrial waste, hazardous waste chemical, ignitable waste, corrosive waste, leachate toxic waste or reactive waste. If checked, where is the waste stored or handled? (check all that apply)
  - Above grade
  - Below grade
  - Partially above and below gradeIf checked, does the waste contain arsenic, cadmium, mercury, or chromium VI?
  - Yes
  - No
- An empty container of less than 20 litres capacity or 1 or more liners weighing, in total, less than 10 kilograms from empty containers, that contained acute hazardous waste chemical. If checked, where is the waste stored or handled? (check all that apply)
  - Above grade



# DRINKING WATER SOURCE PROTECTION

ACT FOR CLEAN WATER

- Below grade
- Partially above and below grade
- If checked, does the waste contain arsenic, cadmium, mercury, or chromium VI?
  - Yes
  - No
- The residues or contaminated materials from the cleanup of a spill of less than 5 kilograms of waste that is a hazardous industrial waste, hazardous waste chemical, ignitable waste, corrosive waste, leachate toxic waste or reactive waste. If checked, where is the waste stored or handled? (check all that apply)
  - Above grade
  - Below grade
  - Partially above and below gradeIf checked, does the waste contain arsenic, cadmium, mercury, or chromium VI?
  - Yes
  - No
- The residues or contaminated materials from the cleanup of a spill of less than 1 kilogram of waste that is an acute hazardous waste chemical. If checked, where is the waste stored or handled? (check all that apply)
  - Above grade
  - Below grade
  - Partially above and below gradeIf checked, does the waste contain arsenic, cadmium, mercury, or chromium VI?
  - Yes
  - No
- Liquid industrial waste that is produced in any month in an amount less than 25 litres or otherwise accumulated in an amount less than 25 litres. If checked, where is the waste stored or handled? (check all that apply)
  - Above grade
  - Below grade
  - Partially above and below gradeIf checked, does the waste contain arsenic, cadmium, mercury, or chromium VI?
  - Yes
  - No

15. Is hazardous waste or liquid industrial waste stored on the property?

- Yes, please continue questionnaire
- No, questionnaire has been completed.



16. How many of each of the following types of wells are on the property? If you do not have a type of well please print 0.

Type of Well	# of Wells
Industrial Use Wells	
Unused Wells	
Irrigation Wells	
Dewatering wells	
Drinking Water Wells	
Geothermal Wells	
Monitoring Wells	
Drywell or Soakaway Pit	
Other: _____	
Other: _____	
Other: _____	

**Unit Conversion Charts**

Metric	Imperial
1 litre	0.22 gallons
25 litres	5.5 gallons
50 litres	11 gallons
250 litres	55 gallons
2500 litres	550 gallons

Metric	Imperial
1 hectare	2.47 acres
10 hectares	24.71 acres
100 hectares	247.1 acres



### Threat 1c - Mine Tailings

#### Contact Information

Contact Name for Property:	
Property Owner:	
Property Address:	
Phone Number:	
Roll Number:	
E-mail:	

1. Are tailings from mining operations stored on the property?  
 Yes, please continue questionnaire  
 No
2. How are the tailings typically stored on the property? (check all that apply)  
 In a pit  
 In an impoundment structure
3. Is the property required to report to the National Pollutant Release Inventory?  
 Yes  
 No



**Threat 2a – Stormwater Management**

**Contact Information**

Contact Name for Property:	
Property Owner:	
Property Address:	
Phone Number:	
Roll Number:	
E-mail:	

*Note: Please see the end of questionnaire for a unit conversion chart.*

**Stormwater**

1. Does the property have a stormwater management facility?
  - Yes, please continue questionnaire
  - No
  
2. What is the drainage area serviced by the facility?
  - Less than 1 hectare
  - 1 to 9 hectares
  - 10 to 100 hectares
  - More than 100 hectares

**Unit Conversion Charts**

Metric	Imperial
1 hectare	2.47 acres
10 hectares	24.71 acres
100 hectares	247.10 acres



## Threat 2b – Waste water Treatment Plants/Sewer Systems

### Contact Information

Contact Name for Property:	
Property Owner:	
Property Address:	
Phone Number:	
Roll Number:	
E-mail:	

### Sanitary Sewage

*The following questions ask about sanitary sewage systems. Note that if more than one system (of the same type) is present on the property, you need to fill in the combined capacity of all systems.*

- Does the property have a privately-owned or operated sewage system that discharges untreated or partially treated sewage into the municipal sanitary sewer, or that is not connected to the municipal sewer system? Note that this includes sewage holding tanks or treatment tanks, but does not include plumbing features such as toilets or pipes.
  - Yes, please continue questionnaire
  - No, skip to question 4

- Does the system include a designed bypass to divert extra flow due to higher volume/higher flow events?
  - Yes
  - No

*Designed bypass means an intentional diversion of wastewater from the wastewater system, from any portion of a pre-treatment facility prior to completing pre-treatment, or from any industrial process or other source of wastewater prior to pre-treatment (i.e. during periods of high volume, some wastewater may bypass the wastewater treatment and flow directly to the sewer system, sewer or surface water).*

- What is the designed conveyance capacity of the sewage system?
  - Less than 250 m<sup>3</sup>/day

# DRINKING WATER SOURCE PROTECTION

ACT FOR CLEAN WATER

- 250 – 999 m<sup>3</sup>/day
  - 1,000 – 9,999 m<sup>3</sup>/day
  - 10,000 – 100,000 m<sup>3</sup>/day
  - More than 100,000 m<sup>3</sup>/day
4. Does the system have a wastewater treatment tank or storage tank?
- Yes, treatment tank
  - Yes, storage tank
  - No, fill out the On-Site Sewage Systems questionnaire
5. What is the designed capacity of the tank? Note: if more than one tank is present indicate the total capacity of all tanks.
- Less than 500 m<sup>3</sup>/day
  - 2,050 – 2,499 m<sup>3</sup>/day
  - 2,500 – 17,499 m<sup>3</sup>/day
  - 17,500 – 50,000 m<sup>3</sup>/day
  - More than 50,000 m<sup>3</sup>/day
6. Does the tank(s) service more than 1 property?
- Yes
  - No
7. The tank(s) is: (check all that apply)
- Above grade
  - Below grade
  - Partially above and below grade



## Threat 2c – On-site Sewage Systems

### Contact Information

Contact Name for Property:	
Property Owner:	
Property Address:	
Phone Number:	
Roll Number:	
E-mail:	

*Note: Please see the end of questionnaire for a unit conversion chart.*

1. Does the property have a septic system, outhouse, earth-pit privy, privy vault, greywater system, cesspool, or leaching bed systems?
  - Yes
  - No
  
2. Does the property have a sewage system that uses a holding tank for hauled sewage?
  - Yes
  - No
  
7. What is the capacity of the system? If you have more than 1 system on the property, indicate the total combined capacity of all systems.
  - Less than 10,000 L/day
  - More than 10,000 L/day
  
8. Is the system servicing more than one property?
  - Yes
  - No



**Unit Conversion Chart**

<b>Metric</b>	<b>Imperial</b>
1 litre	0.22 gallons
25 litres	5.5 gallons
50 litres	11 gallons
250 litres	55 gallons
2500 litres	550 gallons





**Threat 2d - Industrial Effluent**

**Contact Information**

Contact Name for Property:	
Property Owner:	
Property Address:	
Phone Number:	
Roll Number:	
E-mail:	

1. Does the property have an on-site industrial sewage system?
  - Yes, please continue questionnaire
  - No
  
2. Does the system discharge to surface water?
  - Yes
  - No
  
3. Is the property required to report to the National Pollutant Release Inventory?
  - Yes
  - No

4. Please list the chemicals discharged to surface water.

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## Threats 3, 4 and 5 – Agricultural Source Material

### Contact Information

Contact Name for Property:	
Property Owner:	
Property Address:	
Phone Number:	
Roll Number:	
E-mail:	

### Application, Handling and Storage of Agricultural Source Material (Manure)

*This Section asks about application, handling and storage of manure (liquid or solid) on the property. The Source Water Protection program refers to manure as Agricultural Source Material (ASM).*

1. Is manure applied to land on the property?
  - Yes, please state to what percentage of the property it is applied \_\_\_\_\_%
  - No
  
2. What is the approximate land area where agricultural source materials were applied on the property in the last year?
  - Less than 1 hectare
  - 1 – 9.9 hectares
  - 10 – 100 hectares
  - More than 100 hectares
  
3. Is manure stored on the property?
  - Yes, please continue questionnaire
  - No, skip to question 5
  
4. How is the manure typically stored? (check all that apply)
  - Permanent nutrient storage facility located at or above grade
  - Permanent nutrient storage facility located partially below grade
  - Permanent nutrient storage facility located below grade
  - Temporary field nutrient storage site located at or above grade



- Temporary field nutrient storage site located below grade
5. Is any part of the property currently used for aquaculture?
- Yes
  - No

**Unit Conversion Charts**

Metric	Imperial
1 litres	0.26 gallons
25 litres	6.6 gallons
50 litres	13 gallons
250 litres	66.04 gallons
2500 litres	660.4 gallons

Metric	Imperial
1 hectare	2.47 acres
10 hectares	24.71 acres
100 hectares	247.1 acres



**Threats 6 & 7 – Non Agricultural Source Material (NASM)**

**Contact Information**

Contact Name for Property:	
Property Owner:	
Property Address:	
Phone Number:	
Roll Number:	
E-mail:	

**Application, Handling and Storage of NASM**

*This questionnaire asks about Non-Agricultural Source Material (NASM) that may be on your property. NASM refers to biosolids from outside sources, including sewage treatment facilities, pulp and paper mills, and food processing operations.*

- Is non-agricultural source material applied to land on the property?
  - Yes, please state to what percentage of the property it is applied \_\_\_\_\_%
  - No
  
- What is the approximate land area where non- agricultural source materials were applied on the property in the last year?
  - Less than 1 hectare
  - 1 – 9.9 hectares
  - 10 – 100 hectares
  - More than 100 hectares
  
- If nutrients are applied to less than 100% of the property, please give a brief description of the areas to which nutrients are NOT applied: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Application, Handling and Storage of NASM**

- In the last 10 years, was any NASM stored on the property?
  - Yes, please continue questionnaire

# DRINKING WATER SOURCE PROTECTION

ACT FOR CLEAN WATER

No

6. How is the NASM typically stored? (check all that apply)

- Permanent nutrient storage facility located at or above grade
- Permanent nutrient storage facility located partially below grade
- Permanent nutrient storage facility located below grade
- Temporary field nutrient storage site located at or above grade
- Temporary field nutrient storage site located below grade

7. How much nitrogen is typically contained in the stored NASM?

- Less than 0.5 tonnes
- 0.5 - 5 tonnes
- More than 5 tonnes
- Unknown

8. Do you have a NASM Plan?

- Yes, please provide the Reference number \_\_\_\_\_
- No



## Threats 8 & 9 – Commercial Fertilizer

### Contact Information

Contact Name for Property:	
Property Owner:	
Property Address:	
Phone Number:	
Roll Number:	
E-mail:	

*Note: Please see the end of questionnaire for a unit conversion chart.*

### Application of Commercial Fertilizer

- Is commercial fertilizer applied to land on the property?
  - Yes, applied by outsourced contractor. Please state to what percentage of the property it is applied \_\_\_\_\_%
  - Yes, applied by property owner/tenant. Please state to what percentage of the property it is applied \_\_\_\_\_%
  - No

### Handling and Storage of Commercial Fertilizer

- Is commercial fertilizer stored on the property?
  - Yes, please continue questionnaire
  - No
- What is the purpose of fertilizer stored on the property? (check all that apply) Please answer the additional questions if you check any of the boxes.
  - Stored for use on the property? If checked, what is the quantity of fertilizer stored on the property?
    - Less than 25 kg
    - 25-249 kg
    - 250-2,500 kg
    - More than 2,500 kg

# DRINKING WATER SOURCE PROTECTION

ACT FOR CLEAN WATER

- Sold wholesale on the property? If checked, what is the quantity of fertilizer stored on the property?
    - Less than 25 kg
    - 25-249 kg
    - 250-2,500 kg
    - More than 2,500 kg
  - Sold for retail on the property? If checked, what is the quantity of fertilizer stored on the property?
    - Less than 25 kg
    - 25-249 kg
    - 250-2,500 kg
    - More than 2,500 kg
  - Manufactured and/or processed on the property? If checked, what is the quantity of fertilizer stored on the property?
    - Less than 25 kg
    - 25-249 kg
    - 250-2,500 kg
    - More than 2,500 kg
4. What is the typical nitrogen content in the fertilizer?
- Less than 5%
  - 5 – 25%
  - More than 25%
5. What is the typical phosphorus content in the fertilizer?
- Less than 5%
  - 5 – 25%
  - More than 25%

### Unit Conversion Chart

Kilograms	Pounds
1 kilogram	2.20 pounds
25 kilograms	55.1 pounds
250 kilograms	551.1 pounds
2500 kilograms	5511.55 pounds



## Threats 10 & 11 – Pesticides

### Contact Information

Contact Name for Property:	
Property Owner:	
Property Address:	
Phone Number:	
Roll Number:	
E-mail:	

*Note: Please see the end of questionnaire for a unit conversion chart.*

### Application, Handling and Storage of Pesticides

1. In the past year, were pesticides applied to land on the property?
  - Yes, applied by outsourced contractor
  - Yes, applied by property owner/tenant
  - No, skip to question 4
  
2. What is the approximate land area where pesticides were applied on the property in the past year?
  - Less than 1 hectare
  - 1 – 9.9 hectares
  - 10 – 100 hectares
  - More than 100 hectares
  
3. Does the pesticide applied on the property contain any of the following ingredients? (check all that apply)
  - Atrazine
  - Dicamba
  - Dichlorophenoxy Acetic Acid (2,4-D)
  - Dichloropropene-1,3
  - Glyphosate
  - Atrazine
  - MCPA (2-methyl-4-chlorophenoxy acetic acid)
  - Mecoprop



# DRINKING WATER SOURCE PROTECTION

ACT FOR CLEAN WATER

- Metalaxyl
  - Metolachlor or s-Metolachlor
  - Pendimethalin
  - MCPB (2-methylphenoxy) butanoic acid
  - Other \_\_\_\_\_
  - Unknown
  - None of these
4. Are pesticides stored on the property?
- Yes, please continue questionnaire
  - No
5. What is the purpose of pesticide storage on the property? (check all that apply)
- Pesticides are stored for use on the property
  - Pesticides are sold for retail on the property
  - Pesticides are sold wholesale on the property
  - Pesticides are manufactured/processed on the property
6. Does the pesticide stored on the property contain any of the following ingredients? (check all that apply)
- Atrazine
  - Dicamba
  - Dichlorophenoxy Acetic Acid (2,4-D)
  - Dichloropropene-1,3
  - Glyphosate
  - Atrazine
  - MCPA (2-methyl-4-chlorophenoxy acetic acid)
  - Mecoprop
  - Metalaxyl
  - Metolachlor or s-Metolachlor
  - Pendimethalin
  - MCPB (2-methylphenoxy) butanoic acid
  - Other \_\_\_\_\_
  - Unknown
  - None of these



**Unit Conversion Chart**

Metric	US Standard Units
1 hectare	2.47 acres
10 hectares	24.71 acres
100 hectares	247.1 acres



## Threats 12 & 13 – Road Salt

### Contact Information

Contact Name for Property:	
Property Owner:	
Property Address:	
Phone Number:	
Roll Number:	
E-mail:	

*Note: Please see the end of questionnaire for a unit conversion chart.*

### Road Salt and Winter Salt Storage and Application

1. Do you use any salt for de-icing on the property?
  - Yes, please continue questionnaire
  - No, skip to question 4
  
2. How much salt is applied in a typical year?
  - Less than 25 kilograms
  - 25-99 kilograms
  - 100-250 kilograms
  - More than 250 kilograms
  
3. Is the salt managed by an outside hired contractor or company?
  - Yes
  - No
  
4. Are any alternative salt application practices used? (check all that apply)
  - Anti-icing liquid
  - Pre-wetting (e.g. beet juice)
  - Reduced chloride
  - Pickled sand
  - Chloride-free products (e.g. Calcium Magnesium Acetate)
  - Other, please specify\_\_\_\_\_



- None
5. Do you store salt for de-icing on the property?
- Yes, please continue questionnaire
  - No
6. What quantity of salt is stored?
- Less than 500 tonnes
  - 500 5,000 tonnes
  - More than 5,000 tonnes
7. How is the salt stored? (check all that apply)
- In a manner that allows exposure to precipitation, or runoff from precipitation or snow melt
  - In a salt dome or other facility to prevent exposure to runoff and precipitation
  - In manufacturer's package, indoors (e.g., garage or shed)

**Unit Conversion Chart**

Kilograms	Pounds
1 kilogram	2.20 pounds
25 kilograms	55.1 pounds
250 kilograms	551.1 pounds
2500 kilograms	5511.55 pounds



## Threat 14 - Storage of Snow

### Contact Information

Contact Name for Property:	
Property Owner:	
Property Address:	
Phone Number:	
Roll Number:	
E-mail:	

### Snow Storage

1. Is any part of the property used to store snow collected from roads or other paved areas located on a different property?
  - Yes, from public roads, please continue questionnaire
  - Yes, from private properties, please continue questionnaire
  - Yes, from public roads and private properties, please continue questionnaire
  - No
  
2. What is the approximate land area on the property used to store the snow?
  - Less than 0.01 hectares
  - 0.01 – 0.5 hectares
  - 0.5 – 0.9 hectares
  - 1 – 5 hectares
  - More than 5 hectares
  
3. Where is the snow stored?
  - Above grade
  - Below grade (e.g. in a pit or quarry)
  - Both



**Unit Conversion Chart**

Metric	US Standard Units
1 hectare	2.47 acres
10 hectares	24.71 acres
100 hectares	247.1 acres



## Threat 15 - Handling and Storage of Fuel

### Contact Information

Contact Name for Property:	
Property Owner:	
Property Address:	
Phone Number:	
Roll Number:	
E-mail:	

*Note: Please see the end of questionnaire for a unit conversion chart.*

- Are any of the following types of liquid fuel used or stored on the property? (check all that apply) Please answer the additional questions if you check any of the boxes.
  - Gasoline. What is the maximum quantity of fuel stored on the property at any one time? (check only one)
    - Less than 25 litres (e.g. Jerry can)
    - 25-249 litres (up to 1 drum)
    - 250-2,500 litres (at least 1 drum, up to 1 tank)
    - More than 2,500 litres (more than 1 tank)
 How is the fuel stored? (Check all that apply)
    - Above ground tank
    - Underground tank (includes basement tanks)
    - Portable container
  - Diesel. What is the maximum quantity of fuel stored on the property at any one time? (check only one)
    - Less than 25 litres (e.g. Jerry can)
    - 25-249 litres (up to 1 drum)
    - 250-2,500 litres (at least 1 drum, up to 1 tank)
    - More than 2,500 litres (more than 1 tank)
 How is the fuel stored? (Check all that apply)
    - Above ground tank
    - Underground tank (includes basement tanks)
    - Portable container
  - Heating oil/fuel oil. What is the maximum quantity of fuel stored on the property at any one time? (check only one)

# DRINKING WATER SOURCE PROTECTION

ACT FOR CLEAN WATER

- Less than 25 litres (e.g. Jerry can)
- 25-249 litres (up to 1 drum)
- 250-2,500 litres (at least 1 drum, up to 1 tank)
- More than 2,500 litres (more than 1 tank)

How is the fuel stored? (Check all that apply)

- Above ground tank
- Underground tank (includes basement tanks)
- Portable container

- Used oil/waste oil. What is the maximum quantity of fuel stored on the property at any one time? (check only one)

- Less than 25 litres (e.g. Jerry can)
- 25-249 litres (up to 1 drum)
- 250-2,500 litres (at least 1 drum, up to 1 tank)
- More than 2,500 litres (more than 1 tank)

How is the fuel stored? (Check all that apply)

- Above ground tank
- Underground tank (includes basement tanks)
- Portable container

- Other (please specify) \_\_\_\_\_. What is the maximum quantity of fuel stored on the property at any one time? (check only one)

- Less than 25 litres (e.g. Jerry can)
- 25-249 litres (up to 1 drum)
- 250-2,500 litres (at least 1 drum, up to 1 tank)
- More than 2,500 litres (more than 1 tank)

How is the fuel stored? (Check all that apply)

- Above ground tank
- Underground tank (includes basement tanks)
- Portable container

**Unit Conversion Chart**

Metric	Imperial
1 litre	0.22 gallons
25 litres	5.5 gallons
50 litres	11 gallons
250 litres	55 gallons
2500 litres	550 gallons





## Threat 16 - Handling and storage of Dense Non Aqueous Phase Liquids (DNAPLs)

### Contact Information

Contact Name for Property:	
Property Owner:	
Property Address:	
Phone Number:	
Roll Number:	
E-mail:	

*Note: Please see the end of questionnaire for a unit conversion chart.*

### Chemical Storage and Handling

1. Are any of the following chemical products used or stored on the property? (check all that apply) Please answer the additional three questions if you check any of the boxes.

- Degreasers (e.g. acetone, methyl hydrate) not containing chlorinated solvents. What is the maximum quantity of chemical products stored on the property at any one time? (check only one)

- Less than 25 litres (e.g. Jerry can)  
 25-249 litres (up to 1 drum)  
 250-2,500 litres (at least 1 drum, up to 1 tank)  
 More than 2,500 litres (more than 1 tank)

Please print the trade name or chemical name of the product used **most often** in this category: \_\_\_\_\_

How are the chemical products stored? (Check all that apply)

- Above ground tank  
 Underground tank (includes basement tanks)  
 Portable container
- Paints/paint thinners (e.g. Varsol, Turpentine). What is the maximum quantity of chemical products stored on the property at any one time? (check only one)
- Less than 25 litres (e.g. Jerry can)  
 25-249 litres (up to 1 drum)  
 250-2,500 litres (at least 1 drum, up to 1 tank)  
 More than 2,500 litres (more than 1 tank)

# DRINKING WATER SOURCE PROTECTION

ACT FOR CLEAN WATER

Please print the trade name or chemical name of the product used **most often** in this category: \_\_\_\_\_

How are the chemical products stored? (Check all that apply)

- Above ground tank
- Underground tank (includes basement tanks)
- Portable container
- Enamels/lacquers (e.g. Varathane, Hydrocote). What is the maximum quantity of chemical products stored on the property at any one time? (check only one)
  - Less than 25 litres (e.g. Jerry can)
  - 25-249 litres (up to 1 drum)
  - 250-2,500 litres (at least 1 drum, up to 1 tank)
  - More than 2,500 litres (more than 1 tank)

Please print the trade name or chemical name of the product used **most often** in this category: \_\_\_\_\_

How are the chemical products stored? (Check all that apply)

- Above ground tank
- Underground tank (includes basement tanks)
- Portable container
- Adhesives/glues (e.g. Epoxy, Polyurethane). What is the maximum quantity of chemical products stored on the property at any one time? (check only one)
  - Less than 25 litres (e.g. Jerry can)
  - 25-249 litres (up to 1 drum)
  - 250-2,500 litres (at least 1 drum, up to 1 tank)
  - More than 2,500 litres (more than 1 tank)

Please print the trade name or chemical name of the product used **most often** in this category: \_\_\_\_\_

How are the chemical products stored? (Check all that apply)

- Above ground tank
- Underground tank (includes basement tanks)
- Portable container
- Resins (e.g. PVC Resin, Urea Formaldehyde). What is the maximum quantity of chemical products stored on the property at any one time? (check only one)
  - Less than 25 litres (e.g. Jerry can)
  - 25-249 litres (up to 1 drum)
  - 250-2,500 litres (at least 1 drum, up to 1 tank)
  - More than 2,500 litres (more than 1 tank)

Please print the trade name or chemical name of the product used **most often** in this category: \_\_\_\_\_

How are the chemical products stored? (Check all that apply)

# DRINKING WATER SOURCE PROTECTION

ACT FOR CLEAN WATER

- Above ground tank
- Underground tank (includes basement tanks)
  
- Portable container
- Furniture strippers (e.g. Acetone, Toluene, Turpentine). What is the maximum quantity of chemical products stored on the property at any one time? (check only one)
  - Less than 25 litres (e.g. Jerry can)
  - 25-249 litres (up to 1 drum)
  - 250-2,500 litres (at least 1 drum, up to 1 tank)
  - More than 2,500 litres (more than 1 tank)

Please print the trade name or chemical name of the product used **most often** in this category: \_\_\_\_\_

How are the chemical products stored? (Check all that apply)

- Above ground tank
- Underground tank (includes basement tanks)
- Portable container
- Chlorinated solvents (e.g. Trichloroethylene (TCE), Perchloroethylene (PCE)). What is the maximum quantity of chemical products stored on the property at any one time? (check only one)
  - Less than 25 litres (e.g. Jerry can)
  - 25-249 litres (up to 1 drum)
  - 250-2,500 litres (at least 1 drum, up to 1 tank)
  - More than 2,500 litres (more than 1 tank)

Please print the trade name or chemical name of the product used **most often** in this category: \_\_\_\_\_

How are the chemical products stored? (Check all that apply)

- Above ground tank
- Underground tank (includes basement tanks)
- Portable container
- PCB liquids or fluids. What is the maximum quantity of chemical products stored on the property at any one time? (check only one)
  - Less than 25 litres (e.g. Jerry can)
  - 25-249 litres (up to 1 drum)
  - 250-2,500 litres (at least 1 drum, up to 1 tank)
  - More than 2,500 litres (more than 1 tank)

Please print the trade name or chemical name of the product used **most often** in this category: \_\_\_\_\_

How are the chemical products stored? (Check all that apply)



- Above ground tank
- Underground tank (includes basement tanks)
- Portable container
  
- Creosote. What is the maximum quantity of chemical products stored on the property at any one time? (check only one)
  - Less than 25 litres (e.g. Jerry can)
  - 25-249 litres (up to 1 drum)
  - 250-2,500 litres (at least 1 drum, up to 1 tank)
  - More than 2,500 litres (more than 1 tank)

Please print the trade name or chemical name of the product used **most often** in this category: \_\_\_\_\_

How are the chemical products stored? (Check all that apply)

- Above ground tank
- Underground tank (includes basement tanks)
- Portable container
  
- Other (please specify chemical name) \_\_\_\_\_
  - What is the maximum quantity of chemical products stored on the property at any one time? (check only one)
    - Less than 25 litres (e.g. Jerry can)
    - 25-249 litres (up to 1 drum)
    - 250-2,500 litres (at least 1 drum, up to 1 tank)
    - More than 2,500 litres (more than 1 tank)

Please print the trade name or chemical name of the product used **most often** in this category: \_\_\_\_\_

How are the chemical products stored? (Check all that apply)

- Above ground tank
- Underground tank (includes basement tanks)
- Portable container

**Unit Conversion Chart**

Metric	Imperial
1 litre	0.22 gallons
25 litres	5.5 gallons
50 litres	11 gallons
250 litres	55 gallons
2500 litres	550 gallons



## Threat 17 - Handling and Storage of Organic Solvents

### Contact Information

Contact Name for Property:	
Property Owner:	
Property Address:	
Phone Number:	
Roll Number:	
E-mail:	

*Note: Please see the end of questionnaire for a unit conversion chart.*

### Chemical Storage, Handling and Disposal

1. Do you store or handle organic solvents on the property?
  - Yes, please continue questionnaire
  - No
  
2. Do you store or handle more than 25 litres of the following organic solvents on the property:
  - Wood preservative such as creosote or CCA?
  - Paint stripper / degreaser
  - Cleaning agent/ refrigerant
  - Chloroform (historically used as an anesthetic, now as dyes, cleaning agent)
  - Yes, please state how much is stored \_\_\_\_\_ (litres)
  - No
  - Unsure



### Threat 18 - Aircraft De-icing

#### Contact Information

Contact Name for Property:	
Property Owner:	
Property Address:	
Phone Number:	
Roll Number:	
E-mail:	

#### Management of Runoff that Contains Chemicals used in the De-icing of Aircraft

1. Is the airport classified as:
  - Remote
  - Small
  - Regional-continue
  
2. Is there an opportunity for run-off containing de-icing materials to discharge to land or water?
  - Yes
  - No



**Threat 21 - Livestock**

**Contact Information**

Contact Name for Property:	
Property Owner:	
Property Address:	
Phone Number:	
Roll Number:	
E-mail:	

**Use of Land as Livestock, Grazing or Pasturing; an Outdoor Confinement Area; or a Farm Animal Yard**

1. Are livestock and/or poultry raised on the property?

- Yes, please fill in the table below
- No, skip to question 2

Please indicate the total number of each type of livestock and/or poultry on the property.

Type of Livestock	# of Livestock
Beef cattle	
Horses	
Sheep	
Ducks	
Dairy cattle	
Chicken	
Turkeys	
Goats	
Swine	
Other: _____	
Other: _____	

2. What is the total percentage of the property that is used for livestock grazing, pasture lands and outdoor confinement? \_\_\_\_\_%

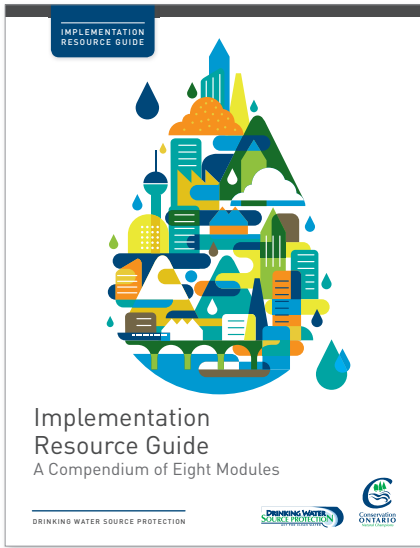




MODULE 3

# Land Use Planning



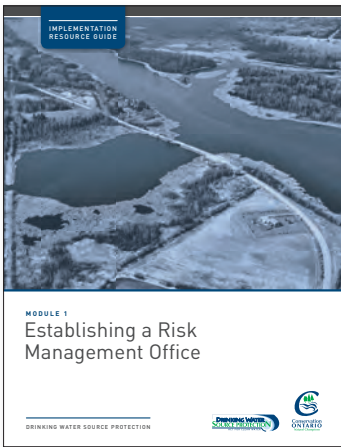


# Implementation Resource Guides

A Compendium of Eight Modules

Look for all eight modules in our Drinking Water Source Protection series. You can find them at [www.conservation-ontario.on.ca](http://www.conservation-ontario.on.ca)

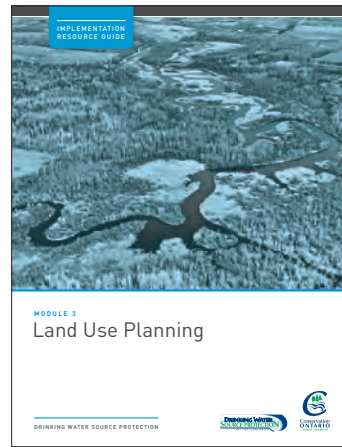
## MODULE 1



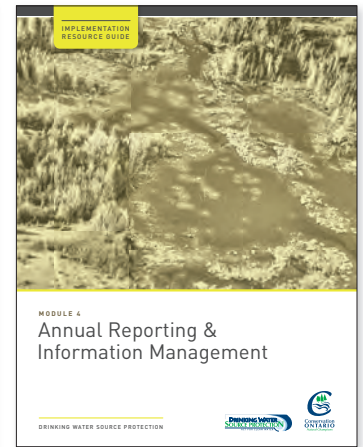
## MODULE 2



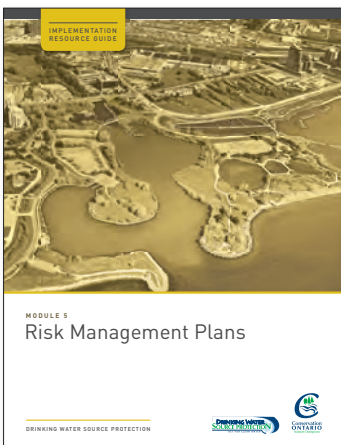
## MODULE 3



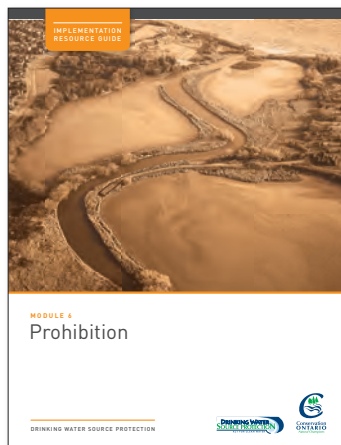
## MODULE 4



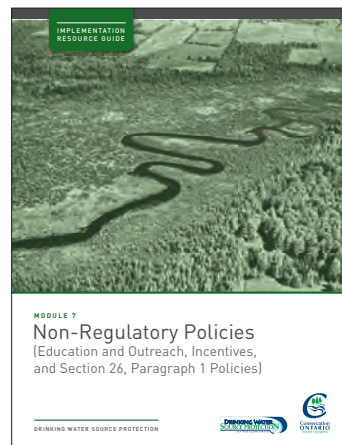
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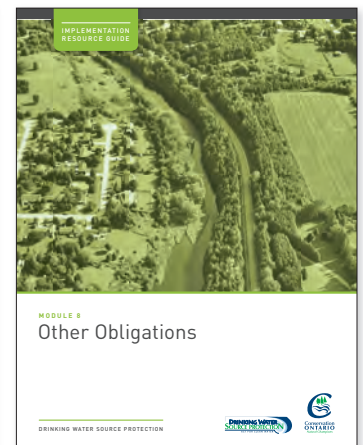
## MODULE 6



## MODULE 7



## MODULE 8



# Module 3: Land Use Planning

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## Implementation Resource Guide

06/05/2014

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Note to Reader: This document is one of a series developed by staff at conservation authorities and Conservation Ontario in support of source protection plan implementation. These documents cover a variety of tools related to plan implementation, but not all will apply in your municipality. Consult your local source protection plan to determine which policies are applicable in your municipality. This document has not been reviewed by legal counsel and is not presented as legal advice.

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## A. Introduction

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This module outlines how the *Clean Water Act, 2006* Assessment Reports and source protection plans can influence municipal planning. The first section describes the source protection planning process, the alignment of the local Assessment Reports with the Provincial Policy Statement, and how the information in Assessment Reports should be used to inform planning decisions.

The second section describes the content and legal effect of source protection plans and implications for planning decisions.

The third section explains how to integrate source protection plan policies into Official Plans, zoning by-laws, and other tools available through the *Planning Act*. This section also describes transition provisions that could be included in some source protection plans, and how implementing bodies should consider these provisions when making planning decisions.

The last sections of this module clarify the use of Section 59 of the *Clean Water Act* in reviewing municipal development applications, source-protection-related appeals to the Ontario Municipal Board, and annual reporting requirements for municipalities.

## B. Land Use Planning and the *Clean Water Act, 2006*

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### i. Source Protection for Land Use Planners

The purpose of the *Clean Water Act* is to protect existing and future sources of municipal residential drinking water. This legislation is a major part of the Ontario government's commitment to ensuring that every Ontarian has access to safe drinking water. Protecting water at its source is the first step in the multi-barrier approach to protecting drinking water. By stopping contaminants from getting into sources of drinking water — lakes, rivers and aquifers — we can provide the first line of defence in the protection of our environment and the health of Ontarians. The *Clean Water Act* relies on locally developed and watershed-based source protection plans founded on sound science to effectively meet this objective.

As part of the Province's multi-barrier approach to drinking water, the *Clean Water Act* mandates that drinking water shall be protected at its source using a variety of tools, including existing resources such as municipal land use planning authorities. To assist municipalities in using these authorities, the *Clean Water Act* established locally driven, watershed-based, source protection committees to review and assess municipal drinking water sources. The *Clean Water Act* mandated each source protection committee prepare three documents:

1. Terms of Reference (a work plan that identified the drinking water systems that are included in the program),
2. local Assessment Reports (technical studies), and

3. drinking water source protection plans to address threats to municipal drinking water at its source.

Land use planners make planning decisions using the best available information. Historically, many municipalities indicated that they could not protect their drinking water supplies because they didn't know where they were. For many municipalities in Ontario, this information is now readily available in the local Assessment Reports. The Assessment Report information and how it can help inform planning decisions is summarized in the next paragraph and discussed in Section C (i).

### **Assessment Reports**

Assessment Reports are technical documents that describe the local watershed and available water supplies, identify vulnerable areas where drinking water sources might face a risk of contamination or depletion, assess threats to drinking water within those vulnerable areas, and provide the basis for the development of a source protection plan. The Director of the Source Protection Programs Branch has approved all of Ontario's 38 Assessment Reports. Assessment Reports are not policy documents; they contain technical and scientific information, including the delineations of vulnerable areas. The information and delineations in the Assessment Reports cannot be appealed to the Ontario Municipal Board.

Several municipalities currently have provisions in their land use planning documents to protect sources of drinking water. Some municipalities are beginning to use the information in the Assessment Reports as they update their planning documents and make decisions on land use planning applications.

### **Director's Technical Rules**

In determining the location and extent of vulnerable areas, source protection committees used scientific rules that were applied across the province and are found in the Director's Technical Rules. In areas of the province where Assessment Reports were not completed, municipalities can rely on the Director's Technical Rules to delineate vulnerable areas or portions of vulnerable areas. The Technical Rules describe, among other matters, how to delineate vulnerable areas and assess the vulnerability of these areas to contamination or depletion. Find the Director's Technical Rules here: <http://www.ontario.ca/environment-and-energy/technical-rules-assessment-report>

When vulnerable areas are delineated using the Director's Technical Rules, these vulnerable areas would then be delineated in accordance with provincial standards and would align with the definition of *designated vulnerable areas* per 2.2.1.d of the Provincial Policy Statement, 2005. Municipalities could then rely on the science as they make decisions to impose restrictions on development and site alteration to satisfy their obligations under the Provincial Policy Statement.

## Tables of Drinking Water Threats

The Technical Rules contain tables that set out the activities that pose risks to drinking water, the circumstances that identify the activity as a threat, and in what instances those activities are considered significant, moderate or low drinking water threats. Examples of circumstances include the volume of a product at a site, the size of the contributing area for a stormwater pond, or the size of area where materials are applied. Activities and circumstances pose a risk to an area depending on the vulnerability score of that area. In some cases, the volume of the contaminant or the vulnerability score can be so low that the activity is not considered a risk to drinking water.

The Tables of Drinking Water Threats combine the activity, circumstances, and vulnerability score into one document that is very complex. There are other tools available to help you understand if an activity poses a risk to drinking water.

## Tables of Circumstances

The Province has also developed Tables of Circumstances to allow you to see only the activities that are a significant risk in a certain vulnerable area. Municipal planning staff can use the Tables of Circumstances as a guide to determine whether a proposed land use would be appropriate. For example, a planner could review the vulnerability of an area to help determine whether a gas station would be acceptable. While planners may use the Tables of Circumstances as a guide when considering planning applications, the Risk Management Official will use these Tables of Circumstances to determine whether regulating these activities is necessary (see Part IV for planners at the end of this module).

Find a searchable version of the Tables of Drinking Water Threats here:

<http://www.trcgauging.ca/RmmCatalogue/>

## Source Protection Plans

Source protection plans must include policies to address areas where threats to sources of drinking water could be significant. Generally, these areas are close to municipal wellheads or intakes. Source protection plans may contain policies to address threats to sources of drinking water in areas where the threat could only rate as moderate or low, such as highly vulnerable aquifers and significant groundwater recharge areas). A municipality's planning decisions to protect designated vulnerable areas may be the only way to protect private drinking water sources since they are not covered by the *Clean Water Act*. Outside of the implementation of source protection plan policies, municipalities are not limited to addressing activities that are considered drinking water threats under the *Clean Water Act* (listed in Ontario Regulation 287/07), and can make their own decisions about which land uses are incompatible with the protection of vulnerable areas for drinking water sources.



The source protection plan is the crucial link between the science in the Assessment Reports and the policy(ies) to address threats. Planning decisions will be required to “conform with” significant threat policies, as well as to “have regard for” any moderate and low threat policies in approved source protection plans. Once a source protection plan is approved, it will prevail. In the case of a conflict over Official Plans and zoning by-laws (i.e. where a conformity exercise has not been undertaken to update an Official Plan or zoning by-law to bring them into conformity with an approved source protection plan) the approved source protection plan still prevails. Where there is a conflict between a source protection plan and the Provincial Policy Statement or other provincial plans, the provision that offers the greatest protection to the source of drinking water will prevail. The *Clean Water Act* also ensures that where there is a conflict between a provision of the *Clean Water Act* and any other Act, the provision providing the highest level of protection to the water quality and quantity will prevail.

Proposed source protection plans can be found at this link:

<http://www.conservationontario.ca/uncategorised/143-otherswpreionsindex>

### **Threats to Drinking Water**

The General Regulation under the *Clean Water Act* prescribed certain threats to drinking water. This list was developed through a multi-stakeholder working group and includes threats or activities that were either known to cause contamination, or were identified as having a higher potential to impact sources of drinking water. The list of prescribed threats to drinking water is found in Section 1.1 of Ontario Regulation 287/07. The list includes 19 specific activities that could contribute chemicals or pathogens and affect the quality of the source of the water supply, and two activities that could result in depleted water supplies (threats 19 and 20). The specific threat activities:

1. The establishment, operation or maintenance of a waste disposal site within the meaning of Part V of the *Environmental Protection Act*.
2. The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.
3. The application of agricultural source material to land.
4. The storage of agricultural source material.
5. The management of agricultural source material.
6. The application of non-agricultural source material to land.
7. The handling and storage of non-agricultural source material.
8. The application of commercial fertilizer to land.
9. The handling and storage of commercial fertilizer.
10. The application of pesticide to land.
11. The handling and storage of pesticide.
12. The application of road salt.
13. The handling and storage of road salt.

14. The storage of snow.
15. The handling and storage of fuel.
16. The handling and storage of a dense non-aqueous phase liquid.
17. The handling and storage of an organic solvent.
18. The management of runoff that contains chemicals used in the de-icing of aircraft.
19. An activity that takes water from an aquifer or a surface water body without returning the water taken to the same aquifer or surface water body.
20. An activity that reduces the recharge of an aquifer.
21. The use of land as livestock grazing or pasturing land, an outdoor confinement area or a farm-animal yard.

In addition to this list of threats, a source protection committee can apply to the Director of the Source Protection Programs Branch for a local drinking water threat to be added. For example, one approved local threat is the transportation of specific hazardous substances, such as fuel and septage, along transportation corridors.

Municipal planning staff involved will need to make decisions relative to vulnerable areas sensitive to contamination or depletion. They should evaluate land uses that involve drinking water threat activities to make decisions on development applications in these vulnerable areas.

## C. Source Protection Considerations and Obligations Before Source Protection Plans Take Effect

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### i. Assessment Reports and the Provincial Policy Statement, 2005

Assessment Reports describe the watershed, provide the scientific basis for the source protection plan, and are approved by the Director, Source Protection Programs Branch, and Ministry of the Environment. Assessment Reports were developed using standardized scientific methods provided by the Ministry of the Environment's Director's Technical Rules. Vulnerable areas that are delineated using the Technical Rules are the "designated vulnerable areas" as defined in the Provincial Policy Statement. Four types of vulnerable areas are delineated and mapped in the Assessment Reports:

1. surface water intake protection zones (IPZs),
2. wellhead protection areas (WHPAs),
3. highly vulnerable aquifers (HVAs), and
4. significant groundwater recharge areas (SGRAs).

If an issue with water quality is identified that is, or could, impact the use of the drinking water system, the issue could be documented in the Assessment Reports. If an issue is identified in the Assessment Reports, it will also include an issue contributing area (ICA) within the vulnerable area. Typically, this means that threat activities in the ICA that could contribute to that drinking water issue could be identified as significant threats in a broader area. For example, if a nitrate issue is identified at or near a well, all threat activities that could contribute nitrates, such as application of fertilizer, agricultural source material, non-agricultural source materials, and sewage disposal systems, could be significant drinking water threats in the broader issue contributing area.

The *Planning Act* requires that municipal planning decisions be consistent with the Provincial Policy Statement, 2005. The Provincial Policy Statement gives municipalities the authority to protect, improve and restore the quality and quantity of water resources. Specifically, Section 2.2.1 includes the following provision:

*"Planning authorities shall protect, improve or restore the quality and quantity of water by...*

*...d. implementing the necessary restrictions on development and site alteration to:*

- 1. protect all municipal drinking water supplies and designated vulnerable areas;*
- 2. protect, improve or restore vulnerable surface and groundwater, sensitive surface water features and sensitive groundwater features, and their hydrologic functions."*

The designated vulnerable areas delineated in the Assessment Reports align with the definition of the term in the Provincial Policy Statement. These designated areas are defined as vulnerable, in accordance with provincial standards, by virtue of their importance as a drinking water source. To be consistent with the Provincial Policy Statement, planning decisions should

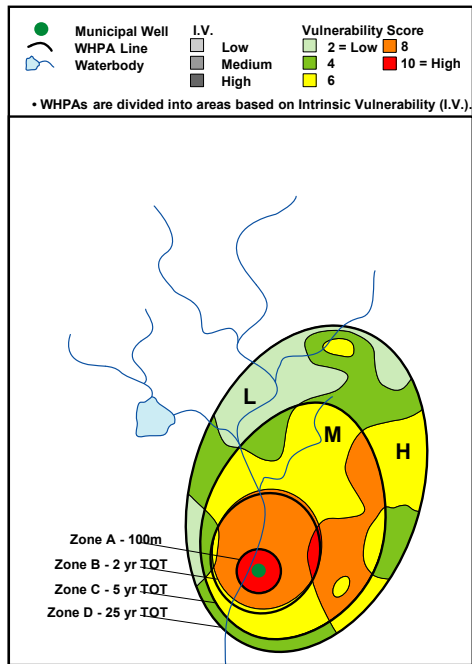
take into consideration information from the relevant local Assessment Reports. Municipalities are beginning to review the mapping in the Assessment Reports as part of their considerations when locating new land uses. Sample illustrations of vulnerable areas are included in Figures 1 and 2.

A municipality may also identify and protect sensitive groundwater features that are important locally, and/or important if the hydrologic function contributes to a sensitive groundwater recharge area or highly vulnerable aquifer. These sensitive groundwater features come under Section 2.2.1.d.2 of the Provincial Policy Statement.

To better understand the delineation of vulnerable areas, vulnerability scores and how to determine the presence of significant drinking water threats, refer to Module 2: Understanding Where Policies Apply and consult with your local source protection authority, or appointed Risk Management Officials.

All existing appeal rights under land use planning legislation continue to apply. A planning decision to protect drinking water sources could still be appealed to the Ontario Municipal Board. Assessment Reports provide decision makers with information used to make an informed decision in a sensitive area. Assessment Reports could be used to support decisions to restrict new uses in vulnerable areas.

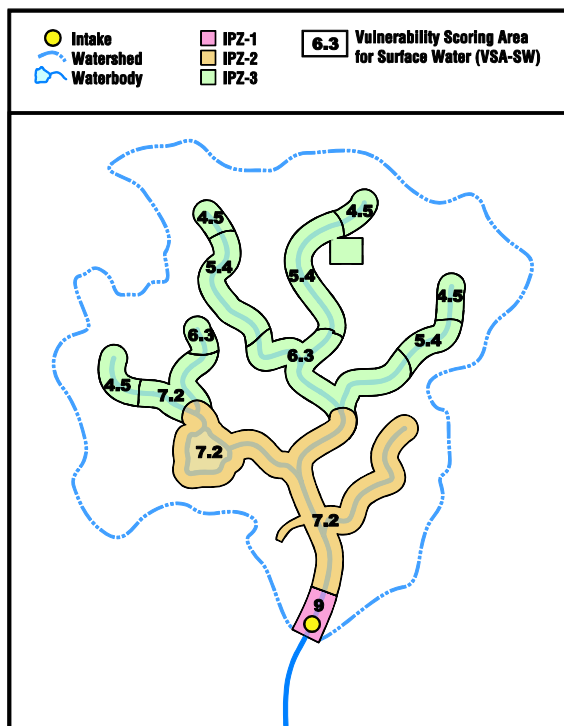
Figure 1: Illustration of a Wellhead Protection Area and Vulnerability Scoring



### WHPA Vulnerability Scoring

- Overlay WHPA zones with groundwater vulnerabilities of low, medium and high
- Scoring decreases away from the well and with decreasing aquifer vulnerability
- Always score 10 in Zone A
- WHPA-B scores 10, 8 and 6 with high, medium and low vulnerability, respectively
- WHPA-C scores 8, 6 and 4
- WHPA-D scores 6, 4 and 2

Figure 2: Illustration of an Intake Protection Zone and Vulnerability Scoring



### Example Vulnerability Scores for Intake Protection Zones Type C Intake

- Vulnerability scores decrease from IPZ-1 to IPZ-2 to IPZ-3
- Individual vulnerability scores are applied to the IPZ-1 and IPZ-2
- Variable vulnerability scores are possible within IPZ-3

## **ii. Official Plan Updates to be Consistent with the Provincial Policy Statement**

Prior to source protection plan approval, the planning approval authority should take into consideration the information and mapping in the Assessment Reports to ensure that decisions are consistent with the Provincial Policy Statement and to protect drinking water supplies and designated vulnerable areas. Some municipalities have vulnerable area mapping that does not match the mapping in the Assessment Reports. When relying on 2.2.1.d of the Provincial Policy Statement, municipalities should use the vulnerable area mapping in the Assessment Reports. However, municipalities may also have an interest in areas that were mapped using locally determined criteria.

Periodically, municipalities are required to undertake a review and, where appropriate, update their planning documents. Prior to completion of the Assessment Reports, many municipalities were uncertain where their vulnerable areas were located. With the information from the Assessment Reports now available, municipalities can review the maps and update their planning documents to be consistent with the Provincial Policy Statement. Including vulnerable area mapping in Official Plans will generate greater awareness about source protection and vulnerable areas amongst property owners, developers, real estate agents, lawyers, and the general public. Municipalities may also elect to be more restrictive and protect other drinking water sources, including non-municipal drinking water systems that are outside of the scope of the Assessment Reports.

Municipal Official Plan updates may include general or detailed policies, together with mapping of designated vulnerable areas to satisfy their obligations under the Provincial Policy Statement. Municipalities may also consider amending Official Plans to include provisions to make vulnerable areas subject to site plan control. Additionally, the Official Plan could be reviewed to determine whether council requires further information about vulnerable areas to make an informed decision.

In developing Official Plan policies, municipalities may wish to consider the direction in the submitted source protection plan, recognizing that the direction can change prior to final approval of the Plan. When the source protection plan takes effect, municipalities may have a limited amendment, if any, to ensure conformity with the source protection plan.

## **iii. *Planning Act* and Development Application Review Prior to Source Protection Plan Approval – Supporting Information**

Whether or not an Official Plan has been updated to be consistent with the Provincial Policy Statement, planning decisions must be consistent with the Provincial Policy Statement in the interim. For a municipality to make an informed decision on a development application,

applicants may request supporting documents to help determine if an application relates to vulnerable areas. The municipality may be required to amend the Official Plan to require any documentation currently not specified in the Official Plan or the *Planning Act*. Supporting documents, such as a disclosure report, hydrological/hydrogeological study, or a spill prevention and contingency plan, could be required to address significant drinking water threats, as part of a *Planning Act* or development application in vulnerable areas, such as WHPAs, IPZs, and ICAs. A planning justification report could also include this information in support of an application. Applicants can incorporate this practice into the development review process, especially if the municipality has a development application checklist.

The Official Plan must incorporate requirements to submit documents to support an application so that proponents are aware of the complete application requirements.

### **1) Disclosure Report**

This report should detail the nature, activities and operations of the proposed development/use. It should describe:

- the nature of the proposed use,
- its associated required services and facilities (e.g. stormwater management facility),
- the threat activities and related operations to be conducted onsite, and
- the substances and their quantities to be used or stored onsite.

### **2) Detailed Hydrological/Hydrogeological Study**

A qualified professional (e.g. hydrogeologist or hydrologist) with a designation of a P. Geo. or P. Eng. should prepare this study in the form of a technical report that uses professional standards and protocols acceptable to the Ministry of the Environment.

The study should:

- predict the net groundwater and surface water quality and quantity impacts likely to occur on the subject property, on down-gradient properties and on the municipal surface water intake or well,
- address cumulative impacts of development in the intake protection zones or wellhead protection areas, and
- include mitigating measures for the design, construction and post-construction monitoring of the proposed use.

**Note:** Where the impacts of the use cannot be adequately mitigated within an acceptable risk to surface or groundwater quality or quantity to the satisfaction of the municipality, the use should not be permitted.

### **3) Spill Prevention and Contingency Plan**

This plan should outline design measures, facilities and procedures to avoid and mitigate the effects of spillage of any contaminants.

During development application review, municipal staff should provide information related to source protection to the proponent, to indicate whether the application is within a vulnerable area and that source protection plan policies may apply. Examples of wording that could be used during application review before source protection plans are approved are provided in Appendix A. Module 2 contains significant drinking water threat surveys, which can be used with applicants during pre-consultation to determine which activities on the property could pose a significant drinking water threat.

#### **iv. Municipal Planning Processes**

To integrate source water protection into the regular planning processes, municipal planning departments must understand source protection mapping and policies. It is also important for municipalities to establish procedures to integrate consultation with the Risk Management Official into planning application reviews and business processes, so that when Source protection plans take effect there is an established review process. In source protection plans where Part IV is used to regulate threats to drinking water, the Risk Management Official will need to review development applications.

In addition to integrating Part IV considerations with application review processes, planning decisions must conform to the source protection plan policies as soon as the source protection plan takes effect. Planners should become familiar with any policies on List A and List B in the source protection plan prior to source protection plans taking effect.

#### **Planning Act/Development Applications Review Process**

Source protection is relevant to many stages of the development application process. For example, municipal councils may pass by-laws requiring pre-submission consultation with proponents and municipal staff before submitting most planning and development applications. This requirement would allow municipal staff to consult Assessment Report mapping and source protection plans and flag applications that fall in vulnerable areas before the formal application submission, allowing proponents to make changes or cease the application process altogether.

Figure 3 provides an example of how to integrate source water protection into the planning process.



Many municipalities have development application checklists to ensure that the appropriate municipal staff members and, where needed, external agencies, such as the local conservation authority, have participated in the review process. Find a sample checklist in Appendix D.

Additionally, municipalities can require proponents to include a source water protection checklist as a requirement for a complete application. A municipality may also elect to update its existing checklist or incorporate questions into existing application forms. The *Planning Act* provides that persons applying for amendments to Official Plans or zoning by-laws submit any information or material that the municipal council may need, beyond the prescribed information. However, complete application submission requirements must be specified in the Official Plan. Therefore, Official Plans might require amendments.

Once the Official Plan is amended, the municipality may wish to create a checklist or form that helps applicants ensure they're addressing source protection. Appendix E provides a sample checklist that would ensure source protection plan policy considerations are part of *Planning Act* or development applications.

Upon submission of the application, municipal staff can review this checklist to determine whether significant drinking water threat policies apply. Specific threat-related checklists are provided in Module 2: Understanding Where Policies Apply.

### **Site Plan Control**

Site plan control can address the layout of a site and ensure proponents consider source protection planning matters, such as waste disposal, grading and drainage, building and septic envelopes, and vegetated buffer strips, and to ensure other features are provided and maintained. To use site plan control, the Official Plan must include provisions that allow site plan control by-laws in the appropriate areas. A local Official Plan provides general or specific provisions as to where site plan control applies and what classes of development are included. A municipality may want to include provisions to require site plan control for all or certain classes of development in all vulnerable areas delineated in the Assessment Reports, or only in vulnerable areas where threats could be significant. Many municipalities use site plan control only for certain classes of uses, and often single detached residential uses or agricultural uses are exempt from site plan control. Depending on the local circumstances, site plan control could be an effective tool to address the layout of sites in vulnerable areas. Table 1 provides examples of significant drinking water threat activities and how they could be managed by site plan control.

Site plan control can also help implement source protection plan policies, including cases in which a property is partially within a vulnerable area, or where more than one vulnerability score applies. When a property is in a vulnerable area and site plan control is required, the municipality can ensure that significant threat activities associated with specific structures are not located within the vulnerable area, or within areas with the highest vulnerability scores. If

the activity can be sited so that it is no longer a significant threat, the activity ceases to be subject to source protection plan policies – a benefit that should be emphasized to the proponent. For example, if a commercial property requiring a large parking lot is partially located in a wellhead protection area where the application of road salt would be a significant drinking water threat, site plan control could ensure the parking lot is located outside of the vulnerable area.

### **Holding By-law**

Holding by-laws allow for future land use or building, but delay development until local services, such as roads, are in place. Holding by-laws must be part of the municipal Official Plan. Holding provisions apply for a limited time only; once the provisions have been met, the holding by-law is removed. This tool would not preclude someone from modifying the activity at a later date, and thus, the use of holding by-laws for implementation of source protection policies may be limited. However, municipalities may choose to investigate the feasibility of holding provisions for source protection purposes.

Holding provisions cannot be used to ensure that Risk Management Plans are negotiated before applications are approved. Risk Management Plans are tied to the person engaged in the activity, and not tied to the land. Therefore, Risk Management Plans must be negotiated with the person or agency engaging in the activity, which may not be the same person or agency that submits a development application.

Figure 3: Application Process Considering Source Water Protection (Adapted from York Region)

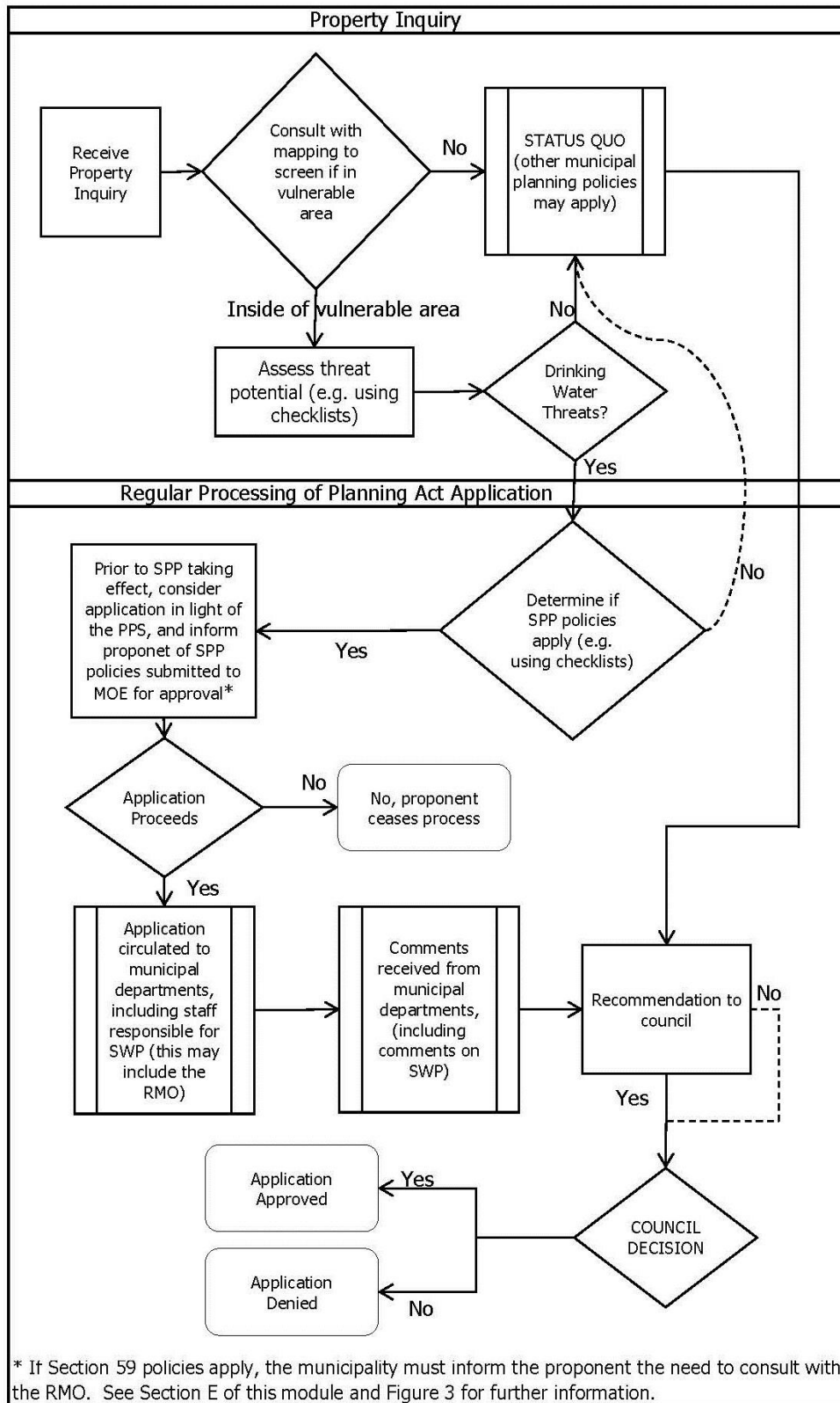


Table 1: Site Plan Control

Prescribed Threat	Example of Threat	Examples of Site Plan Control Requirements
Establishment of a waste disposal site within the meaning of Part V of the <i>Environmental Protection Act</i>	Storage of hazardous waste	Location of storage facility on parcel Size and capacity of storage facility
	Landfilling solid non-hazardous waste	Location of landfill facilities on parcel Setback of development
Establishment of a system that collects, stores, transmits, treats or disposes of sewage	Septic system	Location of septic tank on parcel Size and capacity of tank
	Discharge of untreated stormwater from a stormwater retention pond	Lot grading Capacity of retention pond
Storage of snow	Snow disposal site	Lot grading Location of dedicated snow storage Stormwater management plan
Storage of agricultural storage material	Manure produced and stored on a farm	Building envelope for storage facility Capacity of storage facility
Storage of non-agricultural source material	Storage of unprocessed plant waste from food processing facility	
Storage of commercial fertilizer	Storage of commercial fertilizer	
Storage of fuel	Industry storing fuel	
Storage of pesticide	Storage of pesticide at manufacturing plant	
Storage of DNAPLs and organic solvents	Storage of chemicals at an industrial facility	
Storage of road salt	Storage of road salt at a contractor's yard	Lot grading Stormwater management plan
Application of road salt	Parking lot	
The use of land as livestock grazing or pasturing land, an outdoor confinement area or a farm-animal yard.	Farm animal yard	Location of yard Lot grading

## D. Source Protection Considerations and Obligations After Source Protection Plans Take Effect

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Source protection plans contain policies that manage or prohibit specific activities that are, or may become, significant threats to drinking water. Source protection plans are not land use plans, but rather plans that rely on other legislation for implementation, like the *Planning Act*. Policies in the source protection plan that rely on land use planning authorities may need to be translated into appropriate land use planning restrictions. For example, a source protection plan may specify “no handling and storage of road salt.” A land use planning restriction may state “no municipal works yards or large scale private works facilities.”

### Activities vs. Uses

The *Planning Act* provides the legislative framework for municipalities to regulate land uses, not specific activities occurring within these uses. The land use planning framework does not easily address some of the threat activities prescribed for the *Clean Water Act*. For example, municipal planning decisions cannot restrict specific activities, such as the handling and application of agricultural source material, non-agricultural source material, commercial fertilizer, pesticides, or chemicals. In addition, the use of land for livestock grazing, pasturing, outdoor confinement areas, farm-animal yards and aquaculture generally do not qualify as development or site alteration as defined in the Provincial Policy Statement.

To address these activities through land use planning, a decision would have to restrict all of the uses where these activities might occur. For example, to prohibit an activity like the spreading of agricultural source materials through land use planning, it would be necessary to prohibit agriculture in the designated area, effectively prohibiting many other activities that may pose no risk to sources of drinking water, thus causing a significant impact to the local economy. Committees considered these limitations in the legislation when developing policies, so the source protection plan may or may not rely on *Planning Act* authorities depending on the local circumstances.

### Additional Restrictions

Outside of the implementation of Source protection plan policies, municipalities are not limited to addressing prescribed drinking water threats and can make their own decisions about which land uses are incompatible with the protection of vulnerable areas for drinking water sources. For example, a municipality may review the maps in the Assessment Reports and determine that it wants additional restrictions on land uses or increased setbacks in vulnerable areas. If challenged, the municipality would be responsible for defending these decisions and showing how the decision is consistent with the Provincial Policy Statement and balances provincial interests.

## ***Municipal Act* Authorities**

Municipalities may also use existing authorities under the *Municipal Act* to establish by-laws to control activities that fall within their sphere of jurisdiction, for example, the disconnection of downspouts or household hazardous waste collection. Once a source protection plan is approved, a municipality may be required to establish by-laws using its authority under the *Municipal Act* to satisfy the obligations of the applicable significant threat policies. These policies can be found on List E and/or List J in the Appendix of your local source protection plan.

### **i. Policies Affecting Land Use Planning – Legal Effect and Effective Date**

#### **Legal Effect of Source Protection Plans**

Part III of the *Clean Water Act* specifies the legal effect of each type of policy. Under the Act, some policies can be legally binding on implementing bodies, while others cannot. Each source protection plan has an Appendix that contains the lists of policies identified for each legal effect provision of Part III. The purpose of each list is to ensure the appropriate provisions of Part III of the *Clean Water Act* are applied to a policy. To determine which source protection plan policies rely on land use planning tools, municipal planners should refer to Lists A and B in the Appendix of the source protection plan. List A sets out the significant threat policies in the plan that affect decisions under the *Planning Act* and *Condominium Act*. List B sets out the moderate and low threat policies that affect decisions under the *Planning Act* and *Condominium Act*.

Where the source protection plan policies rely on authorities in the *Planning Act* and *Condominium Act*, municipalities and local boards are required to make decisions that conform with significant drinking water threat policies (policies on List A), and have regard for moderate and low threat policies (policies on List B). Note that the legal effect lists in the Appendix to the source protection plan that identify the legal effect of policies in the source protection plan. Many policies are included on List A, but not included on List B. If a policy appears only on List A, the policy has the legal effect “conform with.” For a policy to have the legal effect “have regard for,” the policy would have to be included on List B, otherwise the policy does not apply to areas with moderate or low threats.

#### **Effective Date of Source Protection Plans**

Source protection plans will take effect on the date specified by the Minister of the Environment. Certain policies may take effect on a later effective date specified in the local source protection plan. This effective date triggers conformity requirements under the *Planning Act* and *Condominium Act*. Decisions on planning matters made by a municipality or planning authority, including the Ontario Municipal Board, on or after the effective date must conform to applicable significant drinking water threat policies, and have regard for moderate and low drinking water threat policies. For example, if an applicant applied to change a land use designation to one that was prohibited through a source protection plan policy, the planning authority would not be able to approve the change.

In addition to planning decisions being affected by the source protection plan, municipalities will also need to review their planning documents (Official Plan, zoning by-law) to ensure conformity with significant drinking water threat policies. Timeframes are established in each source protection plan for Official Plan and zoning by-law conformity, and were determined locally during discussions between the Source protection committee and municipalities in your Source Protection Area during plan development. The timeframe in most Source protection plans follows the same dates as Official Plan and zoning by-law reviews and amendments mandated by Section 26 of the *Planning Act*. Municipalities are encouraged to work with their local source protection authority to determine how to bring Official Plans and zoning by-laws in compliance with significant threat policies.

Municipalities should be aware of source protection plan policies prior to the effective date of the source protection plan. Additionally, municipalities or planning authorities should prepare to have the necessary internal processes in place to be able to meet their legislative obligations when plans take effect.

## **ii. Transition Provisions**

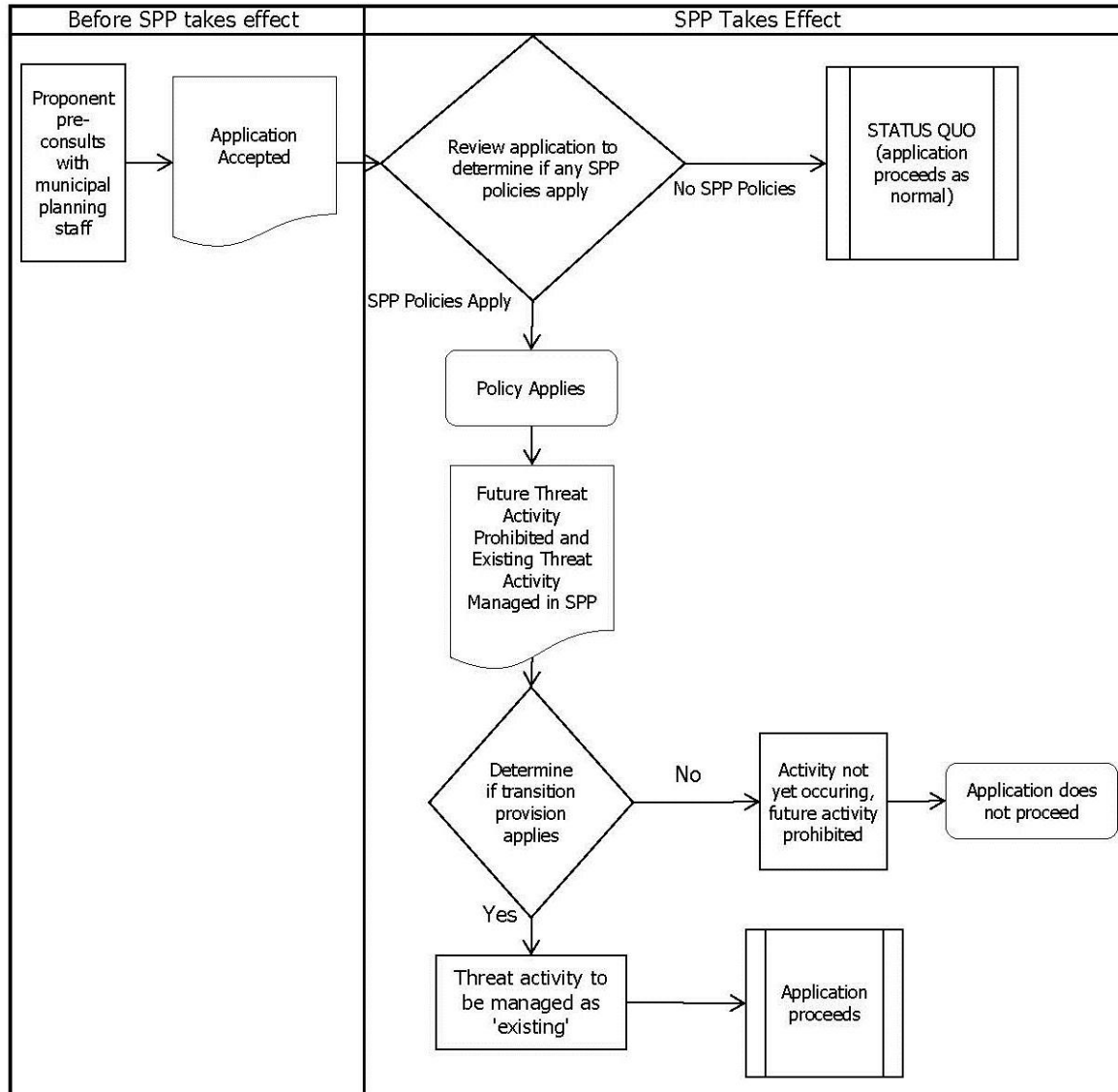
Local source protection plans may contain transition provisions. Transition provisions are common in land use planning, and are often used when changes are made to a regulatory structure to allow existing *bona fide* applications in process or approvals granted to continue. Transition provisions can also allow new applications to be submitted after the effective date, where the new application is helping to implement an existing application in process. For example, a site specific zoning by-law can be transitioned provided it implements a related Official Plan amendment application in process.

Under the *Clean Water Act*, there is a unique consideration for transition provisions. The Act requires source protection plans to contain policies that address all existing or future significant drinking water threats. Therefore, areas that could have significant threats cannot be transitioned to the extent that no source protection plan policy would apply. Many source protection plans opted to prohibit future threats from becoming established and manage existing threats that are presently occurring on the landscape. Prohibiting future threats may unfairly affect complete applications in process when the source protection plans take effect. A transition provision could allow applications that are in process, and land use planning approvals granted, to be considered as “existing” even though the threat has not commenced. This provision would allow the application to proceed and the threat to be managed. Figure 4 provides an example of the transition provision process.

Not all source protection plans have transition provisions as they are not always needed. Where a source protection plan includes policies to manage both existing and future threats, a transition provision is not required. Municipal planners should consult the *Clean Water Act* and applicable policies of the local source protection plans to determine the appropriate

requirements for transition when matters have commenced prior to a source protection plan coming into effect. Refer to Appendix B for an example of a source protection plan transition provision.

Figure 4: Transition Provision





### **iii. Official Plan and Zoning By-law Conformity**

#### **Official Plan and Zoning By-law Conformity in Various Governance Structures**

Upper Tier, Lower Tier, and Single Tier municipalities will need to review and, where appropriate, update or amend Official Plans to ensure conformity with significant threat policies in source protection plans, found in List A. Single and Lower Tier municipalities will also need to review and, where appropriate, amend zoning by-laws to conform to significant threat policies. When a source protection plan contains policies using authorities under the *Planning Act* and *Condominium Act* to address areas where threats could be low or moderate (policies on List B), decisions made on development applications must ensure that they “have regard for” these policies. Mapping vulnerable areas should also be included.

In many cases, source protection plan policies are written in a way that allows municipalities to amend Official Plans and zoning by-laws during the next scheduled update.

The requirements for Upper Tier, Lower Tier, and Single Tier plans can vary substantially based on local context. In some cases, the detail will need to be in the Upper Tier municipality’s plan. In other areas the Lower Tier municipality’s plan will be more detailed. As well, there are Upper Tiers where there are no Lower Tier plans – these will need to include all the details. To determine which approach is most appropriate, Upper and Lower Tier municipalities will need to consider the nature of the policy, the regional and local situation, and the current approach to planning.

#### **Implementing Land Use Planning Policies from More than One Source Protection Plan**

Source protection areas were established using a watershed approach. Many municipalities could be located within two or more source protection areas and, therefore, could be required to implement multiple source protection plan policies, including land use planning policies. Many source protection committees tried to ensure consistency when developing policies that would affect shared municipalities. However, this was not always possible due to local situations or carefully considered decisions by the local source protection committee; therefore policies in source protection plans may use different policy tools or approaches to manage or prohibit significant drinking water threat activities.

Source protection plan policies are written to address significant drinking water threats in specific areas; likewise, municipal land use planning policies are written to manage land use in specific areas. Municipalities will be required to ensure the correct source protection plan policy is applied to the correct location in the municipality. This is similar to municipalities within the jurisdiction of more than one conservation authority, where the regulations of each conservation authority must be considered.

Municipalities may elect to delineate the boundaries of each source protection area on a schedule and provide Official Plan policies that reflect the source protection plan in each area.

Alternatively, a municipality could provide a uniform policy in the Official Plan that encompasses multiple source protection plans and meets the legal effect requirements of multiple source protection plans. If a municipality chooses to provide a uniform policy that is more stringent than a policy in one of the source protection plans, the municipality may be required to justify this decision.

See Appendix C for an example of how land use planning policies can be implemented in a municipality from more than one source protection plan.

### **Existing Official Plan Mapping Differs from Assessment Report Mapping of Vulnerable Areas before Official Plan Amendments**

Once the source protection plan takes effect, municipal decisions must conform to significant drinking water threat policies in the plan. For the purposes of the Provincial Policy Statement, the Assessment Report mapping of vulnerable areas is considered to be the provincial standard. Other areas may be of importance locally. If an application relates to threat activities within vulnerable areas delineated in the Assessment Reports, it will be important to identify if any significant drinking water threat policies will apply. Assessment Report mapping is available from local source protection authorities, or through Conservation Ontario's website.

### **Policy Approaches to Conform with Source Protection Plans**

If a source protection plan policy prohibits, for example, storage of commercial fertilizer, then depending on the local circumstances, the municipality could include a variety of policy approaches in the Official Plan to conform with the source protection plan direction (either alone or in combination):

- Recommend zoning using setbacks from a vulnerable area.
- Include Official Plan provisions to ensure that the vulnerable area is subject to site plan control
- Designate the vulnerable area as a natural vegetated buffer strip or other use that would prevent the erection of buildings and structures.
- Use an overlay designation or provide provisions to use an overlay designation in the zoning by-law to ensure source protection matters are considered in vulnerable areas.
- Include mapping of vulnerable areas delineated in the Assessment Reports.

A zoning by-law could implement the Official Plan direction in a variety of ways.

- Prohibit use of land, buildings and structures in vulnerable areas,
- Impose setbacks from vulnerable areas.
- Continue to allow agriculture as a main use, but prohibit certain accessory uses or structures, such as structures intended to store agricultural materials in specific areas.
- Use a vegetated buffer strip zone.

- Limit the size of additions or prohibit additions in vulnerable areas.
- Provide an overlay zone to define a building envelope, to restrict the size, location or nature of the development, or to impose other restrictions as may be deemed necessary by the municipality.

### **“Placeholder” Policy**

Some municipalities have elected to use a “placeholder” policy in their Official Plans to indicate work that will be undertaken as part of a future conformity exercise. This policy may indicate the scope and scale of the work and may include interim high-level direction to Lower Tier municipal Official Plans. Placeholder policies may be used to provide general council direction to protect supplies of drinking water in vulnerable areas, pending the completion of a more fulsome and detailed conformity exercise. A placeholder policy may be acceptable if a municipal comprehensive review is substantially complete at the time that a source protection plan takes effect. In a Two Tier governance structure a placeholder policy may provide the Lower Tier with sufficient policy direction until the Upper Tier plan is updated.

A placeholder policy can include:

- acknowledgement that a source protection plan(s) is in progress or has taken effect and that protection of drinking water supplies from contamination and depletion is a key objective,
- direction to review the source protection plan(s) and ensure appropriate policies and a timeframe are incorporated to enable its implementation,
- direction to Lower Tier municipalities to include detailed mapping and policies as well as provisions in a zoning-by-law, and
- an outline of vulnerable areas delineated in the Assessment Reports and areas where threats could be significant, either by textual reference or on a schedule.

### **Policy Examples and Official Plans and Zoning By-Laws**

Land use planning policies used to implement source protection plans will vary across the province. Many municipal Official Plans already contain policies that consider the protection of water quantity and quality. Other municipalities may wish to refer to the following Official Plans and zoning by-laws to see examples of how water protection has been considered:

- Norfolk County Official Plan – Section 6.3 is devoted to source water protection; draft zoning by-law section 3.35 is devoted to wellhead protection.
- Region of Waterloo Official Plan – Chapter 8 is devoted to source water protection (note: as of January 24, 2011, the plan in its entirety was under appeal before the OMB).
- City of North Bay Official Plan – Section 2.1.14.4 provides for complete application requirements for development in IPZ-1.

- Town of Innisfil Official Plan – Section 4.3 has policies for the protection of IPZs; draft zoning by-law section 3.51 has policies related to WHPAs and IPZs.
- City of Barrie Official Plan – Section 3.5.2.3.3 addresses groundwater protection and refers to wellhead protection areas; Section 3.5.2.3.4 refers to the protection of significant groundwater recharge areas.
- City of Kawartha Lakes Oak Ridges Moraine Official Plan – Section 5.4 sets out prohibited uses in WHPAs; Section 5.5 sets out provisions for areas of high aquifer vulnerability.

Other examples can be found through municipalities affected by the Oak Ridges Moraine Conservation Plan which required that each of the 32 municipalities on the Oak Ridges Moraine review and, where necessary, amend or update Official Plans and zoning by-laws to implement policies of the Oak Ridges Moraine Conservation Plan, including policies to protect the quality and quantity of water.

#### **Part IV of the *Clean Water Act* for Planners**

When a source protection plan contains policies that use Part IV of the *Clean Water Act*, municipalities with the responsibility for the production, treatment and storage of water are also responsible for enforcing Part IV of the *Clean Water Act*. Part IV authorities are used to regulate specific activities that could be significant drinking water threats. Part IV allows the specific threat activity to be regulated according to the circumstances, such as volume, in the specific area where the threat could be significant. Some activities, such as storage of organic solvents or dense non-aqueous phase liquids (DNAPLs), are not otherwise regulated, and authorities under the *Planning Act* may not always be locally acceptable as it may be difficult to restrict specific types of materials.

Part IV of the *Clean Water Act* provides municipalities with the authority to regulate significant threat activities through Prohibition (Section 57), Risk Management Plans (Section 58) and Restricted Land Use (Section 59). Municipalities responsible for enforcement of Part IV will need to appoint a Risk Management Official, and such Risk Management Inspectors as are necessary. The Risk Management Official is responsible for making decisions about Risk Management Plans, prohibitions, and risk assessments in vulnerable areas, similar to the way in which building officials make decisions on building permits. The Risk Management Inspector is responsible for enforcing Part IV, similar to the way in which building inspectors enforce the provisions of the *Building Code Act*.

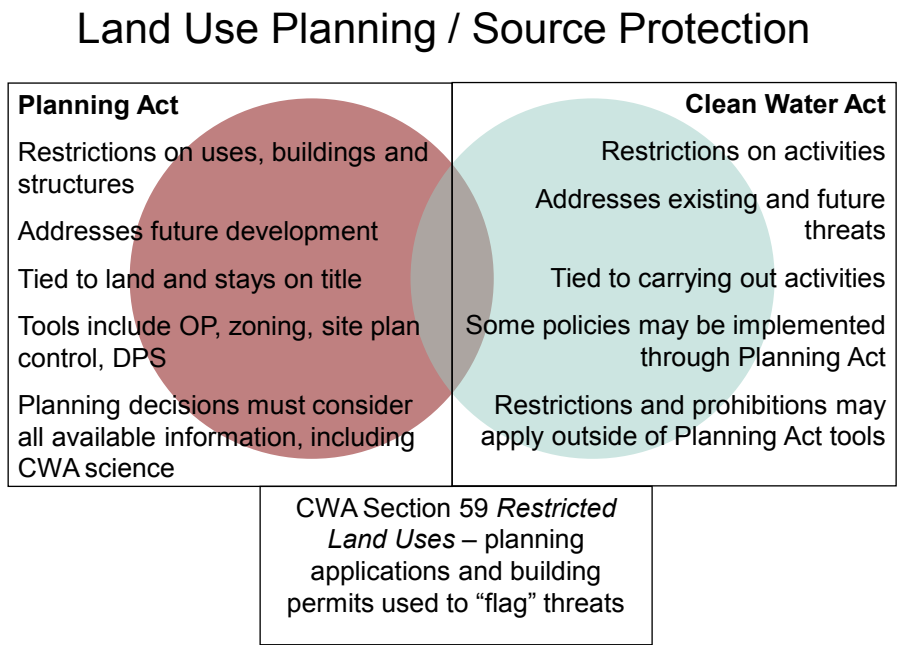
Planners need to be aware of Part IV policies and where they apply because planning applications and building permits in these areas need to be reviewed by the Risk Management Official to avoid a threat activity from becoming inadvertently established. Section E discusses the role of the Risk Management Official in the application and review process if Part IV policies apply.

Part IV authorities are different from the restrictions under the *Planning Act* to which planners are accustomed. Key features include:

- Part IV can apply to existing activities currently in operation when the source protection plan takes effect, as well as to future activities.
- Risk Management Plans established under Section 58 are tied to the person engaged in the threat activity, rather than tied to the property, and this may be a landowner or a tenant, and are not transferrable without the consent of the Risk Management Official.

Figure 5 illustrates key differences between land use planning restrictions and the *Clean Water Act* provisions, including Part IV provisions.

*Figure 5: Key Differences between Land Use Planning Restrictions and the Clean Water Act Provisions*



When a source protection plan policy designates an activity using Section 57 Prohibition, that specific activity will be prohibited in an area specified in the source protection plan. For example, fuel storage over 2,500 litres may be prohibited in a wellhead protection area with a score of 10. Similarly, when a source protection plan policy designates an activity for the purpose of Section 58, the activity is prohibited until a proponent can establish a Risk Management Plan to ensure the activity will not pose a significant threat to drinking water. For example, a Risk Management Official may determine that fuel storage over 2,500 litres may be acceptable in an area provided that the physical containment, safety measures, operational and administrative procedures ensure that the threat to drinking water would be managed safely.

Further information about Part IV roles and responsibilities can be found in Module 1: Establishing a Risk Management Office, Module 5: Risk Management Plans, and Module 6: Prohibition.

Some municipalities are beginning to establish risk management offices, as there are authorities under Part IV that are available when the Assessment Reports are completed. Some municipalities are preparing to implement Part IV when the plans take effect.

## E. Section 59 – Restricted Land Uses

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### Understanding Section 59

Section 59 is intended to serve as a “red flag” under Part IV of the *Clean Water Act* so that building permit and *Planning Act* applications can be reviewed in areas where Section 57 (Prohibition) or Section 58 (Risk Management Plans) are in effect. Such a review will help to prevent inadvertently approving an application that includes a significant drinking water threat activity. Section 59 requires that the applicant must obtain a notice, called the “Section 59 notice to proceed,” from a Risk Management Official before an application for an approval under the *Planning Act* or a building permit can proceed. Part IV applies to limited areas where threats to drinking water could be significant, therefore not all applications need to be sent to the Risk Management Official. The Risk Management Official will need to review development applications in vulnerable areas where Part IV applies, and issue a notice to proceed, which will form part of the complete application under the *Planning Act* and part of the applicable law provisions under the Building Code. In a two tier governance structure this may mean that the application is reviewed by the Risk Management Official and the Upper Tier, Lower Tier, and Single Tiers will need to work together to transfer this information.

The Section 59 notice was modelled after existing application review processes, in which proponents are required to ensure that a number of requirements are met. For example, a planning application that fronts onto a regional road would require review by the transportation department that authorizes entrance permits. In the area where Part IV applies, planners will need to ensure that the Risk Management Official reviews an application and provides a notice to proceed (the Section 59 notice) with the application.

The Section 59 notice is part of the applicable law provisions under the *Building Code Act*, effective January 1, 2014, and is part of the complete application requirements under the *Planning Act*. The notice will indicate one of the following:

- i. neither Section 57 or 58 apply to the application, or
- ii. Section 58 applies, and if so, a Risk Management Plan has been agreed to or established for the significant drinking water threat activity.

Note that if Section 57 Prohibition applies, the Risk Management Official informs the proponent and the application does not proceed. There is no Section 59 notice issued in this circumstance.

For Section 59 to be used, the source protection plan must contain policies using Section 57 or Section 58, as well as specifying that Section 59 applies. Section 59 policies must also designate land uses in the Official Plan or zoning by-law (e.g. commercial or industrial) to which the policy applies and the area. For example, if storing organic solvents was designated for the purpose of Section 57 Prohibition in areas where the threat would be significant in the source protection plan, then industrial and commercial land uses may be designated under Section 59 in those areas.

In some source protection plans, Section 59 policies are written in such a way that all land uses are designated for Section 59, or all uses except for residential are designated for Section 59. If a land use is exempt from Section 59, applications related to that land use do not need to be reviewed by the Risk Management Official. However, even if a land use is exempt from Section 59, other policies, including Section 57 and 58 policies, will continue to apply on the property.

### **Section 59 Policies on List A**

Some source protection plans have included Section 59 policies on List A. Policies included on List A require that decisions under the *Planning Act* and *Condominium Act* must conform to these policies. If a Section 59 policy is included on List A, then an Official Plan and zoning by-law could include a textual reference, mapping of the area where the policy applies, and the land uses that have been designated for the purpose of screening applications.

### **Development Application Submission and Section 59**

The Section 59 flag was developed to integrate with existing review functions of a planning or building department. Obtaining the Section 59 notice will form part of the submission requirements for planning applications and building permits in areas where Part IV and Section 59 apply. Section 62 of Ontario Regulation 287/07 prescribes applications under the *Planning Act* for the purpose of Section 59 of the *Clean Water Act*. In addition, municipal departments that process applications under the *Building Code Act* also need to ensure the Risk Management Official reviews applications in areas where Part IV applies. The definition of applicable law in the Ontario Building Code was amended to include the Section 59 notice as part of the applicable law provisions (effective January 1, 2014, Section 1.4.1.3. of the Building Code). When the source protection plans take effect, the Risk Management Official must have a review process in place for planning applications and building permits in areas where Part IV applies.

All Part IV policies, including Section 59, are enabled through the *Clean Water Act* and therefore do not need to be integrated into Official Plans or zoning by-laws to be implemented by municipalities. They will take effect when the source protection plan takes effect (however, see section entitled “Section 59 Policies on List A”). It is recommended, however, that municipalities indicate on a schedule in their planning documents where Part IV applies, as many residents and businesses are familiar with these documents and rely on them for information related to development. Although no amendment is necessary to implement Part IV, municipal planning processes will have to be changed to ensure the Risk Management Official reviews applications in the area where Section 59 applies.

Section 59 will need to be integrated into the regular planning and building review processes. Figure 6 shows how proponents and municipalities can consider Section 59 during the development application review process.



## **F. Appeals to the Ontario Municipal Board**

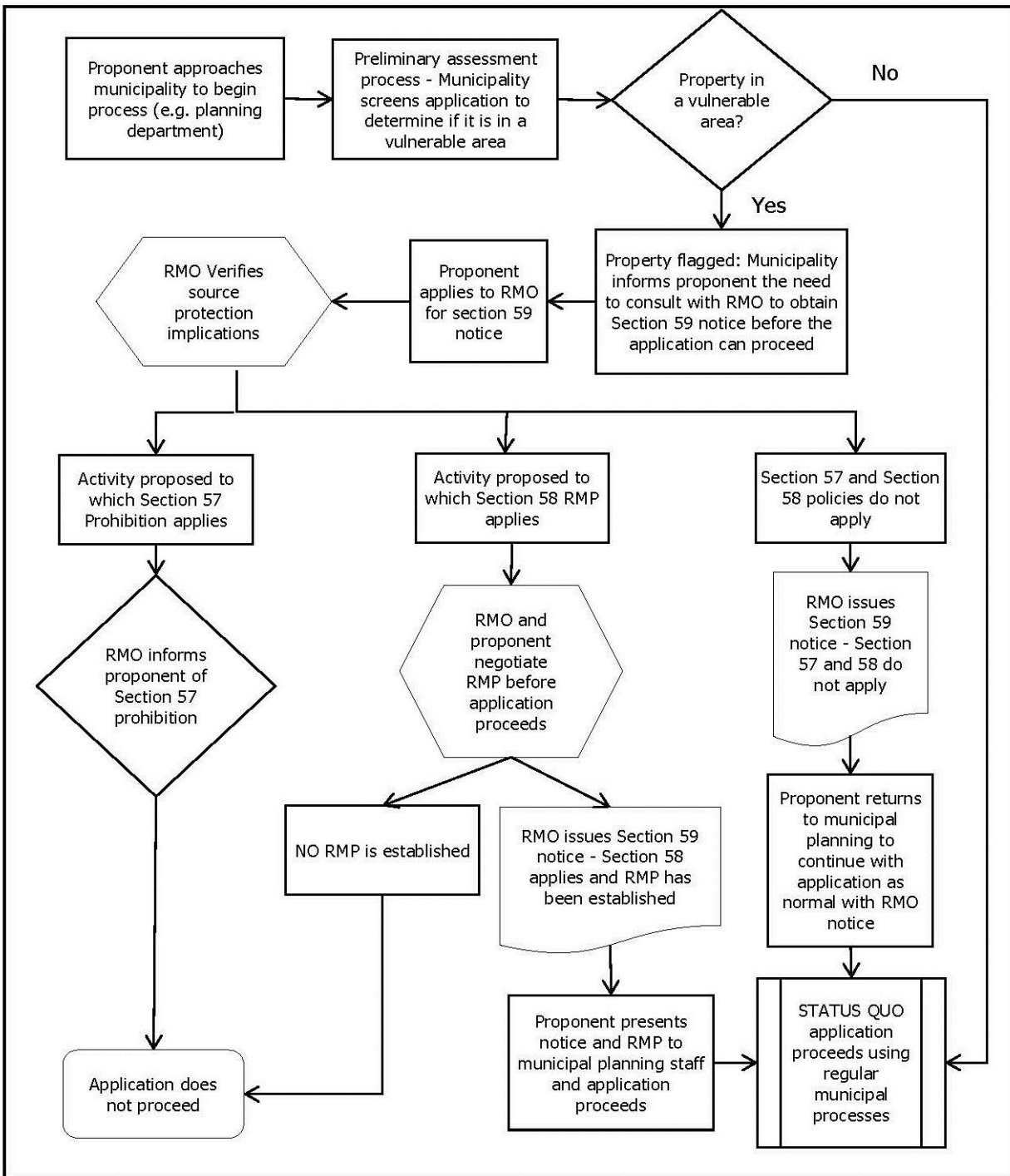
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Once approved, the source protection plan cannot be appealed; however, decisions under the *Planning Act* or the *Condominium Act* can be appealed to the Ontario Municipal Board. Appeals could be made to the Ontario Municipal Board regarding the following:

- i. amendments proposed to the municipal Official Plan and zoning by-law to conform with the source protection plan, and
- ii. decisions on applications, including when the decision is based on source protection plan provisions.

Ontario Municipal Board decisions must also conform with significant drinking water threat policies in the source protection plan (policies on List A), and have regard for policies in the source protection plan that rely on authorities under the *Planning Act and Condominium Act* and that apply in areas where threats could be moderate or low (policies on List B).

Figure 6: Example of Section 59 Process (Adapted from York Region)



## G. Annual Reporting

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Municipalities will have responsibilities related to annual reporting, which may include reporting to the source protection authority on land use planning activities related to source protection. See Module 4: Annual Reporting and Information Management for more information on annual reporting.

## H. Glossary of Terms Defined in the *Clean Water Act* and Regulations

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**Drinking water threat:** An activity or condition that adversely affects or has the potential to adversely affect the quality or quantity of any water that is or may be used as a source of drinking water, and includes an activity or condition that is prescribed by the regulations as a drinking water threat. Activities prescribed as drinking water threats are listed in Section 1.1 (1) of Regulation 287/07.

**Highly vulnerable aquifer (HVA):** An aquifer on which external sources have or are likely to have a significant adverse effect and include the land above the aquifer. Highly vulnerable aquifers could include areas where the bedrock is fractured.

**Intake protection zone (IPZ):** An area that is related to a surface water intake and within which it is desirable to regulate or monitor drinking water threats. The areas around the surface water intake are determined through the Director's Technical Rules based on the time it would take for a spilled substance to reach the intake. The times of travel have been standardized as follows:

- IPZ 1: A fixed radius from the municipal intake, radius varies from intake based on the type of source (e.g. Great Lake vs. Inland river source), generally there is no response time.
- IPZ 2: An area adjacent to IPZ-1 where there is limited response time in the event of a spill (maximum response time is 2 hours, some drinking water system operators delineated a longer response time).
- IPZ 3: Zone that captures all water courses in the watershed that contributes water to the source of the municipal intake. For specific municipal systems such as systems in great lakes or connecting channels, the IPZ-3 may be delineated to capture specific activities that have or will have an impact on the source in case of spills.

**Moderate or low drinking water threats:** Designations based on the vulnerability of an area and the hazard rating of an activity, as identified in the Assessment Reports. Moderate and low threats may exist in any of the vulnerable areas.

- "Moderate drinking water threat" refers to a drinking water threat that, according to a risk assessment, poses or has the potential to pose a moderate risk.

- “Low drinking water threat” refers to a drinking water threat that, according to a risk assessment, poses or has the potential to pose a low risk.

**Risk Management Plans (Section 56 and Section 58):** A Risk Management Plan is a policy implementation tool available under Section 58 of the *Clean Water Act* to manage activities that are significant drinking water threats<sup>1</sup> when enabled in an approved source protection plan. A Risk Management Plan may contain operational procedures and requirements for physical barriers, incorporate best management practices, require staff training, etc. to ensure that a threat ceases to be significant. A Risk Management Official is responsible for negotiating and approving Risk Management Plans and ensuring the measures in the Risk Management Plan satisfy Section 22 of the *Clean Water Act*. A Risk Management Plan is tied to the individual undertaking the activity, is not registered on title, and cannot be transferred unless the Risk Management Official consents to the transfer.

A Risk Management Plan created under Section 56 of the *Clean Water Act* would contain the same information as one created under Section 58, but is available to municipalities only in the period between the approval of the Assessment Reports and the approval of a source protection plan. For interim Risk Management Plans, the Risk Management Official must be satisfied that the measures will reduce the potential for the activity to adversely affect raw water supplies.

**Significant drinking water threat:** A drinking water threat that, according to a risk assessment, poses or has the potential to pose a significant risk. Areas where threats could be significant include all of WHPA-A and IPZ-1, as well as all of IPZ-2, and some parts of IPZ-3 and all or portions of WHPA-B, WHPA-C or WHPA-C1, depending on the assigned vulnerability score (8 or greater). DNAPLs are significant drinking water threats anywhere in WHPA-C or WHPA-C1 with a vulnerability score of 2-10. Significant drinking water threats can also occur in any part of a WHPA or IPZ if there are water quality issues in a drinking water system.

**Significant groundwater recharge area (SGRA):** An area within which it is desirable to regulate or monitor drinking water threats that may affect the recharge of an aquifer. For example, SGRAs could include sand and gravel deposits.

**Source protection committee (SPC):** A committee established under Section 7 of the *Clean Water Act* and according to Regulation 288/07, mandated to prepare three documents to address the municipal residential drinking water systems in its watershed: 1 - Terms of Reference (workplan), and 2 - Assessment Report (scientific report), and 3 - source protection plan (policies to address threats to drinking water).

**Vulnerability score:** A score that represents the inherent vulnerability of each part of the vulnerable areas that must be delineated in the Assessment Reports. The vulnerability score is assigned based on scientific methodology outlined in the Director’s Technical Rules and represents the hydrogeological and hydrological characteristics of the vulnerable area. Vulnerability scores for wellhead protection areas and intake protection zones can range from 0.8 (low vulnerability) to 10 (highly vulnerable HVAs are designated a vulnerability score of 6

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<sup>1</sup> Except waste and sewage threats where a prescribed instrument is available or the Building Code Act applies

and SGRAs are designated a vulnerability score of 2, 4 or 6, depending on the groundwater vulnerability.

**Wellhead protection area (WHPA):** An area that is related to a wellhead and within which it is desirable to regulate or monitor drinking water threats. The area around a municipal wellhead is delineated through the Director's Technical Rules that determine the time of travel a substance entering the groundwater will reach the wellhead. The times of travel have been standardized as follows:

- WHPA-A: 100 m radius around a municipal wellhead,
- WHPA-B: 2-year time of travel,
- WHPA-C: 5-year time of travel or WHPA-C1: 10-year time of travel, and
- WHPA-D: 25-year time of travel

## I. APPENDIX A – Sample Planning Application Review Wording (Prior to Source Protection Plan Approval)

The purpose of this appendix is to provide some basic wording that municipal staff members could use, before the local source protection plan is approved, when reviewing planning applications that are located within a vulnerable area. To use the sample wording, staff members will need to refer to vulnerable area mapping in local Assessment Reports and source protection plans to determine the type of vulnerable area and vulnerability scores. Note that examples are not provided for all vulnerable areas.

### Sample Wording A – Properties in Wellhead Protection Areas

This sample wording applies to all properties inside the WHPA. Start by using the general wording (1) for all properties, then use the first part of sample (2) followed by the appropriate wording from the third column depending on the time of travel zone in which the property is located. Next, use the beginning of sample (3) and finish with the appropriate wording based on the vulnerability score for the area. Note that the wording is different where the vulnerability score is 6, 4 or 2, depending on whether or not the property is in the 5-year (or 10-year) time of travel zone.

<i>(1) The subject property is located in the &lt;name of wellhead protection area&gt;. This means groundwater is flowing towards the municipal well and could eventually be drawn up by these wells. Activities taking place on the subject property could impact the source of municipal drinking water if chemicals or pathogens migrate to the groundwater. The Provincial Policy Statement, 2005, provides municipalities the authority to protect, improve and restore the quality and quantity of water resources within wellhead protection areas.</i>		
<i>(2) Within the WHPA, the subject property is located....</i>	100 m zone	<i>within 100 m of the municipal well. This means groundwater beneath the subject property could reach the municipal well very quickly, as would contaminants if they got into the aquifer in this zone.</i>
	2-year time of travel	<i>in the 2-year time of travel zone. This means groundwater beneath the subject property could reach the municipal well within two years, as would contaminants if they got into the groundwater in this zone.</i>
	5-year time of travel	<i>in the 5-year time of travel zone. This means groundwater beneath the subject property could reach the municipal well within five years, as would contaminants if they got into the groundwater in this zone.</i>
	25-year time of travel	<i>in the 25-year time of travel zone. This means groundwater beneath the subject property could reach the municipal well within 25 years, as would contaminants if they got into the aquifer in this zone.</i>
<i>(3) The area where the subject property is located has a vulnerability score of &lt;10, 8, 6, 4, or 2&gt;.</i>	Vulnerability Score of 10 or 8	<i>In areas that score &lt;8 or 10&gt; there are a number of threat activities that are considered significant threats to sources of drinking water. There are also many other activities that are considered moderate and low drinking water threats. Local source protection plans (currently under review by the Ontario Ministry of the Environment) contain policies to address significant threats to source water, and may contain policies to address moderate or low threats. Source protection plan policies (when they come into effect) may limit or restrict drinking water threat activities,</i>

		<p>or they may address threat activities through provincial instruments, education, outreach, or incentives. Municipalities are also able to further restrict land uses in wellhead protection areas through their land use planning processes.</p> <p>(Cont.)</p>
	<p>5-year time of travel (or 10-year time of travel if the Assessment Report includes one) where the vulnerability score is 6, 4 or 2.</p>	<p>In areas that score &lt;6, 4 or 2&gt; within the 5 year time-of-travel zone (in addition to areas that score 8 or 10), activities associated with the handling and storage of dense non-aqueous phase liquids (DNAPLs) are considered to be a significant drinking water threat. DNAPLs are chemicals that are heavy and sink in water (e.g. trichloroethylene). There are also a number of other activities that are considered moderate and low drinking water threats.</p> <p>Local source protection plans (currently under review by the Ontario Ministry of the Environment) contain policies to address significant threats to source water, and may contain policies to address moderate or low threats. source protection plan policies (when they come into effect) may limit or restrict drinking water threat activities, or they may address threat activities through provincial instruments, education, outreach, or incentives. Municipalities are also able to further restrict land uses in wellhead protection areas through their land use planning processes.</p>
	<p>Vulnerability Score of 6 (not in the 5-year or 10-year time of travel)</p>	<p>In areas that score &lt;6&gt;, no threat activities are considered to be a significant threat to sources of drinking water. However there are activities that are considered a moderate or low threat.</p> <p>Local source protection plans (currently under review by the Ontario Ministry of the Environment) may contain policies to address activities that pose a moderate or low threat to source water. These policies may address threat activities through provincial instruments, education, outreach, or incentives. Municipalities are also able to further restrict land uses in wellhead protection areas through their land use planning processes (e.g. Official Plans and zoning by-laws).</p>
	<p>Vulnerability Score of 4 or 2 (not in the 5-year or 10-year time of travel)</p>	<p>In areas that score &lt;4 or 2&gt;, no threat activities are considered to be a significant, moderate or low threat to sources of drinking water. However, municipalities may restrict land uses in wellhead protection areas through their land use planning processes (e.g. Official Plans and zoning by-laws).</p>

## Sample Wording B – Properties in Intake Protection Zones

This sample wording applies to all properties inside an IPZ. To use the wording, start with the general wording in sample (1) for all properties, then use the first part of sample (2) followed by the appropriate wording from the third column, depending on the IPZ in which the property is located. Next, use the beginning of sample (3a) if the property is located in IPZ-1 or IPZ-2, and finish with the appropriate wording based on the vulnerability score for the area. If the property is located in an IPZ-3, use sample (3b).

<p><i>(1)The subject property is located in the &lt;name of intake protection zone&gt;. This means that surface water in the &lt;water body&gt; is flowing towards, and could eventually be drawn up, by the intake. Activities taking place on the subject property could impact the source of municipal drinking water if chemicals or pathogens left the property and got into the &lt;name of water body&gt;. The Provincial Policy Statement, 2005, provides municipalities the authority to protect, improve and restore the quality and quantity of water resources within intake protection zones.</i></p>		
<p><i>(2)The subject property is located...</i></p>	<p><b>IPZ-1</b></p>	<p><i>...within the Intake Protection Zone -1 of the intake. Intake Protection Zone-1 is the most susceptible to contamination.</i></p>
	<p><b>IPZ-2</b></p>	<p><i>...within the Intake Protection Zone -2 of the intake. IPZ-2 extends outward from IPZ-1 and is delineated based on the time of travel for the water treatment plant operator to respond to adverse conditions in the watershed with a maximum 2-hour travel time being used as the furthest upstream point.</i></p>
	<p><b>IPZ-3</b></p>	<p><i>...within the Intake Protection Zone – 3 of the intake. The IPZ 3 is delineated differently for different intakes. For intakes that are located in inland rivers or inland lakes, the IPZ-3 extends outward from the IPZ-2 to capture all water courses that contribute water to the source of the municipal intake. For intakes located in the Great Lakes or a connecting channel, the IPZ- 3 is only delineated if there is a need to capture an activity, outside of the IPZ- 2, that the source protection committee has shown could impact the quality of water at the intake. In this case, the IPZ-3 extends out from the IPZ-3 to capture that activity. If there are no activities that need to be captured, the IPZ-3 is not delineated.</i></p>
<p><i>(3a)The area where the subject property is located has a vulnerability score of &lt;4.2, 4.5 4.8, 4.9 5.0, 5.4 5.6, 6 6.3, 6.4 7.0, 7.2, 8, 9</i></p>	<p><b>Vulnerability score of 8, 9 or 10.</b></p>	<p><i>In areas that score &lt;10, 9, or 8&gt; there are a number of activities that are considered significant threats to sources of drinking water. There are also a number of other activities that are considered moderate and low drinking water threats. Local source protection plans (currently under review by the Ontario Ministry of the Environment) contain policies to address significant threats to source water, and may contain policies to address moderate or low threats. source protection plan policies (when they come into effect) may limit or restrict drinking water threat activities, or they may address threat activities through provincial instruments, education, outreach, or incentives. Municipalities are also able to further restrict land uses in intake protection zones through their land use planning processes.</i></p>



<i>or 10&gt;</i>	<b>Vulnerability score of 4.2, 4.5, 4.8, 4.9 5.0, 5.4, 5.6, 6.0, 6.3, 6.4 7.0, 7.2</b>	<i>In areas that score &lt; 4 to 7.9&gt;, no activities are considered to be a significant threat to sources of drinking water. However there are activities that are considered a moderate or low threat. Local source protection plans (currently under review by the Ontario Ministry of the Environment) may contain policies to address activities that pose a moderate or low threat to source water. These policies may address threat activities through provincial instruments, education, outreach, or incentives. Municipalities are also able to further restrict land uses in intake protection zones through their land use planning processes (e.g. Official Plans and zoning by-laws).</i>
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**Example: Property occurs in WHPA – B with a score of 8**

The subject property is located in the **<name of wellhead protection area>**. This means groundwater beneath the subject property is flowing towards the municipal well and could eventually be drawn up by these wells. Activities taking place on the subject property could impact the source of municipal drinking water if chemicals or pathogens left the property and got down into the groundwater. The Provincial Policy Statement, 2005, provides municipalities the authority to protect, improve and restore the quality and quantity of water resources within wellhead protection areas.

Within the WHPA, the subject property is located in the 2-year time of travel zone. This means groundwater beneath the subject property could reach the municipal well within two years or less, as would contaminants if they got into the groundwater in this zone.

The area where the subject property is located has a vulnerability score of **8**. In areas that score **8** there are a number of threat activities that are considered significant threats to sources of drinking water. There are also a number of other activities that are considered moderate and low drinking water threats.

Local source protection plans (currently under review by the Ontario Ministry of the Environment) contain policies to address significant threats to source water, and may contain policies to address moderate or low threats. Source protection plan policies (when they come into effect) may limit or restrict drinking water threat activities, or they may address threat activities through provincial instruments, education, outreach, or incentives. Municipalities are also able to further restrict land uses in wellhead protection areas through their land use planning processes. Links to local source protection plans can be accessed through Conservation Ontario’s website: <http://www.conservation-ontario.on.ca/uncategorised/143-otherswpreionsindex>

## J. APPENDIX B: Example of a Source Protection Plan Transition Provision

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This sample transition provision captures the following circumstances. Not all source protection plans have used this provision. See your local source protection plan to determine whether there are transition provisions.

### Sample Transition Provision

Where a source protection plan:

- i) proposes to prohibit future threats (using any tool) and,
- ii) manages existing threats (using any tool), then
- iii) ALL applications in process (prescribed instruments, applications under the *Planning Act* and building or development permits) and land use planning approvals granted are treated as existing and managed.

In this source protection plan, some drinking water threats are addressed by prohibiting “future” threats and managing “existing” threats.

Policy tools used to prohibit and manage threats include:

- **Part IV** – a “future” occurrence of a threat is designated for the purpose of section 57 of the *Clean Water Act* and therefore prohibited while its “existing” occurrence is designated for the purpose of section 58 of the *Clean Water Act* and therefore requires a risk management plan.
- **Prescribed instruments** – a “future” occurrence of a drinking water threat is prohibited while “existing” occurrences are managed.
- **Land use planning** – “future” drinking water threats are prohibited, while other policy approaches, such as a specify action or an education and outreach policy, are used to manage the same “existing” drinking water threats.

Where a policy in this plan refers to an “existing” threat, it means a threat that commenced on a day before the source protection plan comes into effect. A “future” threat means a threat that commences on a day on or after the day the source protection plan comes into effect. However, despite these definitions, in order to be fair to *bona fide* applications in process and to recognize approvals obtained, it is important to allow certain “future” prohibited threats to be treated as “existing” threats and therefore subject to the policies that apply to “existing.”

Where a policy in this plan prohibits a “future” threat from becoming established, the policy to manage “existing” drinking water threats applies in the following cases even though the threat will not exist until after the source protection plan comes into effect:

- A drinking water threat that is related to a development proposal where an application was made or an approval was obtained under the *Planning Act* or *Condominium Act* on a day before the source protection plan comes into effect. The policy for “existing” drinking water threats also applies to any further applications required under the *Planning Act*, *Condominium Act*, or prescribed instruments, to implement the development proposal.
- A drinking water threat that is related to an application made under the *Building Code Act* on a day before the source protection plan comes into effect.

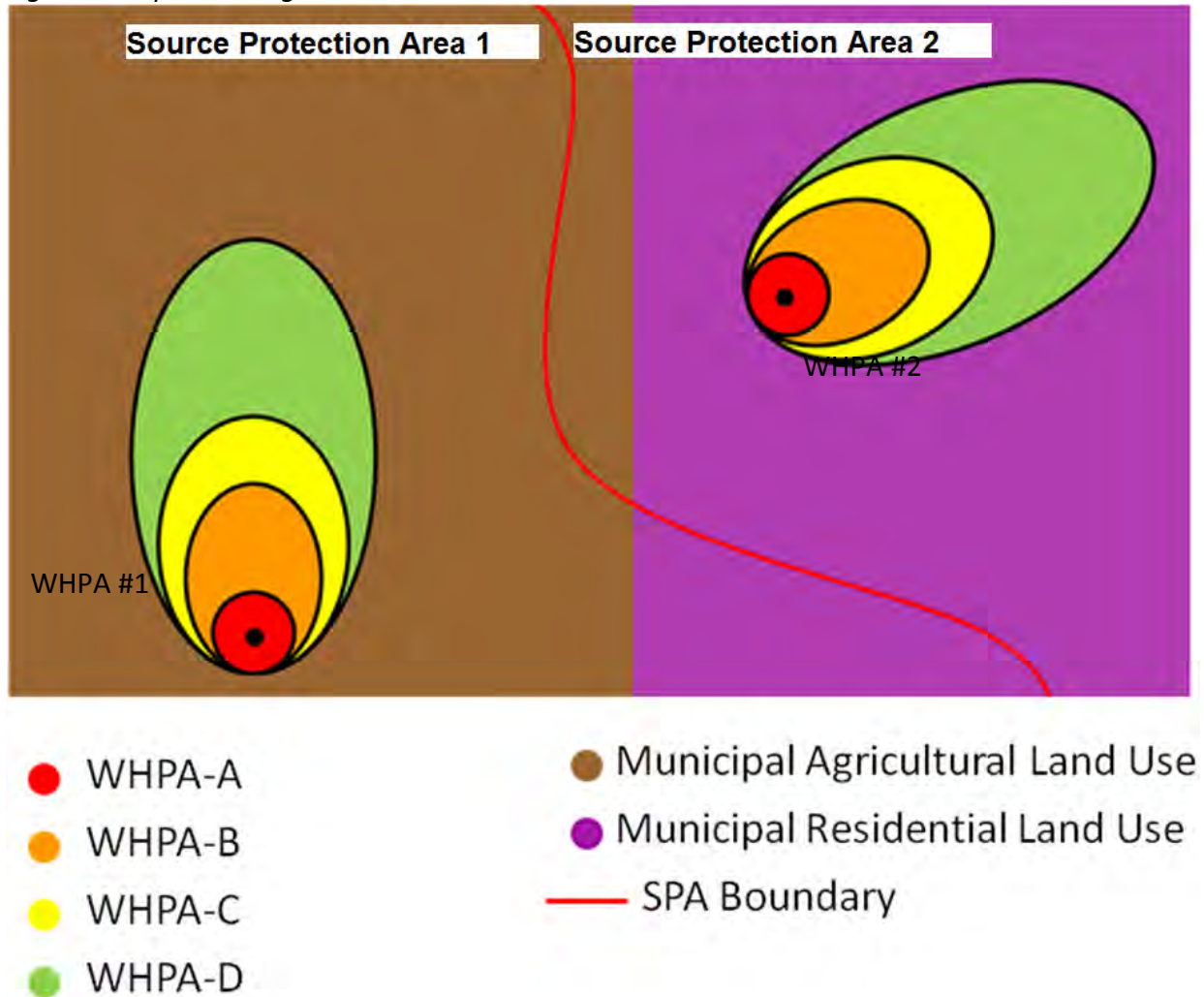
A transition provision that affects:

- Decisions under the *Planning Act* are found on List A in an appendix in the source protection plan,
- Building permit or development permit applications are found on List E in an appendix in the Source protection plan,
- Section 57 Prohibition are found on List G in an appendix in the source protection plan

## K. APPENDIX C: Implementing More than One Source Protection Plan

The simple example illustrates a single municipality that will need to implement land use planning policies from two source protection plans.

Figure 7: Implementing More than One Source Protection Plan



In Figure 7, a single municipality is located within two SPAs, and two WHPAs are located in the municipality. WHPA 1 is located completely within SPA 1, and WHPA 2 is located completely within SPA 2. These WHPAs are located in areas of the municipality with different land use designations. WHPA 1 is located in an area of the municipality that has an agricultural land use designation, and WHPA 2 is located in an area of the municipality that has a residential land use designation.

The source protection plan for Source Protection Area 1 would apply to WHPA #1. The Source protection plan for Source Protection Area 1 provides that the following land use would be prohibited in WHPA-A:

- uses where fuel is stored including industrial operations and any other uses involving the bulk handling and storage of fuel.

The source protection plan for Source Protection Area 2 would apply to WHPA #2. The Source protection plan for Source Protection Area 2 provides that the following uses would be prohibited in WHPA-A:

- storage of PCBs, and
- future agricultural uses.

In this example municipality the Official Plan and zoning by-laws would need to be amended to ensure these land uses do not occur in the associated WHPA-As.

The municipality could map the WHPA-As on a schedule either as an overlay designation or as a separate source protection vulnerable area. The existing Official Plan policies would be reviewed in light of source protection to ensure that they conform to the Source Protection Area. The current municipal land use designations would prevent some of the land uses included in the source protection plan from being established. For example, for WHPA #2 the source protection plan prohibits the development of the land for future agricultural land uses. Since this land is currently designated as residential land use in municipal plans, future agricultural land use may already be prohibited as an incompatible land use designation. Additional policies to direct incompatible land uses away from the WHPAs may be included. Policies which are more restrictive than the source protection plan are permitted, however the municipality would have to defend this decision.

**L. APPENDIX D: Municipal Development Application Checklist  
(Adapted from York Region)**



**Municipality Name  
and Header**

**File No.**

**Type of Application:** \_\_\_\_\_

**Applicant:** \_\_\_\_\_

**Location:** \_\_\_\_\_

**Date of Site Visit (if applicable):** \_\_\_\_\_

Application Considerations	Comments	
	Yes	No
<b>Archaeological</b> Comments:		
<b>Site Contamination</b> Comments:		
<b>Environmental Considerations</b> Comments:		
<b>Water/Wastewater Servicing</b> Comments:		
<b>Land Use Compatibility</b> Comments:		
<b>Transportation</b> Comments:		
<b>Source Water Protection</b> Comments:		
<b>Official Plan Conformity</b> Comments:		
<b>Zoning by-law Conformity</b> Comments:		
<b>Additional Comments:</b>		

*Are additional comments attached?*      YES      NO

## M.APPENDIX E: Source Water Protection Development Application



### SOURCE WATER PROTECTION *PLANNING APPLICATION* CHECKLIST

#### SOURCE WATER PROTECTION INFORMATION

Is the subject property within a Wellhead Protection Area (WHPA)<sup>2</sup>?  YES  NO

IF YES, please complete the rest of the Screening Checklist and email, mail or fax it to the address below. Municipal staff will respond to you in 2-3 business days.

Mail checklist to: ATTN: Mr. Planner, Planning Department, Example Municipality, #1 Municipal Street, City, Ontario, A1B 2CD  
Email checklist to: mrplanner@example.ca  
Fax checklist to: (555) 555 - 5555

#### WELLHEAD PROTECTION AREA<sup>3</sup>:

WHPA-A

WHPA-B

WHPA-C

#### PROPERTY & CONTACT INFORMATION

Source Protection Area<sup>4</sup>: \_\_\_\_\_ Date: \_\_\_\_\_  
Name of Applicant: \_\_\_\_\_  
Contact Information: Address: \_\_\_\_\_  
Telephone/Cellular Number: \_\_\_\_\_  
Email Address: \_\_\_\_\_  
Municipal Address of Subject Property: \_\_\_\_\_  
Legal Description of Subject Property: \_\_\_\_\_  
Lot/Part No.: \_\_\_\_\_ Registered Plan No.: \_\_\_\_\_  
Lot & Concession: \_\_\_\_\_

<sup>2</sup> This form could be modified to include "intake protection zone", "issue contributing area" or other vulnerable areas where land use planning policies apply

<sup>3</sup> Additional WHPAs may need to be added.

<sup>4</sup> This field is only required if municipality is located in two or more source protection areas

**PROPOSAL**

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<input type="checkbox"/>	New Structure	<input type="checkbox"/>	Geothermal System <sup>5</sup> (Transport Pathway)
<input type="checkbox"/>	New Land Use/Change of Use	<input type="checkbox"/>	New or Replacement Septic System
<input type="checkbox"/>	Expansion OR Conversion of an Existing or Previous Approved Land Use or Structure	<input type="checkbox"/>	New Well <sup>5</sup> (Transport Pathway)

**Classification**

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<input type="checkbox"/>	Single Residential	<input type="checkbox"/>	Industrial
<input type="checkbox"/>	Multi – residential (incl. subdivision)	<input type="checkbox"/>	Commercial (incl. mixed use)
<input type="checkbox"/>	Agricultural	<input type="checkbox"/>	Institutional.

**Brief Description of Proposal and/or Activity**

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**PLANNING INFORMATION**

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OFFICIAL PLAN DESIGNATION: \_\_\_\_\_  
OFFICIAL PLAN DOCUMENT NAME: \_\_\_\_\_  
CURRENT ZONING: \_\_\_\_\_

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<sup>5</sup>Section 27, Ontario General Regulation 287/07 requires the municipality to notify the SPA and SPC when a new transport pathway may be created



**POTENTIAL THREATS ASSOCIATED WITH PROPOSED ACTIVITY**

A drinking water threat as defined under the *Clean Water Act, 2006* as “an activity or condition that adversely affects or has the potential to adversely affect the quality or quantity of any water that is or may be used as a source of drinking water”.

*Please note that activities that are, or may be, significant drinking water threats will vary in each vulnerable area.*

*PLEASE CHECK ALL ACTIVITIES THAT MAY BE ASSOCIATED WITH THE DEVELOPMENT PROPOSAL WITHIN THE VULNERABLE AREA:*

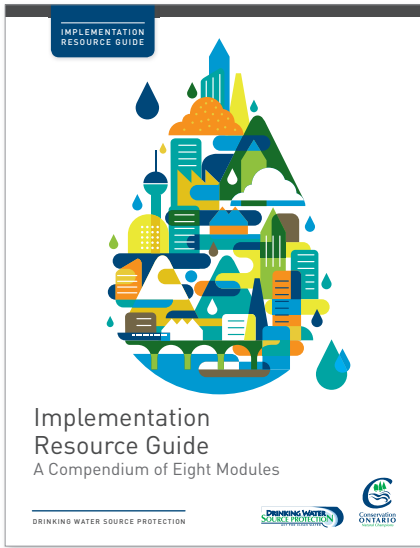
- |  |                                                                                                                                              |
|--|----------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>1. FUEL HANDLING &amp; STORAGE</b>                                                                                                        |
|  | a. Includes both liquid fuel and fuel oil                                                                                                    |
|  | b. Home heating, retail outlets, bulk plant, marina, farm                                                                                    |
|  | <b>2. CHEMICAL HANDLING &amp; STORAGE</b>                                                                                                    |
|  | a. Automotive and automotive related businesses that use paints, degreasers, chemicals etc.                                                  |
|  | b. Dry cleaning establishments                                                                                                               |
|  | c. Industrial manufacturing and processing (e.g. using furniture stripping products, paints, chemical processes)                             |
|  | d. Industrial strength cleaning agents                                                                                                       |
|  | e. De-icing of aircraft                                                                                                                      |
|  | <b>3. APPLICATION, HANDLING &amp; STORAGE OF ROAD SALT</b>                                                                                   |
|  | <b>4. SNOW STORAGE</b>                                                                                                                       |
|  | <b>5. WASTE DISPOSAL</b>                                                                                                                     |
|  | a. Raw, untreated liquids and solids that are pumped out of septic systems and holding tanks                                                 |
|  | b. Disposal of petroleum refining waste; hazardous, liquid and industrial waste; municipal waste, industrial and commercial waste; PCB waste |
|  | c. Mine tailings                                                                                                                             |
|  | <b>6. STORMWATER MANAGEMENT</b>                                                                                                              |
|  | a. Stormwater management facility (treatment, retention, infiltration or control of stormwater)                                              |
|  | b. Car or truck washing facility                                                                                                             |
|  | c. Sewage treatment plant effluent discharge (e.g. lagoons)                                                                                  |
|  | d. Sewer systems and related pipes                                                                                                           |
|  | <b>7. SEPTIC SYSTEMS</b>                                                                                                                     |
|  | a. Small septic for residential or small-scale commercial/industrial/institutional                                                           |
|  | b. Large septic system (>10,000 L/day) for commercial/industrial/institutional                                                               |
|  | <b>8. AGRICULTURAL</b>                                                                                                                       |
|  | a. Application, handling and storage of fertilizers and pesticides                                                                           |
|  | b. Application, handling and storage of agricultural and non-agricultural source material (e.g. biosolids)                                   |
|  | c. Grazing and pasturing of livestock                                                                                                        |



MODULE 4

# Annual Reporting & Information Management



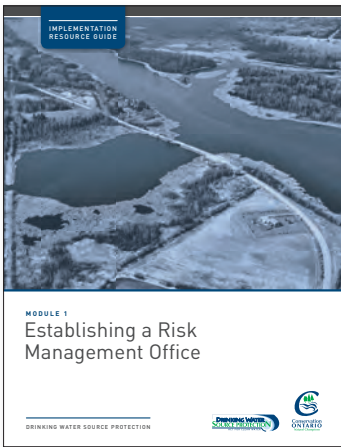


# Implementation Resource Guides

A Compendium of Eight Modules

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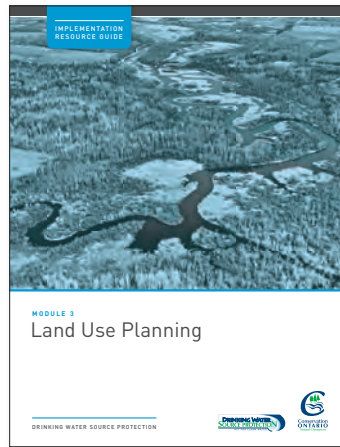
## MODULE 1



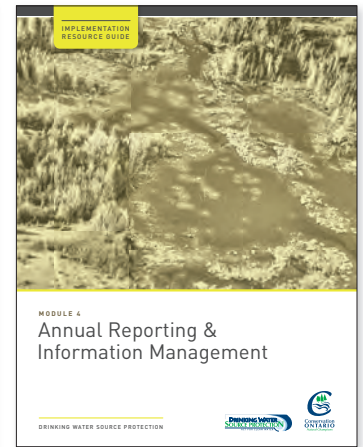
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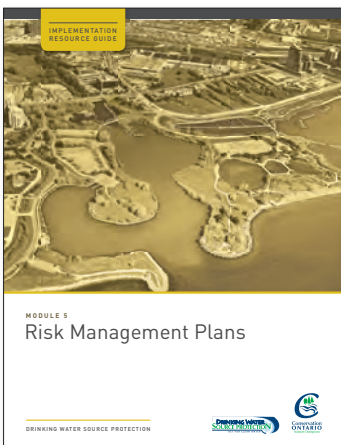
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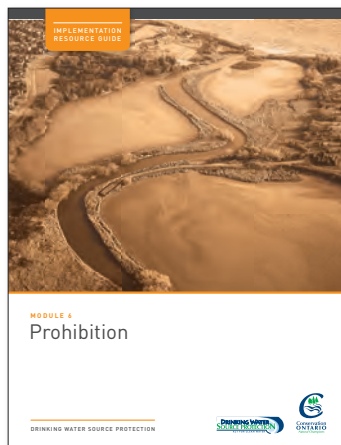
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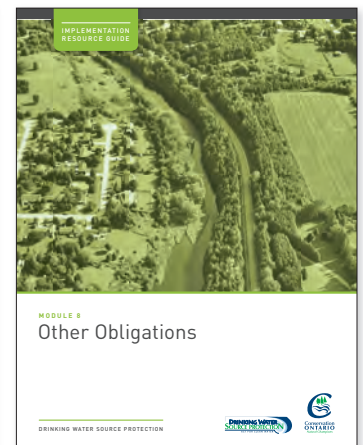
## MODULE 6



## MODULE 7



## MODULE 8



# Module 4: Annual Reporting and Information Management

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## Implementation Resource Guide

06/05/2014

Note to Reader: This document is one of a series developed by staff at conservation authorities and Conservation Ontario in support of source protection plan implementation. These documents cover a variety of tools related to plan implementation, but not all will apply in your municipality. Consult your local source protection plan to determine which policies are applicable in your municipality. This document has not been reviewed by legal counsel and is not presented as legal advice.

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## A. Introduction

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This module aims to provide information on annual reporting and information management requirements for source protection plan implementation to municipalities or other implementation bodies. Information has also been included regarding the data management associated with source water protection in general.

Annual reporting makes up the first section of this module and includes a summary of requirements under the *Clean Water Act, 2006*, as well as how to fulfill these obligations. The annual reporting requirements are available through the *Clean Water Act*, specifically Sections 46 and 81, as well as Sections 52 and 65 of Ontario Regulation 287/07. Reference the legislation for exact wording and provisions.

The second section of this module discusses data and information management. The module also explores how data and information management pertain to annual reporting and general source water protection.

Data is not static; therefore changes may be made to annual reporting and information management requirements in the future. The Ministry of the Environment will be developing requirements and/or recommendations to assist with annual reporting or information management. The information contained in this module is current at the time of writing.

## B. Annual Reporting

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The *Clean Water Act* requires that Risk Management Officials, source protection authorities, other implementing bodies, as well as the Minister of the Environment, report annually on the implementation of source protection plans. The goal of annual reporting is to track and advise the public that the implementation of the source protection plans and their respective policies are protecting Ontario's drinking water sources.

The *Clean Water Act* prescribes the annual reporting process flow, as summarized in Figure 1 and described here. Ontario Regulation 287/07 requires that all implementing bodies, including the Risk Management Official, report<sup>1</sup> directly to the source protection authority on the actions taken to implement the source protection plan. The source protection authority combines the information from the various implementing bodies into one succinct report for the source protection area. Once complete, the report is provided to the source protection committee for commenting. All comments provided by the source protection committee are incorporated into the final version of the report provided to the Director. Upon submission to the Director, the

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<sup>1</sup> *In addition to reporting directly to the source protection authority, Ontario Regulation 287/07 prescribes that upon the Director's request, the Risk Management Official shall also provide an additional copy of the Annual Report directly to the Director.*

source protection authority shall make the report publicly available as soon as reasonably possible.

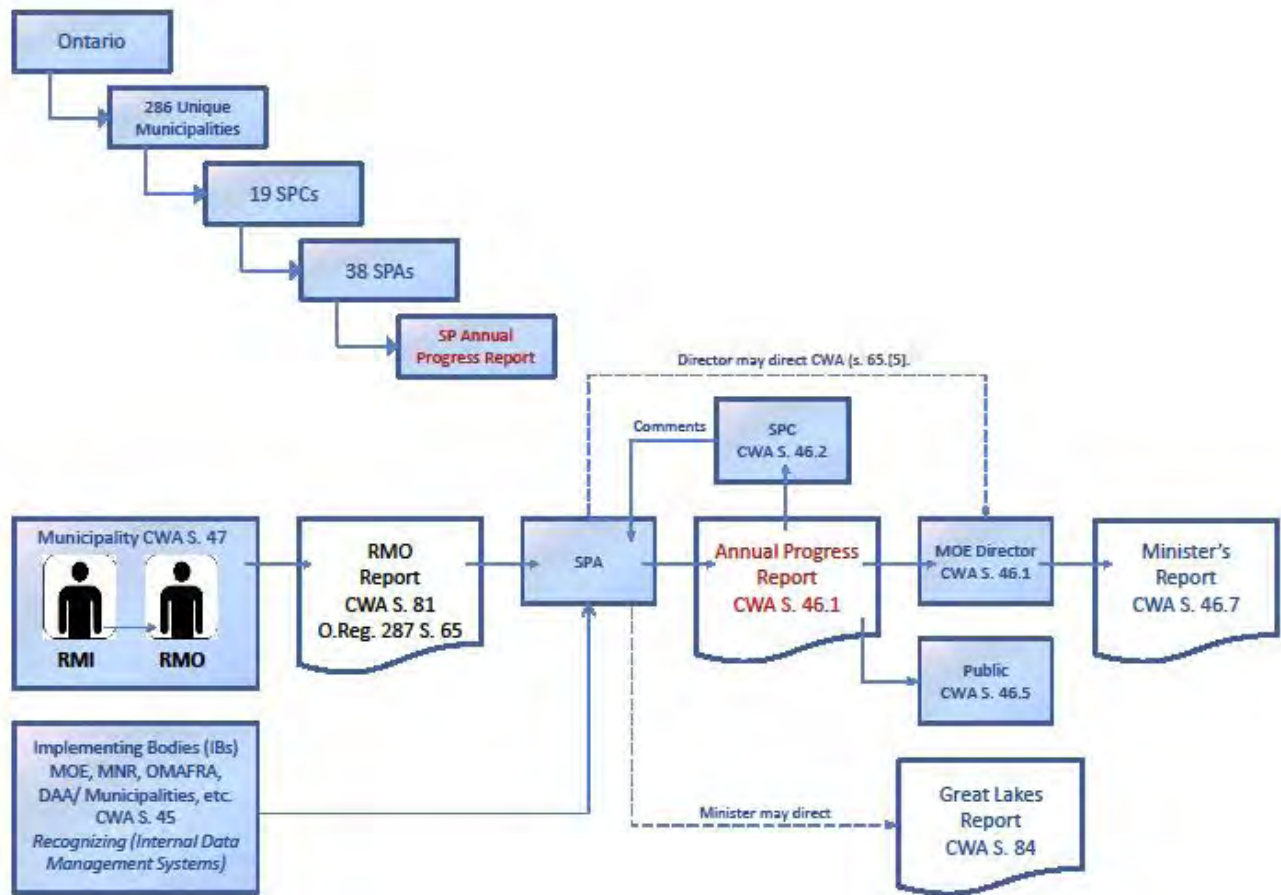
Annual Reports describe the measures taken to implement the source protection plans, ensure activities cease to be significant drinking water threats, and ensure activities do not become significant drinking water threats. The goal of the Minister's Annual Report is to provide a provincial larger scale picture of all the measures taken.

There are two separate and distinct annual reporting processes that need to be completed under the requirements of the *Clean Water Act* in order for the Ministry of the Environment to complete its Annual Report for the public. The general contents of the Annual Progress Report are outlined in Section 65 of O. Reg. 287/07, and the general contents of the Section 46 Annual Report are outlined in the monitoring policies of each source protection plan.

1. Under Section 81 of the *Clean Water Act*, annual reporting focuses on the implementation of Part IV powers and is completed by the Risk Management Official. The Province is currently developing a reporting mechanism to facilitate Section 81 Annual Reporting.
2. Section 46 Annual Reporting focuses on the implementation of the remaining source protection plan policies and includes a summary of the Risk Management Official Annual Report. The general contents of the Section 46 Annual Report are outlined in Section 65 of Ontario Regulation 287/07.

The information required to complete the Section 46 Annual Report will be provided by the implementing bodies to the source protection authority. Your local source protection authority will be providing additional details on the information required to complete Section 46 Annual Reporting. The Ministry of the Environment is in the process of creating guidance – which could come in the form of templates, software, or forms – for long-term annual reporting assistance. The local source protection authorities may also provide templates or forms in the interim to assist with annual reporting; however, source protection authority data collection will continue along with the Ministry of the Environment data collection once in place. Data collection by the source protection authority may be more extensive than what the Ministry of the Environment requires. The source protection authority needs to gather information to assist the source protection committee in assessing the effectiveness of source protection plan policies and gauging the need for revisions in the future.

The two separate annual reporting processes are discussed in greater detail later in this module.



**Figure 1:** Annual Reporting Process

### i. Risk Management Official Annual Reporting

#### Legislated Requirements

Section 81 of the *Clean Water Act* states that the Risk Management Official is required to submit an Annual Progress Report to the source protection authority. The report must contain a summary of all actions taken by the Risk Management Official and Risk Management Inspector(s). The Ministry may ask that a standard summary template be included to enable easier review of the report. The deadline for submitting the report to the source protection authority is February 1 in the year following the year to which the report applies. Additional Risk Management Official and Risk Management Inspector duties can be found in Module 1 of this guide.



Section 65 of Ontario Regulation 287/07 requires the Risk Management Official's Annual Report to contain:

- Description of Risk Management Plans agreed to and established by the Risk Management Official including the property location, Wellhead Protection Area (WHPA) or Intake Protection Zone (IPZ), and the activity to which the plan relates.
- The number of Risk Management Plans the Risk Management Official refuses to agree to or to establish, which must include the property location, WHPA or IPZ where the property is located, the activity to which the plan relates, and the reason for refusal.
- The number of orders issued under Part IV of the *Clean Water Act*. Each order must include a brief description of the circumstances, property location, WHPA or IPZ where the property is located, and the activity to which the plan relates.
- The number of notices given to and the number of notices given by the Risk Management Official under Section 61 of the *Clean Water Act*, which must include the property location, WHPA or IPZ where the property is located, the activity to which the plan relates, the type of prescribed instrument referred to in the notice, and any information needed to identify the prescribed instrument.
- The number of inspections carried out under Section 62 of the *Clean Water Act*, including:
  - the activity to which the inspection related
  - the number of inspections carried out under Section 56 of the *Clean Water Act* and the number of those cases where the person was not complying with a Risk Management Plan
  - the number of inspections carried out under Section 58 of the Act and the number of those cases where the person was not complying with a Risk Management Plan and the number of those cases where the person was carrying out an activity in contravention of Subsection 58 of the *Clean Water Act*
  - the number of inspections carried out under Section 57 of the *Clean Water Act* and the number of those cases where the person was carrying out an activity in contravention of Subsection 57 of the *Clean Water Act*
- The number of risk assessments submitted, both accepted and not accepted, including property location, WHPA or IPZ where the property is located, and the activity to which the plan relates.
- The number of times the Risk Management Official caused a thing to be done under Section 64 of the *Clean Water Act*, which must include the property location, WHPA or IPZ where the property is located, and the activity to which the plan relates.
- Total number of prosecutions and the number of prosecutions that resulted in a conviction under Section 106 of the *Clean Water Act*, including a brief description of each offence.

Find additional information on Risk Management Plans in Module 5.

If the Risk Management Official has jurisdiction in multiple source protection areas, the Risk Management Official must complete a separate report for each area. The first report will begin the day the Risk Management Official is appointed and will end on December 31 of that year.

The report needs to be submitted to the source protection authority by February 1 of the year following the year for which the report was written. For example, if a Risk Management Official is appointed on June 1, 2013, the Annual Report would cover the period from June 1 to December 31, 2013 and would be submitted to the source protection authority on February 1, 2014. The Risk Management Official must submit a copy of the report to the Director upon the Director's request. In addition, the Director may require that the report be prepared according to standards currently being developed by the Ministry of the Environment in consultation with the various source protection areas and municipalities. Until that time, the reports may be prepared using guidance from the local source protection authority.

Section 65 of Ontario Regulation 287/07 requires that the Risk Management Official Annual Report contain the WHPA or IPZ information for the property where a Risk Management Plan, notice, or order applies. Each WHPA and IPZ in the province will have a unique ID and standard name based on the well and system it serves. In addition, the location of the site will be based on either a GPS value or assessment roll number, so its association with a particular WHPA or set of WHPAs (where they overlap) can be made with confidence. These unique identifiers will enable the Annual Reports to accurately reflect how policies are being addressed in each source protection authority for each drinking water system. Where there is a requirement to provide the WHPA or IPZ in which the property is located, the unique ID and name must also be provided. The Ministry is currently working in partnership with source protection authorities and municipalities to develop spatial information to support this process.

## General Steps for Annual Reporting Data Collection

Data collection consists of three steps.

1. Determine the data your municipality needs to collect for annual reporting purposes. To establish data requirements, review the *Clean Water Act* and source protection plan policies. Municipalities should also consult with local source protection authorities to determine full data requirements for annual reporting and monitoring policies. Source protection authorities can advise whether data needs to be provided using specific software or formats.
2. Determine the methods to use to collect data. Consult with municipal departments with implementation responsibilities. Table 1 provides examples of departments that may have these responsibilities.

**Table 1: Municipal Departments for Implementation Reporting**

<b>POLICY TYPE</b>	<b>MUNICIPAL DEPARTMENT</b>
Land Use Planning Policies	<b>Planning, Development Services, Community Development, Administrative, Legal</b>
Spill Contingency or Management Plans	<b>Public Works</b>
Education and Outreach	<b>Public Works, Environmental Services</b>
Incentives	<b>Building, Public Works, Environmental Services</b>
Specify and Promote Best Management Practices	<b>Public Works, Environmental Services</b>
Transport Pathways†	<b>Planning, Building, Public Works</b>
Septic System Policies*	<b>Building, Planning</b>

*†Section 27 of Ontario Regulation 287/07 requires the municipality to provide notice to the source protection authority when a person applies for approval of a proposed activity in a WHPA or IPZ that may result in the creation of a new, or modification of an existing, transport pathway. Transport pathways are further discussed in Module 8.*

*\* Under the Ontario Building Code, municipalities have new responsibilities related to septic systems; however, some source protection plan monitoring policies require reporting on the implementation of the Ontario Building Code.*

A gap analysis can help determine which data is already collected through regular business processes versus the data required for source protection plan implementation purposes. If the data required for implementation purposes is not collected during regular business, it will be important to integrate new data collection processes into daily operations.

Some data is required to be kept and reported; however, your municipality may choose to keep additional data, beyond annual reporting requirements, to assist with record keeping. Some of this additional data may include the names and addresses of property owners, the date and nature of contact with property owners, and links to relevant documents, such as correspondence, notices, site diagrams, or Risk Management Plans.

3. Make data available in formats for municipal use. For example, including vulnerable areas in municipal mapping can help ensure that municipal land use planning decisions are consistent with the source protection plan policies, and the data collected can be easily compiled for Annual Reporting needs.
4. Store data using a standardized format and file naming system to ensure future staff members can find, access and use data. It may be useful to have inventories of common datasets that relate to source water protection, along with a description of the methods

used to collect the data. If external organizations provide the datasets, be sure to log the data source and date the information was received.

## Ensuring a Property is Correctly Identified

The source protection authority will provide data on the location of drinking water threats as identified in the Assessment Reports. The legislated requirements for the Risk Management Official (Section 81) require reporting on the locations where Part IV policies, such as Risk Management Plans, are being implemented. Data on significant drinking water threat locations may also be helpful for other municipal programs or departments.

Collecting threat location and activities is necessary when the Risk Management Official is implementing Part IV policies. More details follow.

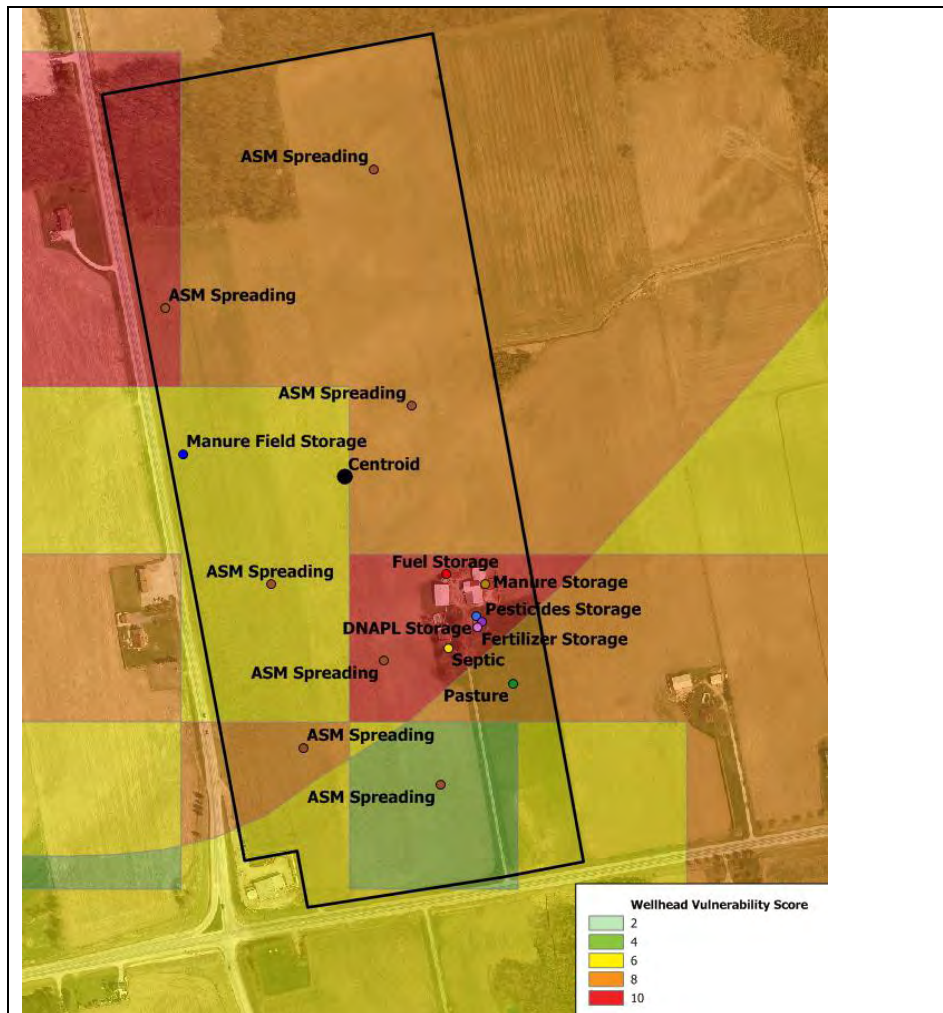
### 1. Threat Location

The location of the activity must be recorded, and there are various ways the location could be described. GPS coordinates are useful at the local level, but other location information may also be necessary as part of the provincial requirements (e.g. inclusion of parcel boundary and assessment roll number).

- **GPS coordinates** may help verify the threat location. The correct vulnerability score for that location can then be attributed to the activity and a determination made about the threat level of the activity, i.e. significant, moderate, low, or none. It is possible for several vulnerability scores and activities to be located on one parcel, as Figure 2 demonstrates. Plotting an activity at the centre of the property (centroid), can lead to an incorrect consideration of the threat level. Where there are multiple overlapping zones, scores with the highest zone/score combination should be chosen (e.g. multiple overlapping zones, two wells labelled A and B, A will override the B. When multiple vulnerability scores exist within a parcel, the Risk Management Official will manage the activities within the appropriate zone/score (e.g. agricultural source material spreading within WHPA-A and WHPA-B on same parcel, an example policy may prohibit in WHPA-A Score 10, and Manage Spreading in WHPA-B Score 6). The Risk Management Official will also need to use professional judgment when dealing with such circumstances.

In some cases, Assessment Report data has been plotted by parcel, so the exact location of each threat was not identified. In these instances, it was difficult to assign accurate x/y coordinates to describe the threat location (e.g. spreading of agricultural source material). To address this problem, threats were assigned the maximum possible vulnerability score for the parcel. However, knowing the exact location can assist in determining if an activity (e.g. fuel storage) is located in a certain vulnerability score on a particular parcel.

GPS data collected as part of the process of verifying threats or through the risk management process can be a valuable improvement to the knowledge about activities that may affect drinking water sources. Having accurate GPS coordinates will help to verify and document this information. The format used when recording GPS coordinates (i.e. Universal Transverse Mercator (UTM), Degrees/Minutes/Seconds (DMS) or Decimal Degrees) should also be standardized within your municipality.



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**Figure 2:** Recording GPS Coordinates for Activities in a Parcel Shows these Activities in Relation to Vulnerability Scores and the Wellhead

- Assessment Roll Number:** The roll number can be used to connect all other information for the property together, such as ownership, contact details, correspondence, enforcement, and documents. This number can be listed on all data and documents that deal with the property. In some cases (e.g. roads) a roll number will not be available. Use the Parcel Identification Number (PIN) in these instances.

- **Property Address:** A standard street address can be useful when conducting field work or discussing a property with a landowner, particularly if the owner does not reside at the property or owns multiple parcels. This information can be recorded or can be retrieved from another database using the roll number.
- **Vulnerable Area:** The area where the activity is located should be recorded (e.g. Municipal Well 2, WHPA-B, vulnerability score 10).

## 2. Activity

Basic information about the activity must be recorded. The provincial Tables of Drinking Water Threats list the activities considered drinking water threats and further divide these activities based on particular sets of circumstances. Find a full description of how to use the Tables of Drinking Water Threats in Module 2.

- **Threat Reference Number:** The threat reference number should be taken from the most current provincial Tables of Drinking Water Threats or Tables of Circumstances. It itemizes the type of activity and circumstances that exist in order to deem an activity as being a significant drinking water threat and subject to particular source protection plan policies. Ideally, this number, as well as the version of the threats table, will be recorded along with the GPS coordinates (for local requirements), parcel boundary (for provincial roll-up), and the roll number to facilitate record-keeping. This information is important to verify the correct threat circumstances. At the very least, a circumstance (or quantity) must be listed.

The current version of the Tables of Drinking Water Threats (7.1.2 as of July 2013) was issued in November 2009. Complete a periodic check for updates to ensure your municipality is using the correct version of the threat tables. Find the Tables of Drinking Water Threats on the Ministry of the Environment's website:

<http://www.ontario.ca/environment-and-energy/tables-drinking-water-threats>

Additionally, a database of the 7.1.2 tables is available from your local source protection authority.

- **Prescribed Threat Subcategory:** There are a total of 21 drinking water threats prescribed under the *Clean Water Act*. The list can be found in Ontario Regulation 287/07 s. 1.1 (1). While listing the prescribed threat would help to narrow down the type of activity, it would not provide the same high level of detail about the circumstances related to the activity as the threat reference number would. The Threats Analysis Tool provides additional detail regarding the circumstances, and is available from conservation authorities or Conservation Ontario.
- **Issues and Local Threats:** There may be local threats, such as transportation corridors, that have been added through an approval from the Director at the

Ministry of the Environment. As well, in some locations a drinking water source protection issue, such as nitrates, may be identified in the Assessment Report. In these cases there may not be a corresponding threat reference number; instead, a description of the activity will need to be recorded. The Ministry of the Environment will provide standardized wording for the local threats.

- **Municipality:** It is important to maintain standardized naming conventions when providing municipal names for provincial reporting requirements. The Threats Analysis Tool can be used to find the standard name of a local municipality. Contact your local source protection authority or Conservation Ontario to access the tool.

## RMO Annual Reporting Process

The Ministry of the Environment is creating a database for Risk Management Officials (Section 81) Annual Reporting; however, this database is still in development and may not be completed until 2015. This database may include many of the items you are already recording. This database may not require some information you are recording; however, your source protection authority may require it, or it may be useful for your own organizational purposes. The source protection authority can support the Risk Management Official during this initial reporting period. The source protection authority will provide the Risk Management Official with further details regarding the Ministry of the Environment annual reporting database as it is released.

Under Section 54 of the *Clean Water Act*, every person or body responsible for the enforcement of Part IV of the *Clean Water Act* must retain records as prescribed by the regulations. These records must be available to the public. Record retention requirements are listed in Section B (i) of this module. Additional requirements for the Risk Management Official (Section 81) Annual Report may be provided in the local source protection plan.

Depending on the scope of work for your Risk Management Office, there are several options for facilitating the annual reporting process. The amount of staff time required may vary. The easiest way for the Risk Management Office to complete annual reporting will be to integrate the collection of metrics required by the regulations and the source protection plan into regular business processes. For example, when the Risk Management Official writes a notice, relevant annual reporting information could be included in the notice. Additionally, a database or spreadsheet where risk management information is entered to track progress internally could be modified to ensure that annual reporting information is collected concurrently with regular business processes. The database or spreadsheet would need to be accessible by all staff members who participate in the enforcement of Part IV policies, for example, the Risk Management Inspector. If data is collected and inputted into a central location on a regular basis, it is easier to produce a report.



If data for annual reporting is not collected on a regular basis during regular business processes, it will be important to develop an organized filing system so staff can manually produce a report.

After the Risk Management Official's (Section 81) report is received by the source protection authority, the authority is required to compile its own Annual Report, which will incorporate the Risk Management Official's report details. The source protection authority's Annual Report must be submitted by May 1. The source protection committee reviews and comments on this report, and then it is submitted to the Director at the Ministry of the Environment. The report will be made available to the public after it has been submitted to the Director; it should not contain any personal or proprietary information.

### What This Means for My Municipality

1. The Risk Management Official will be required to provide an Annual Report to the source protection authority by February 1 in the year following the year to which the report applies.
2. The report must contain a summary of all actions taken by the Risk Management Official and Risk Management Inspector. Find the required report contents in Section 65 of Ontario Regulation 287/07.
3. If the Risk Management Official has jurisdiction in more than one source protection area, a separate report must be prepared for each area.
4. The municipality and/or the Risk Management Official must determine which data to collect by reviewing the *Clean Water Act* and the source protection plan, as well as consulting with the source protection authority. Determine methods for collecting data and present the data using a standardized format and file naming system per source protection authority or future Ministry of the Environment guidance.

#### ii. Section 46 Annual Reporting

### Legislated Requirements

Section 46 of the *Clean Water Act* requires the source protection authority to annually prepare and submit a report to the Director that describes the measures taken to implement the source protection plan. The first report will begin the day the plan takes effect and will end on December 31 of the second calendar year following the year the plan takes effect. The report needs to be submitted to the Director by May 1 in the year following the year for which the report was written. For example, the first reporting period for a source protection plan with an effective date of June 7, 2013 would be from June 7, 2013 to December 31, 2015 and would be submitted to the Director by May 1, 2016. The Director may require that the report be prepared using an approved form and/or specific software.

Section 46 of the *Clean Water Act* requires the source protection authority's Annual Report contain:



- A description of the measures taken to implement the source protection plan, including measures to ensure that activities cease to be significant drinking water threats and measures to ensure activities do not become significant drinking water threats.
- A description of the results of any monitoring program conducted in accordance with Section 45 of the *Clean Water Act*.
- A description of the extent to which the objectives set out in the source protection plan are being achieved.
- Other such information as prescribed by the regulations.
- A copy of the comments supplied by the source protection committee, if any were provided.

Section 52 of Ontario Regulation 287/07 contains a list of the other information that is prescribed by the regulations to include in the Annual Report. The list includes:

- If the source protection plan sets out a policy that specifies a date by which a particular action shall be taken by a person or body, and the person or body fails to take that action by that date, a description of the failure and the reasons for the failure.
- A description of any steps taken during the reporting period to address any deficiencies in the information that was used in developing the Assessment Report set out in the source protection plan.
- A summary of the report prepared and submitted by the Risk Management Official under Section 81 of the *Clean Water Act* for the same calendar year to which the report under Section 46 of the *Clean Water Act* applies.
- Any other information that the source protection authority considers advisable.

Section 22 of the *Clean Water Act* requires source protection plans to include monitoring policies for significant drinking water threat policies. Monitoring policies provide information to support the annual reporting requirements of the source protection authority, and help the source protection committees gauge policy effectiveness. The source protection plan may also include policies to monitor activities or conditions that are moderate or low threats to prevent them from becoming significant and to monitor drinking water issues.

Much of the information required to prepare this report will come from the monitoring policies that accompany each significant drinking water threat policy. Municipalities, local boards, conservation authorities, a ministry, board, agency, or official of the Government of Ontario may be designated as implementing bodies for monitoring policies. If designated, these public bodies must conform to obligations set out in monitoring policies as stated in Section 45 of the *Clean Water Act*.

Certain monitoring policies may require annual reporting, although some may require a one-time report on a certain event or order only. These policies will mainly focus on the progress of implementation of the significant threat policy. Additionally, these policies include specific dates

by which the implementing body is required to report to the source protection authority to facilitate the annual reporting process. Find the monitoring policies to which a municipality must conform in the source protection plan appendix that designates the legal effect of each policy.

The information gathered from monitoring policies is an essential part of the material that will be used to prepare the Annual Report. However, the information generated from monitoring policies is not the only information source protection authorities can use to prepare the Annual Report.

Monitoring policies will vary depending on the significant threat, the implementing body, and the policy tool used to manage the threat. At a minimum, a monitoring policy may require reporting on actions taken to implement a policy or, if a policy has not been implemented, the reason implementation has not yet occurred. To ensure you are collecting the appropriate data, consult with your source protection authority. Table 2 provides examples of potential reporting requirements, based on the policy tool used.

**Table 2: Monitoring Policy Requirement Example**

<i>POLICY TOOL</i>	<i>REQUIREMENT EXAMPLE</i>
<i>Planning Act Tools</i> (e.g. Official Plan)	<b>Copy of Official Plan or zoning by-law amendment</b>
	<b>Date Official Plan or zoning by-law amended</b>
	<b>Number of approvals issued under the <i>Planning Act</i></b>
Specify and Promote Best Management Practices	<b>Management plan updated (e.g. salt management plan, stormwater management plan, pesticide management plan)</b>
	<b>Date management plan updated or comes into effect</b>
Education	<b>Type of program (e.g. mail-out, open house, public service announcements, site visits, hazardous material collection, etc.)</b>
	<b>Number of persons contacted or number of participants</b>
	<b>Location of participants or event</b>
Establish Stewardship Programs	<b>Type of stewardship (e.g. fencing along agricultural properties, creation of buffer zones, etc.)</b>
	<b>Number of landowners contacted</b>
	<b>Number of projects completed</b>
	<b>Amount of land impacted (hectares)</b>
Incentives	<b>Type of Program (fuel storage upgrades, septic upgrades*, agricultural best management practices, etc.)</b>
	<b>Total amount of funding made available</b>
	<b>Number and locations of funded projects</b>

*\*Note that septic systems are now managed through the Ontario Building Code; however, many source protection plans have policies that directly reference the Ontario Building Code and septic inspection program, including monitoring policies related to the outcomes of septic inspection programs.*

As part of the source protection plan implementation, your source protection authority will determine the information that requires collection to comply with the significant drinking water threat monitoring policies under Section 22 of the *Clean Water Act*. The source protection authority will then communicate this information to each municipality and work collaboratively to organize a process for the information transfer. Contact the source protection authority prior to setting an information collection process to ensure the system meets the reporting needs of both parties.

**Municipal Annual Reporting Process to the Source Protection Authority**

Since data and other information will be collected for multiple purposes, it is important to establish internal procedures to facilitate the process of data collection and data transfer to the source protection authority. Data collection procedures will vary based on the source protection plan policy; procedures for transferring data should be established through meetings with the source protection authority.

In addition, Section 87 of the *Clean Water Act* includes provisions that allow source protection authorities to ask for information related to a drinking water threat from public bodies. The

Information generated and collected outside of source water protection may also be considered by source protection authorities during the annual reporting process. This includes copies of any documents or records related to source water, including technical studies and records related to drinking water threats, such as private well data and location of septic systems.

Municipalities will need to arrange procedures to ensure data is properly maintained. Proper documentation is not only good practice, but it is also needed in case of appeals to the Environmental Review Tribunal or Ontario Municipal Board.

Municipalities will need to decide on internal procedures for:

- which data is collected
- which data is inputted
- who enters the data
- how frequently data is entered
- how frequently data is summarized
- how and where log books and other notebooks are kept

If your municipality is within two source protection authorities, you will be required to submit information to both to track source protection plan implementation. However, the information submitted to each source protection authority should only apply to the threats in that source protection authority. To facilitate this process, it may be useful to ensure that the source protection authority data is recorded as part of regular business processes, such as when land use planning applications or risk assessments are submitted.

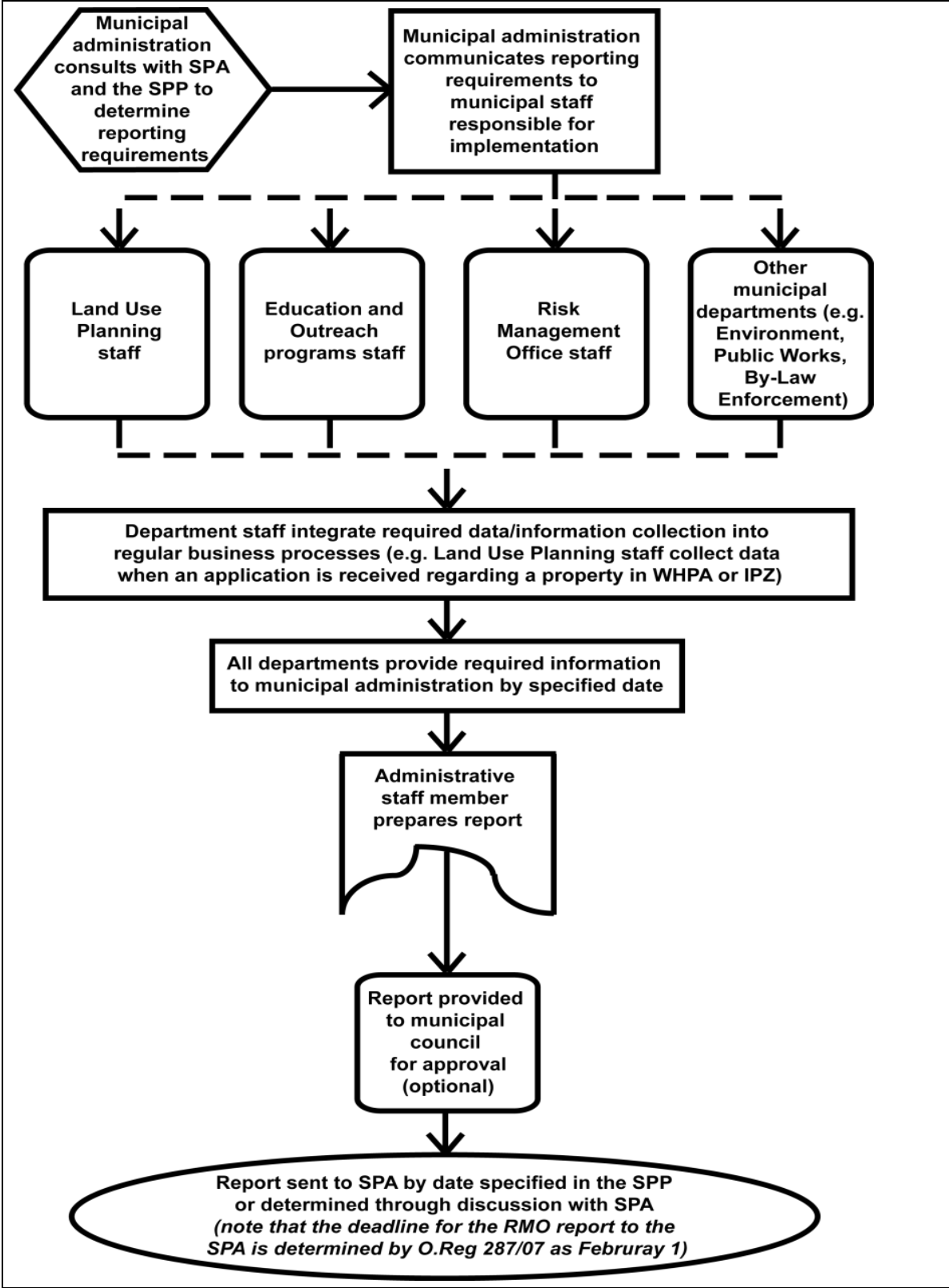
The tasks involved with data collection and annual reporting are ongoing. Figure 3 summarizes Municipal (Section 46) Annual Reporting. These are some of the key tasks:

- determining what data to collect
- establishing a data collection method
- developing data standards (e.g. units always reported in km<sup>2</sup> vs. ha)
- developing a database schema
- compiling a database of collected data
- assigning staff members with various data collection tasks
- determining how data will be stored

To provide the required reports under the *Clean Water Act*, staff will need to complete them. Staff time must be taken into consideration for these additional requirements; however, ensuring the required data is collected regularly can help municipalities reduce the level of effort required to produce a report.

The staff member best suited for completing the reporting requirements will be proficient in software that will facilitate the reporting. In addition, that person should have general knowledge of the source protection plan to ensure the reporting requirements follow the appropriate methodology as set forth by the local source protection authority and the Ministry of the Environment.

Figure 3 provides a sample process to follow when developing and setting-up internal procedures to comply with annual reporting requirements. It is recommended that municipalities consult the source protection authority prior to setting-up internal procedures. Once information needs have been established, consult with the various departments responsible for annual reporting data collection. The consultation process will make each department aware of its reporting responsibilities. From there, the various departments will need to integrate the annual reporting requirements into daily business practices. Integration approaches will vary depending on the municipality. Once the internal procedures have been put in place, and the source protection plan effective date has occurred, the annual reporting process begins. The various departments will work together or report to the main department responsible for report compilation. The report may require council approval prior to submission to the source protection authority.



**Figure 3: Example Procedures for Municipal Annual Reporting to the SPA**

In addition to the Risk Management Official and Risk Management Inspector, source protection plan implementation involves municipal staff such as planners, administrative staff for reporting on applications received, and by-law enforcement officers for some violations that are relevant to reporting to the source protection authority on monitoring policies.

If your municipality has an Information Management department, consult these staff members for assistance in determining data requirements as well as data collection and storage methods. Your municipality may have database software available that can be used for source protection plan purposes. Additionally, Information Management staff with database knowledge may be able to develop a data schema and create your database structure.

It may be necessary to train staff members who will be required to implement source water protection along with regular business about source water protection data management. For example, land use planning staff may need training on where to find mapping on source protection plans. Your municipality may need to integrate source water protection with municipal mapping and your local source protection authority may be able to assist with this task.

GIS staff will be of great assistance when dealing with source water protection data. Depending on the scope of the workload, hiring a GIS staff member may not be feasible; however, in larger areas with a vast number of threats, it could be an option. Staff knowledge of a database program consistent with municipal needs is beneficial when it comes time to input all necessary data. If your municipality does not have GIS capabilities, connect with your source protection authority for help and advice. Source protection authority staff will be able to guide you in alternate data recording methods that will facilitate an easy transfer of data between agencies for implementation purposes.

Several items may be beneficial to reporting and record keeping. Certain computer software will be of benefit to input data in a form that is easily transferable to the source protection authority. At the very least, a spreadsheet program will be required, such as Microsoft Excel. Some more efficient and usable programs include database programs, such as Microsoft Access. Your municipality may also utilize software that is already available in your office and can be tailored to store and report information relevant to source water protection. In the future, the Ministry of the Environment may also require the use of certain software and formats for this information; however, there are no current requirements.

Technological items, such as handheld GPS devices, can also facilitate annual reporting. GPS coordinates will be valuable when completing the Annual Report. Taking GPS coordinates at each threat location when completing source water protection tasks is advisable.

At the bare minimum, it would be helpful for reporting purposes to have a portable GPS device, a simple database program and a GIS-enabled mapping program. The GPS device will allow coordinates to be taken at each location and can be used in a GIS program to spatially display

information and correlate it to other features. A simple database will allow for data management. As an example, most conservation authorities and source protection authorities use ESRI software for GIS mapping.

Your municipality may want to use software that will integrate a variety of business processes in one location. For example, using Information, Planning and Conservation System (iPaC) or Cityview software can help integrate development permitting and risk management in one central location. Your municipality may already have software that can be modified to collect other data required for source water protection purposes.

In addition to assisting with the collection and storage of data, a database program can also assist with the information management life cycle. A database can be setup to retain and dispose of records in a 15-year cycle. Required reporting will be much more streamlined if data is well organized within a database structure, rather than in multiple formats and various locations. Your source protection authority may have specific reporting requirements beyond those of the Province. Data from the municipality must be in a format that can be used directly by the source protection authority or converted into a usable format.

To ensure data is not lost, schedule regular backups using internal backup storage such as an external hard drive, or cloud technology at an off-site location. When dealing with hosted (cloud) based applications and solutions, it is very important to ensure private information (e.g. landowner name) resides in a country where privacy laws are consistent with Canada's *Privacy Act*.

Source protection authorities may provide municipalities with certain options to assist with annual reporting. These options may be provided through forms, templates or online databases, and would allow for consistency across the source protection authorities and prevent municipalities from having to create these items from scratch. Not all source protection authorities will provide these options, so check with your local source protection authority to determine if options are available to your municipality.

### **What This Means for My Municipality**

- Procedures must be established for data collection, maintenance and transfer to the source protection authority. The source protection authority may consider information outside of source water protection; therefore, it may be useful to include the source protection authority in regular business processes.
- The municipality must consider which staff would be best suited to complete reporting requirements, including the Risk Management Official, Risk Management Inspector, municipal planners, GIS staff, administrative staff, and by-law enforcement officers. Staff training will be required.



- Certain computer software and technological items, such as a simple database program, a portable GPS device and a GIS enabled mapping program, can facilitate reporting. Staff training will be required.
- Many municipal staff members will be involved in annual reporting tasks. Therefore, it will be important to integrate tasks into daily business practices.

## C. Data and Information Management

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Information management is an important component in implementing source protection plan policies, completing Annual Reports, verifying and identifying significant drinking water threats, and transferring information back to the source protection authority. Collecting this data, and then being able to easily extract and report the desired information, requires some planning and consistent data entry.

Managing data involves deciding and coordinating what, who, when, where, and why information is used, disclosed, collected, and retained. Information and related processes and technology to support it include operations-critical information assets. These assets are the essential information that must be properly managed because failure to do so will impact the ability of the municipality to function or meet legislated obligations. Examples of operations-critical information assets related to source water protection include:

- mandated information – e.g. risk management information
- executive accountability and legal risk (e.g. Environmental Review Tribunal, Ontario Municipal Board, *Municipal Freedom of Information and Protection of Privacy Act, 1990*)

Information management is also the management of organizational processes and systems that acquire, create, organize, distribute, and use information.

### i. Types of Data and Information to Manage

To date, the information available from your local source protection authority includes the Terms of Reference, the Assessment Report, and the Proposed Source Protection Plan. These documents contain valuable information to assist you with implementation.

Additionally, raw data may be available in a number of digital formats. This includes water budget information and Assessment Report data. Your municipality should review the policies in the local source protection plan to determine the data you require to implement different policies. Consultation with municipal staff, such as land use planners, who will be responsible for implementing policies, will establish the datasets to which the municipality already has access, and which datasets are needed from the source protection authority.

Specific datasets that are available from your local source protection authority may include, but are not limited to:

- WHPAs
- IPZs
- highly vulnerable aquifers
- significant groundwater recharge areas
- vulnerability mapping
- livestock density mapping
- managed lands mapping
- municipal wells and/or intakes
- threats
- ownership parcel boundaries with parcel identification number
- assessment parcel boundaries with assessment roll number
- private well data
- septic data
- permits to take water
- water quality reports

The local source protection authority has a list of significant drinking water threats enumerated during the Assessment Report process, which includes locations, prescribed threat, and threat subcategory, and may include circumstances. This information can be provided to each municipality, or has already been provided in some cases, in GIS, database, Excel spreadsheet, or other formats.

Other tools that are available to assist municipalities are the Threats Analysis Tool, the Risk Management Measures Catalogue (RMMC) and the Policy Database. Links to these tools are provided in Section B (iv). Certain information may also be readily available at your municipality, such as orders, by-laws, enforcement information, GPS data, and education programs.

Confirming threats will be ongoing for all municipalities. Threat verification will involve fieldwork to visit and confirm each threat in your municipality. Each threat will need to be investigated and either verified or removed from the list of enumerated threats. This information will assist your local source protection authority when updating Assessment Reports. Data that would be used to support Assessment Reports updates will also need to be provided in specific formats, and you should consult with your source protection authority to determine the preferred format. Data for Assessment Reports will be used to populate models that support the implementation of source protection plans, such as water quantity or quality models. It will also be useful to report any municipal changes that may be forthcoming, such as new municipal wells or changes in pumping rates. New drinking water threats may be identified during threats verification and, in the future, during the review of proposed development and

other activities. This information should also be collected and retained. See Module 2 for more details on how threats can be verified.

Since the requirements for the Ministry of the Environment annual reporting database are in development, the data that will need to be managed to complete the Annual Reporting is unclear. Therefore, the source protection authority will provide additional information regarding these data to municipalities as they receive it.

According to Section 53 of Ontario Regulation 287/07, the following records must be kept for a period of 15 years:

- risk management plans – taken from the date the risk management plan ceases to be in effect
- a notice or order – taken from the date the notice or order is issued
- Risk Assessment – taken from the date of acceptance
- acceptance of a Risk Assessment – taken from the date of acceptance
- any record related to source water protection – taken from the date the record is acquired or created

## ii. **Data Cycle and Data Sharing**

Your local source protection authority currently has a readily available structure and format for data. Contact your local source protection authority for details on how to obtain these data and to discuss what format best suits your needs. In future years, the local source protection authority will continue to share information that will be useful to you during implementation, including any updates to Assessment Reports.

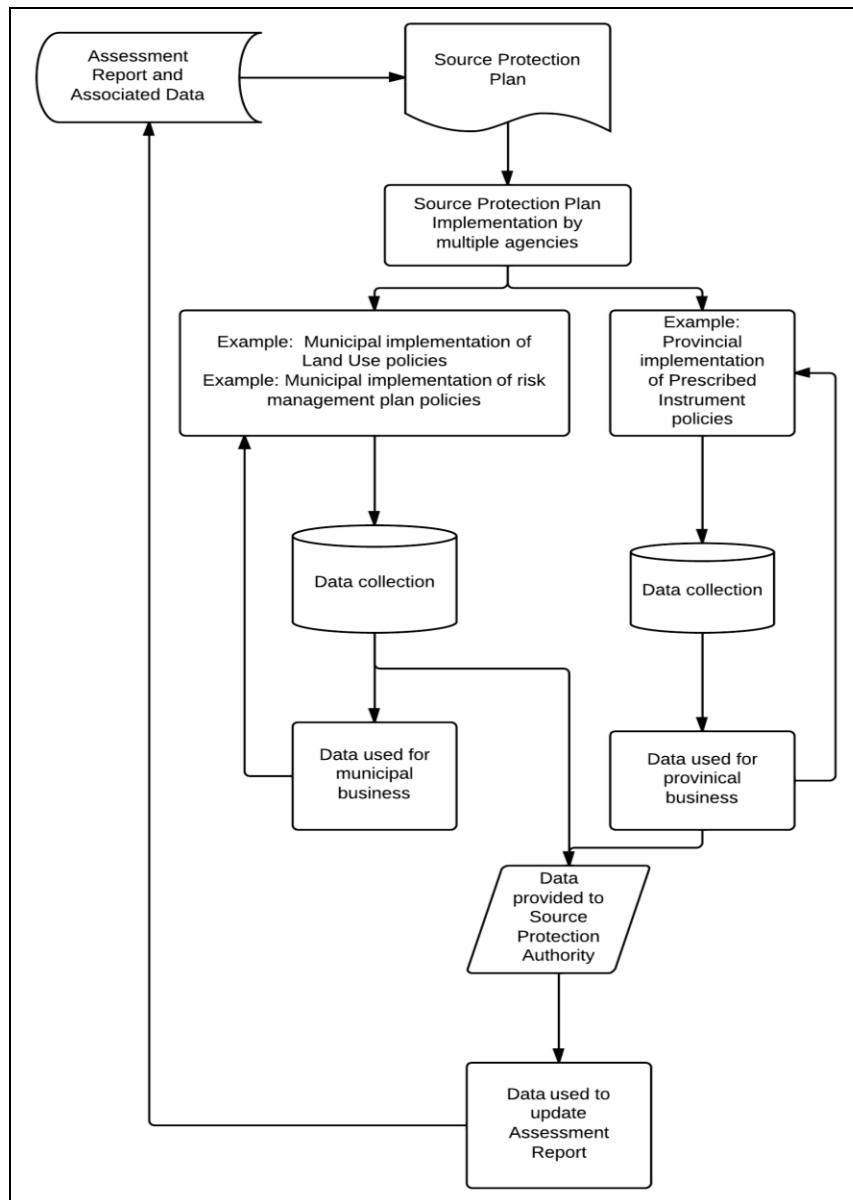
Figure 4 outlines the basic data cycle process implementing bodies can expect to follow. Assessment Reports and any associated data is translated into the various source protection plan policies (e.g. land use policies, risk management plan policies, prescribed instrument policies), which are in turn implemented by multiple agencies (e.g. the Province, municipalities, other public bodies). During policy implementation, implementing bodies will collect new data; this new data may inform regular business for these agencies, and will be transferred back to the source protection authority, and used to update the Assessment Report as part of the annual reporting cycle prescribed under the *Canada Water Act*.

Agreements should be made between the municipality and source protection authority regarding access to and use of data. The source protection authority, represented by the conservation authority or other body as defined under the *Clean Water Act* (see Ontario Regulation 284/07), is expected to have rights to the raw data used to generate the Assessment Report and source protection plan. If someone else owns the rights to the data (e.g. a municipality) used in the development of the approved Assessment Report and source protection plan, the source protection authority is expected to attain an unrestricted license

agreement with those parties to use, execute, modify, manufacture, copy, reproduce, distribute, publish, sublicense to others, and prepare, in any form, derivative works with the data for source water protection planning and implementation purposes.

Data sharing agreements are required to ensure data can be used for these purposes:

- to provide and publish deliverables and/or derivative works within the Ontario Public Service
- to provide and publish derivative works to the public, such as maps of vulnerable areas
- to enable the Ministry and/or clients to make evidence based policy and program area decisions and to meet obligations required of the Ministry and/or clients to review prescribed instruments
- to meet obligations as described in policies in approved source protection plans
- to ensure that owners and operating authorities of all drinking water systems in source protection areas in Ontario have the information needed to be in compliance with the *Clean Water Act, 2006* and the *Safe Drinking Water Act, 2002*
- to enable the Ministry and clients to make evidence based decisions regarding policy and any related program area planning and risk assessment initiatives
- to meet obligations pursuant to the Canada-Ontario Agreement Respecting the Great Lakes Ecosystem
- to meet the principles and carry out the roles and responsibilities under the Low Water Response Program
- to meet any obligations required of the Ministry and clients to address concerns associated with climate change initiatives



**Figure 4: Data Maintenance Cycle for Municipalities**

Sharing data with your source protection authority or other agencies will occur; therefore, it is important to generate useable and shareable data. Source protection authorities and the Ministry of the Environment are developing a streamlined process that will require data to be stored in a format that is easily sent to other agencies. Some things to consider:

- having a database that can be searched and filtered to extract the desired information
- using software that can export data to other formats, including ones that are easily read by other programs; for example, comma separated values are readable by spreadsheet, database and GIS applications
- ensuring spatial data (assessment roll number and GPS coordinates) are related to information such as notices, documents and Risk Management Plans

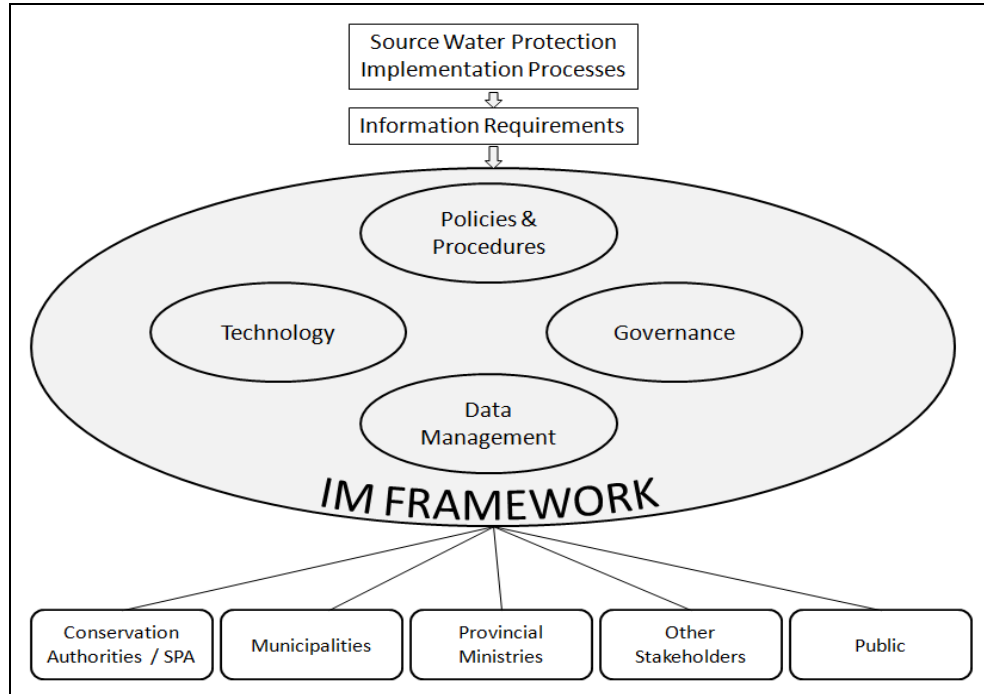
- ensuring staff adheres to data standards so data are collected and reported in a standardized way

Please review this document in its entirety to determine programming and data requirements as the Ministry of the Environment may dictate certain requirements in the future.

### iii. Setting up a Data Management Model

The process and functions of information can be organized into an information management framework comprised of elements (Figure 5). This framework is dependent on the data and information made available through the technical work that was completed to develop the Assessment Reports; these data and information are available from your local source protection authority.

Figure 5 demonstrates that agencies responsible for implementing source protection plan policies will also be responsible for managing the corresponding information. Implementing bodies should collaborate to ensure consistent, standard data are maintained and stored to support program requirements for multiple agencies. The formation of teams with representatives from these agencies could assist in streamlining information management. Six steps have been derived from this framework and are specific to source protection plan implementation.



**Figure 5: Information Management Framework**

## Step 1: Define Information Requirements and Resources

Municipalities must assess their particular situation with respect to existing data management structures to better understand the effort that will be required to maintain, exchange, and make source water protection data available. Source protection authorities will be able to provide lists of data used to generate the Assessment Reports and source protection plans.

Information resources that can facilitate successful source protection plan implementation may include:

- tabular and geospatial databases (e.g. Assessment Report Database, Threats Database, Water Quantity Databases, Boundaries and Models)
- images, photographs, graphics, maps, and reports
- look-up tools, key tables and Risk Management Measures

Municipalities will need to determine the information they already have and what additional information they will require to successfully implement source protection plan policies. Municipalities should also assess the data and information related to source water protection they will collect during implementation, or through other regular municipal business processes.

## Step 2: Define Guiding Principles

The implementation of source protection plan policies and ongoing data management should be an open and transparent process; therefore, defining the guiding principles required to manage data effectively and efficiently in a collaborative inter-agency environment is essential. The principles can be determined internally or in collaboration with partner agencies, such as the local source protection authority or conservation authority.

- **Define custodianship:** Custodianship implies a primary custodian or curator of data. A custodian does not have to be an individual or a single agency, and responsibilities can be jointly shared or transferred between business departments or agencies. Data custodians provide a leadership role by ensuring that staff and stakeholders derive the greatest benefit from the investment made in data collection, maintenance and storage.
- **Accountability for information management:** Accountability for management of the information required for implementation should be clearly defined and understood. The designation of accountability should be appropriate to the capabilities and availability of staff or agencies involved.
- **Accessible and shared information:** The custodian ensures the design of the information promotes easy use, access and sharing. This does not mean that private information should be shared beyond the limits imposed by legislation, such as MFIPPA, FIPPA, existing or future licensing agreements, access, confidentiality rights, and internal policies.
- **Integrated information management:** Information should be defined and managed to promote integration regardless of medium. At the municipal level, integrated

information should be managed and displayed across shared municipal boundaries. Based on the diversity of municipal information systems, the management solution for integration will be different in almost every case.

- **Define a sustainable funding model:** It is essential that municipalities secure long-term sustainable funding to allow the program to support the minimum ongoing requirements, such as annual reporting. It is anticipated that the increased recent investment in information related to source water protection will require financial planning to ensure the value of the information collected to date are maintained.
- **Collected and maintained information value and efficiency:** Information has significant value and plays an important role in source water protection, both currently and in the future. Source water protection information is a resource and a reusable asset. Municipalities and other agencies should aim to find efficiencies, by eliminating the need to collect, maintain or provide access to the same or similar source water protection information more than once.
- **Business-driven information:** Source water protection information gathered and maintained by municipalities and other agencies must be relevant to the decisions that will be made, such as whether or not a Risk Management Plan is required. Sustainable funding is required to support effective decision-making, public accountability and cost-effective delivery of programs and services. Information management should be planned and integrated into the municipal business planning process.

### Step 3: Define a Data-Sharing Framework

Data-sharing agreements are fundamental to enabling a collaborative environment. The agreements follow from the ‘information is shared’ principle, and they represent the legal agreements enabling fair exchange of data among all parties involved. Further discussion about data agreements is provided in Section C (ii).

The mechanism for sharing data can be as simple as sending some files by email, creating a CD, or posting to an FTP site. Another method is a data exchange, in which member organizations can share their data and have access to the data of other members. A data exchange is similar to a data-sharing agreement; however, it is more streamlined, flexible and open to numerous organizations. Land Information Ontario’s Ontario Geospatial Data Exchange is one good example of a data exchange framework. A direct data transfer can be made from one Ontario Geospatial Data Exchange member to another as long as:

- the other party is an Ontario Geospatial Data Exchange member
- the party providing the data has the rights to do so
- it is solely for the transfer of data

A similar process could be set-up between the source protection region and its municipalities to easily facilitate data sharing among the partners.



## Step 4: Agree to a Data Maintenance Protocol

Data standards for both input and output data can ensure consistent, standardized deliverables across municipalities that span multiple source protection areas or regions. Standards also allow for the efficient use of automated systems and facilitate data transfer between agencies to enable managers, planners and others to compile data at the municipal or watershed region scale. A list of standards and reference tools used in source water protection to date is included in Section C (iv). These standards and tools can be used as a starting point for local business requirements, while maintaining the necessary data fields to support provincial reporting and update needs. The local source protection authority may have further information and can provide assistance.

Many datasets lack maintenance protocols and many data holdings are not properly catalogued or documented; therefore, they are unknown to others that may benefit from the data. Maintaining current data will provide benefits to the planning cycle and position local organizations to benefit from future planning cycles and other water management activities. Information requirements are used as a starting point for the assessment of existing and potential data sources. Detailed investigations are required at the local level to ensure that source water protection data are available on the right scale and in sufficient detail for the data to be used for a specific purpose.

Municipalities should conduct a gap analysis should be conducted by comparing the existing spatial and tabular data against the specific requirements for each of the municipal business areas that will require source water protection data. When data are unavailable to support a specific source water protection requirement, a gap exists. Where gaps exist, the best available data source should be determined. In cases where local efforts cannot reasonably satisfy gaps, municipalities should make these gaps known to the source protection authority, conservation authority, and other implementing bodies. Ultimately, municipalities must ensure that appropriate data and information exist to support the implementation requirements of the local source protection plan.

Metadata is defined as a description of your dataset. As data are created or enhanced, metadata should be recorded for the dataset. The metadata catalogue addresses the fundamental requirement that data be discoverable. The catalogue increases the value of data assets by making their existence more widely known and used, especially if using best practice standards, such as the Federal Geographic Data Committee.

## Step 5: Define Your Technology Environment

Source protection plan implementation involves many participating organizations and a large number and variety of datasets. Consequently, the process requires a mechanism to enable discovery, distribution and data standardization.

There are several database models, such as centralized or disconnected database environments. However, to support the implementation phases and the integration of source water protection information into other business processes, municipalities need to establish or leverage existing local data storage and analysis environments, including analytical software, geographic information systems, database management systems, internet servers, analytical software, and communication/consultation capabilities.

Models were used to delineate vulnerable areas and determine vulnerability scores, which are described in the Assessment Report. Models used varied between source protection areas and regions, and each model will have different input requirements, analysis methodology and output processes. The Ministry of the Environment streamlined the selection of the specific models to a limited list of preferred models; however, variations with respect to in-house capacity and the software used for modeling, can significantly impact software and hardware requirements.

## Step 6: Refined Governance Model

Existing governance models should be refined to capture the requirements for source protection plan implementation and oversee implementation of the information management framework. The refined governance model will be used to resolve technical issues, as well as foster data standardization and collaboration among partners.

The ideal governance model effectively coordinates the information management needs of the municipality and other partners. A multi-agency technical committee is an example of a governance model that may work well for source water protection data management. The collaborative information management environment envisioned in the framework involves multiple organizations working together.

### iv. Data Standards and Reference Tools

Data standards exist for several source water protection related tools and databases. Here are some of these tools:

- **Assessment Report Database:** A fixed set of source water protection data that includes threats, issues, intake protection zones, wellhead protection areas, significant groundwater recharge areas, and highly vulnerable aquifers. These standards and associated data are available from source protection authorities.
- **Threats Database 1.9:** Source protection authority conducted threat assessments for which the Province of Ontario has prescribed specific activities and circumstances that when combined can create significant, low or moderate threats to municipal drinking water sources.
- **Threats Analysis Tool:** The threats data standard includes tables describing the threat and associated attributes including standard “lookup tables” for a set list of chemicals,

allowing toxicity and persistence values to be automatically selected when a land use activity (i.e. threat) is identified. Similarly, hazard scoring for pathogens has been set at a fixed value for a specific pathogen depending on whether the occurrence was within groundwater or surface water.

<http://maps.thamesriver.on.ca/swpCAMaps/threatslookup/default.aspx> (Note some aspects of this tool are currently undergoing revision and are subject to change.)

- **Risk Management Measures Catalogue:** The catalogue describes hundreds of tools and techniques that can be utilized in the management of activities that may pose a drinking water threat. <http://www.trcgauging.ca/RmmCatalogue/>
- **Water Budget:** Includes the Water Budget Geodatabase and associated Risk Assessments. [www.waterbudget.ca](http://www.waterbudget.ca)
- **Policy Database:** <http://maps.thamesriver.on.ca/swpPolicyEntry/disclaimer.aspx>
- **Symbology Standards:** For source water protection cartographic and web products, Conservation Authorities used standards, guidelines and best management practices for the production of output products (i.e. maps and other images) found in the document titled Source Water Protection Mapping Symbology and Standards (Ontario Ministry of Natural Resources, 2006).
- **GIS Software:** The Ministry of the Environment requires Source Protection Authorities and Conservation Authorities to work with ESRI GIS software. Therefore, for spatial water quality outputs, and some water quantity outputs, data are available in ESRI geodatabase format. Regardless of the GIS or planning software tools a municipality may be using, ESRI format is flexible enough to import ESRI GIS format into any platform or format.

#### v. **What This Means for My Municipality**

- The municipality and the source protection authorities should make agreements regarding access and data usage. Datasets are available from the source protection authority.
- Confirming threats will be an ongoing task for all municipalities.
- Record retention requirements are generally 15 years and can be found in Section 53 of Ontario Regulation 287/07.
- Implementing bodies should collaborate to ensure consistent, standard data are maintained and stored to support program requirements for multiple agencies.
- Proper data management can help municipalities integrate source water protection information into regular decision making, and leverage this knowledge for other municipal processes.

#### vi. **York Region Data Management Example**

The following information was provided by York Region as an example for other municipalities. This example provides information on the upgrading of their data management system. Note that this is strictly an example and may or may not suit the specific needs of your municipality.

The goal of the York Region Data Management Project was to upgrade the current environmental data management system (e.g. Access and Excel databases) to a system that will support business processes for source water protection risk management and all industrial waste control functions. When the project was initiated in early 2012, there were no *Clean Water Act* source water protection data management systems available. In fact, there is no system or guidance available for source water protection data management. These steps helped create this system:

1. A request for tenders was jointly released by the York Region Risk Management Office and the group that enforces the York Region sewer use by-law because partnering on the project had benefits for the Environmental Services department.
  - The groups have similar data management requirements; however, the processes of the two groups are very different and added to the challenge of finding a suitable system.
2. A contractor was selected based on their ability to meet the needs of both groups by providing a customizable product that was capable of working with GIS.
3. To clarify requirements for the system, several meetings were held with the contractor to develop flow charts, checklists and templates to describe the process requirements.
4. The contractor released several versions of the system, each version requiring extensive review and testing.
  - The development process required a great deal of time and effort since the system and the risk management program were being refined at the same time. The added benefit of conducting this work was that the Risk Management Office developed a number of tools that will be of benefit as the risk management program is implemented, such as a system to manage work flows.

As a result, the Risk Management Office now has a data management system that will manage threats data, as well as data related to other programs such as development review. Data quality has also been improved through the quality assurance/quality control process required during development of the system. The data management system includes:

- a 'dashboard' for the Risk Management Officials and Risk Management Inspectors that displays tasks such as inspections required and Risk Management Plan follow-up
- templates for documents, such as notices
- access to information for Annual Reports
- the capability to manage and track applications, fees, inspections, enforcement, correspondence, and Risk Management Plan conditions
- GIS capabilities that can populate WHPAs, produce vulnerability scores as well as validate addresses
- a lookup tool that can quickly and accurately summarize threats for a given location

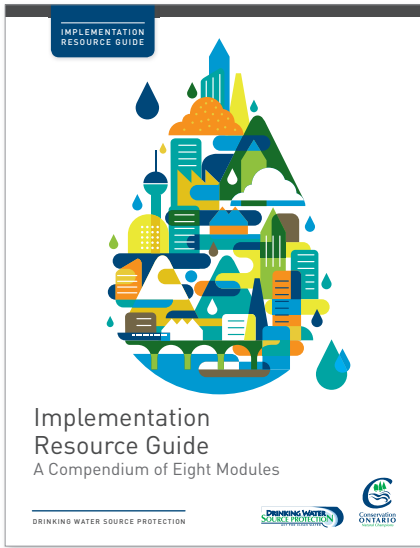




MODULE 5

# Risk Management Plans



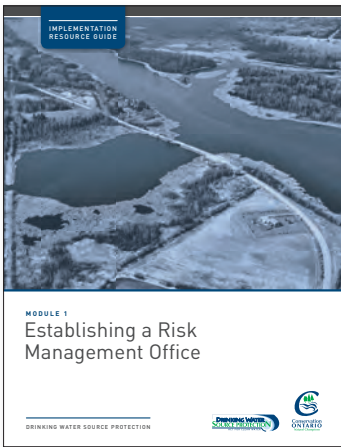


# Implementation Resource Guides

A Compendium of Eight Modules

Look for all eight modules in our Drinking Water Source Protection series. You can find them at [www.conservation-ontario.on.ca](http://www.conservation-ontario.on.ca)

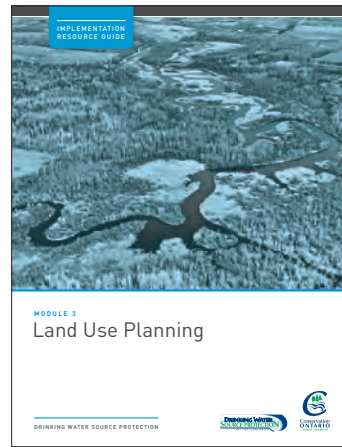
## MODULE 1



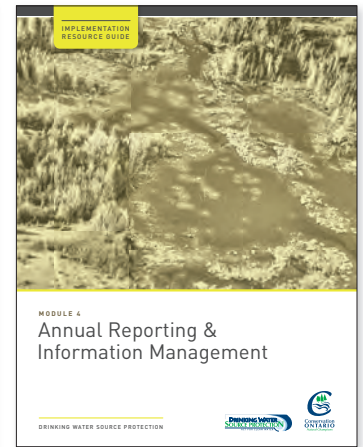
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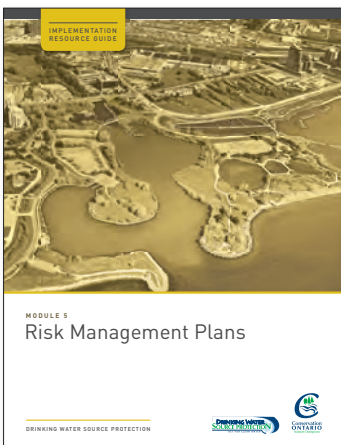
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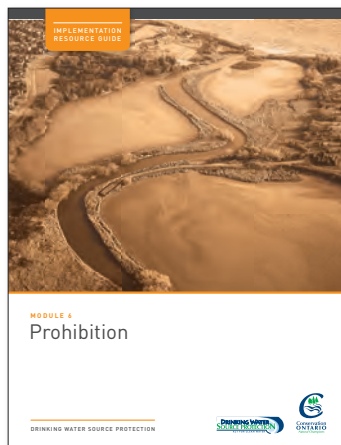
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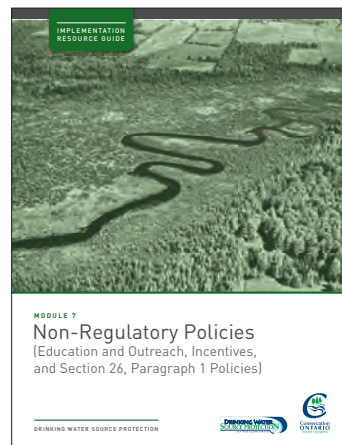
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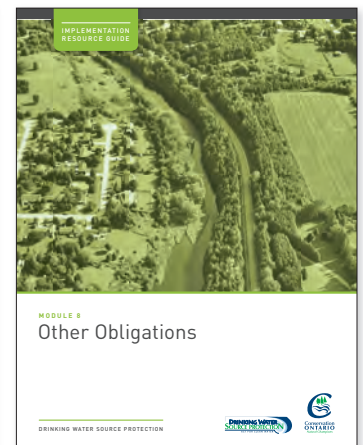
## MODULE 6



## MODULE 7



## MODULE 8



# Module 5: Risk Management Plans

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## Implementation Resource Guide

06/05/2014

Note to Reader: This document is one of a series developed by staff at conservation authorities and Conservation Ontario in support of source protection plan implementation. These documents cover a variety of tools related to plan implementation, but not all will apply in your municipality. Consult your local source protection plan to determine which policies are applicable in your municipality. This document has not been reviewed by legal counsel and is not presented as legal advice.

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## A. Introduction

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Module 5 provides information on risk management plan creation, negotiation and enforcement. Most source protection plans will use a new tool called a risk management plan to manage activities that threaten municipal drinking water sources. The sections of Module 5 are intended to assist municipalities, other enforcement agencies, Risk Management Officials, Risk Management Inspectors, and other risk management support staff in preparing for their various roles.

This module covers these topics:

- preparing for risk management plan development
- identifying the need for a risk management plan
- risk management plan roles and responsibilities
- risk management plan contents and processes
- negotiation and approval of the risk management plan
- enforcement of the risk management plan
- annual reporting
- excerpts of applicable legislation from the *Clean Water Act, 2006*

The information contained within this module is current as of the time of writing and describes legal requirements under the *Clean Water Act, 2006* as well as practical advice on how to fulfill these obligations. Reference should be made back to the *Clean Water Act* and its regulations as well as other Ministry of the Environment guidance materials.

## B. Structure of This Module

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This module consists of eight main sections intended to provide an overview of the risk management planning process. There is also an extensive set of appendices.

Section D.	Preparing for Risk Management	<ul style="list-style-type: none"><li>• steps necessary to determine if a risk management policy applies</li><li>• helpful tools and documents</li><li>• prioritizing the risk management process workload</li></ul>
Section E.	Format and Contents of a Risk Management Plan	<ul style="list-style-type: none"><li>• suggested options for the contents and structure of risk management plans</li></ul>

Section F.	Processes: Establishing a Risk Management Plan	<ul style="list-style-type: none"> <li>• notification of persons engaged in an activity</li> <li>• scenarios for establishing a risk management plan</li> <li>• exemptions</li> </ul>
Section G.	Negotiating a Risk Management Plan	<ul style="list-style-type: none"> <li>• how to approach the risk management negotiation process</li> </ul>
Section H.	Enforcing the Risk Management Plan	<ul style="list-style-type: none"> <li>• how to set up a risk management enforcement program</li> </ul>
Section I.	Reporting Requirements	<ul style="list-style-type: none"> <li>• reporting risk management work to local source protection authority</li> </ul>
Section J.	Work Planning: Advice for Managing the Workload	<ul style="list-style-type: none"> <li>• prioritizing the risk management workload process</li> </ul>
Section K.	Glossary	<ul style="list-style-type: none"> <li>• some terms to know</li> </ul>
Sections L to T.	Appendices 1 to 9	<ul style="list-style-type: none"> <li>• example formats of risk management plans</li> <li>• samples of notices, orders, screening tools, letters and other templates</li> </ul>

By the end of this module, you will have a better understanding of:

- what a risk management plan is
- the by-laws, notices and orders that are associated with the administration of Part IV of the *Clean Water Act*
- processes that could be followed to establish a risk management plan
- how to work through the negotiation process
- how to set up an inspection program
- how risk management plans link to annual reporting

In addition, the module will provide you with the sample templates, guidance and links to additional resources that will aid in conducting risk management duties pertaining to meeting the requirement of s. 58 of the *Clean Water Act*.

## C. Key Concepts

---

A risk management plan is a tool under Part IV of the *Clean Water Act*, specifically s. 58, used to address an identified significant drinking water threat. Risk management plans give municipalities new abilities to manage drinking water threats. They allow for activities to

continue yielding economic and societal benefits, while at the same time protecting sources of municipal drinking water by reducing the risk of contamination.

An activity is a significant drinking water threat only when it occurs in a particular location within a vulnerable area and under specific combinations of circumstances. In some cases only a portion of a property lies in the vulnerable area, so any requirement for a risk management plan would only apply to that portion and the remainder of the property would be exempt. A summary on how to determine if an activity is a significant threat can be found in Section J (i) of this module, while a detailed version can be found in Module 2.

The risk management plan specifies protective measures that are in place or will be implemented to reduce the threat posed by the activity and includes a timeframe for when specific actions are required. The process is designed to provide an opportunity for negotiation and collaboration between the Risk Management Official and the person engaged in the activity to determine how the activity is managed. Negotiation of the risk management plan will consider a number of elements including, but not limited to, the:

- nature of the activity (e.g. intensity, frequency, potential impact);
- current conditions in which the activity is engaged;
- best management practices and/or measures currently in place;
- additional measures that may be necessary (e.g. Risk Management Measures Catalogue developed by the Ministry of the Environment);
- spill contingency planning, as well as education; and
- consideration of ability to implement (e.g. costs, etc.)

The source protection plan policies that use risk management plans may require specific conditions or measures that must be followed when the risk management plan is developed. The local source protection plan should be consulted in order to understand the nature of the policies that use risk management plans.

Risk management plan policies come into force on the effective date specified in the local source protection plan. In general, policies may allow a period of three years or more before existing activities are required to have a risk management plan. Once a source protection plan is in effect for an area, new activities subject to risk management plan policies cannot commence until a risk management plan is established.

Several decisions need to be made if an efficient and effective risk management program is to be implemented. Advanced preparation and establishing good business processes are important. Establishing a risk management plan requires a consistent process. The various sections of this module provide detailed information about that process and Figure 1 includes the required steps. Roles and responsibilities of various stakeholders and staff are also

described. The Appendices contain examples of forms, letters and templates, which can be adapted locally to aid in preparations for implementation.



**Figure 1:** Typical Process of Risk Management Plan Development

The Risk Management Official may need to determine how best to notify or contact persons engaged in significant threat activities to confirm the threat exists and to let them know they



may need a risk management plan. The person(s) engaged in the activity(ies) may also be informed of any associated fees and made aware that they have the option of writing and submitting their own risk management plan. An inventory of properties where threats may exist was identified in the local assessment report. During the preparation of the Assessment Report and at the start of the preparation of the source protection plan, the source protection committee was required to provide a notice about the process to each person believed to be engaged in an activity that may be considered a significant drinking water threat. The Risk Management Official should check with the source protection authority to receive a copy of the inventory.

Ideally, risk management plan development will be a negotiated process with the person engaged in the activity. However, additional powers can be utilized by the Risk Management Official if necessary. The person engaged in the activity has the opportunity for an appeal to the Environmental Review Tribunal for certain actions by either the Risk Management Official or Risk Management Inspector. There are also situations where an exemption to the risk management policy can be claimed by the person engaged in the activity. These procedural steps are described in more detail in Section G.

Once a risk management plan is approved, it can be implemented, and the Risk Management Inspector will begin a routine of inspections and monitoring to ensure compliance with the risk management plan as written (see Section H).

Risk Management Officials are required to report annually to the local source protection authority, who will compile a report for submission to the Ministry of the Environment. The contents of these reports will be outlined briefly in Section I. For full details on reporting, see Module 4.

## **D. Preparing for Risk Management**

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A number of important steps need to be completed before risk management plans can be negotiated and implemented. Firstly, a Risk Management Office needs to be established with the trained and appointed Risk Management Official and Risk Management Inspector.

Various forms and templates can be developed that will facilitate the submission and review of risk management plans. Procedural processes can be set for both internal work and working with other municipal departments and outside agencies.

## i. Establishing a Risk Management Office

The term Risk Management Office refers to the staff, structures and processes necessary to administer Part IV of the *Clean Water Act*. Prior to commencing the implementation of the s.58 policies, the risk management office should be established. The Risk Management Office is responsible for completing a number of administrative tasks prior to implementing Part IV policies. The tasks include, but are not limited to setting procedural processes; drafting templates, notices, orders, and by-laws; and setting fee schedules for cost recovery.

Module 1 outlines several options for how the Risk Management Office could be organized within a municipality. The options include retaining Part IV responsibilities within the municipality, establishing a joint Risk Management Office with one or more municipalities, or transferring the authority to the source protection authority, board of health or local planning board. For detailed information on how to establish a risk management office, refer to Module 1.

### Key Roles

A Risk Management Official and a Risk Management Inspector will be required and additional staff members may also be needed to assist with risk management plan development. The number of staff required will depend on the anticipated workload for the administration of the risk management tasks. In some cases, existing staff may have the role of Risk Management Official or Risk Management Inspector added to their current duties. For details on the roles and responsibilities of the Risk Management Official /Risk Management Inspector during risk management plan development, see Section F.

***Key individuals and groups in establishing a risk management office:***

*Risk Management Official*

*Risk Management Inspector*

*Municipal council*

*Municipal staff*

*Source protection committee*

*Source protection authority (generally the Conservation Authority)*

*Person with Qualifications (if enabled by municipality or delegate)*

This section will describe the various roles and responsibilities of the individuals and groups involved in establishing the risk management planning processes. At this stage, the general public and persons engaged in activities that may require a risk management plan are not yet involved. Decisions made by the municipality will determine whether some the groups and individuals discussed here will have a role in the process. Each description highlights the specific responsibilities associated with the particular role.

## Risk Management Official

The Risk Management Official is the primary authority responsible for the negotiation of risk management plans under s.58 of the *Clean Water Act*. To be eligible for appointment, an individual must complete the training course offered by the Ministry of the Environment (see O.Reg. 287/07, s.54). Individuals with this training can be appointed by the municipality, or by the source protection authority or health unit in cases where Part IV powers have been delegated to one of these agencies by the municipality.

### *Training*

*Risk Management Officials and Risk Management Inspectors must complete training offered through the Ministry of the Environment. This module provides only a brief summary of some of the material covered in the training.*

*For information about training, send an e-mail to:  
source.protection@ontario.ca*

Risk Management Officials should be fully versed in the *Clean Water Act* and the source protection plan policies they are responsible for enforcing. The Risk Management Official can use the time prior to source protection plan policies taking effect to familiarize themselves with relevant information, including:

- maps of vulnerable areas and other related data from the local Assessment Report
- applicable measures from the Risk Management Measures Catalogue
- pertinent legislation, such as the *Clean Water Act* and its regulations
- prescribed provincial instruments that may apply to aspects of an activity
- applicable policies in the local source protection plan
- any existing municipal licenses, permits, by-laws, etc. that may relate to the same activities

Risk Management Officials have the additional responsibility of issuing notices under s.59 of the *Clean Water Act*. Procedures will need to be set up with other departments to ensure that proposals and applications needing an s.59 notice are forwarded to the Risk Management Official. Find additional discussion in Section F (ii) of this module, and Section E (iii) in Module 6.

Other Risk Management Official duties include ensuring that any rules passed by the enforcement authority regarding applicable fees and other administrative matters are satisfied.

## Risk Management Inspector

Risk Management Inspectors are responsible for ensuring that persons subject to Part IV policies are in compliance with applicable policy requirements. Under the *Clean Water Act*, the Risk Management Inspector's compliance and enforcement duties enable the Risk Management Inspector to conduct inspections and regular monitoring to ensure compliance with risk management plans, prohibition policies and other Part IV requirements. The training requirements are similar to those of a Risk Management Official.

The Risk Management Inspector should review pertinent source protection plan policies and become familiar with the vulnerable areas and the types of activities considered significant drinking water threats. The Risk Management Inspector may also want to determine inspection protocols and the inspection schedule.

### **Person with Qualifications**

The use of a Person with Qualifications is an option that the municipality can choose to allow under certain criteria. Municipalities may choose to enable the Person with Qualifications provision for various reasons, such as:

- to reduce the workload of the Risk Management Official to a manageable level,
- to require the use of experts in a particular field instead of allowing the person engaged in the activity to prepare the risk management plan themselves,
- to minimize expenses for the Risk Management Official and having proponents cover most of these technical expenses, or
- to perform the review function where the Risk Management Official does not have the necessary expertise to conduct a detailed review of the subject matter of a risk management plan or risk assessment.

The role of the Person with Qualifications is to assist the person engaged in an activity in the completion of a risk management plan. Provided a Person with Qualifications meets the requirements prescribed by s. 60 (2)(b) of the *Clean Water Act* and s.56 of O.Reg. 287/07, the risk management plan completed by a Person with Qualifications must be accepted by the Risk Management Official. A Person with Qualifications may also prepare risk assessments. For more information, see Section F (iv).

The Ministry of the Environment is currently developing training and guidance for Persons with Qualifications. Persons with Qualifications must successfully complete a Ministry-approved training course approved that will detail the criteria for establishing a risk management plan and accepting a risk assessment.

### **Timelines for Establishing a Risk Management Office**

To ensure all necessary tasks are complete in advance of the source protection plan effective date, municipalities may require a minimum of four to five months to establish the risk management office; however, this process may take upwards of 12 to 15 months. Table 1 provides a sample timeline.

Failure to establish an office prior to the effective date of the source protection plan may result in delays of approvals for planning and development applications in the municipality. As well, the municipality would not meet its legal obligation to implement the policies of the source protection plan. For further information, refer to Section D (iii) in Module 1.

**Table 1: Potential Schedule of Tasks for Establishing a Risk Management Office (Relative to Source Protection Plan Effective Date)**

<b>TASK</b>	<b>TIMELINE (Guideline)</b>
Determine staffing requirements	Eight months before effective date
Hiring process for Risk Management Officials and Risk Management Inspectors, including creation of new staff descriptions, posting, interviews, and selection	Three to seven months before effective date
Develop an application review process/system for screening	Commence five months before effective and have in place at least one month before effective date
Develop fee schedules and new by-laws (if required), including drafting, review and Council resolutions	Commence five months before effective date and have in place at least one month before effective date
Risk Management Official and Risk Management Inspector training by Ministry of the Environment (if not already completed)	Three to six months before effective date
Set up an information/data management system	Commence four months before effective date and complete within two months after the effective date at the latest

## ii. Tools for Administering Risk Management

Section 55 of the *Clean Water Act* enables implementing bodies to pass by-laws, resolutions and regulations to aid in the administration of Part IV policies. The selected Risk Management Office model will dictate whether by-laws, resolutions or regulations are required to be passed. For example:

- If a municipality is retaining Part IV enforcement responsibilities within the organization, it will pass by-laws.
- If the authority is being transferred to a planning board or source protection authority that is not a conservation authority (e.g. Severn Sound Environmental Association), resolutions will be passed governing Part IV enforcement.

- If the authority is being transferred to a source protection authority that is also a conservation authority, the conservation authority will pass certain types of conservation authority specific 'regulations.'
- In addition, the Minister may make provincial regulations, applicable in the area in which the municipality, board of health, planning board or source protection authority has jurisdiction for the enforcement of Part IV.

The by-laws, resolutions and regulations that can be passed under s.55 of the Act include:

- a) prescribing classes of risk management plans and risk assessments
- b) establishing and governing an inspection program for the purpose of enforcing Part IV
- c) providing for applications under section 58, 59 or 60 and requiring the application to be accompanied by such plans, specifications, documents and other information as is set out in the by-law, resolution or regulation
- d) requiring the payment of fees for receiving an application under section 58, 59 or 60, for agreeing to or establishing a risk management plan under section 56 or 58, for issuing a notice under section 59, for accepting a risk assessment under section 60, or for entering property or exercising any other power under section 62, and for prescribing the amounts of fees
- e) requiring the payment of interest and other penalties, including payment of collection costs, when fees referred to in clause (d) are unpaid or are paid after the due date
- f) providing for refunds of fees referred to in clause (d) under such circumstances as are set out in the by-law, resolution or regulation
- g) prescribing forms respecting risk management plans, acceptances of risk assessments, notices under section 59 and applications under section 58, 59 and 60, and providing for their use
- h) prescribing circumstances in which a Person with Qualifications prescribed by the regulations may act under clause 56 (9) (b), 58 (15) (b) or 60 (2) (b)

Depending on the selected enforcement option, implementing bodies may not need to pass by-laws, regulations and resolutions pertaining to all of the s.55 sub-sections. For example, some municipalities may choose not to utilize Persons with Qualifications or prescribe classes of risk management plans and risk assessments. Section 55 merely enables these powers should the implementing body deem it necessary.

Since the by-laws, regulations and resolutions aid in the enforcement and administration of Part IV, it is recommended that any relevant s.55 by-laws, regulations and resolutions be put in place prior to commencing the implementation of Part IV.

Implementing bodies will also need to develop forms, templates, notices, and orders to allow for efficient enforcement of the s.58 policies. The forms, templates, notices, and orders to be

developed pertain to the negotiation and acceptance of risk management plans, the enforcement of risk management plan requirements and dealing with exceptions to s.58 of the Act. Section E (ii) and Section F (i) provide greater detail. Find samples in Section L, Section M, Section N, and Section O.

### **iii. Useful Supporting Documents**

This section provides an overview of some of the helpful supporting documents for risk management tasks.

- **Assessment Reports**

Assessment Reports are technical documents which describe the local watershed, assess the available water supply, map vulnerable areas, and identify threats in these vulnerable areas that pose risks to drinking water. A multi-stakeholder source protection committee, with representation from the municipal sector, economic sector (agriculture, commercial, industrial, etc.), other public interests (environment, health, etc.), and, in some regions, First Nations, completed an assessment report for the local source protection area. The Assessment Report identifies vulnerable areas and where activities could be a drinking water threat. It also enumerates existing significant drinking water threats. The information contained in the local Assessment Report contributed to the development of policies in the source protection plan. A copy of your local approved Assessment Report is available through the source protection authority's website.

- **Source Protection Plans**

Source protection plans contain policies developed by source protection committees in consultation with local communities to protect municipal drinking water sources from existing and future drinking water threats. The *Clean Water Act, 2006* and Ontario Regulation 287/07 establish the requirements governing the contents of a source protection plan. In particular, O.Reg. 287/07 requires that the source protection plan contain

- policies to protect existing and planned drinking water sources, and
- policies for every area where threats could be significant to ensure that the activities identified as significant drinking water threats either never become a significant threat or, if the activity is already taking place, the activity ceases to be a significant threat.

The local source protection plan may contain s.57 (prohibition) and s.58 (risk management plan) policies that Risk Management Officials and Risk Management Inspectors will be responsible for administering. A copy of your local source protection plan may be available through the source protection authority's website.

- **Risk Management Official/Risk Management Inspector Training Course Manual; Property Entry Training Course Manual**

Individuals who have taken the Risk Management Official, Risk Management Inspector or property entry training from the Ministry of the Environment can refer to the training manual they received during the course. These manuals contain information about several topics, including how to deal with persons engaged in activities, how to negotiate a risk management plan, and the responsibilities and powers under Part IV of the *Clean Water Act*.

- **Risk Management Measures Catalogue**

This database contains Risk Management Measures that can be used to assist with managing a significant drinking water threat. Figure 2 is a sample page from the website. Find the database at <http://www.trcagauging.ca/RmmCatalogue/>

The screenshot shows the website interface for the Risk Management Measures Catalogue. At the top, there are navigation links: RMM Catalogue, Home, Quality Catalogue, and Quantity Catalogue. The main heading is "Source Water Protection" with the subtitle "Risk Management Measures Catalogue". Logos for "Toronto and Region Conservation for The Living City" and "Ontario" are visible. A breadcrumb trail reads "Home / Quality Home / Search By Threat / Measure Details". There are links for "Print Version" and "PDF Version". The main content area is titled "Risk Management Measures" and "Measure Information Sheet". A table provides details for measure QL208, including its name, description, and climate change adaptation status. Below the table, there are sections for "Management Targets" and "Applicable Sectors".

ReferenceID	QL208
Measure Name	Upgrading existing storage tank systems
Measure Description	Storage tank systems which are found to not be in compliance with applicable guidelines/codes/standards/regulations will need to be upgraded to meet regulatory requirements, or taken out of service. Timelines for upgrading or removal from service for non-compliant storage tank systems are stipulated by applicable regulatory guidelines. It is the responsibility of facility owners/operators to ensure that non-compliant storage tank systems are either brought in to compliance or taken out of service in accordance with the timelines stipulated by regulatory standards. In addition, upgrades or decommissioning of storage tank systems must be conducted by individuals licensed/qualified to conduct upgrade/decommissioning activities in accordance with applicable regulations.
Climate Change Adaptation	No

**Management Targets**

- Effective system design/layout for abatement of concentration/volumes of contaminants.

**Applicable Sectors:**

- Agriculture
- Commercial
- Government / Institutional
- Industry
- Municipal
- Residential

**Figure 2:** Excerpt from the Risk Management Measures Catalogue



- **Ontario Farm Environmental Coalition (OFEC) Farm Assessment Workbook**

The OFEC designed this workbook to assist farmers in preparing for risk management plans and implementation of the *Clean Water Act*. There are two steps in the process: a Farm Sketch and Threats Inventory; and Farm Assessment Worksheets. This workbook allows farmers to identify and improve their practices to minimize risks to municipal water supplies and allows them to prepare for a meaningful negotiation with the local Risk Management Official. Find more details on this tool in Appendix R of this module.

- **York Region Guidance for Proposed Developments in Wellhead Protection Areas**

This document was developed to assist persons engaged in activities with the preparation of risk management plans and risk assessments. It outlines the technical requirements for the preparation of the plans and assessments. You can request a hard copy from York Region or find this document online at [http://www.york.ca/wps/wcm/connect/yorkpublic/6bfeff60-f583-40ee-95b0-b5943334d365/Guidance\\_for\\_proposed\\_developments\\_in\\_WHPAs.pdf?MOD=AJPERES](http://www.york.ca/wps/wcm/connect/yorkpublic/6bfeff60-f583-40ee-95b0-b5943334d365/Guidance_for_proposed_developments_in_WHPAs.pdf?MOD=AJPERES)

## **E. Format and Content of a Risk Management Plan**

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The *Clean Water Act* and associated regulations only briefly mention the specific requirements for the contents of a risk management plan. However, the regulations do empower the enforcement authority for risk management to set forms and standard templates. Having some type of established form for a risk management plan can have benefits for both the plan reviewer (i.e. the Risk Management Official) and the person seeking approval (i.e. person engaged in the activity or proponent). The person engaged in the activity will have a better idea of what is required and what will constitute an acceptable submission. It may answer some of the questions that otherwise would be asked of the Risk Management Official and can help to focus the discussion. The Risk Management Official does have to invest some time and effort to create the form or template. However, the review process will be somewhat simplified, since the desired information will be compiled on the completed form.

This section offers some suggestions for the standard content of a risk management plan. A discussion on options for a format for risk managements plans is also provided.

### **i. Content Considerations**

In most situations, discussions between the Risk Management Official and the person engaged in the activity will determine the exact measures that go into the risk management plan. However, other relevant and necessary information could be captured through a standardized template.

It is a requirement that each risk management plan contain a provision stating that the risk management plan cannot be transferred to another person without the written consent of the Risk Management Official (O.Reg. 287/07, s.60). Two other optional items are specifically mentioned in O.Reg. 287/07, s.59: requirements dealing with the remediation of adverse effects caused by the activity to which the plan relates; and a requirement to provide financial assurance in a form specified in the plan.

Additional suggestions for content could include:

- current contact information for the person engaged in the activity (ies)
- current contact information for the property owner, if the person engaging in the activity is not the owner (e.g., a tenant)
- a list of specific activities designated as significant drinking water threats in the area to which the risk management plan will apply
- a reference to the policy or policies in the approved source protection plan
- map(s) of the property identifying the location of the activities
- location information for the activity, such as GPS coordinates
- the risk management measures, operational practices, etc, to be undertaken to address the threat
- rationale in support of the risk management measures identified
- an implementation schedule for risk management measures
- details of the monitoring and reporting requirements to ensure that the implementation schedule is being followed
- relevant signatures and date

A common front section could be used for gathering property and contact information. A sample page, which displays a set of fields for recording information within the risk management plan form, is shown in Figure 3. Additional pages in the front section could collect the signature agreeing to the terms of the application and provide space for a site sketch (as shown on the sample in Section L: Appendix 1 in this module), type of activities and measures to be used. Not all of the components of the risk management plan may lend themselves to being marked on a form. There may be cases where reports, drawings, printouts, or photocopies need to be submitted as attachments.

It should be possible for a single risk management plan to address more than one significant drinking water threat activity on the same property. Each activity that requires a risk management plan would have its own section that follows the common front section. Within each section of the risk management plan would be the measures to address the particular activity and any required attachments, such as information from farm management programs or nutrient calculations. The multiple activities may be reviewed and then approved under a

single risk management plan. Find an example of this type of multi-activity risk management plan in Section N: Appendix 3.

### **Risk Management Plan: Information Page**

#### **Applicant Information**

Name: \_\_\_\_\_

Phone: \_\_\_\_\_ Phone (alternate): \_\_\_\_\_

E-mail: \_\_\_\_\_ Fax: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

Town: \_\_\_\_\_ Prov: \_\_\_\_\_ Postal Code: \_\_\_\_\_

#### **Property Information**

Roll Number: \_\_\_\_\_

GPS coordinates (if known): (Lat.) \_\_\_\_\_ (Long.) \_\_\_\_\_

GPS: (E) \_\_\_\_\_ (N) \_\_\_\_\_

Address: Lot: \_\_\_\_\_ Conc: \_\_\_\_\_

Fire # or Street Address: \_\_\_\_\_

Land Use:  Residential  Agricultural  Commercial  Institutional  Industrial

Other (please specify) \_\_\_\_\_

Name of Vulnerable Area:  \_\_\_\_\_

Vulnerable Area Zone:  WHPA-A  WHPA-B  WHPA-C

WHPA-E Vulnerability Score: \_\_\_\_\_

IPZ – 1  IPZ-2 Vulnerability Score: \_\_\_\_\_

***Figure 3: Sample Page for Collecting Information in a Risk Management Plan.***

## Key Roles

The Risk Management Official will play a key role in determining the type of information that should be collected and the best method for achieving that task. The Risk Management Inspector and other municipal staff with knowledge about source protection, planning, privacy protection, software, and other topics may provide some assistance.

The municipal council may pass a by-law to establish the format for risk management plans if the municipality has retained the Part IV implementation responsibilities. If the risk management duties have been delegated to the conservation authority or health unit, the delegated agency would perform a similar role in prescribing the forms for the risk management process.

***Key individuals and groups in developing a risk management plan:***

*Risk Management Official*

*Risk Management Inspector*

*Municipal council*

*Municipal staff*

*Source protection committee*

*Person with Qualifications (if enabled by municipality or delegate)*

*Source protection authority (if duties delegated by municipality)*

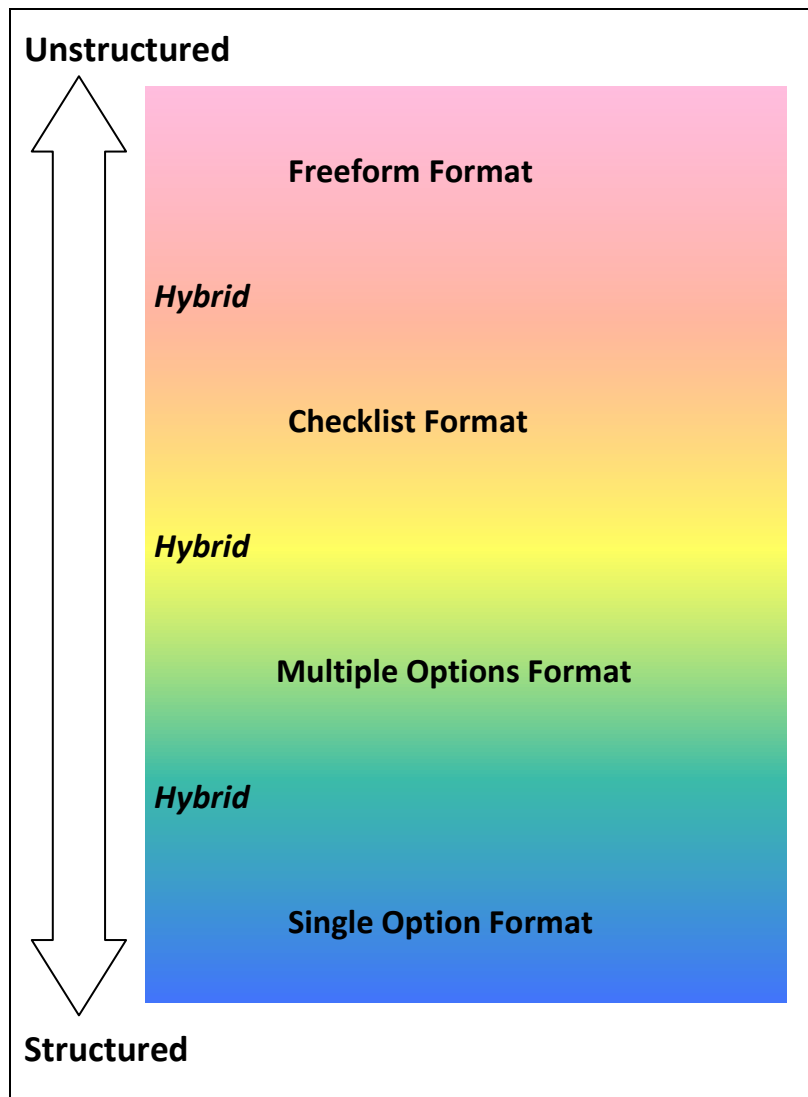
## ii. Format Options for Risk Management Plans

This section offers some options for risk management plan formats. Municipalities and enforcement agencies should use a risk management plan format that will suit the threat activity in question. Having a thorough understanding of the nature of the activity will help Risk Management Officials decide on the most appropriate type of risk management plan.

For less complex activities, the municipality may choose to develop a standard risk management plan template, allowing it to be negotiated fairly quickly, since much of the required content will have been predetermined. For example, the enforcement authority may develop a simple risk management plan template to address commonly occurring residential home heating fuel threats. Home heating fuel threats are often similar in nature and could potentially be addressed through standardized risk management plan templates (see example in Section M: Appendix 2).

For more complex activities, a standard template may not be appropriate. The Risk Management Official may have to partake in dialogue and several site visits to gain a comprehensive understanding of the operation and ensure the risk management plan will adequately address associated threat activities. These activities may require more detailed, site-specific risk management plans (see example in Section N: Appendix 3).

The options range from an unstructured style with very little detail or direction given, to a structured style where many of the details may be predetermined and the applicant is mostly checking off boxes that apply to the situation. Figure 4 illustrates this spectrum of risk management plan styles.



*Figure 4: Spectrum of Risk Management Plan Formats*

Risk management plan format options may be classified into three major categories:

- structured
- unstructured
- hybrid

## Unstructured Risk Management Plan Format

### Freeform Plan

A freeform risk management plan has no set template and one plan can look very different from another. The person engaged in the activity will determine the manner in which the information is presented and will produce a report for the Risk Management Official's review. This report is expected to address source protection plan policies and use best management practices and measures.

### Checklist Plan

This risk management plan is a simple checklist of required materials or content. This type of plan allows the person engaged in the activity to use information or reports that may already exist for the operation. This type of risk management plan would be suitable for complex activities or when there are few occurrences of an activity within the municipality. Find an example of this type of plan in Section L: Appendix 1 and in Figure 5.

<b><u>Risk Management Plan: Checklist of Documents</u></b>	
<b>Required Documentation - Attach the following reports to your application</b>	
<input type="checkbox"/> <b>A. Product handling procedures</b>	Describe how material will be handled on-site, including unloading and transfer, if applicable.
<input type="checkbox"/> <b>B. Product storage</b>	Include a diagram and/or photographs and a description of storage areas and methods.
<input type="checkbox"/> <b>C. Containment measures</b>	Describe what measures will be used to prevent damage to stored materials and to contain spills.
<input type="checkbox"/> <b>D. Spills Response Plan</b>	All spills are to be reported to the Spills Action Centre (toll-free 1-800-268-6060). Include emergency contact information.

*Figure 5: Excerpt from a Checklist Form of Risk Management Plan.*

## Structured Risk Management Plan Format

### Multiple Options Plan

This format presents a limited suite of measures that could be used to address an activity. The person engaged in the activity selects one or more measures from the list of acceptable measures and this forms the basis for the risk management plan. The advantage for the Risk Management Official is that the measures can be narrowed down to ones that are understood or that best meet the objectives of the source protection plan policies. At the same time, the person engaged in the activity still has some flexibility to choose measures that they feel are suited to their situation and can be implemented.

### Single Option Plan

This plan allows municipalities or enforcement agencies to specify the acceptable measure(s) that can be used. The person engaged in the activity simply provides property and contact information and signs the form. An example of this type of plan can be found in Section M: Appendix 2.

There is limited opportunity for negotiation with this type of risk management plan. Single option plans work best when there are very few methods for managing the activity or where a consistent approach is deemed desirable.

## Hybrid Risk Management Plan Format

Hybrid risk management plans are a combination of two or more formats. They may be considered structured or unstructured depending on the formats.

Risk Management Officials should have an understanding of the style of risk management plan they wish to establish prior to commencing negotiations.

## F. Processes: Establishing a Risk Management Plan

Risk management plans are site-specific documents that outline the actions required to address significant drinking water threats. The primary objective of every risk management plan should be to reduce the risk to drinking water sources introduced by significant drinking water threat activities.

The regulatory requirements for risk management plans are outlined in s.58 of the *Clean Water Act*. Source protection plans will designate where, and for which activities, risk management plans should be established. Many source protection committees have included policies in local source protection plans requiring risk management plans to be established for existing and future significant threat activities not currently addressed through regulatory instruments.

## Key Roles

The Risk Management Official and the person engaged in the activity will jointly review various available risk management measures and negotiate those that will be most suitable to reduce the risks associated with the significant drinking water threats that will be addressed through the risk management plan. The agreed upon measures will be written into the plan.

The person creating the risk management plan may vary. It may be the Risk Management Official, the person engaged in the activity, a third party consultant, or a person with qualifications in certain circumstances. It is anticipated that the risk management plan will reflect the negotiation efforts of all parties involved. If a plan meets the requirements set out in the Act, the Risk Management Official is responsible for accepting the plan. The Risk Management Official is ultimately responsible for signing off on all risk management plan, even those that have been created by a Person with Qualifications or reviewed by an outside consultant.

### ***Key individuals and groups in format and content of a risk management plan:***

*Risk Management Official*

*Person engaged in the activity*

*Risk Management Inspector*

*Municipal council*

*Municipal staff*

*Source protection committee*

*Person with Qualifications (if enabled by municipality or delegate)*

*Source protection authority (if duties delegated by municipality)*

### **Person Engaged in the Activity**

The person engaged in the significant drinking water threat activity takes an active role during risk management plan negotiations. Prior to negotiations, the person engaged in the activity will want to review all relevant source protection policies, applicable Assessment Report information and any best management practices or risk management measures already in place to address the threat activity. This will help that person make informed decisions when participating in negotiations with the Risk Management Official. At the commencement of negotiations, the person engaged in the activity may elect to provide the Risk Management Official with a background on current operations to ensure that once a risk management plan is established, it adequately addresses the risk(s) in question. When negotiating the terms of the plan, the person engaged in the activity should collaborate with the Risk Management Official to review the various risk management measures available, and negotiate those that will be most suitable to reduce the risks associated with the identified significant drinking water threat(s).

### **Person with Qualifications**

In some circumstances the municipality may advise persons subject to the risk management plan policy to retain a Person with Qualifications to prepare the necessary risk management



plan. The ability for the municipality to use this option is enabled by s.55 (1)(h) of the *Clean Water Act*. When preparing the risk management plan, the Person with Qualifications should comply with all applicable Lieutenant Governor in Council regulations, Director Rules, and the local source protection plan. Ultimately the risk management plan prepared by the Person with Qualifications must ensure that the activity ceases to be a significant drinking water threat. The Risk Management Official must approve the risk management plan submitted by a Person with Qualifications (*Clean Water Act*, s.58(15)(b)).

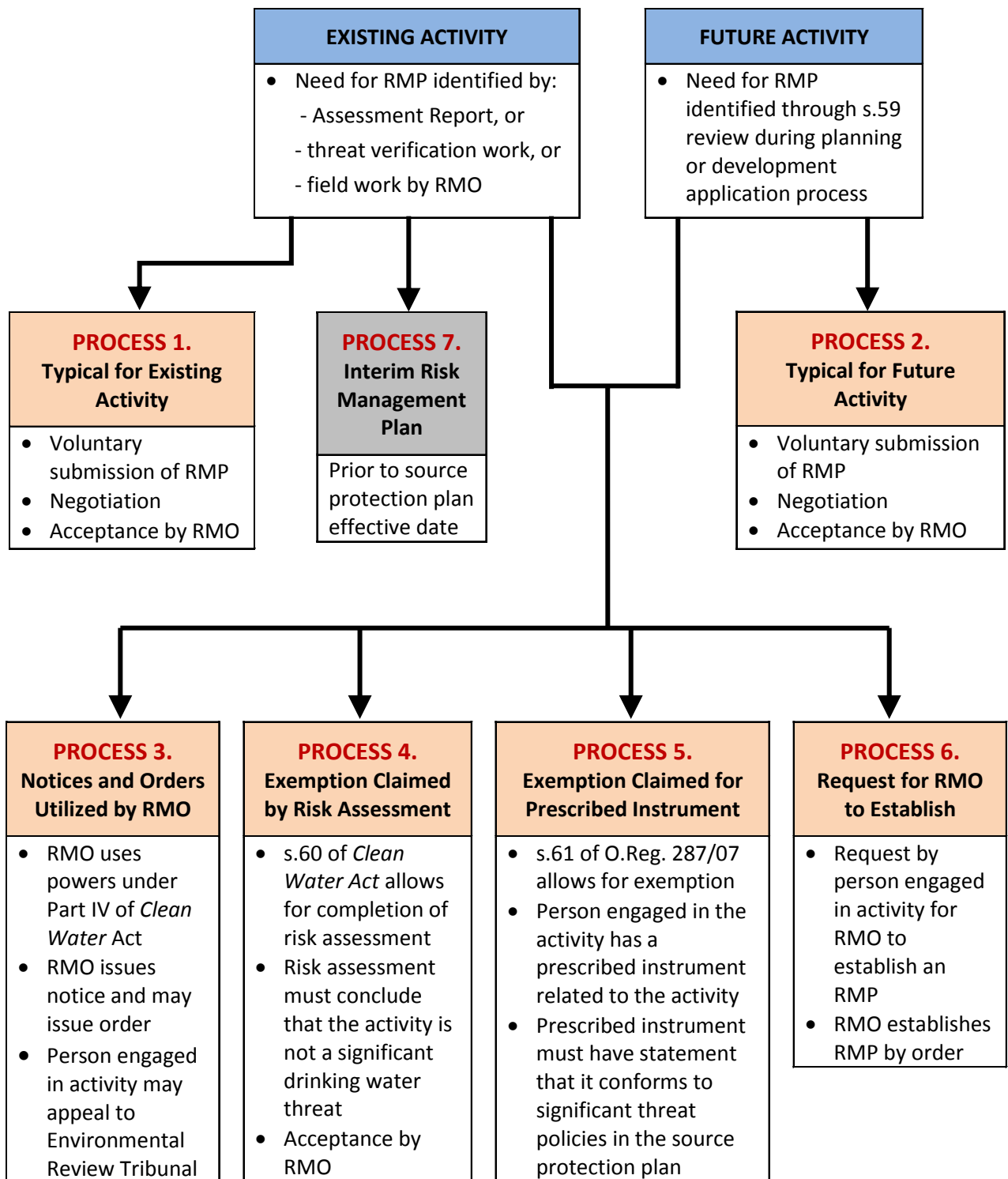
### **Timelines for Establishing a Risk Management Plan**

The time it may take to establish a risk management plan for an activity will vary depending on the complexity of the activity, whether standard processes and forms are used, and the amount of dialogue needed to settle on an agreeable plan. Should the Risk Management Official need to use additional powers to establish a risk management plan, the timeline could lengthen significantly.

The applicable source protection plan policy may contain a policy about timelines for implementation. Prior to the deadline, the person engaged in the activity must be notified and provided opportunity to voluntarily comply. If a notice is given, there is a minimum amount of time for voluntarily agreeing to the establishment of a risk management plan. When necessary, time should also be set aside for a site visit. Find a discussion on managing the workload and timing of risk management plan development in Section J.

### **Overview of Risk Management Plan Processes**

The requirement for a risk management plan can be triggered in more than one way. Similarly, a risk management plan can also be developed in different ways. Figure 6 illustrates the principal ways that risk management plan development can occur. Each of these processes is explained in more detail in this section of the module.



**Figure 6: Overview of Several Risk Management Plan Processes**

## **i. Process 1: Typical Process for Existing Activity; Voluntary Submission**

The typical process differs for existing and future activities. Existing activities are generally allowed to continue for a period of time after the effective date of the source protection plan before a risk management plan must be in place; however, future activities are prohibited from starting until a risk management plan is in place. Figure 7 provides an outline of the process.

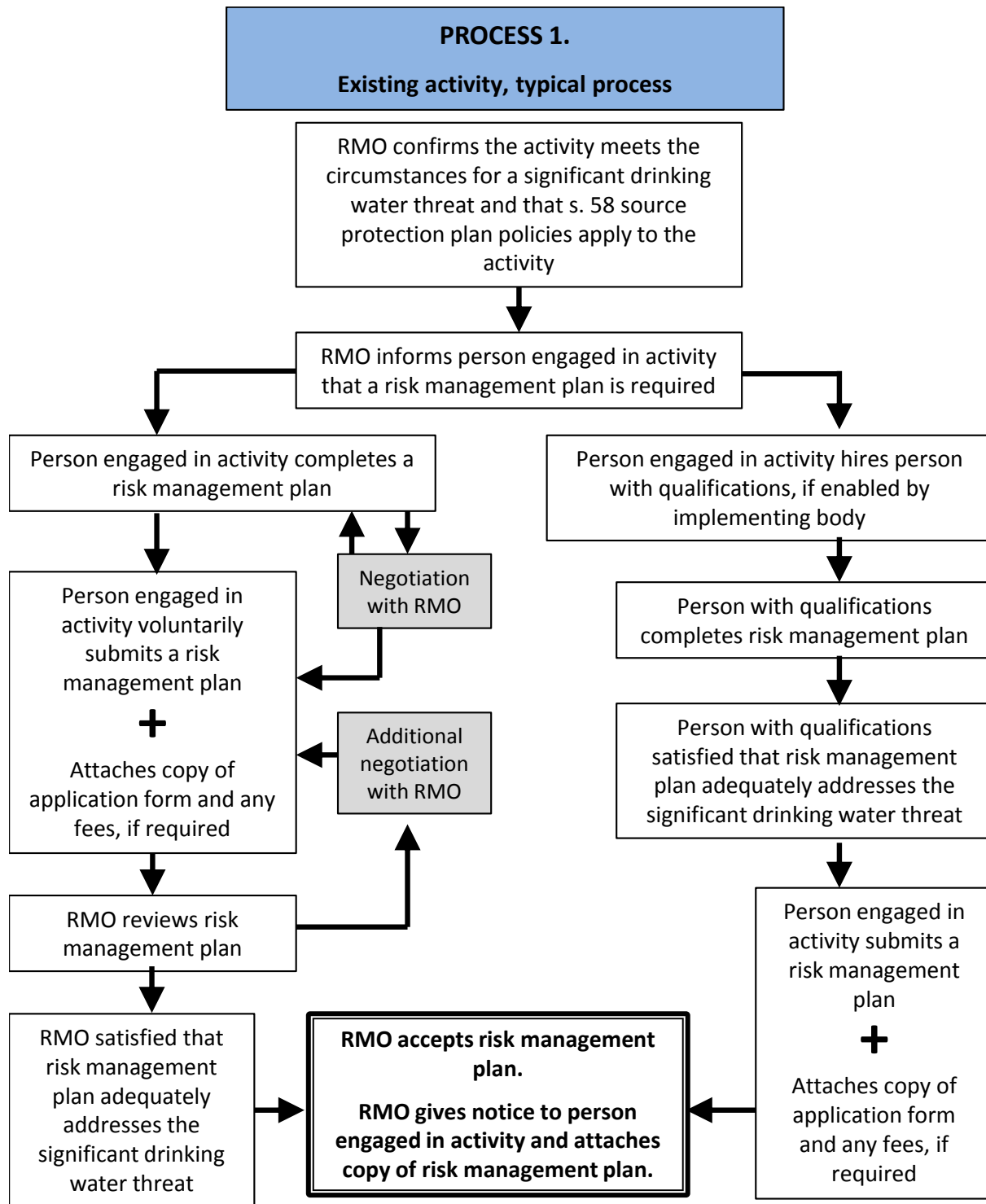
Section 58 policies found in the source protection plan may specify the date by which risk management plans for existing activities will have to be in place. If a risk management plan is not in place by the specified date, the existing threat activity will no longer be permitted to continue under the circumstances that generated the significant threat (refer to *Clean Water Act*, s.58(1)). The activity may have to be changed; for example, a smaller amount of product may be stored or the location may be moved, which would allow the activity to continue in some form. This could mean that a certain aspect of an operation at a business would cease, but the business would carry on with its other normal functions.

In some instances, the source protection plan may not specify a date for when a s.58 policy should apply to existing threat activities. If no date is specified, the Risk Management Official would set a date for the risk management plan policy to take effect for any existing activities by giving a notice under s.58(4) of the Act.

During negotiations the Risk Management Official and person engaged in the activity will need to confirm that all necessary measures are implemented to ensure that the activity will not be a significant drinking water threat at the specified location in accordance with the risk management plan. This will be achieved through the consideration of best management practices, spill contingency plans, and risk management measures. Once the Risk Management Official and person engaged in the activity reach an agreement about the measures that will be used to address the threat, those measures will then become formal in the risk management plan.

If a Risk Management Official and a person engaging in an activity agree to a risk management plan, the Risk Management Official must give the person a written Notice of Agreement, and attach the agreed upon risk management plan to the notice (*Clean Water Act*, s.58(6)). When plan is agreed to, a person should only engage in the specified activity in accordance with the plan (*CWA*, s.58(18)). In cases where multiple drinking water threats exist on a property, a single risk management plan may address multiple threat activities.

The terms of a risk management plan should outline reasonable and practical actions to manage the risks presented by drinking water threat activities. Each plan will establish a timeline, outlining when specific actions will be required. The agreed upon plan must comply with all of the rules and regulations set out in the *Clean Water Act*, as well as the local source protection plan (*Clean Water Act*, s.58(15)).



*Figure 7: Process 1. Typical Process for an Existing Activity; Voluntary Submission*

## ii. Process 2: Future Activity; Voluntary Submission for Approval

Section 58 policies found in the source protection plan will specify the date by which risk management plans for newly proposed (i.e. future) activities will automatically be subject to section 59 Restricted Land Uses requirements outlined in the *Clean Water Act*. Section 59 is intended to serve as a screening tool under Part IV of the Act, so that future development applications can be reviewed in areas where s.57 (prohibition) and s.58 (risk management plan) policies are in effect.

Section 59 of the Act requires that an applicant submitting a new development application (or building permit, site plan approval, zoning amendment, etc.) first obtain a notice from a Risk Management Official before the application can proceed through the standard application screening process. The specific provisions of the *Planning Act* to which s.59 applies are stated in O.Reg. 287/07, s.62 as:

- requests to amend official plans (*Planning Act*, s.22)
- applications to amend zoning by-laws (*Planning Act*, s.34)
- applications to amend zoning by-laws to authorize a temporary use (*Planning Act*, s.39)
- applications for approval to undertake development in a site plan control area (*Planning Act*, s.41)
- applications for minor variances (*Planning Act*, s.45)
- applications for approval of plans of subdivision (*Planning Act*, s.51)
- applications for consents (*Planning Act*, s.53)

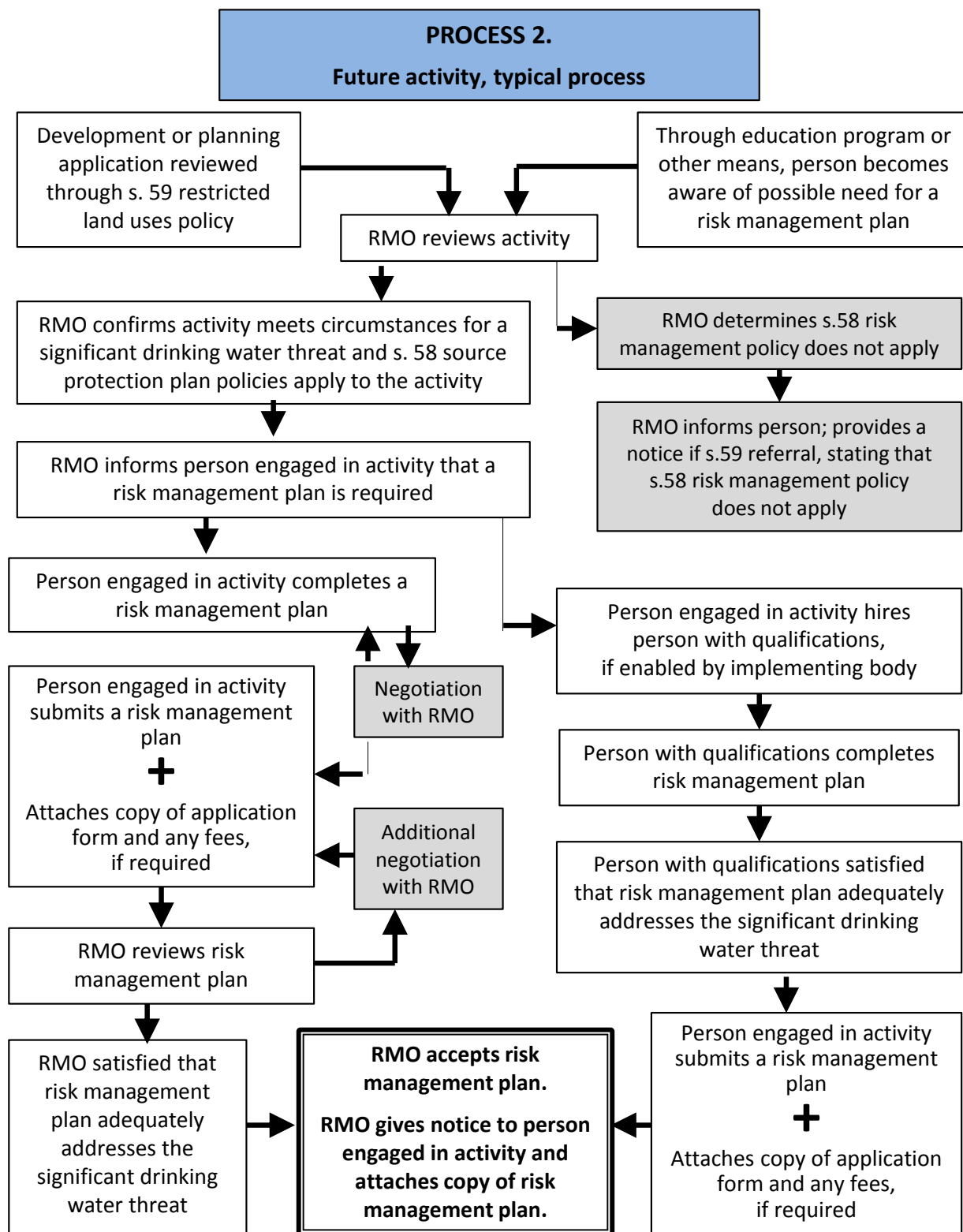
The s.59 notice should state that the application is either:

- subject to s.58, and an RMP has been agreed to /established, or
- not subject to either s.57 or s.58 requirements.

If an s.57 prohibition policy applies to an activity that is part of an application, the application cannot proceed so long as that activity is proposed to occur under circumstances that would generate a significant threat. However, prohibiting a specific activity under Section 57 does not necessarily prohibit a type of business or land use. The application may proceed if modifications were made to the proposed activity. For example, certain aspects of an activity proposed in the application could be carried out in a way that they are not a significant drinking water threat, such as smaller volume of storage, or the activity could be moved to a location within the property but outside of the vulnerable area. For full details on the application of s.59 for proposed activities, refer to Section E of Module 3.

If an s.58 risk management plan policy applies, a risk management plan will need to be negotiated in order for the application to proceed through the screening process. Once a risk management plan is agreed to, the Risk Management Official will issue a section 59 notice

stating that an s.58 policy applies to the proposed activity and a risk management plan has been established, and the application can then proceed through the municipal planning processes normally. Figure 8 provides an overview of the process



**Figure 8:** Process 2. Typical Process for a Future Activity.

### iii. **Process 3: Existing or Future Activity; Notices and Orders Issued by Risk Management Official**

Voluntary negotiation should be the first mechanism employed by Risk Management Officials when attempting to establish a risk management plan. In circumstances where the Risk Management Official and the person engaged in the activity cannot jointly negotiate a risk management plan, additional tools may need to be used by the Risk Management Official. Figure 9 is a flowchart of these additional tools.

#### **Notice of Intent to Establish by Deadline**

The RMO may issue a notice under s.58(7) of the *Clean Water Act*. This is the second step in the process to establish a risk management plan with the person engaged in the activity. This step follows the request for a risk management plan that has not resulted in compliance. To avoid an adversarial relationship, realistic deadlines and correspondence should precede this step.

The notice specifies the Risk Management Official's intent to establish a risk management plan by Order, if a risk management plan is not agreed to by the date specified in the notice. The date by which a risk management plan must be negotiated and agreed to must be at least 120 days after the notice is issued. A sample Notice of Intent form is provided in Section O: Appendix 4. The affected person has the option to waive the remainder of the notice period and consent in writing to the establishment of an risk management plan at an earlier date (CWA, s.58(9)). A sample consent form can also be found in Section O: Appendix 4.

The notice of intent should be written in clear and decisive language including appropriate dates and contact information for the Risk Management Official.

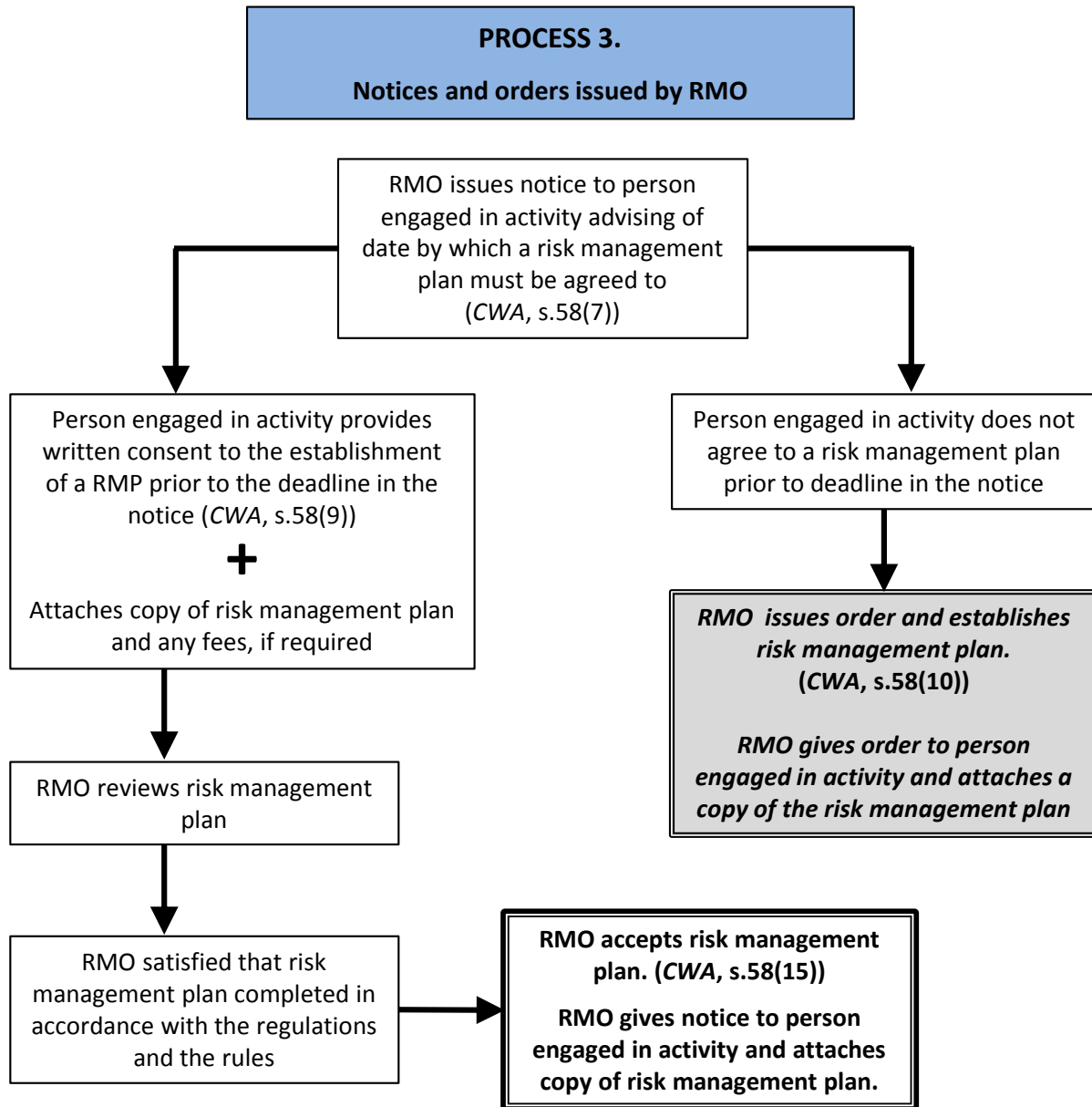
#### **Order to Establish**

In a situation where the deadline in a notice of intent for the risk management plan to be submitted and approved has passed, the next step is the issuing of an order. Under s.58(10) of the *Clean Water Act*, Risk Management Officials are required to establish a risk management plan for a designated activity by Order once the date indicated in a notice of intent has passed and there was no agreement on a risk management plan. A sample s.58(10) Order to Establish is provided in Section O: Appendix 4.

The Risk Management Official attaches the risk management plan to the Order and provides it to the person engaged in the activity. The risk management plan will govern the significant drinking water threat activity on the property and the person engaged in the activity must comply with the risk management plan as written. If the person wishes to appeal this process, the matter goes to the Environmental Review Tribunal by serving written notice to the Tribunal and the Risk Management Official/Risk Management Inspector. The Tribunal process is included in the *Clean Water Act* under s.70.



On rare occasions, the Risk Management Official may refuse to establish a risk management plan if the Risk Management Official believes that, based on past conduct, the applicant will not engage in the activity in accordance with the plan (CWA, s.58(16)). If this occurs, Risk Management Officials will need to write a notice explaining the rationale behind the refusal. Affected parties will have the right to appeal the refusal to the Environmental Review Tribunal.



**Figure 9:** Process 3. Process with Notices or Orders Issued by Risk Management Official.

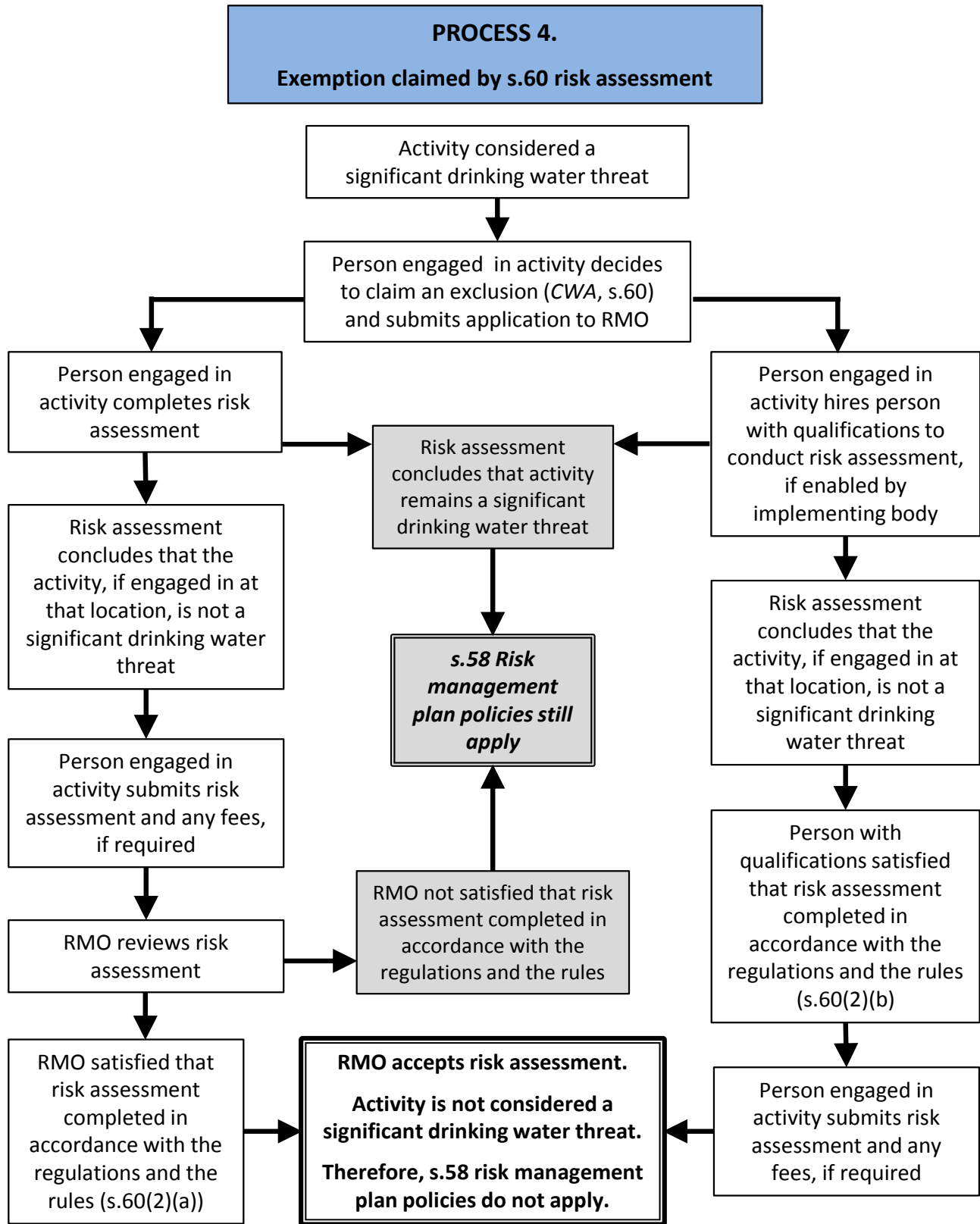
#### **iv. Process 4: Exemption Claimed by Risk Assessment**

A person engaged in an activity that requires the establishment of a risk management plan under s.58 may decide to apply for an exemption under s.60 of the *Clean Water Act*. Section 60 allows affected persons to challenge the designation of a significant drinking water threat.

The contents of the application may be set out by the enforcement authority. The risk assessment will be prepared by the person engaged in the activity or, if enabled by the enforcement authority, a Person with Qualifications.

In addition to negotiating and establishing risk management plans, Risk Management Officials are responsible for reviewing risk assessments under section 60 of the *Clean Water Act*. Following the submission of a risk assessment, the Risk Management Official must determine whether the risk assessment complies with the rules and regulations set out in the legislation. Based on these conclusions, Risk Management Officials must decide whether to accept the risk assessment or to refuse the application (*CWA*, s.60(2)(a)). If a Person with Qualifications prepares a risk assessment that concludes the activity is not a significant threat, the Risk Management Official will accept the risk assessment (*CWA*, s.60(2)(b)).

It is recommended that a letter be sent to the applicant from the Risk Management Official acknowledging receipt of the risk assessment. The letter should also specify the timeframe within which the Risk Management Official will make a decision whether to accept or reject the risk assessment. The steps involved in a risk assessment are outlined in Figure 10.



**Figure 10:** Process 4. Exemption Claimed by s.60 Risk Assessment

## v. Process 5: Exemption Claimed for Prescribed Instrument

To minimize the potential for regulatory duplication during plan implementation, O.Reg. 287/07 provides a way for a person to claim an exemption from the requirement for an s.58 risk management plan where the person holds a prescribed instrument related to the threat activity. An individual affected by a risk management plan policy may be relieved of these obligations under Part IV of the *Clean Water Act*, provided the person has obtained a prescribed instrument which conforms to the desired goal or outcome of the policy that the activity ceases to be, or never becomes, a significant drinking water threat (O.Reg. 287/07, s.61).

An exemption under s. 61 can be applied if:

- a prescribed instrument is already held that adequately regulates a threat activity, or
- a prescribed instrument is amended or obtained to address the threat activity.

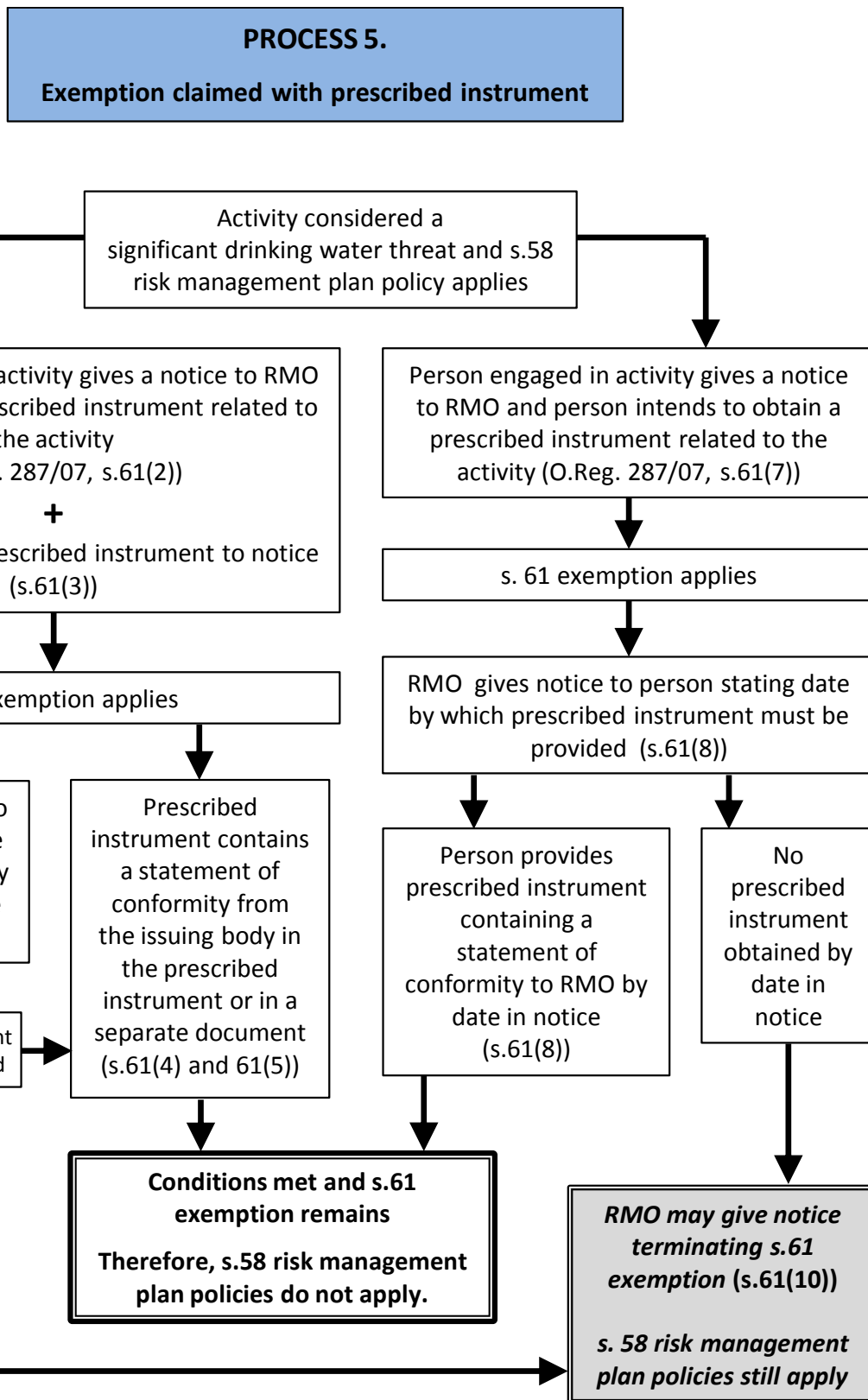
The process is initiated by the person engaged in the activity giving a notice (O.Reg. 287/07, s.61(2)) to the Risk Management Official. The notice must state that the person has a prescribed instrument that regulates the activity, or is intending to obtain one (s.61(7)). Where a person already has such an instrument, in addition to giving a notice, that person must also provide a copy of the regulating instrument. In the case where a person does not have a prescribed instrument but intends to obtain one, that person must provide a notice under s.61(7) to the Risk Management Official indicating the actions they will take to amend or obtain a prescribed instrument. The Risk Management Official will reply with a notice (under s.61(8)) indicating the deadline to provide a copy of the instrument.

In addition, the person must also provide a statement of conformity that indicates the instrument conforms to the significant drinking water threat policies in the source protection plan. This is provided either as a statement within the instrument itself or as a separate document from the person/body that issued or created the instrument. If a statement of conformity is not identified, the Risk Management Official will give a notice to the applicant (under s.61(6)) in writing specifying the date by which the requirements need to be met and copies need to be provided.

The determination of whether or not the instrument conforms with the significant drinking water threat policy is the sole responsibility of the person or body that issues, amends or otherwise creates the instrument (in many cases, the Crown).

In any situation where the Risk Management Official specifies a date in a notice under s.61(6), (8) or (9), the time it will take for the body responsible to create or amend the instrument (as necessary), or to issue a statement of conformity will need to be considered. If a person fails to give the Risk Management Official anything by the date specified by a notice under s.61(6) or s.61(8), the Risk Management Official may give notice (s.61(10)) terminating the exemption (by a specific date). The Risk Management Official may extend the date to provide documents in

either situation at their discretion. Figure 11 provides an overview of the s.61 process.



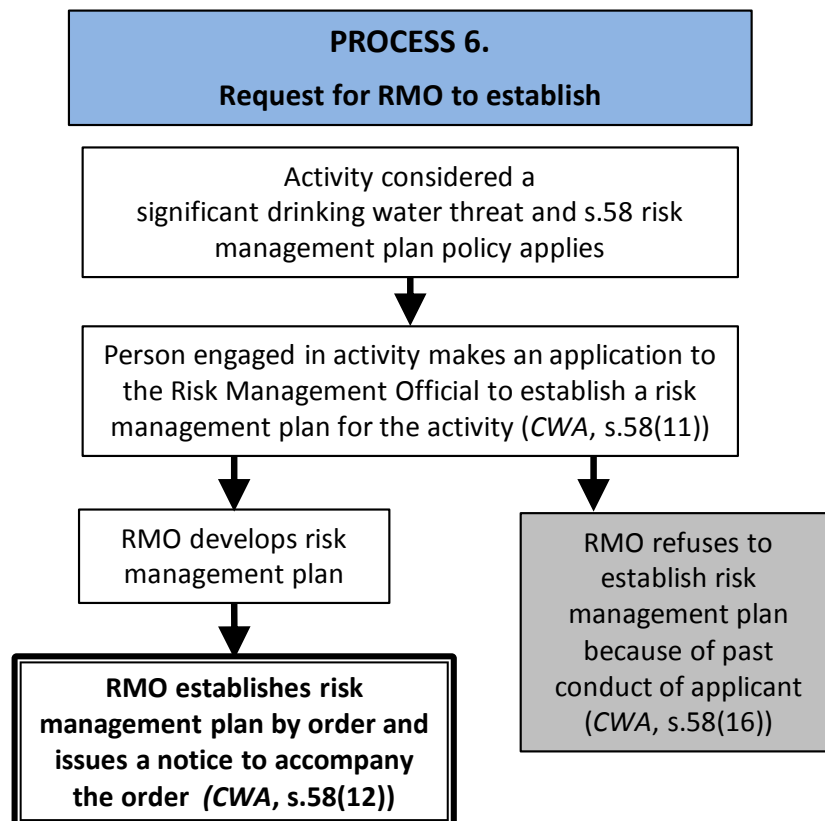
**Figure 11:** Process 5. Exemption Claimed with Prescribed Instrument.

The role of a Risk Management Official includes understanding this exclusion process, communicating the steps involved for exclusion, and answering questions from the landowner. It is not the role of a Risk Management Official to act on behalf of the landowner and determine if an exclusion applies or contact the Crown for an exclusion.

**vi. Process 6: Request for Risk Management Official to Establish**

A person engaging or proposing to engage in an activity subject to s.58 policies may apply to have a risk management plan established for them, under s.58 (11) of the *Clean Water Act*. Under these circumstances, the affected person will request that the Risk Management Official create a risk management plan on their behalf, rather than negotiate one with the Risk Management Official. This request can only be made if a section 58 risk management plan policy applies to the activity in question.

If such a request is made, the Risk Management Official must establish a risk management plan by Order under s.58(12) and issue a notice to accompany the order. However, the Risk Management Official has the ability to refuse to establish a risk management plan if the past conduct of the applicant affords reasonable grounds to believe that the applicant will not engage in the activity in accordance with the risk management plan (s.58(16)).



**Figure 12:** Process 6. Request for RMO to Establish a Risk Management Plan.

## vii. Process 7: Interim Risk Management Plan (s.56)

When an existing drinking water threat has been identified as posing too great of a risk to wait for source protection plan approval for action, a Risk Management Official can use an interim risk management plan to manage the activity until the source protection plan comes into effect. Once the interim risk management plan has been established, the activity can only be engaged in at that location, in accordance with the requirements outlined in the interim risk management plan.

Through additional notice and order power, Risk Management Officials are able to set the deadlines by which risk management plans must be negotiated for a specific activity. If plans cannot be negotiated by deadlines set out in the notice, Risk Management Officials have the authority to establish plans by Order. Find samples of s.58 notifications and letters regarding risk management plans in Section O: Appendix 4. They can be modified to apply to s.56 interim risk management plan situations.

The interim risk management plan no longer applies once the source protection plan comes into effect and either: a) the activity is prohibited by a s.57 prohibition policy in the source protection plan; or b) the source protection plan does not designate the activity or the location of the activity under a s.58 policy.

## G. Negotiating a Risk Management Plan

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It is advisable to promote voluntary negotiation between all parties wherever possible on the content of a risk management plan. This will ensure that persons who are affected by a risk management plan are properly informed and involved. It is also the most cost-effective approach for all parties involved. The negotiation process should consider any risk management measures currently in place, implementation timing and costs. If it is necessary to establish an risk management plan by Order, the process will become more adversarial.

### Key Roles

The Risk Management Official and the person engaged in the activity will jointly review various risk management measures available and negotiate those that will be most suitable to reduce the risks associated with the significant drinking water threats. The agreed upon measures will be written into the risk management plan.

The person creating the risk management plan may vary. It may be the Risk Management Official, the person engaged in the activity (and/or property owner), a third party consultant,

***Key individuals and groups in negotiating a risk management plan:***

*Risk Management Official*

*Person engaged in the activity*

*Person with Qualifications (if enabled by municipality or delegate)*



or a Person with Qualifications in certain circumstances. It is anticipated that the plan will reflect the negotiation efforts of the parties involved.

## **i. Negotiation Process/Options**

The typical risk management plan negotiation process can be broken down into four key steps:

- notification
- pre-negotiation preparation
- negotiation of risk management plan with person engaged in the threat activity
- agreement

The following section will provide details about each step of the process, and highlight some of the negotiation options available to Risk Management Officials.

### **Step 1: Notification**

Prior to commencing the negotiation process, the Risk Management Official will need to provide affected parties with notification of the need for an RMP. Notification can be accomplished by issuing a Notice of Requirement (*CWA*, s.58(4) and 58(7)). Notices should inform affected persons of their obligations under the Act and source protection plan policies, as well as set deadlines for the agreement of risk management plans. Further information on notification strategies are provided in Section G (ii).

### **Step 2: Pre-negotiation Preparation**

Risk Management Officials may want to refresh their understanding of the applicable source protection plan policies. Risk Management Officials may also want to take special note of any timelines set in the policies, and plan the negotiation process accordingly to ensure that plans will be established prior to deadlines.

To ensure a good understanding of the activity, and gauge the complexity of the risk management plan that will be required, the Risk Management Official should review a number of resources including, but not limited to:

- property features in relation to the threat activity and the vulnerable area
- existing management measures
- applicable measures from the Risk Management Measure Catalogue
- industry standards, procedures and best management practices applicable to the activity
- other applicable documents that may indicate the manner in which the activity is being engaged (i.e. existing municipal licenses, permits, site conditions, applicable by-laws)
- source protection plan and Assessment Report

- information about the threat activity obtained through the Risk Management Official’s order for a s.61 Report on Activity (if the Risk Management Official has exercised this option)

### **Step 3: Negotiation with Person Engaged in Activity**

The risk management plan development process may occur through voluntary negotiation, prescribed procedures, or a combination of these. The voluntary negotiation process will in most cases be a co-operative process where all parties involved engage in risk management plan development. The regulations enable various provisions that Risk Management Officials can elect to use during the process to establish a risk management plan. These procedures, such as an s.58 notice or order, are described in Figure 9 and Section F (iii).

#### ***Negotiation Styles***

The negotiation style used by the Risk Management Official may vary depending on municipal circumstances, the complexity of the threat activity, whether standard processes and forms can be used, and the amount of dialogue needed to settle on an appropriate plan. Two of the many possible approaches that the Risk Management Official may consider using are the “kitchen-table” approach and the review process approach. Other negotiation styles can also be considered.

The “**kitchen table**” approach is the less formal, more personalized approach to risk management plan negotiation. All parties involved come together to negotiate back and forth, until they can come to an agreement on the terms of the plan. For the kitchen table approach to be effective, all parties involved must have a good understanding of the issues to be addressed, clearly understand their roles and responsibilities in the process, and be willing to communicate, collaborate, and deal fairly. This approach may not be the best choice when there is a large number of risk management plans to be developed, due to the amount of time that may be necessary for each negotiation. However, the kitchen table approach may be the most effective and efficient way to undertake negotiations for complex activities, as it allows for detailed discussion and input from the person engaged in the activity.

The **review process approach** is a more structured, formal and prescriptive style that can be used in establishing a risk management plan. This approach may involve the implementation of a formalized, multi-step process during which proponents submit formal applications that are screened by staff for accuracy and completeness. Revisions may be requested before the risk management plan is established. Standardized templates could be used and timelines could be set for each step of the process. Risk management plans developed through this approach will often be more structured in nature.

### **Step 4: Agreement**

If a risk management plan is agreed to through voluntary negotiation, the Risk Management Official will issue a Notice of Agreement under s.58 (6) of the *Clean Water Act*, confirming the

agreement on risk management plan, and attach a copy of the plan. Once a plan is agreed to, the activity must be carried out in accordance with the terms. Find a sample of a Notice of Agreement in Section O: Appendix 4.

## **ii. Notification**

Provisions in the *Clean Water Act* and O.Reg. 287/07 require that persons believed to be engaging in a significant drinking water threat activity receive notifications from the source protection committee at specific times. These impacted persons should have received notification in the past from the local source protection committee regarding Assessment Report preparation, source protection plan commencement, and source protection plan consultation.

In addition to these required notifications, Risk Management Officials will also want to notify persons subject to s.58 policies of the commencement of RMP negotiations. Initial risk management plan negotiation notifications should be used as a means of education and engagement about obligations under the source protection plan. If carried out tactfully, initial communication can set the stage for a cooperative and productive negotiation process. A well-communicated notification process will help build honest working relationships and encourage collaboration between the parties involved. The following section will outline some of the key objectives Risk Management Officials should aim to meet through their initial notification efforts.

### ***Two-Way Communication***

In order to implement an effective negotiation process, the municipality will have to first establish two-way communication with the right people. Two-way communication occurs when both parties involved establish a dialogue. The municipality will want to initiate this dialogue through the risk management plan notification process. Employing the most appropriate method of initial notification will increase the chances of establishing an effective dialogue. Letter(s) will be important in all cases and care should be taken in how the letter is worded. Other methods of communication, such as phone calls and site visits, may also be options.

The Risk Management Official may want to identify who they will need to engage, and tailor the notification approach to these individual groups. Where the person engaged in the activity is not the property owner, it may be a best practice for the Risk Management Official to also communicate with the property owner to make that person aware of activities related to the property.

To further encourage two-way communication, Risk Management Officials should also clearly highlight opportunities for feedback about the information communicated through notification.

### ***Clarity, Accuracy, and Relevance***

In order to build good relations, Risk Management Official should ensure that initial notifications contain information that is clear, accurate, and relevant to affected individuals. The initial notification should be structured in a way that helps affected individuals understand

the risk management plan process and policies, and their role in the procedure. This will allow for informed decision-making later on in the negotiation phase of the process.

The initial notification should also clearly highlight accessible resources to help affected parties better understand the information and allow them to contribute more effectively to the negotiation process.

### ***Timeliness***

Individuals, businesses, and industries that will need to conform to risk management plan policies should be contacted well in advance of any specific deadlines in the source protection plan to allow them to build the knowledge they need to support the implementation process. Initial notifications should clearly highlight all relevant timelines associated with risk management plan negotiation and establishment.

### ***Transparency***

Overall, the aim of the initial notification should be to establish the integrity of the risk management plan process and ensure that all of those involved understand the main objectives of the process. Risk Management Officials should articulate preferred outcomes through initial notification efforts. Communicating objectives and preferred outcomes from the beginning is an important part of building open and honest working relationships and ensuring that all of those involved clearly understand the boundaries of the process.

Clearly articulating the expectations of each party involved will allow affected persons to more effectively participate and prepare for the process. Risk Management Officials will also want to mention available support resources and should identify appeals and procedural options available to affected persons during the process (e.g., the option for an s.60 Risk Assessment).

### ***Collaboration***

Initial risk management plan notification efforts should demonstrate a commitment to collaboration and negotiation. It is important to articulate that the process will seek mutually beneficial outcomes and that affected parties will be legitimate contributors; their involvement is an essential part of developing a risk management strategy that will work for them and benefit the community.

## **iii. Process for Determining which Risk Management Measures to Include**

Many factors will need to be taken into consideration when considering the specific content requirements of a risk management plan. Figure 13 provides a useful seven-step process for the Risk Management Official and person(s) engaged in threat activities to follow in order to identify appropriate risk management measures.



**Figure 13:** Steps for Identifying Appropriate Risk Management Measures to Include in a Risk Management Plan

### **Step 1: Review the source protection plan policies**

The applicable policy(ies) in the local source protection plan should be reviewed prior to development of a risk management plan. The approach taken to writing the s.58 policies varied across the province. In some cases the source protection plan policies will outline specific measures to be included, while in others the Risk Management Official may be directed to include current industry standards and best management practices in the risk management plan. The policies may simply state that the risk management plan must ensure the activity ceases to be a significant drinking water threat.

### **Step 2: Consider site-specific conditions and limitations**

Site-specific conditions and limitations should be explored, including:

- hydrogeologic or hydrologic conditions
- vulnerable zone to which the RMP would apply
- number and type (s) of threat activities occurring/proposed to occur onsite
- associated risk to drinking water
- scale of operations
- operational constraints
- financial implications

### **Step 3: Check for risk management measures currently in place**

The negotiation of the risk management measures take into consideration the current measures in place. In many cases, the facility may be required to have protective measures in place to carry out the daily operational activities under other pieces of legislation. To identify these existing measures, discussions or a site tour with the person engaged in the activity may be helpful.

### **Step 4: Conduct a gap analysis**

There may be a difference between the existing measures that are currently applied to an activity and those measures that should be in place to satisfy the requirements of the risk management plan. A gap analysis can help to determine where additional can help. The analysis will also need to take the source protection plan policy requirements into consideration.

In some cases, the gap analysis will note that the gap is narrow, and only a few measures may need to be put in place to meet the 'ceases to be significant' test. In other cases the analysis may conclude that a large gap exists, and additional measures will need to be added to the list. If it is determined that the threat is adequately managed by existing measures, there may not be a need for additional measures.

### **Step 5: Select appropriate risk management measures**

Every source protection plan has as its objective that an activity ceases to be a significant drinking water threat or never becomes a significant drinking water threat (O.Reg. 287/07, s.22(1)(2)). That is to say, the threat is suitably managed or mitigated. The measures contained in the risk management plan should collectively achieve the test of ‘ceases to be a significant threat’ when they are implemented.

After completing an assessment of existing measures, the Risk Management Official should consider the available risk management measures. These may be best management practices used within that industry or adaptable to the situation. One source of information on these types of measures is the Provincial Risk Management Measures Catalogue. The Catalogue is a Ministry-developed tool to aid in risk management plan development. It provides a list of protective measures that could be put in place to fulfill the requirements of source protection plans. As well, the Catalogue can sort the recommended measures by activity and whether or not the measure is applicable to groundwater or surface water supply systems. The Catalogue provides some other specific insights about each measure. Figure 3 provides a screen shot of the risk management measures catalogue.

Find the Risk Management Measures Catalogue at <http://www.trcgauging.ca/RmmCatalogue/>

### **Step 6: Apply professional judgment**

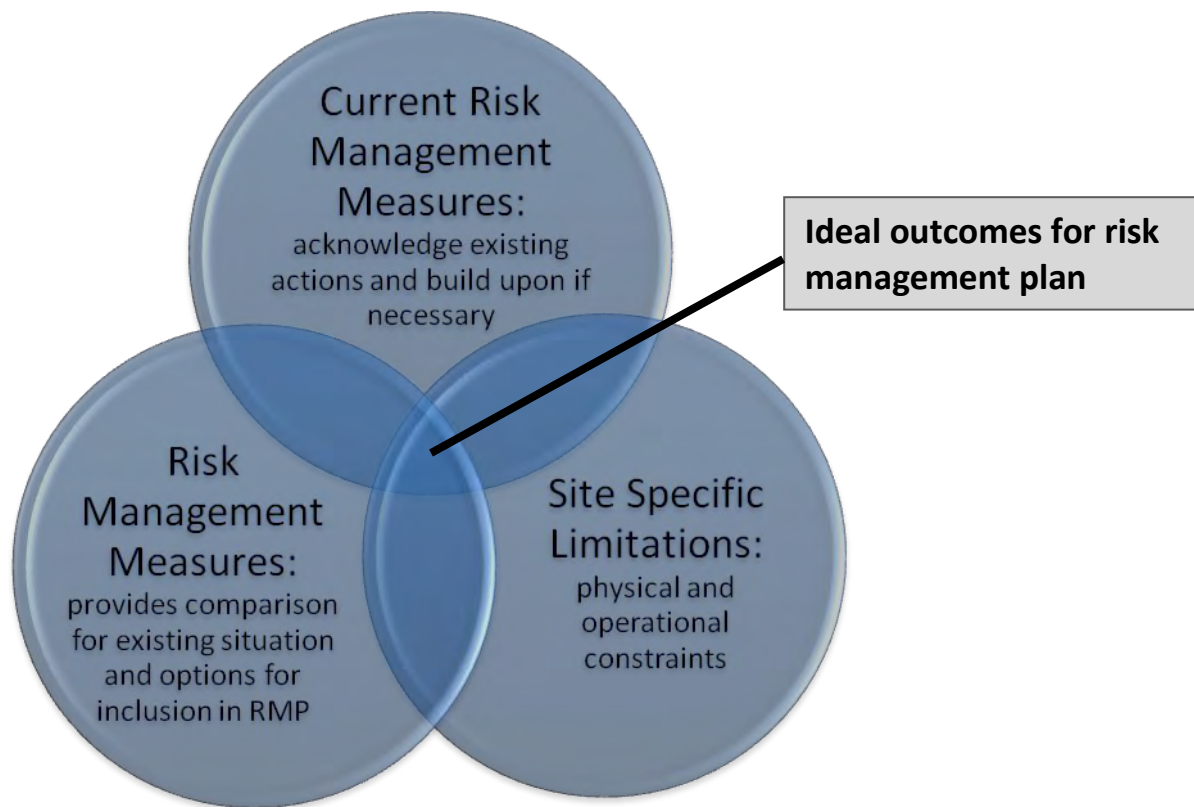
When finalizing the risk management measures to be put in place, the Risk Management Official will need to apply professional judgment. Also, the Risk Management Official will need to ensure that the measures put in place will pass the cease to be significant test, and are practical and feasible to implement. When determining the practicality and feasibility of certain risk management measures, the items discussed in steps 1 through 5 will need to be considered as a whole. Applying professional judgment in developing the risk management plan should occur in all stages of negotiation.

Applying professional judgment in developing the risk management plan should occur in all stages of negotiation. The Risk Management Official will need to ensure that the measures put in place will meet the ‘ceases to be significant’ test of s.22 of the Act, and are practical and feasible to implement. When determining the practicality and feasibility of certain risk management measures, the items discussed in steps 1 through 6 will need to be considered as a whole.

Figure 14 illustrates how some of these elements are factored into deciding which measures to incorporate into a risk management plan.

In some cases, the Risk Management Official may not have the appropriate level of knowledge to be confident that the selected measures would meet the ‘ceases to be significant’ test, and are practical, implementable and feasible. In this situation it may be appropriate for the Risk Management Official engage a technical expert to assist in identifying the best approach.





**Figure 14:** Considerations for Use of Risk Management Measures.

**Step 7: Develop an implementation schedule**

The implementation schedule will outline the timeline for putting each measure in place. Some measures will be easy to implement, and could be implemented right away, while other measures may take a considerable amount of time or effort to implement. For example, a risk management plan addressing a DNAPL threat may require that inspections of existing storage tanks and drums commence immediately; that a spill contingency plan be developed and implemented within six months; and that a commitment be made to phase to an alternative product when such a product becomes available if it reduces the risk to drinking water. Establishing an implementation schedule will occur as part of the negotiation process with the person engaged in the activity. However, the Risk Management Official will need to consider the risks to drinking water and use professional judgment when negotiating and agreeing to an implementation schedule.

## H. Enforcing the Risk Management Plan

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The goal of inspections will be to verify compliance with the terms of established risk management plans, as well as adherence to any s.57 prohibition policies. Inspections are an effective way for enforcement authorities to manage activities subject to compliance, and enforce the requirements of source protection plan policies. If a source protection plan policy is in effect and designates an activity as one that requires a risk management plan, then a person shall not engage in that activity within that area unless a risk management plan has been agreed to or established. For existing activities, a risk management plan is not required until such a date as specified in the source protection plan policy or as specified in a notice issued by the Risk Management Official.

### Key Roles

The Risk Management Inspector will play the primary role in inspections and enforcement, while the Risk Management Official may become involved at various stages in the enforcement process. The Risk Management Inspector may use powers conferred by sections of the *Clean Water Act* and its regulations to gain property entry and to collect materials relevant to the investigation. Risk Management Officials and Risk Management Inspectors must have the prescribed qualification of completing a course, as noted in O.Reg. 287/07, s.54. The enforcement authority may also wish to have their appointed Risk Management Official/Risk Management Inspector complete additional training, such as enforcement techniques.

***Key individuals and groups in enforcing a risk management plan:***

*Risk Management Official*

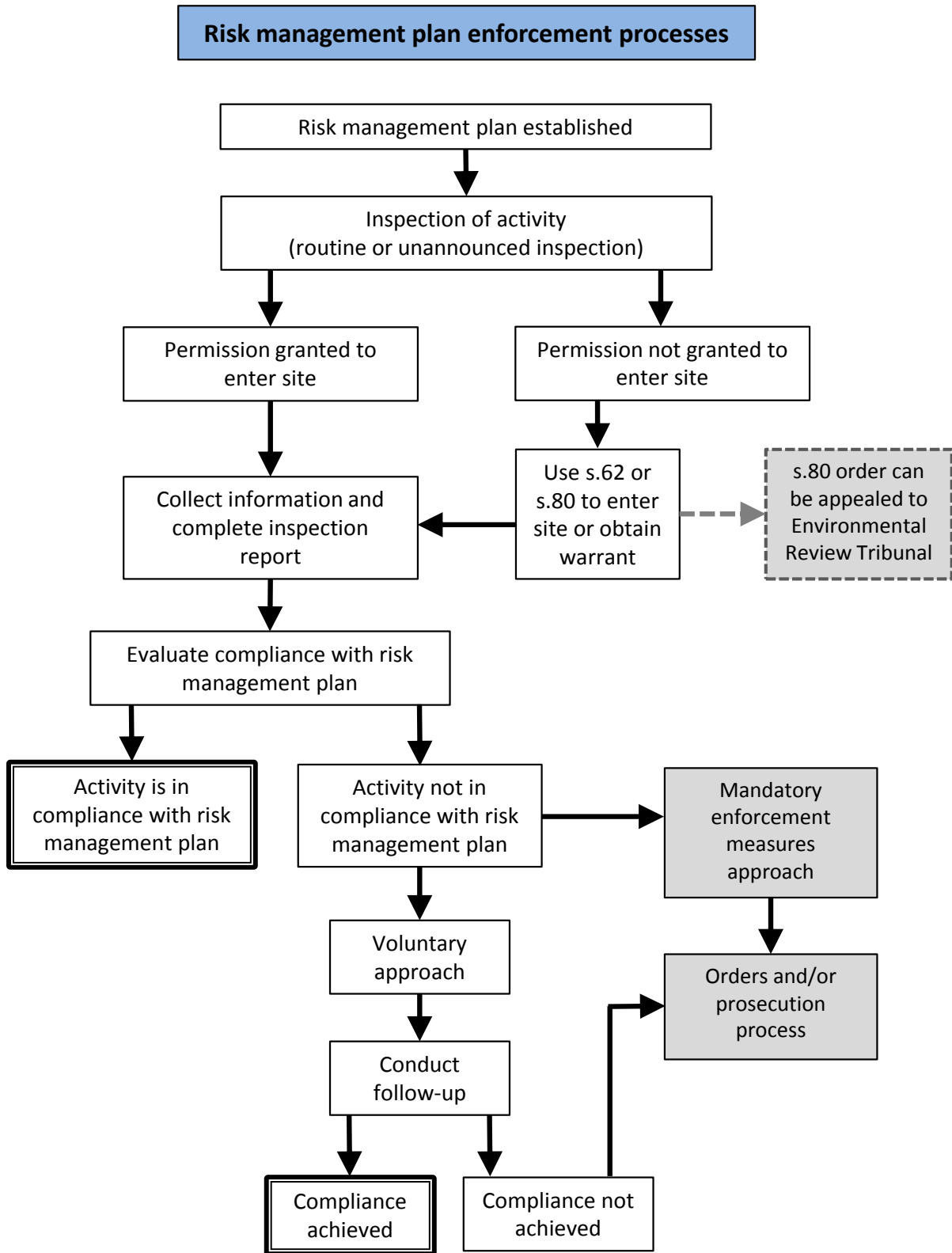
*Risk Management Inspector*

*Person engaged in the activity*

### i. Overview of Enforcement Processes

Risk Management Officials and Risk Management Inspectors may use professional judgement in deciding on the frequency of inspections, the conduct of the inspection and the enforcement approach used should an activity not be in compliance with the risk management plan or Part IV requirements. The *Clean Water Act* and O.Reg. 287/07 enable various tools to assist with enforcement of a risk management plan, while stipulating the conditions under which these tools can be utilized, and allow for persons engaged in activities to have opportunities for appeal.

Figure 15 provides an overview of the enforcement process.



**Figure 15: Enforcement Process (Adapted from York Region, 2011)**

## ii. Timelines for Enforcement of Risk Management Plans

The policies in a source protection plan have legal effect once the source protection plan is approved and comes into effect. Future activities to which s.58 policies apply must conform to the policies from the day the source protection plan takes effect. The Risk Management Inspector can also take appropriate action should an activity commence without first receiving an approval for a risk management plan. Where an s.58 risk management policy applies to an existing activity, the source protection plan policy usually gives a set timeframe by which the person engaged in the activity must have a risk management plan in place if the activity is to continue.

**Table 2: Overview of Enforcement Timeframes**

<b>TASK</b>	<b>TIMELINE</b>
s. 57 prohibition policies for future activities	Effective date of source protection plan
s. 58 risk management policies for future activities	Effective date of source protection plan
s.57 prohibition policies for existing activities	Minimum of 180 days after effective date of source protection plan or as stated in source protection plan policy
s. 58 risk management policies for existing activities	As stated in source protection plan policy; if not stated, then will be determined by Risk Management Official

## iii. Approaches to RMP Enforcement

This section outlines several approaches enforcement authorities may want to consider when instituting their own inspection programs.

- 1) Regional** – Enforcement authorities may want to organize inspections according to region. Using the regional approach, inspections would be carried out according to their geographic location within the vulnerable area. All of the regulated activities located within a designated geographic region are inspected during a single round of inspections. When all of the inspections for one particular region (or regions) are completed, another set of inspections can commence in a different region. To implement this approach, enforcement authorities will want to establish the boundaries of each inspection region, and set appropriate timelines for the completion of each round of inspections. Two inspection regions identical in size may contain a very different number of activities subject to

inspections. Defining appropriate inspection region boundaries will be crucial for the effective and timely delivery of regional enforcement programs.

**2) Risk-based** – A risk-based inspection program will consider the potential of each regulated activity to cause an adverse effect on drinking water sources and human health. If enforcement authorities choose to implement the risk-based approach, it will be necessary to consider several risk criteria associated with each activity, such as:

- compliance history
- past environmental performance
- nature/type of activity
- vulnerability score at the location of activity
- proximity to municipal intakes and wells
- time elapsed since last inspection (if applicable)

Based on the criteria above (and any other relevant criteria), the Risk Management Official and Risk Management Inspector will prioritize inspections. Generally, inspections for higher risk activities will be carried out first.

**3) Operation/Sector-based** – Enforcement authorities may want to target specific sectors or operations during each individual round of inspections. In most circumstances, this would entail targeting inspections at a particular group of industries, or businesses most commonly associated with similar types of threat activities. Using this approach, Risk Management Officials and Risk Management Inspectors will have the opportunity to gain an understanding of the risks associated with each type of operation or sector and build an expertise in the associated best management practices and risk management measures. This approach will also allow Risk Management Inspectors the opportunity to gain the technical understanding of procedures, equipment, and processes that will be necessary when carrying out complex inspections.

**4) Combined** – Enforcement authorities may decide that a combination of methods 1, 2, and 3 may be the best approach for establishing an effective inspection program in their communities. For example, the risk management office may decide to undertake inspections according to region, and further prioritize the inspections according to risk or sector. Overall, enforcement authorities should choose the inspection approach that best addresses the number and types of regulated activities in their municipalities.

#### **iv. Inspection Scheduling**

Once an inspection program has been established, enforcement authorities may want to further organize the enforcement program according to **scheduled** and **unscheduled** inspections.

##### ***Scheduled Inspections***

Scheduled inspections occur when Risk Management Inspectors consult with affected persons, prior to conducting the inspection. Inspectors will advise the affected persons of their intent to perform an upcoming compliance inspection. Scheduled inspections are preferable when an inspector wants to ensure that the appropriate person is onsite on the day of the inspection, and it will give affected persons an opportunity to gather useful information/documentation that may aid the inspection process. Scheduled inspections may also serve as a tool for encouraging good performance. Those with a good compliance history may be rewarded by being informed of upcoming inspections in advance. Scheduled inspections also give affected persons the opportunity to arrange inspections at a time that is convenient for them, which may also be considered an incentive for good performance.

##### ***Unscheduled inspections***

Under certain circumstances, it may be necessary for enforcement authorities to conduct unscheduled inspections. Unscheduled inspections may occur in response to information or complaints received from the public regarding the regulated activity. A history of non-compliance may also encourage Risk Management Inspectors to conduct unscheduled inspections. Emergency situations may also prompt unscheduled inspections.

Unscheduled inspections will allow the Risk Management Inspector to observe day-to-day compliance with Part IV policies. More specifically, it will allow the Risk Management Inspector to more accurately verify that the terms of risk management plans are being followed on a regular basis. However, it should be recognized that the facility staff that would be important to the inspection may not be present onsite if advanced notice is not given. Also, poor timing of the inspection may impact upon operations or production at the facility.

##### ***Frequency of Inspections***

When deciding on inspection timelines, enforcement authorities should give consideration to implementation and monitoring schedules outlined in risk management plans. Enforcement authorities may want to establish predetermined timelines for recurrent inspections. For example, the enforcement authority may decide that activities subject to Part IV policies will be subject to inspections by the Risk Management Inspector every five years. Alternatively, the enforcement authority may decide that the frequency of inspections should depend on compliance history. Using this approach, operations with a history of non-compliance will be subject to more frequent inspections, while operations with good performance histories will be rewarded with less frequent inspections.

The nature of the activity may also impact the inspection cycle. It is reasonable that a different inspection frequency would be applied to major industrial or commercial facilities with multiple threat activities, as compared to a single threat activity in a residential setting.

## **v. Inspection Objectives**

During inspections, Risk Management Inspectors can verify if compliance with Part IV policies is being achieved. More specifically, Risk Management Inspectors would confirm that:

- Activities are being conducted in accordance with identified Risk Management Measures (i.e. all measures identified in the risk management plan are in place and being followed).
- All provisions outlined in the risk management plan are in place and being implemented according to established timelines.
- Monitoring and reporting practices are in place and being carried out according to the terms of the risk management plan.
- Any corrective actions specified in the risk management plan are/have been implemented.

When carrying out inspections, Risk Management Inspectors should aim to review and confirm the accuracy of the information presented in the risk management plan, including administrative and source protection program area information. Risk Management Inspectors should ensure that previously documented threat activities still exist and meet the circumstances of a significant threat. They should note any changes in quantities, physical location or areal extent. Risk Management Inspectors should also document any activities onsite that may not have been previously identified and should be incorporated into the risk management plan.

## **vi. Methods for Addressing Non-compliance**

If, following an inspection, a non-compliance with the terms of a risk management plan is identified, the Risk Management Inspector will need to determine how to respond to the non-compliance to ensure that future compliance is achieved. Two of the many possible approaches to resolving non-compliance are the voluntary approach or mandatory enforcement measures approach.

The Risk Management Inspector should base the approach on several general considerations, which may include:

- The severity/significance of non-compliance (i.e. the severity of the actual or potential impact to drinking water sources).

- Compliance history (if one exists); if there is no risk management plan compliance history, the Risk Management Inspector could also consider the operation’s compliance with other programs.
- Any progressive sanctions used to address the non-compliance in the past.

Ultimately, the decision on the most appropriate response rests with the Risk Management Inspector. Risk Management Inspectors should implement the approach they feel will achieve the best outcome, while reducing the likelihood of the offence occurring again.

### ***Voluntary Approach***

Risk Management Inspectors may choose to issue a verbal or written request to the person engaged in the activity to correct a non-compliance situation within a certain period of time. The issuance of a compliance request is the voluntary approach. The approach is considered “voluntary” because legal instruments requiring mandatory action are not used; rather the Risk Management Inspector uses negotiation skills to reach a solution with the person engaged in the activity to correct the non-compliance.

The request may recommend a course of action, or set out directions that the affected person should take to bring the activity back into compliance, as well as set deadlines by which the corrective actions will need to be implemented. After receiving a request from the Risk Management Inspector, the affected person should then take the initiative to carry out the actions outlined in the request. A Risk Management Inspector request may require compliance through a variety of activities, such as corrective actions or education.

The Risk Management Inspector may request the person engaged in the regulated activity to follow up once the actions highlighted in the request are completed. Alternatively, the Risk Management Inspector may decide to follow up on the actions to ensure the activity has been brought back into compliance. The voluntary approach should generally be the first approach used in most situations.

### ***Mandatory Enforcement Measures Approach***

The mandatory enforcement measures approach makes use of legal instruments. The Risk Management Inspector may opt to use these measures as the primary steps to address a non-compliance incident. These measures may also be part of a progressive sanction to address either one-time or repeat non-compliance occurrences that have not been addressed despite previous requests from the Risk Management Inspector per the “voluntary” approach.

A brief description of many of the available enforcement measures are described in Section H (vii). An example of the progressive sanction type of enforcement is described in Section H (ix).



## **vii. Legal Instruments Available to Risk Management Officials and Risk Management Inspectors for Addressing Non-compliance**

### **Property entry and information gathering**

Under s.62 of the *Clean Water Act*, Risk Management Inspectors have the authority to enter property without a warrant for the purpose of carrying out an inspection as long as reasonable notice of entry has been given to the occupier of the property. However, if the property owner actively obstructs the inspector from entering, the Risk Management Inspector may have to obtain an inspection warrant to carry out their enforcement duties. The Ministry of the Environment's property entry training course covers entry protocols in further detail.

When carrying out inspections for the purpose of verifying Part IV compliance, Risk Management Inspectors have the authority to:

- collect samples, conduct tests and measurements, and carry out any necessary excavations,
- operate, use or set in motion any machine or thing that the person requires,
- examine, record, or copy any documents or data, or require the production of any documents or data,
- remove documents or data and make copies, and
- require any person to answer any reasonable inquiries related to the purpose of the entry. (*CWA*, s.62(8)).

The Risk Management Inspector is not permitted to remove any documents without providing a receipt for them. Additionally, if a property is entered, the Risk Management Inspector should do everything practicable to restore the property to the condition it was in prior to the entry. (*CWA*, s.62)

### **Enforcement Order**

Orders may be issued under Part IV of the *Clean Water Act*. The Act provides Risk Management Officials and Risk Management Inspectors with the authority to issue Orders according to prescribed criteria. RMOs and Risk Management Inspectors can issue various types of orders depending on the nature and circumstances of the contravention. Table 3 summarizes these powers.

When enforcement orders are issued, they create a new legal requirement that obliges affected persons to undertake (or cease) specific actions within established timelines. For example, a Risk Management Inspector may issue an Order that outlines the actions a person must take in order to achieve compliance with a provision in their risk management plan. Orders are specific in function and purpose and clearly outline the consequences of failing to comply with an outlined requirement. Before issuing an Order, Risk Management Inspectors should clearly

indicate the facts upon which the Order will be based to the person affected. This will allow the affected person the opportunity to address any perceived issues they may have.

**Notice of Intention to Cause Work to Be Done**

If an Enforcement Order has been issued and the affected person has refused to comply, or has not complied, the Risk Management Official may issue a Notice of Intention to cause work to be done under s.64 of the Act. This notice informs the person engaged in the activity that the Risk Management Official will cause work to be done that is required to bring the activity into compliance with Part IV requirements.

**Table 3. Various Types of Orders Issued by the Risk Management Official and Risk Management Inspector**

<b>Type of order</b>	<b>Issued by</b>
Order to comply, by a date specified in the Order, with directions set out in the Order relating to achieving compliance with a s.57 prohibition (CWA, s.63(1)(1))	Risk Management Inspector
Order to cease engaging in the activity that constitutes the contravention of a s.57 prohibition (CWA, s.63(1)(2))	Risk Management Inspector
Order to comply, by a date specified in the Order, with directions set out in the Order relating to implementing the provision of the risk management plan (CWA, s.63(4)(1))	Risk Management Inspector
Order to seek an amendment to the risk management plan (CWA, s.63(4)(2))	Risk Management Inspector
Order to report to the Risk Management Inspector on compliance with the order (CWA, s.63(1)(3) and s.63(4)(3))	Risk Management Inspector
Order to prepare a report on an activity (CWA, s.61(1))	Risk Management Official
Order establishing or amending an RMP (CWA, s.58(10) and s.58(12))	Risk Management Official
Order to pay costs (CWA, s. 67)	Risk Management Official
Order requiring a person to grant access to the property (CWA, s.80)	Risk Management Official or Risk Management Inspector

### **viii. Transition from Inspection to Investigation**

The intent of inspections under the *Clean Water Act* is to verify compliance with Part IV policy requirements. An investigation is initiated when the inspector has reasonable grounds to believe that a breach of compliance has taken place and evidence needs to be gathered to serve as proof of an offence.

To commence an investigation, the Risk Management Inspector or Risk Management Official must first verify that reasonable grounds exist to lay a charge. In other words, the Risk Management Inspector/Risk Management Official must confirm that there is a set of facts or circumstances that provide good reason to believe an offence has been committed. When a Risk Management Inspector/Risk Management Official has reasonable grounds to believe that an offence has occurred, they will need to collect evidence to provide proof of the offence.

When conducting an investigation, the Risk Management Inspector will, in most circumstances, be required to obtain a search warrant. Inspectors should always seek legal advice if they are thinking about obtaining a warrant. It is important to remember that when information gathered from an inspection leads to an investigation, the Risk Management Inspector should ensure that all reasonable actions are taken to prevent a violation of the Canadian Charter of Rights and Freedoms. A violation may discredit all of the evidence collected in support of the offence. An entry, inspection, or physical taking of something real will almost always require a warrant under the Canadian Charter of Rights and Freedoms.

## **ix. Sample Inspection Program Model – Ontario Ministry of the Environment**

The Ministry of the Environment has established a compliance and enforcement program and has made its policy publicly accessible on the Ontario government website. A synopsis of the document is provided in this section. The entire document, "Compliance Policy Applying Abatement and Enforcement Tools – May 2007" (Publication # 6248e), can be accessed on the Ministry of the Environment website [www.ontario.ca](http://www.ontario.ca) through a search for "Compliance Policy".

The Compliance Policy outlines the approach that Ministry staff members use to determine the severity of an incident. It can be considered as a reference document for Risk Management Officials and Risk Management Inspectors to use when dealing with similar enforcement situations. The policy outlines a number of definitions that apply to enforcement of ministry legislation. The Compliance Policy also includes types of abatement and enforcement tools, some of which are similar to those available to Risk Management Officials and Risk Management Inspectors to address significant drinking water threats.

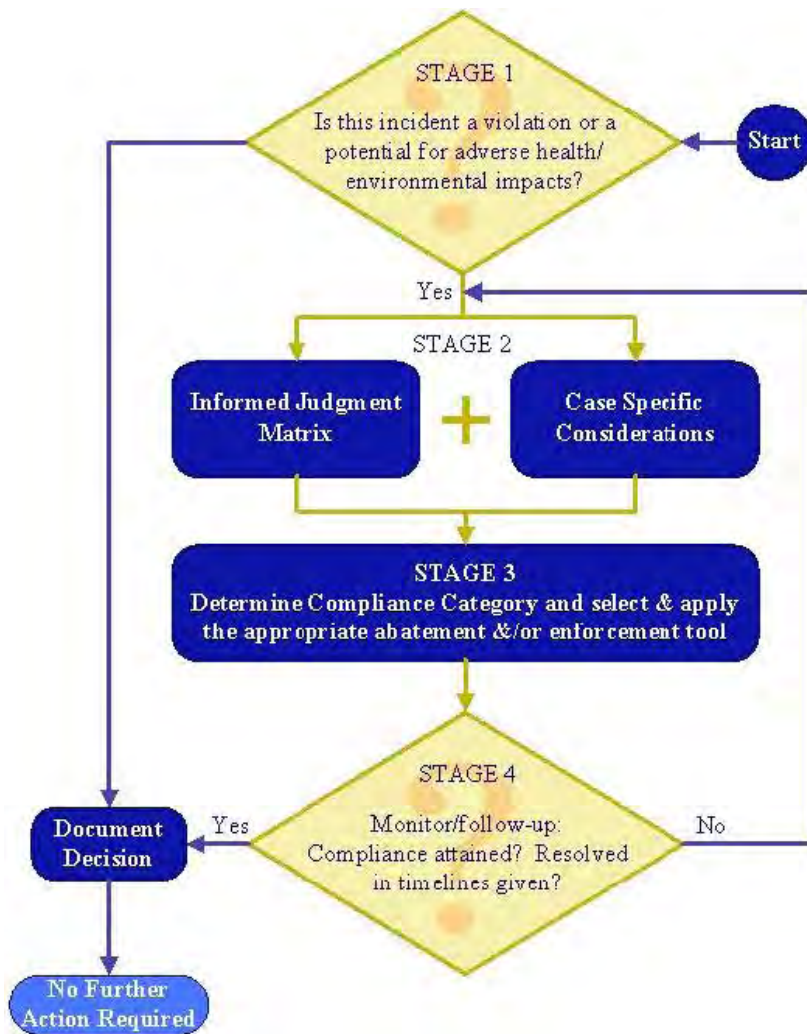
"The Ministry's approach to compliance and enforcement, as embodied in this Policy, seeks to safeguard the public interest by ensuring that the Ministry's response to an incident is proportionate to the severity of the incident. This Policy sets out the approach Ministry staff will use to determine the severity of an incident. For incidents that are determined to be more severe in nature, this Policy requires staff to consider a mandatory abatement response. For less severe incidents, this Policy permits staff to consider a voluntary abatement response. Generally, a mandatory abatement response is one where the law is used to compel a person to respond to an incident whereas a voluntary abatement response relies on a person's voluntary actions to respond to the incident. (Introduction to "Compliance Policy", MOE, 2007)

The approach allows for firm and swift action to respond to incidents with the potential for significant health and/or environmental consequences. There is also flexibility when addressing other situations. Enforcement staff seek to work in a professional and cooperative manner with the person responsible for the activity. The goal is to address the impacts of a violation and prevent a recurrence.

In Chapter 8 of the policy there is a decision tree that goes through a step-by-step process to assist in selecting which abatement and enforcement tools would be most appropriate to each

case/situation. It guides the evaluation of an incident by using the Informed Judgment Matrix to classify the severity of the incident. Case-specific considerations are applied to determine whether the recommended response for that classification is appropriate in the circumstances. The matrix considers the health/environmental consequences and the compliance history for the person or landowner involved in the incident.

The decision tree has been reproduced as Figure 16. The Informed Judgment Matrix is shown in Figure 17. Using the two tools together can help achieve a measured response to incidents.



**Figure 16:** Decision Tree for Determining Enforcement Response (MOE, 2007).

Informed Judgment Matrix (IJM)		Health/Environmental Consequences					
		1. Administrative	2. Minor Environmental	3. Minor Health	4. Medium Environmental	5. Major Environmental	6. Medium/Major Health
Compliance History	A. No History / Good Compliance History	Compliance Category I		Compliance Category II		Compliance Category III	
	B. Previous Violation (unrelated)						
	C. Previous Violation (related)						
	D. Ongoing Violation Not Resolved Despite Ministry Directions						
	E. Previous Significant Convictions or Environmental Penalty Orders						
	F. Obstruction / False Information **						

Compliance Category I: Recommend Education & Outreach, Notice of Violation, Abatement Plan &/or Amend Authorizing Document (Control Documents (e.g. Orders), EP Order, Ticket, or IEB Referral for Investigation may be considered).

Compliance Category II: Recommend Amend Authorizing Document, Control Document (e.g. Order) or EP Order. May Write A POA Ticket\* and shall consider IEB Referral for Investigation except when a ticket is used.

Compliance Category III: Recommend Amend Authorizing Document, Control Documents (e.g. Order) or EP Order. Shall refer to IEB for Investigation (No Ticket).

\*A ticket cannot be issued for a violation that is subject to an EP.

\*\* Obstruction is not a violation subject to an Environmental Penalty

**Figure 17: Informed Judgment Matrix (after MOE, 2007).**

## I. Reporting Requirements

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Under s.81 of *the Clean Water Act*, Risk Management Officials have a responsibility to prepare annual reports that summarize the actions taken by the Risk Management Official and Risk Management Inspector in fulfillment of their Part IV responsibilities. These reports must be submitted to the source protection authority, who will then use the information to track the implementation and effectiveness of source protection plan policies.

Information that the Risk Management Official must highlight in the report include:

- number of risk management plans agreed to, established or refused,
- number of Notices and Orders issued,
- number of inspections carried out (without consent),
- number of risk assessments submitted, accepted, or not accepted,
- number of times the RMO caused things to be done, and
- total number of prosecutions and number of convictions (O.Reg. 287/07, s.65).

Each report will apply to a single calendar year. The first report submitted should document information starting from the day the first Risk Management Official was appointed by the Council of the municipality (or delegated body) to December 31 of that same year. The report must be submitted to the source protection authority by February 1 of the following year. For example, the annual report that covers the period from January 1 to December 31, 2015 would be submitted to the source protection authority on February 1, 2016.

York Region has developed a checklist of materials that should be included in the annual report; find it in Section O: Appendix 4. Module 4 provides comprehensive information regarding the annual reporting requirements established for Risk Management Officials.

## J. Work Planning: Advice for Managing the Workload

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The risk management plan negotiation workload will vary depending on the municipality. Some Risk Management Officials will be required to negotiate many risk management plans, while others may only have a few to complete. There may be one type of threat activity that predominates or the types of threat activities may be wide ranging. Also, there may be a combination of simple and complex risk management plans.

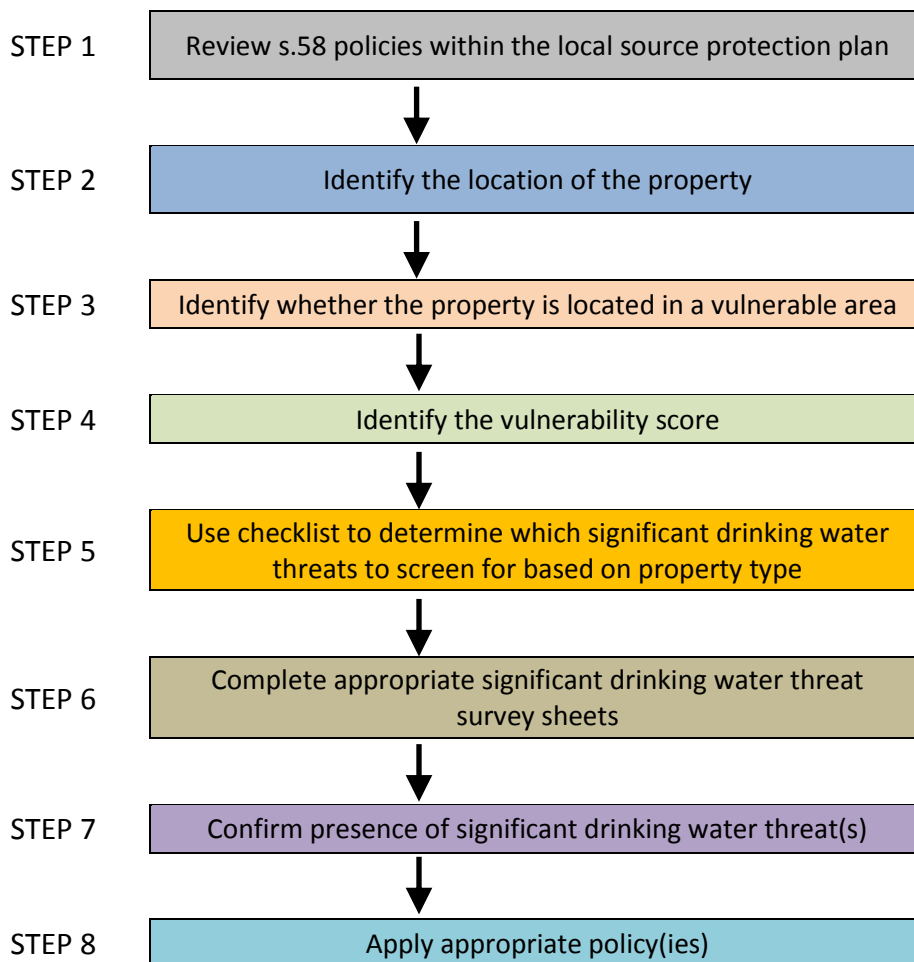
Regardless of the number of risk management plans to be negotiated, prioritizing the risk management plan negotiation workload will help ensure the job is completed by the date specified in the source protection plan. Prioritizing the workload can be separated into two key tasks: understanding the workload and prioritizing the negotiation roll out.

## i. Understanding the workload

### **Step 1: Determine how many existing significant drinking water threats require an RMP.**

RMPs are only necessary if a s.58 policy applies to the identified threat activity. Source protection plan policies will explicitly state where and when risk management plans will need to be established. In other words, a risk management plan will be necessary only when the local source protection plan has specifically designated the use of an s.58 risk management plan to address the significant threat and the significant threat has been confirmed using steps 2-7 (Figure 18).

To begin the workload prioritization process, you will first need to understand the vulnerable areas, including the numbers and types of significant drinking water threats present in your municipality. Before determining if an activity will need to be addressed through a risk management plan, the Risk Management Official will have to confirm that the activity in question is a significant drinking water threat. Module 2 provides detailed, step-by-step guidance on the process of identifying and confirming a significant drinking water threat.



**Figure 18:** Steps for Identifying and Confirming Significant Drinking Water Threats



To confirm the presence of a significant drinking water threat, the RMO will need to confirm that the property is located in a vulnerable area where significant drinking water threats are possible. In most cases, significant drinking water threats are found within Wellhead Protection Areas (WHPAs) and Intake Protection Zones (IPZs) where the vulnerability score is between 8 and 10. Activities associated with the handling and storage of DNAPLs are an exception to this, and are considered significant threats in any zone within a WHPA with a vulnerability score greater than or equal to 2. Pathogens are another exception as identification of pathogens as a significant threat does not include a quantity circumstance, i.e. they are significant in any amount. Within an Issue Contributing Area, significant drinking water threats can be present anywhere a circumstance for the identified threat is met, because there are no vulnerability scores associated with an Issue Contributing Area.

The next step would be to identify the significant drinking water threats present on the property, specifically those for which the local Source protection plan has applied an s.58 risk management plan requirement. The circumstances of the activity should be compared with the Provincial Tables of Threats and/or the Provincial Tables of Circumstances. Direction on how to use the Tables of Threats and Tables of Circumstances is described in Section I (i) of Module 2.

If a comparison with the tables determines that a significant drinking water threat exists on the property of interest, the RMO can then go on to identify the need for an RMP. In order to determine if an RMP is required to address the identified significant drinking water threat(s), the RMO will need to consult the policies established in the local source protection plan.

### **Step 2: Identify the land uses that are associated with significant drinking water threats**

Once the total number and type of risk management plans to negotiate is known, the information can be sorted into a variety of formats to begin prioritizing the workload - for example, using a tabular or database software such as a spreadsheet, database, or geographic information system (GIS). These tools will allow the workload to be sorted statistically and spatially.

By sorting the information into broad categories, an understanding of the sectors you will be dealing with can be gained, such as agriculture, businesses, municipal lands, and residential properties. The MPAC (Municipal Property Assessment Corporation) reference number is one source of information that will help in sorting by category or sector. Through this exercise it may be determined, for example, that risk management plans primarily need to be negotiated for the business sector and residential properties, and only a handful need to be negotiated for municipal lands and agriculture. This information is useful to know as different approaches may be taken to develop risk management plans for the various sectors.

Using GIS enabled software, such as ArcGIS from ESRI (Environmental Systems Research Institute, Inc.), the workload can be mapped according to vulnerable area and geographic location. Completing this task will allow you to easily view and map the target work areas.

Viewing the risk management plan workload in a variety of formats will provide additional information required to prioritize the workload. An analysis of the workload may identify that all required risk management plans are located in the same geographic area, or alternatively that the risk management plans needed are dispersed throughout all of the vulnerable areas within the municipality. The data could also indicate that risk management plans are only required for one or two primary land uses, thereby indicating where the majority of effort should be placed.

#### **Step 4: Estimate the number of Future Threat Activities that will require a Risk Management Plan**

Another consideration would be to go through an exercise to determine, based on best available information, the estimated potential or need for future risk management plans that will need to be negotiated as a result of applications to develop new threat activities. To estimate the number of “future threat” risk management plans, you will need to consult with the planning and/or building department within the municipality.

The location of the identified vulnerable areas within your municipality should be compared to the development areas outlined in the official plan. If the areas do not coincide, it is not likely that many of the applications submitted will be for future threat activities. If they do coincide, further consultation with the planning department will be required to estimate the number of future plans expected to be negotiated each year. The planning department will have records of the number of planning applications typically received each year. It also may be possible to break down the number of applications received according to each vulnerable area. Using these three key pieces of information, the number of future risk management plans can be estimated on a yearly basis.

#### **ii. Timelines for Establishing a Risk Management Plan**

The Risk Management Official may allow a period of time for persons engaged in an activity to agree to a risk management plan with the RMO after the source protection plan comes into effect (*CWA*, s.58(5)). A formal notice of intent to establish (*CWA*, s.58(7)) may be issued by the RMO as part of the process and will state a deadline by which a risk management plan must be agreed to (*CWA*, s.58(8)). The person engaged in the activity still has an opportunity to waive the remainder of the time before the deadline and consent to a risk management plan (*CWA*, s.58(9)). Deadlines for agreement should be set far in the future to allow for the negotiation, writing, and review of the RMP. A minimum of 120 days must be provided after the notice to establish is given (*CWA*, s.58(8)); however RMOs may wish to provide as long as 24 months for very complex activities. Time may also need to be allotted for site visits.

When establishing a timeline for the negotiation and development process, the RMO should take special consideration of their entire RMP workload. Where a large number of risk management plans must be established, it will be advisable to stagger the issuance of notices to spread the workload out over time.

**Table 4: Potential Schedule of Tasks for Establishing a Risk Management Plan (Relative to Effective Date of Source Protection Plan)**

<b>TASK</b>	<b>TIMELINE (Guideline)</b>
Determine number and complexity of risk management plans within jurisdiction	within 2 months after effective date
Send out initial correspondence to persons engaged in activities requiring an RMP	2 to 4 months after effective date
Work with persons who submit RMP for approval	4 to 12 months after effective date
Send first set of formal notices (CWA, s.58(7)) only to the more complex activities; set date far in future to allow time for writing draft RMP, review by RMO and negotiation process (minimum 120 days (CWA, s.58(8)); may wish to provide as long as 24 months)	12 months after effective date
Send out second correspondence to persons engaged in activities requiring an RMP	13 to 14 months after effective date
Work with persons who submit RMP for approval and persons who consent to establishment of RMP before date stated in the notice from the RMO (CWA, s.58(9))	13 to 24 months after effective date
Send second set of formal notices (CWA, s.58(7)) to the remaining activities; set date as just prior to or on deadline as specified in SPP policy; still allows up to 12 months for writing draft RMP, review by RMO and negotiation process (minimum 120 days (CWA, s.58(8)))	24 months after effective date
Work with persons who consent to establishment of RMP before date stated in the notice from the RMO (CWA, s.58(9))	24 to 36 months after effective date
Final reminder for activities where no RMP established to date	34 months after effective date
<b>Deadline for RMPs as set by SPP policy</b>	<i>Note: 3 years after effective date of SPP often used; see local SPP policy for specific details</i>
Additional powers may need to be exercised by RMO/RMI	36 months after effective date and beyond

### **iii. Prioritizing the negotiation roll-out**

Now that the workload can be analyzed from a variety of angles, the work plan for Risk Management Plan negotiation can be developed. The source protection plan will outline the timeframe in which all existing threat activities subject to s.58 will be required to have a risk management plan in place. The timelines in the source protection plans typically range from three to five years across the province. All future threat activities that are subject to s.58 would require a risk management plan as part of the municipal application process.

Several approaches can be taken to prioritize the risk management plan negotiation roll out. The approach taken will vary depending on the Risk Management Official and the local circumstances. Two options for consideration have been outlined below.

#### **Option 1- Phased Approach**

Considering the uncertainty associated with the time and resources regarding the implementation of Part IV, a phased approach may be appropriate for the Risk Management Official to consider. A phased approach will allow the Risk Management Official to learn and adapt, while still meeting the source protection plan policy timeframe. It is recommended that a small number of risk management plans from each of the general categories (for example, agriculture, business, municipal, residential) be negotiated in the first year to better understand the effort required to complete a risk management plan from start to finish. The knowledge gained from the risk management plans negotiated in year 1 will allow for a realistic prioritization schedule to be developed based on the remaining workload and timeframe. In the remaining years, a set number of risk management plans will be negotiated according to the schedule developed in year 1.

#### **Option 2- Equal Number Approach**

A different approach could be planning that an equal number of risk management plans will be negotiated each year to conform to the source protection plan timelines. For example, if 150 individual parcels were identified as requiring a risk management plan and the source protection plan indicates that all plans must be in place within five years of SPP approval, approximately 30 risk management plans will need to be negotiated each year to address the existing threat activities. Based on the local circumstances, the RMO will prioritize which 30 RMPs are to be negotiated each year. The analysis of the future threat activities may indicate, for example, that approximately 7 applications can be anticipated each year. Adding this to the existing threat activity numbers brings the annual risk management plan negotiation workload up to 37 plans per year. Risk Management Plans associated with new threat activities will need to be negotiated each year as applications for new or re-developments are received.

The implementation workload and priority schedule will be unique to each municipality. Other factors that may influence the workload prioritization process include, but are not limited to:

- cross boundary jurisdiction situations,

- the need to implement more than one source protection plan, and
- the time it will take to establish the new internal business practices.

The case study provided in Section Q: Appendix 6 outlines the step-by-step prioritization process.

## K. Glossary: Some Terms to Know

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Some key terms are defined in the *Clean Water Act*, s.2. The following are excerpts from the Act:

“activity” includes a land use

“drinking water threat” means an activity or condition that adversely affects or has the potential to adversely affect the quality or quantity of any water that is or may be used as a source of drinking water, and includes an activity or condition that is prescribed by the regulations as a drinking water threat

“prescribed instrument” means an instrument that is issued or otherwise created under a provision prescribed by the regulations of,

- (a) the *Aggregate Resources Act*,
- (b) the *Conservation Authorities Act*,
- (c) the *Crown Forest Sustainability Act, 1994*,
- (d) the *Environmental Protection Act*,
- (e) the *Mining Act*,
- (f) the *Nutrient Management Act, 2002*,
- (g) the *Oil, Gas and Salt Resources Act*,
- (h) the *Ontario Water Resources Act*,
- (i) the *Pesticides Act*, or
- (j) any other Act or regulation prescribed by the regulations;

“risk management inspector” means a risk management inspector appointed under Part IV

“risk management official” means the risk management official appointed under Part IV

“risk management plan” means a plan for reducing a risk prepared in accordance with the regulations and the rules

# APPENDICES

- L. Appendix 1: Checklist Risk Management Plan Example
- M. Appendix 2: Single Option Risk Management Plan Example
- N. Appendix 3: Multiple Activities Addressed in one Risk Management Plan
- O. Appendix 4: Samples of Notices, Orders, Letters and other templates by York Region
- P. Appendix 5: Process Charts
- Q. Appendix 6: Case Study of Workload Prioritization Process
- R. Appendix 7: Ontario Farm Environmental Coalition – Farm Assessment Summary
- S. Appendix 8: Sample Checklist-style Risk Management Plan Framework by Region of Waterloo
- T. Appendix 9: Sample s.59 Screening Tool by Region of Waterloo

## L. Appendix 1: Checklist Risk Management Plan Example

### Checklist Risk Management Plan General Information Form

Municipality  
of ABCD



#### Applicant Information

Name: \_\_\_\_\_

Phone: \_\_\_\_\_ Phone (alternate): \_\_\_\_\_

E-mail: \_\_\_\_\_ Fax: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

Town: \_\_\_\_\_ Prov: \_\_\_\_\_ Postal Code: \_\_\_\_\_

#### Property Information

Roll Number: \_\_\_\_\_

GPS coordinates (if known): (Lat.) \_\_\_\_\_ (Long.) \_\_\_\_\_

GPS: (E) \_\_\_\_\_ (N) \_\_\_\_\_

Address of project location (if different from mailing address): Lot: \_\_\_\_\_ Conc: \_\_\_\_\_

Fire # or Street Address: \_\_\_\_\_

Land Use:  Residential  Agricultural  Commercial  Institutional  Industrial

Other (please specify) \_\_\_\_\_

Name of Vulnerable Area:  \_\_\_\_\_

Vulnerable Area Zone:  WHPA-A  WHPA-B  WHPA-C Vulnerability Score: \_\_\_\_\_

WHPA-E

IPZ – 1  IPZ-2 Vulnerability Score: \_\_\_\_\_

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## Checklist Risk Management Plan General Information Form

**Municipality  
of ABCD**



### Declaration of Applicant(s)

1. I/we have completed this application in full and I/we certify that the information contained in this application and any supporting documentation is true and complete to the best of my/our knowledge.
2. I/we are the owners of the mentioned property or if the land is rented or leased I have included a copy of the agreement from the property owner.
3. I/we understand that I/we are responsible for implementing the measures described herein.
4. I/we understand that failure to comply with all the requirements of an approved Risk Management Plan may result in action by the Risk Management Official or Risk Management Inspector.
5. I/we understand that I/we will be responsible for ensuring the technical and structural adequacy and legal requirements of any activities or structures.
6. I/we have included all other required documentation.
7. I/we agree to obtain all necessary permits and approvals from applicable agencies, which may include local municipalities, public health units and conservation authorities.
8. I/we acknowledge that this plan cannot be transferred to another person engaged (or proposing to engage in the activity at that location), without the written consent of the Risk Management Official.

\_\_\_\_\_  
Signature of Applicant(s)

\_\_\_\_\_  
Date

*NOTE: All information collected on this application form is subject to the Freedom of Information and Protection of Privacy Act (FIPPA). Information may be provided to the Ministry of the Environment and other regulatory bodies.*

*NOTE: Incomplete applications will delay the approval process. Please ensure applications are complete before submission.*

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# Checklist Risk Management Plan General Information Form

**Municipality  
of ABCD**



## Site Plan

Please use the grid below to provide a sketch of the subject property. Please mark directional north, as well as any of the following features that occur on the subject property (include distances between features where possible):

- Location of abandoned and/or existing water wells
- Location of septic system
- Location of field tiles and catch basins
- Location of activity related to this Risk Management Plan
- Location of all building(s): mark those serviced by the existing septic system and water wells
- Indicate type of well: dug water wells ▼ drilled water wells ■
- Roadway/access routes
- Surface water features (streams, pond, wetlands)
- Location of municipal drinking water service line/trunk line and sewer line
- General topography (even and level, hilly, steep, depression)

**NOTE:** Illustrations from other permit applications or from design drawings may be submitted.


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## Checklist Risk Management Plan Organic Solvents

Municipality  
of ABCD



### Required Documentation - Attach the following reports to your application

**A. Product handling procedures**

Describe how material will be handled on-site, including unloading and transfer, if applicable.

---

**B. Product storage**

Include a diagram and/or photographs and a description of storage areas and methods.

---

**C. Containment measures**

Describe what measures will be used to prevent damage to stored materials and to contain spills.

---

**D. Spills Response Plan**

All spills are to be reported to the Spills Action Centre (toll-free 1-800-268-6060).

Include emergency contact information.

---

**E. Disposal of unused product**

Describe procedures for ensuring proper disposal of unused or waste product. Include name of contractor, if applicable.

---

**F. Inventory system for types of materials and quantities on-site**

Describe the inventory system for documenting the amount of material on-site.

---

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## M. Appendix 2: Multiple Activities Addressed in one Risk Management Plan

### Risk Management Plan General Information Form

Municipality  
of ABCD



#### Applicant Information

Name: \_\_\_\_\_

Phone: \_\_\_\_\_ Phone (alternate): \_\_\_\_\_

E-mail: \_\_\_\_\_ Fax: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

Town: \_\_\_\_\_ Prov: \_\_\_\_\_ Postal Code: \_\_\_\_\_

#### Property Information

Roll Number: \_\_\_\_\_

GPS coordinates (if known): (Lat.) \_\_\_\_\_ (Long.) \_\_\_\_\_

GPS: (E) \_\_\_\_\_ (N) \_\_\_\_\_

Address of project location (if different from mailing address): Lot: \_\_\_\_\_ Conc: \_\_\_\_\_

Fire # or Street Address: \_\_\_\_\_

Land Use:  Residential  Agricultural  Commercial  Institutional  Industrial

Other (please specify) \_\_\_\_\_

Name of Vulnerable Area:  \_\_\_\_\_

Vulnerable Area Zone:  WHPA-A  WHPA-B  WHPA-C Vulnerability Score: \_\_\_\_\_

WHPA-E

IPZ – 1  IPZ-2 Vulnerability Score: \_\_\_\_\_

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## Risk Management Plan General Information Form

**Municipality  
of ABCD**



### Declaration of Applicant(s)

9. I/we have completed this application in full and I/we certify that the information contained in this application and any supporting documentation is true and complete to the best of my/our knowledge.
10. I/we are the owners of the mentioned property or if the land is rented or leased I have included a copy of the agreement from the property owner.
11. I/we understand that I/we are responsible for implementing the measures described herein.
12. I/we understand that failure to comply with all the requirements of an approved Risk Management Plan may result in action by the Risk Management Official or Risk Management Inspector.
13. I/we understand that I/we will be responsible for ensuring the technical and structural adequacy and legal requirements of any activities or structures.
14. I/we have included all other required documentation.
15. I/we agree to obtain all necessary permits and approvals from applicable agencies, which may include local municipalities, public health units and conservation authorities.
16. I/we acknowledge that this plan cannot be transferred to another person engaged (or proposing to engage in the activity at that location), without the written consent of the Risk Management Official.

\_\_\_\_\_  
Signature of Applicant(s)

\_\_\_\_\_  
Date

*NOTE: All information collected on this application form is subject to the Freedom of Information and Protection of Privacy Act (FIPPA). Information may be provided to the Ministry of the Environment and other regulatory bodies.*

*NOTE: Incomplete applications will delay the approval process. Please ensure applications are complete before submission.*

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**Risk Management Plan  
General Information Form**

**Municipality  
of ABCD**



**Site Plan**

Please use the grid below to provide a sketch of the subject property. Please mark directional north, as well as any of the following features that occur on the subject property (include distances between features where possible):

- Location of abandoned and/or existing water wells
- Location of septic system
- Location of field tiles and catch basins
- Location of activity related to this Risk Management Plan
- Location of all building(s): mark those serviced by the existing septic system and water wells
- Indicate type of well: dug water wells ▼ drilled water wells ■
- Roadway/access routes
- Surface water features (streams, pond, wetlands)
- Location of municipal drinking water service line/trunk line and sewer line
- General topography (even and level, hilly, steep, depression)

**NOTE:** Illustrations from other permit applications or from design drawings may be submitted.


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## Risk Management Plan Fuel Storage Activity

Municipality  
of ABCD



### Required Containment Measures

#### A. A double-walled storage tank is required

- The existing tank is a double-walled storage tank.

Manufacturer: \_\_\_\_\_ Model: \_\_\_\_\_

Date of manufacture: \_\_\_\_\_ Date Installed: \_\_\_\_\_

- A new, double-walled storage tank will be installed.

Date by which tank will be installed: \_\_\_\_\_

---

#### B. A visible interstitial alarm is required

- The existing tank has a visible interstitial alarm.

- A visible interstitial alarm will be added to the existing, double-walled storage tank.

Date by which alarm will be installed: \_\_\_\_\_

- A visible interstitial alarm will be part of the new, double-walled storage tank.

Note: Interstitial refers to the space in between the two walls of the tank.

---

#### C. Additional alarm requirement

An electronic monitoring system for spills and leaks with a visible and audible alarm is required if there is a floor drain, sump, indoor well, or cracks in the floor in the vicinity of the fuel storage tank.

- There is no floor drain, sump, indoor well, or cracks in the floor in the vicinity of the fuel storage tank.

- A floor drain    A sump    An indoor well    Cracks in the floor are present in the vicinity of the storage tank.

- Work will be undertaken to eliminate the identified openings in the floor.   OR

- An electronic monitoring system will be added to the existing, double-walled storage tank.

Date by which monitoring system will be installed: \_\_\_\_\_ OR

- An electronic monitoring system will be part of the new, double-walled storage tank.

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## Risk Management Plan Fuel Storage Activity

Municipality  
of ABCD



### Required Documentation

#### A. Spills Response Plan

Any large spills are to be reported to the Spills Action Centre (toll-free 1-800-268-6060).

Fuel supplier and contact information:

\_\_\_\_\_

Describe other steps to be taken in the event of a fuel spill:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

---

#### B. Annual inspection for oil burning equipment, including storage tank, is required

- An annual inspection will be carried out each year, as per Section 14 of the CAN/CSA-B139-00 Installation Code for Oil Burning Equipment, which includes an inspection of the fuel storage tank.

Date of last inspection: \_\_\_\_\_

Attach documentation of the last inspection. Inspection records are to be kept by the property owner.

---

#### C. Ten-year inspection for storage tank by fuel oil distributor

A comprehensive inspection of the storage tank is to be undertaken every ten years by the fuel oil distributor.

- The tank is less than ten years old. The first comprehensive inspection will be completed by:

Date of inspection: \_\_\_\_\_

- The tank is more than ten years old. The last comprehensive inspection was completed on:

Date of inspection: \_\_\_\_\_

Attach documentation of the last inspection.

---

#### D. Disposal of unused fuel

- Unused or contaminated fuel will be removed by a company equipped to safely dispose of the material:

Name of company: \_\_\_\_\_

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## N. Appendix 3: Multiple Activities Addressed in one Risk Management Plan

### Risk Management Plan General Information Form

Municipality  
of ABCD



#### Applicant Information

Name: \_\_\_\_\_

Phone: \_\_\_\_\_ Phone (alternate): \_\_\_\_\_

E-mail: \_\_\_\_\_ Fax: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

Town: \_\_\_\_\_ Prov: \_\_\_\_\_ Postal Code: \_\_\_\_\_

#### Property Information

Roll Number: \_\_\_\_\_

GPS coordinates (if known): (Lat.) \_\_\_\_\_ (Long.) \_\_\_\_\_

GPS: (E) \_\_\_\_\_ (N) \_\_\_\_\_

Address of project location (if different from mailing address): Lot: \_\_\_\_\_ Conc: \_\_\_\_\_

Fire # or Street Address: \_\_\_\_\_

Land Use:  Residential  Agricultural  Commercial  Institutional  Industrial

Other (please specify) \_\_\_\_\_

Name of Vulnerable Area:  \_\_\_\_\_

Vulnerable Area Zone:  WHPA-A  WHPA-B  WHPA-C Vulnerability Score: \_\_\_\_\_

WHPA-E

IPZ – 1  IPZ-2 Vulnerability Score: \_\_\_\_\_

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**Risk Management Plan  
General Information Form**

**Municipality  
of ABCD**



**Declaration of Applicant(s)**

- 17. I/we have completed this application in full and I/we certify that the information contained in this application and any supporting documentation is true and complete to the best of my/our knowledge.
- 18. I/we are the owners of the mentioned property or if the land is rented or leased I have included a copy of the agreement from the property owner.
- 19. I/we understand that I/we are responsible for implementing the measures described herein.
- 20. I/we understand that failure to comply with all the requirements of an approved Risk Management Plan may result in action by the Risk Management Official or Risk Management Inspector.
- 21. I/we understand that I/we will be responsible for ensuring the technical and structural adequacy and legal requirements of any activities or structures.
- 22. I/we have included all other required documentation.
- 23. I/we agree to obtain all necessary permits and approvals from applicable agencies, which may include local municipalities, public health units and conservation authorities.
- 24. I/we acknowledge that this plan cannot be transferred to another person engaged (or proposing to engage in the activity at that location), without the written consent of the Risk Management Official.

\_\_\_\_\_  
Signature of Applicant(s) \_\_\_\_\_  
Date

*NOTE: All information collected on this application form is subject to the Freedom of Information and Protection of Privacy Act (FIPPA). Information may be provided to the Ministry of the Environment and other regulatory bodies.*

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# Risk Management Plan General Information Form

**Municipality  
of ABCD**



## Site Plan

Please use the grid below to provide a sketch of the subject property. Please mark directional north, as well as any of the following features that occur on the subject property (include distances between features where possible):

- Location of abandoned and/or existing water wells
- Location of septic system
- Location of field tiles and catch basins
- Location of activity related to this Risk Management Plan
- Location of all building(s): mark those serviced by the existing septic system and water wells
- Indicate type of well: dug water wells ▼ drilled water wells ■
- Roadway/access routes
- Surface water features (streams, pond, wetlands)
- Location of municipal drinking water service line/trunk line and sewer line
- General topography (even and level, hilly, steep, depression)

**NOTE:** Illustrations from other permit applications or from design drawings may be submitted.


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## Risk Management Plan Application of Agricultural Source Material

Municipality  
of ABCD



### Principles for Creating a Risk Management Plan

All Risk Management Plans related to the application of agricultural source material must meet the following guidelines as a minimum:

- Follow the details with respect to the contents of a nutrient management plan as described in Part III of O.Reg 267/03 under the *Nutrient Management Act*.
- Ensure that no material is applied within setback areas from municipal or private wells.
- Ensure that no material is applied near a watercourse unless a vegetated buffer strip is established between the field and the watercourse.
- Apply no material during restricted periods.
- Use application methods prescribed in O.Reg 267/03.
- Optimize the relationship between the land-based application of nutrients, farm management techniques and crop requirements.
- Maximize the efficiency of on-site nutrient use.
- Minimize adverse environmental impact.

### Contents of a Risk Management Plan

**A. Describe how material will be applied to the land**

Include a diagram and/or photographs and a description of application areas and methods.

**B. Calculations for expected annual application of nutrients**

It is recommended that NMAN or similar software be used to assist in calculations.

**C. Schedule for nutrient application**

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# Risk Management Plan Temporary Field Storage of Agricultural Source Material

**Municipality  
of ABCD**



## Principles for Creating a Risk Management Plan

All Risk Management Plans related to the temporary field storage of agricultural source material must meet the following guidelines as a minimum:

- Do not allow for the expansion of a temporary site existing as of the effective date of the Source Protection Plan.
- Follow the details with respect to the contents of a nutrient management strategy as described in Part III of O.Reg 267/03 under the *Nutrient Management Act*.
- Ensure that no material is stored within setback areas from municipal or private wells.
- Select sites that meet the siting criteria for temporary field nutrient storage sites as per the *Nutrient Management Act*.
- Store no material for no longer than 30 days.
- Demonstrate that sufficient land base exists to accommodate the land application of the stored agricultural source material.
- Optimize the relationship between the land-based application of nutrients, farm management techniques and crop requirements.
- Maximize the efficiency of on-site nutrient use.
- Minimize adverse environmental impact.

## Contents of a Risk Management Plan

**A. A statement that a Notice shall be obtained from the Risk Management Official prior to the use of a temporary field nutrient storage site**

**B. A map and coordinates identifying any sites to be used for the temporary storage of agricultural source material**

Include a diagram and/or photographs and a description of the land conditions at each site.

**C. Calculations for expected annual application of nutrients**

It is recommended that NMAN or similar software be used to assist in calculations.

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## O. Appendix 4: Samples of Notices, Orders, Letters and Other Templates by York Region

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### **Notification- Information Letter for Section 58**

**YORK-#4181329-v1-template\_letter\_requiring\_establishment\_of\_risk\_management\_plan**

[Name  
Address  
Date]

To [XXXX],

You have received this letter because the RMO for the Regional Municipality of York would like to inform you that the Source Protection Plan for the [SPArea] was approved by the Ministry of the Environment on [XX date].

The source protection plan was developed in accordance with the *Clean Water Act, 2006* and its supporting regulations. The purpose of the Act is to protect Ontario's existing and future drinking water sources, in order to safeguard human health and the environment. A key focus of the legislation is the preparation of locally science-based assessment reports and source protection plans.

You are encouraged to review the provincially approved [Area Name] Source Protection plan, which is comprised of both the scientific basis for identifying significant threat activities (in the form of the assessment report) as well as the local policies designed to address them. The plan can be found online at [www.conservation-ontario.on.ca/uncategorised/143-otherswpreionsindex](http://www.conservation-ontario.on.ca/uncategorised/143-otherswpreionsindex) or a hard copy can be obtained via the (Municipal Clerk, Risk Management Official, etc).

As you should already be aware, one or more of the activities on your property has been designated in the source protection plan as being subject to section 58 risk management plan. Policy #[XX] in the Source Protection Plan states that a risk management plan is required in order for this activity to be carried out on that property address above. The source protection plan sets a date of no longer than [x] months for a plan to be in place.

The risk management plan provides an opportunity for collaboration and agreement, between the person identified in this notice and the Risk Management Official, on the conditions that will be applied to an activity and the appropriate actions required to address the identified significant drinking water threat(s). This may include any risk management measures that are already in place at the site to manage the activity.

In order to begin the process of developing a risk management plan for the identified activity(ies) on your property, please contact the Risk Management Official's Office at [587-555-5555], anytime between **Monday and Friday, 9:00 am to 4:30 pm**, to discuss the specific contents of this notice and to request additional information.

If you wish to call into question the designation of the above activity at that location as a significant drinking water threat, you may do so by submitting an application and completing a site-specific risk assessment, under section 60 of the Clean Water Act. For more information on this process, please contact your local risk management official/municipality.

General information related to source water protection in Ontario, and the *Clean Water Act, 2006* can be found at [www.ontario.ca/ministry-environment](http://www.ontario.ca/ministry-environment).

Thank you for your ongoing cooperation in protecting our local sources of drinking water. We look forward to speaking with you in the near future.

**[Provide Contact Information]**

**Notice of Requirement for a Risk Management Plan**

**Clean Water Act - Section 58(4) Notice\* (used when NO date is specified in the SPP)**

**YORK-#4181349-v1-notice\_template\_for\_RMP\_required\_under\_ss\_58(4)**

Notice  
File No. \_\_\_\_\_

To/ATTN: \_\_\_\_\_

Site/  
Location Address: \_\_\_\_\_

Property Owner Name: \_\_\_\_\_

Date: \_\_\_\_\_

**This Notice is being issued under subsection 58(4) of the *Clean Water Act, 2006*.**

You are receiving this notice because one or more of the activities engaged in at the above noted address has/have been identified as a significant drinking water threat in the [SP Area name] Source Protection Plan, which came into effect on [XX date].

The [SP Area name] Source Protection Plan contains a policy which states that a section 58 Risk Management Plan is required to manage the following activity(ies) at that location:

- Name of specific SDWT activity(ies) (from prescribed DWT list in regulation)

***It is the opinion of the Risk Management Official that the section 58 Risk Management Plan policy should be applied for the above activity (or activities) at the above noted property, within [XX days] (at least 120 days after this notice is given).***

In order to begin the process of developing a risk management plan for the identified activity(ies) on your property, please contact the Risk Management Official's Office at [587-555-5555], anytime between **Monday and Friday, 9:00 am to 4:30 pm**, to discuss the specific contents of this notice and to request additional information.

You are also encouraged to review the provincially approved [Area Name] Source Protection plan, which is comprised of both the scientific basis for identifying significant threat activities (in the form of the assessment report) as well as the local policies designed to address them. The plan can be found online at [www.conservation-ontario.on.ca/uncategorised/143-otherswpreionsindex](http://www.conservation-ontario.on.ca/uncategorised/143-otherswpreionsindex) or a hard copy can be obtained via the (Municipal Clerk, Risk Management Official, etc).

Thank you for your ongoing cooperation in protecting our local sources of drinking water. We look forward to speaking with you in the near future.

**\*\* Note:** With respect to Notice Period:

- The date set out in the notice must be a minimum of 120 days after the notice is given. [CWA, s.58 (4)]
- Rules relating to the 'service' of documents: Section 100 (1) of the Clean Water Act, 2006 and Ontario Regulation 231/07 specify the circumstances where the service of documents (including this notice) has been deemed made (i.e., in person, via mail, fax, e-mail, etc.)

**Signature of Risk Management Official and Contact Information**

O. Appendix 4 (continued): Samples of Notices, Orders, Letters and Other Templates by York Region

**Letter which accompanies the ss. 58(4) Notice (recommended)**  
**YORK-#4181358-v1-template\_for\_notice\_of\_agreement\_to\_RMP\_ss\_58(6)**

Dear Sir or Madame,

Please find attached a Notice from the Risk Management Official for the Regional Municipality of York given under section 58(4) of the *Clean Water Act, 2006*. The purpose of the Act is to protect existing and future sources of drinking water through the development of collaborative, locally-driven solutions to manage both existing and future significant drinking water threats.

You are receiving this notice because one or more of the activities engaged in at the above noted address has/have been identified as a significant drinking water threat in the **[SP Area name]** Source Protection Plan, which came into effect on **[XX date]**. **Policy #[XXX] within the Source Protection plan states that in order for that activity to be carried out, a Risk Management Plan is required for the activity, at that location.**

The risk management plan provides an opportunity for collaboration and agreement, between the person identified in this notice and the Risk Management Official, on the conditions that will be applied to an activity and the appropriate actions required to address the identified significant drinking water threat(s). This may include any risk management measures that are already in place at the site to manage the activity.

In order to begin the process of developing a risk management plan for the identified activity(ies) on your property, please contact the Risk Management Official's Office at **[587-555-5555]**, anytime between **Monday and Friday, 9:00 am to 4:30 pm**, to discuss the specific contents of this notice and to request additional information.

You are encouraged to review the provincially approved **[Area Name]** Source Protection plan, which is comprised of both the scientific basis for identifying significant threat activities (in the form of the assessment report) as well as the local policies designed to address them. The plan can be found online at [www.conservation-ontario.on.ca/uncategorised/143-otherswpreionsindex](http://www.conservation-ontario.on.ca/uncategorised/143-otherswpreionsindex) or a hard copy can be obtained via the (Municipal Clerk, Risk Management Official, etc).

General information related to source water protection in Ontario, and the *Clean Water Act, 2006* can be found at [www.ontario.ca/ministry-environment](http://www.ontario.ca/ministry-environment)

Thank you for your ongoing cooperation in protecting our local sources of drinking water. We look forward to speaking with you in the near future.

---

[Signature of RMO]

**Contact Information:**

[Address:  
Telephone:  
Fax:  
E-mail: ]

**Risk Management Official's Notice of Agreement on a Risk Management Plan  
Clean Water Act – ss. 58(6)**

To/ATTN: \_\_\_\_\_

Site/  
Location Address: \_\_\_\_\_

Property Owner Name \_\_\_\_\_ and/or

Site Operator \_\_\_\_\_

Pursuant to Notice Issued On (Date) \_\_\_\_\_ Notice File No. \_\_\_\_\_

This notice verifies that an agreement has been reached between **[PROPERTY OWNER NAME/NAME OF PERSON ENGAGED IN ACTIVITY]** and the Risk Management Official for the Regional Municipality of York on a section 58 risk management plan under subsection 58(5) of the *Clean Water Act, 2006*. The agreed-upon risk management plan is attached to this notice.

Signature of RMO: \_\_\_\_\_ Date: \_\_\_\_\_

Signature of Property Owner: \_\_\_\_\_ Date: \_\_\_\_\_



**Notice of Requirement for a Risk Management Plan**

**Clean Water Act - Section 58(4) Notice\* (used when NO date is specified in the SPP)**

**YORK-#4181391-v1-template\_for\_notice\_to\_establish\_RMP\_and\_letter\_ss58(7)**

Notice  
File No. \_\_\_\_\_

To/ATTN: \_\_\_\_\_

Site/  
Location Address: \_\_\_\_\_

Property Owner Name: \_\_\_\_\_

Date: \_\_\_\_\_

**This Notice is being issued under subsection 58(7) of the *Clean Water Act, 2006*.**

You are receiving this notice because one or more of the activities engaged in, or proposed to be engaged in, at the above noted address has been identified as a significant drinking water threat in the **[SP Area name]** Source Protection Plan, which came into effect on **[XX date]**.

The **[SP Area name]** Source Protection Plan designates that a section 58 Risk Management Plan is required to manage the following activity(ies) at that location:

- **[Name of specific prescribed activity(ies) engaged in or proposed to be engaged in (from prescribed DWT list in regulation)]**

The risk management plan for the above noted activity(ies) must include actions to address the identified significant drinking water threat(s) associated with that activity.

***Please be aware that, pursuant to the authority provided by the Clean Water Act, 2006, if agreement on a Risk Management Plan cannot be reached by [XX Date (minimum 120 days)], then it is the intent of the Risk Management Official to establish one for the identified activity(ies) at that location, by Order, under section 58(10) of the Clean Water Act, 2006.***

You are encouraged to review the provincially approved **[Area Name]** Source Protection plan, which is comprised of both the scientific basis for identifying significant threat activities (in the form of the assessment report) as well as the local policies designed to address them. The plan can be found online at [\[www.conservation-ontario.on.ca/uncategorised/143-otherswpreionsindex\]](http://www.conservation-ontario.on.ca/uncategorised/143-otherswpreionsindex) or a hard copy can be obtained via the [(Municipal Clerk, Risk Management Official, etc)].

Thank you for your ongoing cooperation in protecting our local sources of drinking water. We look forward to speaking with you in the near future.

***[Signature of Risk Management Official and Contact information:]***

***[A letter could accompany the S. 58(7) Notice (recommended):]***

Dear Sir or Madame,

Please find attached a Notice from the Risk Management Official for the Regional Municipality of York given under section 58(7) of the *Clean Water Act, 2006*. The purpose of the Act is to protect existing and future sources of drinking water through the development of collaborative, locally-driven solutions to manage both existing and future significant drinking water threats.

You are receiving this notice because one or more of the activities engaged in at the above noted address has/have been identified as a significant drinking water threat in the **[SP Area name]** Source Protection Plan, which came into effect on **[XX date]**. Policy #[XX] in the Source Protection Plan states that a risk management plan is required in order for this activity to be carried out on that property address above.

The risk management plan provides an opportunity for collaboration and agreement, between the person identified in this notice and the Risk Management Official, on the conditions that will be applied to an activity and the appropriate actions required to address the identified significant drinking water threat(s). This may include any risk management measures that are already in place at the site to manage the activity.

***Please be aware of the date set out in the notice by which an agreement on a risk management plan must be reached; if agreement cannot be reached by that date, then it is the intent of the Risk Management Official to establish a risk management plan for the identified activity(ies) at that location, by Order. The authority for the Risk Management Official to do so is provided under Section 58 of the Clean Water Act, 2006.***

The content of the risk management plan will include, at minimum:

- Basic contact information
- The specific activities on the property designated as significant drinking water threats
- Property map identifying the location of the activities
- A reference to the draft policy (or policies) in the draft source protection plan that the interim risk management plan is designed to address
- The risk reduction measure(s) currently in place
- The additional risk reduction measures(s) to be taken to address the threat
- Rationale in support of the measure(s) identified
- Implementation schedule for measure(s)
- Details of the monitoring and reporting requirements
- Signatures and date.

In order to begin the process of developing a risk management plan for the identified activity(ies) on your property, please contact the Risk Management Official's Office at **[587-555-5555]**, anytime between **Monday and Friday, 9:00 am to 4:30 pm**, to discuss the specific contents of this notice and to request additional information.

You are encouraged to review the provincially approved **[Area Name]** Source Protection plan, which is comprised of both the scientific basis for identifying significant threat activities (in the form of the assessment report) as well as the local policies designed to address them. The plan can be found online at [www.conservation-ontario.on.ca/uncategorised/143-otherswpreionsindex](http://www.conservation-ontario.on.ca/uncategorised/143-otherswpreionsindex) or a hard copy can be obtained via the [(Municipal Clerk, Risk Management Official, etc)].

General information related to source water protection in Ontario, and the *Clean Water Act, 2006* can be found at [www.ontario.ca/ministry-environment](http://www.ontario.ca/ministry-environment).

Thank you for your ongoing cooperation in protecting our local sources of drinking water. We look forward to speaking with you in the near future.

***[Signature of the RMO and Contact Information]***

O. Appendix 4 (continued): Samples of Notices, Orders, Letters and Other Templates by York Region

***Risk Management Official's Order to Establish a Risk Management Plan***

***Clean Water Act, 2006 – ss. 58(12)***

***YORK-#4181439-v1-template\_for\_order\_to\_establish\_a\_risk\_management\_plan\_ss58(12)***

Order Number: \_\_\_\_\_

To: \_\_\_\_\_

Site/Location: \_\_\_\_\_

Property Owner: \_\_\_\_\_

Date: \_\_\_\_\_

Pursuant to Notice Issued On: \_\_\_\_\_

Notice File Number: \_\_\_\_\_

**Certificate of Service**

**Clean Water Act, 2006 – s. 10**

**YORK-#4181439-v1-template\_for\_order\_to\_establish\_a\_risk\_management\_plan\_ss58(12)**

I, \_\_\_\_\_, a designated Risk Management Official under the Clean Water Act, certify that I served a true copy of this Order, Order Number: \_\_\_\_\_, on the following person(s) or company ordered in the following manner:

Person/Company: \_\_\_\_\_

Site/Location: \_\_\_\_\_

Left With: \_\_\_\_\_

Position: \_\_\_\_\_

Date of Service: \_\_\_\_\_

Method of Service: \_\_\_\_\_

Signature \_\_\_\_\_

[name]  
Regional Municipality of York

Date: \_\_\_\_\_

**Notice of Date Copy of Prescribed Instrument is Due**

**O.Reg. 287/07 - Section 61(6)**



Notice  
File No. \_\_\_\_\_

To/ATTN: \_\_\_\_\_

Site/  
Location Address: \_\_\_\_\_

Property Owner Name: \_\_\_\_\_

Date: \_\_\_\_\_

**This Notice is being issued under subsection 61(6) of the O.Reg. 287/07.**

You are receiving this notice because one or more of the activities engaged in, or proposed to be engaged in, at the above noted address has been identified as a significant drinking water threat in the [SP Area name] Source Protection Plan, which came into effect on [XX date].

The subsection 61(2) of O.Reg. 287/07 Notice you gave did not identify where a statement described in subsection (4) of O.Reg. 287/07 appears and no statement under subsection (5) of O.Reg. 287/07 was given. As per the subsection 61(6) of O.Reg. 287/07 you shall give me:

- (a) a copy of a prescribed instrument that regulates the activity you are engaged in or are proposing to engage in at the particular location and that contains a statement that, for the purposes of engaging in the activity at that location, conditions have been included in the instrument to ensure that it conforms to the significant threat policies set out in the source protection plan; or**
- (b) a copy of a prescribed instrument that regulates the activity you are engaged in or are proposing to engage in at the particular location and a statement in writing from the person or body who issued or created the instrument indicating that, for the purposes of engaging in the activity at that location, the instrument conforms to the significant threat policies set out in the source protection plan.**

**This information is due by: \_\_\_\_\_**

**[Signature of Risk Management Official and Contact information:]**

**Notice of Date Copy of New Prescribed Instrument is Due**

**O.Reg. 287/07 - Section 61(8)**



Notice  
File No. \_\_\_\_\_

To/ATTN: \_\_\_\_\_

Site/  
Location Address: \_\_\_\_\_

Property Owner Name: \_\_\_\_\_

Date: : \_\_\_\_\_

**This Notice is being issued under subsection 61(8) of the O.Reg. 287/07.**

You are receiving this notice because one or more of the activities engaged in, or proposed to be engaged in, at the above noted address has been identified as a significant drinking water threat in the **[SP Area name]** Source Protection Plan, which came into effect on **[XX date]**.

The subsection 61(7) of O.Reg. 287/07 Notice you gave described the actions you will take to obtain a prescribed instrument that will regulate the activity at that location and that will conform to the significant threat policies set out in the source protection plan. As per the subsection 61(8) of O.Reg. 287/07 you shall give me:

- (a) a copy of a prescribed instrument that regulates the activity you are engaged in or are proposing to engage in at the particular location and that contains a statement that, for the purposes of engaging in the activity at that location, conditions have been included in the instrument to ensure that it conforms to the significant threat policies set out in the source protection plan; or**
- (b) a copy of a prescribed instrument that regulates the activity you are engaged in or are proposing to engage in at the particular location and a statement in writing from the person or body who issued or created the instrument indicating that, for the purposes of engaging in the activity at that location, the instrument conforms to the significant threat policies set out in the source protection plan.**

**This information is due by:** \_\_\_\_\_

**[Signature of Risk Management Official and Contact information:]**

**Notice of Termination of  
O.Reg. 287/07 - Subsection 61(1) Exemption**



Notice  
File No. \_\_\_\_\_

To/ATTN: \_\_\_\_\_

Site/  
Location Address: \_\_\_\_\_

Property Owner Name: \_\_\_\_\_

Date: : \_\_\_\_\_

**This Notice is being issued under subsection 61(10) of the O.Reg. 287/07.**

You are receiving this notice because one or more of the activities engaged in, or proposed to be engaged in, at the above noted address has been identified as a significant drinking water threat in the **[SP Area name]** Source Protection Plan, which came into effect on **[XX date]**.

The subsection 61(1) of O.Reg. 287/07 Notice you gave in order to receive an exemption from section 58 of the *Clean Water Act* has been terminated as of **[XX date]**.

**[Signature of Risk Management Official and Contact information:]**

**Restricted Land Use Notice**

**Clean Water Act - Section 59(2)- Risk Management Plan Agreed to or Established**



Notice  
File No. \_\_\_\_\_

To/ATTN: \_\_\_\_\_

Site/  
Location Address: \_\_\_\_\_

Property Owner Name: \_\_\_\_\_

Date: : \_\_\_\_\_

**This Notice is being issued under subsection 59(2)(b) of the *Clean Water Act, 2006*.**

You are receiving this notice because one or more of the land uses proposed to be engaged in, at the above noted address has been identified as a restricted land use under Section 59 of the *Clean Water Act* and in the **[SP Area name]** Source Protection Plan, which came into effect on **[XX date]**.

We have reviewed your application and find that section 58 (Risk Management Plan) applies to the activity(ies) for which the land is to be used at the location where the land is to be used. A risk Management Plan has been agreed to or established under section 58.

Thank you for your ongoing cooperation in protecting our local sources of drinking water.

***[Signature of Risk Management Official and Contact information:]***



**Clean Water Act (CWA) Annual Requirements for Reporting to Source Protection**

**Authority (Conservation Authority)**

**Required Under CWA (s. 81) and O.Reg. 287/07 (s. 65)**



The official's report **must** contain (9 items):

1. Number of RMPs **agreed to** (Section 56 (1) or 58 (5) (*Voluntary*) or **established** (56(6), 58(10), (or (12) (via application/order). Indicate for each:
  - a) **the location** of the property to which plan relates
  - b) **the WHPA of IPZ** where property is located
  - c) **the activity** to which plan relates
2. Number of plans the RMO **refuses to agree to** or **establish** under Section 56(9), 58(15) – (*meet/not meet criteria*), and 58(16) (*refusal*), including for each plan the information above (**a, b, c**) as well as the **Reasons for Refusal**.
3. Number of **orders issued** under Part IV, including for each order the information above (**a, b, c**) as well as a brief description of **circumstances** related to the order.
4. Number of **notices given to** and the number of **notices given by** the RMO under O.Reg 287/07, Sections 61(2)(*has Prescribed Instrument*), (7) (*intends to get instrument*) and (10) (*exemption termination*), including for each notice the information above (**a, b, c**) as well as the **type of prescribed instrument**, if any, referred to in the notice and any information needed to identify the prescribed instrument.
5. Number of CWA Section 59 notices issued.
6. Number of **inspections** carried out under Section 62 (*without consent*) of the CWA, including:
  - For each inspection, the **activity** to which the inspection relates.
  - The number of those cases in which the person was **not complying** with the RMP agreed to/imposed under section 56.
  - The number of inspections carried out in respect of an activity to which section 58 applies, and number of those cases where person **not complying** with an RMP agreed to/imposed under Section 58 and number of cases in which person was carrying out activity in **contravention of Section 58(1)** – (*engaged in activity without required RMP*)
  - The number of inspections carried out in respect of an activity to which Section 57 applies and number of those in which person was in **contravention of Section 57(1)** (*engaged in an activity where prohibited*)
7. Number of Risk Assessments submitted under Section 60 of the CWA, the number of those accepted and not accepted, including for each application the a) location of property b) WHPA or IPZ and c) activity to which the risk of assessment relates.
8. Number of times the RMO caused a thing to be done under Section 64 of CWA, including in each instance the information above (a, b, c) to which the Section 64 notice relates.
9. Total number of prosecutions and the number of prosecutions that resulted in conviction under Section 106 (Offences), including a brief description of each offence.

**Certificate of Compliance**



**Certificate of Compliance Framework for  
Handling and Storage of Fuel Oil at a Residential Site**

This information is required for obtaining a certificate of compliance for storage and handling of fuel oil at a residential site.

**1. Introduction and Background**

- Property description
- Clearly define the site with a map of it in a local context, where the fuel tank is located in relation to the house, identify significant threats, other prescribed activities, and preferential pathways (e.g. well, septic system, ditch). Include a scale bar, legend, and north arrow
- Describe the threat(s)

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**2. Document Preparation**

This document was prepared by: \_\_\_\_\_

**3. Process Considerations**

This document was prepared keeping in mind not only the protection of the existing municipal wells and well fields, but also for the longer term protection of the aquifer and potential new sources of groundwater supply. Consultation between the municipal review staff and the proponent has taken place as part of the initial screening stage to ensure that the major issues have been identified.

**Certificate of Compliance (continued)**



**4. Risk Determination Components**

**4.1 Introduction/Background:**

- Site location including street address \_\_\_\_\_
- UTM (northing and easting for centre of property) \_\_\_\_\_
- Roll/tax number \_\_\_\_\_
- Township/municipality \_\_\_\_\_
- Lot, concession \_\_\_\_\_
- Size of property \_\_\_\_\_
- Type of site servicing:  Municipal water  Municipal sewer  Private well  
 On-site septic system  Other \_\_\_\_\_

**4.2 Below-Ground Site Characterization**

- If there are any existing wells on the site please provide information on them (e.g. dug/drilled, depth, age, well log, in use or not) \_\_\_\_\_
- If there is an existing on-site septic system please provide information on it (e.g. location, design, age, capacity/yield) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**4.3 Risk Determination**

- Please indicate the approximate maximum volume of fuel oil stored on site:  
\_\_\_\_\_ litres (or gallons)
- Tank Location (e.g. outside, basement, underground) \_\_\_\_\_

**Certificate of Compliance (continued)**



**5. Risk Management Components**

**Information on Preventive Measures**

**Please provide details on how the handling and storage of the fuel will cease to be or be prevented from becoming a significant threat, such as:**

- Copy of information on industry standards, regulations, best management practices, policies, etc. that are in place to help prevent contamination from the fuel oil, including those of your insurance company
- Copy of fuel oil supplier's environmental management policies and commitments

***Spill/leak prevention measures***

Provide details on how the fuel oil storage tank is constructed and operated so that it does not cause contamination, by checking the following boxes that apply and providing details where possible:

- Double walled and/or lined tanks and pipelines
- Liquid level indicators
- Leak detectors Alarm systems Backflow prevention Corrosion prevention
- Maintenance, inspection, and leak testing plans
- Selection of chemically appropriate storage containers
- Separation of non-compatible chemicals
- Security information (i.e. fencing)

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Copy of procedure and schedule to inspect the site and all related contamination prevention measures to ensure they are functioning as intended/designed

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**Certificate of Compliance (continued)**



Schedule of reporting to the Region

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Schedule to review and update the plan (e.g. every 5 years or more frequently if major changes occur at the site)

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Emergency response plan (e.g. phone numbers for contractors, Spill Centre)

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Proof of all required insurance is attached

Method proposed to cover any remediation of adverse effects

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Other:

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**Spill containment measures**

Check the following boxes that are in place:

- Bunds, pads, and trays
- Enclosures with sealed floors
- Dykes
- Trenches
- Lagoons

Other:

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**Certificate of Compliance (continued)**



**6. Conclusions and Recommendations**

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**7. References and Appendices**

Please provide the following if they are available: Well records and borehole logs; Copies of relevant planning policies, agency guidelines

**8. Other information or comments**

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NAME: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

DATE: \_\_\_\_\_

**Restricted Land Use Notice**  
**Clean Water Act - Section 59(2)**



Notice  
File No. \_\_\_\_\_

To/ATTN: \_\_\_\_\_

Site/  
Location Address: \_\_\_\_\_

Property Owner Name: \_\_\_\_\_

Date: \_\_\_\_\_

**This Notice is being issued under subsection 59(2)(a) of the *Clean Water Act, 2006*.**

You are receiving this notice because one or more of the land uses proposed to be engaged in, at the above noted address has been identified as a restricted land use under Section 59 of the *Clean Water Act* and in the **[SP Area name]** Source Protection Plan, which came into effect on **[XX date]**.

We have reviewed your application and find that neither section 57 (Prohibition) nor section 58 (Risk Management Plan) applies to the activity(ies) for which the land is to be used at the location where the land is to be used.

Thank you for your ongoing cooperation in protecting our local sources of drinking water.

***[Signature of Risk Management Official and Contact information:]***

**Notice of Intent to Cause Things to Be Done**

**Clean Water Act - Section 64**



Notice  
File No. \_\_\_\_\_

To/ATTN: \_\_\_\_\_

Site/  
Location Address: \_\_\_\_\_

Property Owner Name: \_\_\_\_\_

Date: \_\_\_\_\_

**This Notice is being issued under subsection 64(2) of the *Clean Water Act, 2006*.**

You are receiving this notice because one or more of the activities engaged in, or proposed to be engaged in, at the above noted address has been identified as a significant drinking water threat in the **[SP Area name]** Source Protection Plan, which came into effect on **[XX date]**.

As per the section 63 Order issued to you on [XX date] the following things were required to be done:

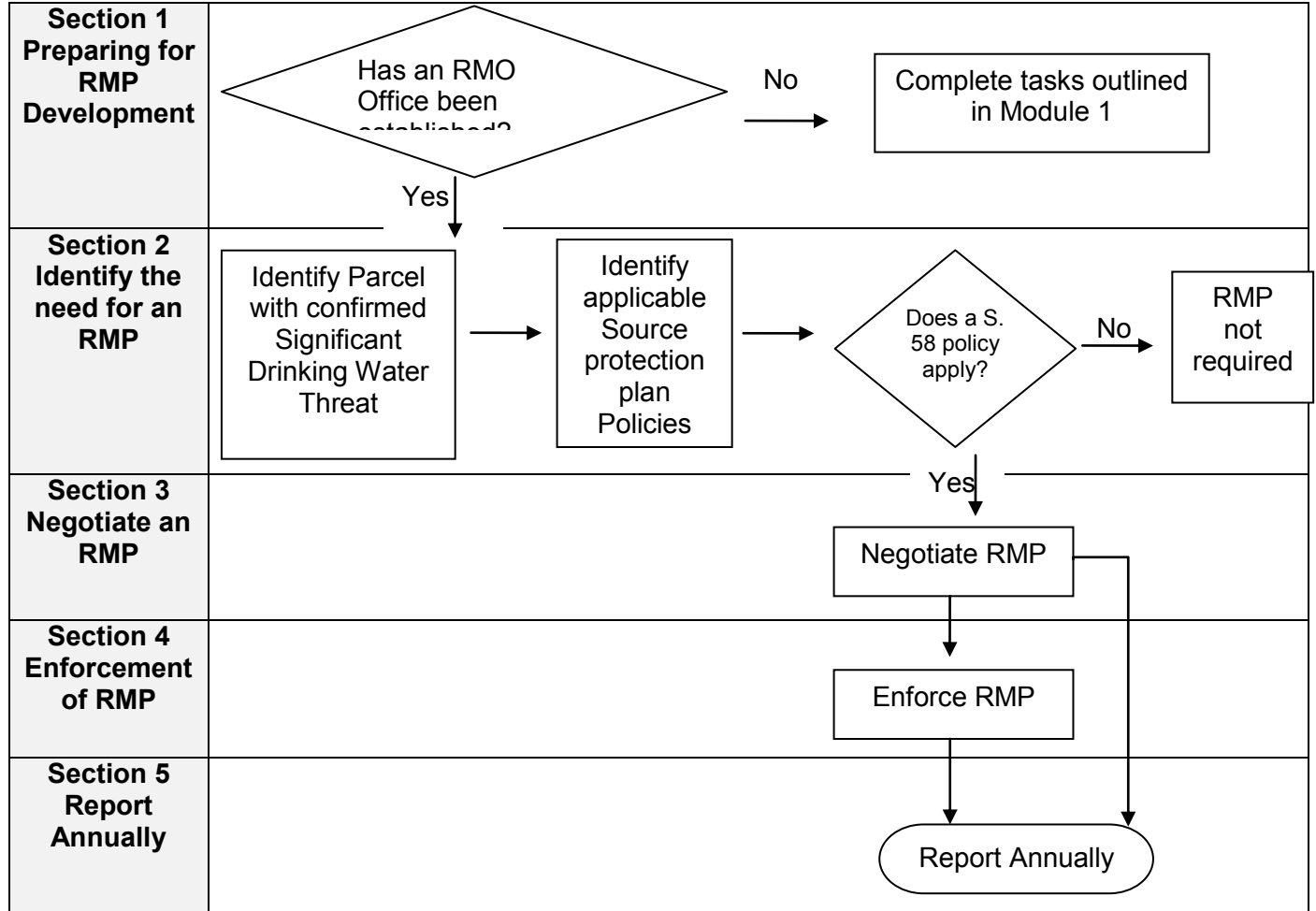
***Pursuant to the authority provided by the Clean Water Act, 2006, it is the intent of the Risk Management Official to cause the things listed above to be done at [location], by this Order, under section 64 of the Clean Water Act, 2006.***

***[Signature of Risk Management Official and Contact information:]***

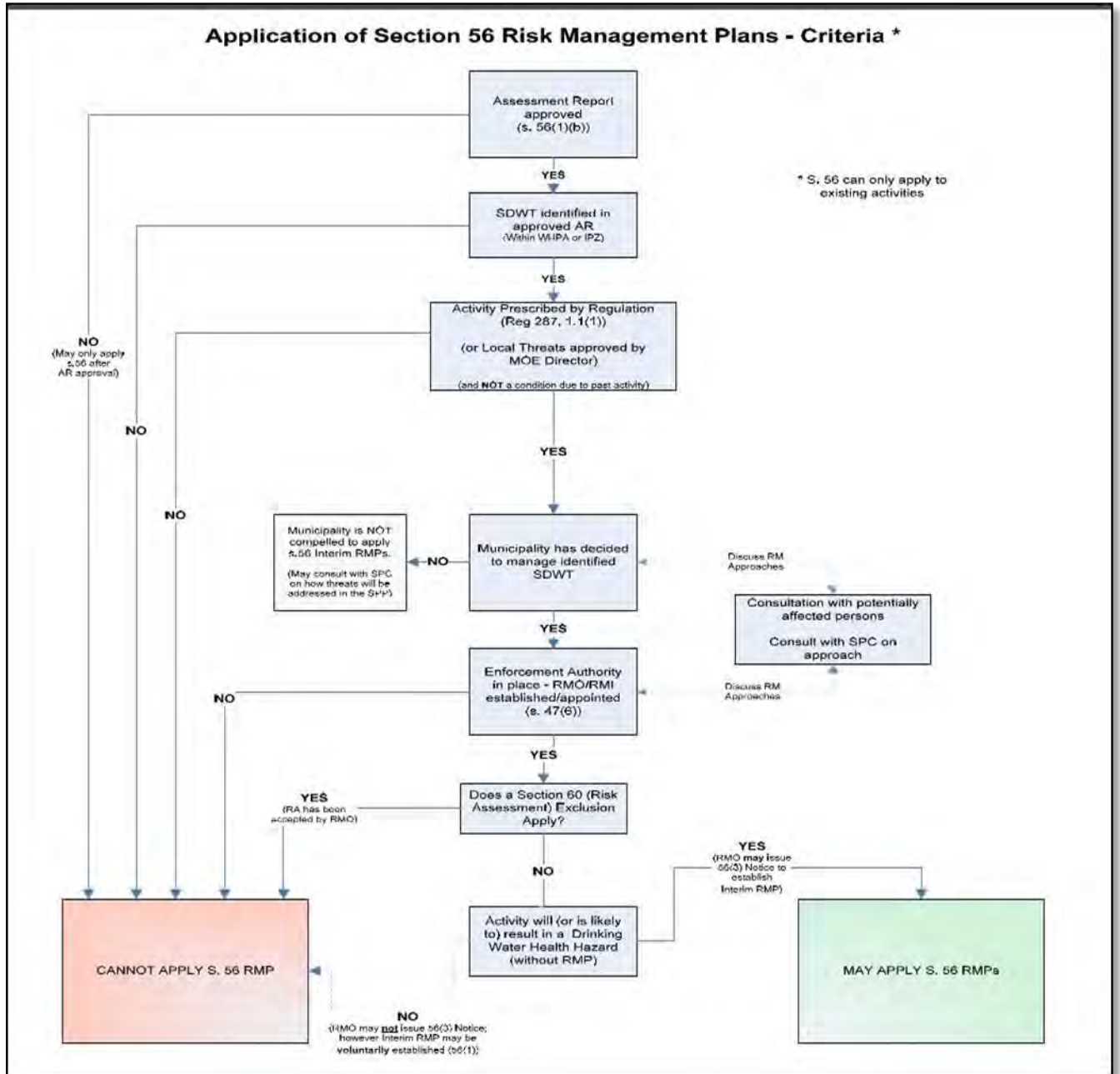


## P. Appendix 5: Process Charts

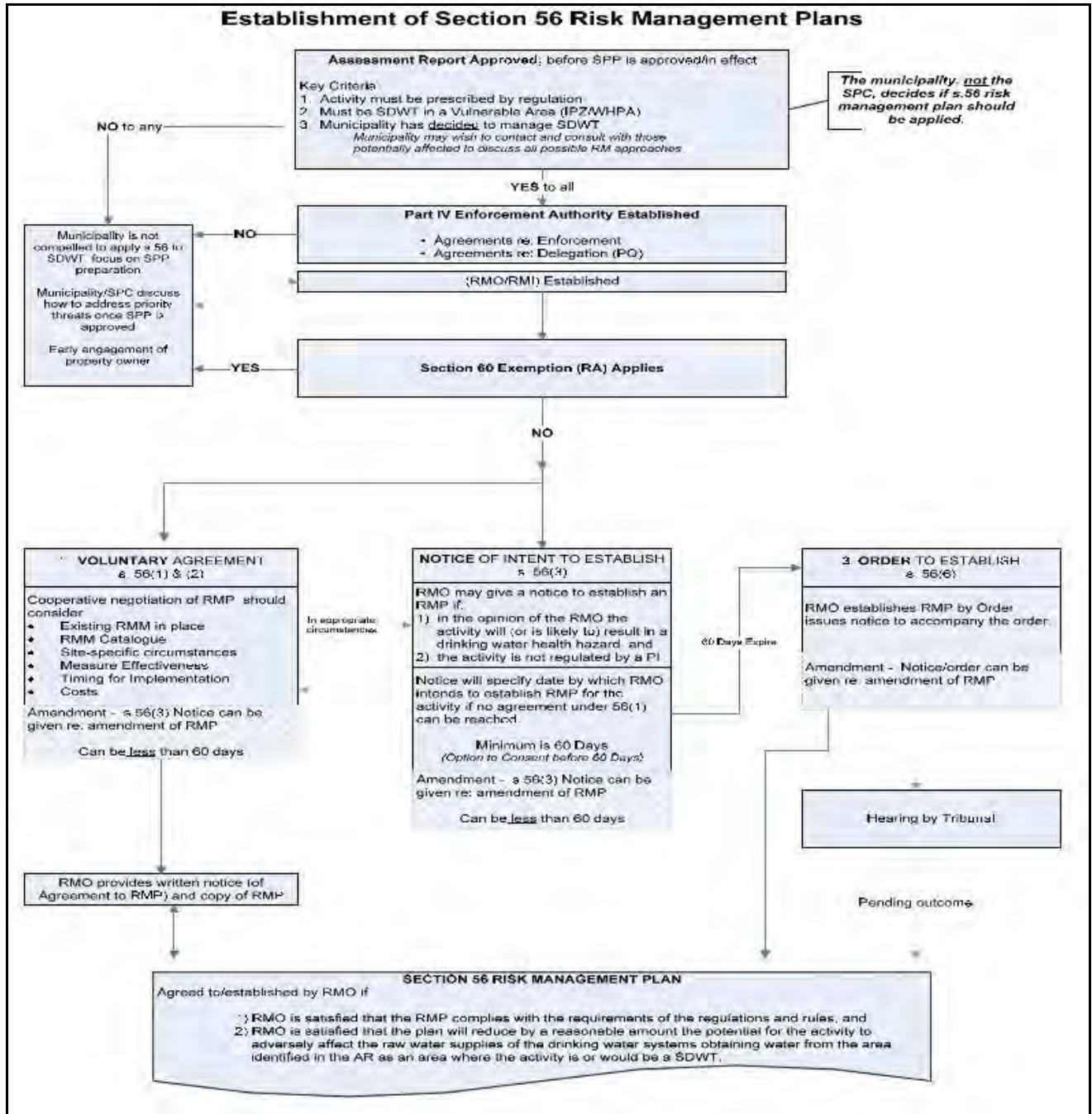
### Risk Management Plan Development Process under Section 58 of the *Clean Water Act*



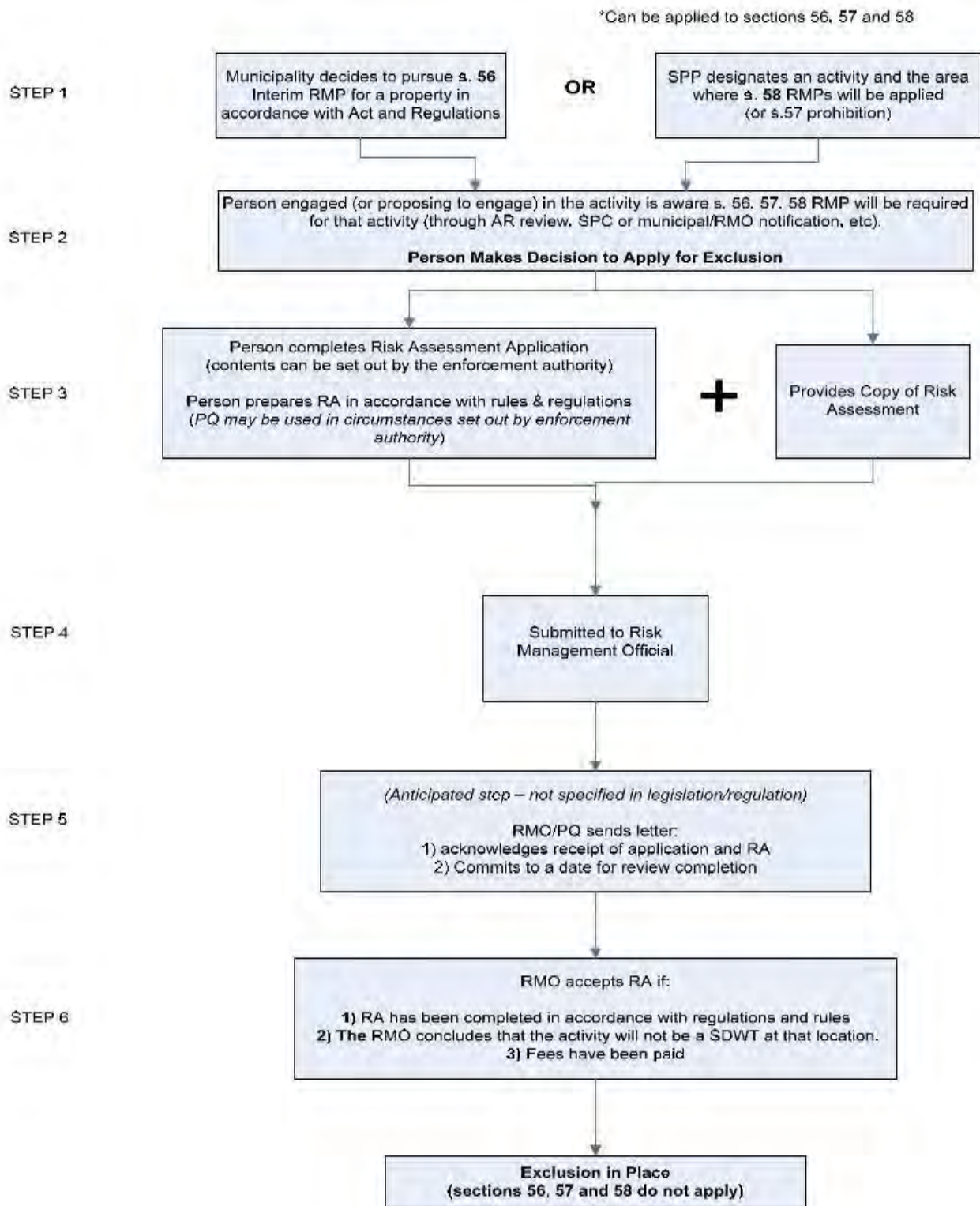
Process for Interim Risk Management Plan Development  
under Section 56 of the *Clean Water Act*



## Process for Interim Risk Management Plan Development under Section 56 of the *Clean Water Act*



### Section 60 Risk Assessment Process\*





## Q. Appendix 6: Case Study of Workload Prioritization Process

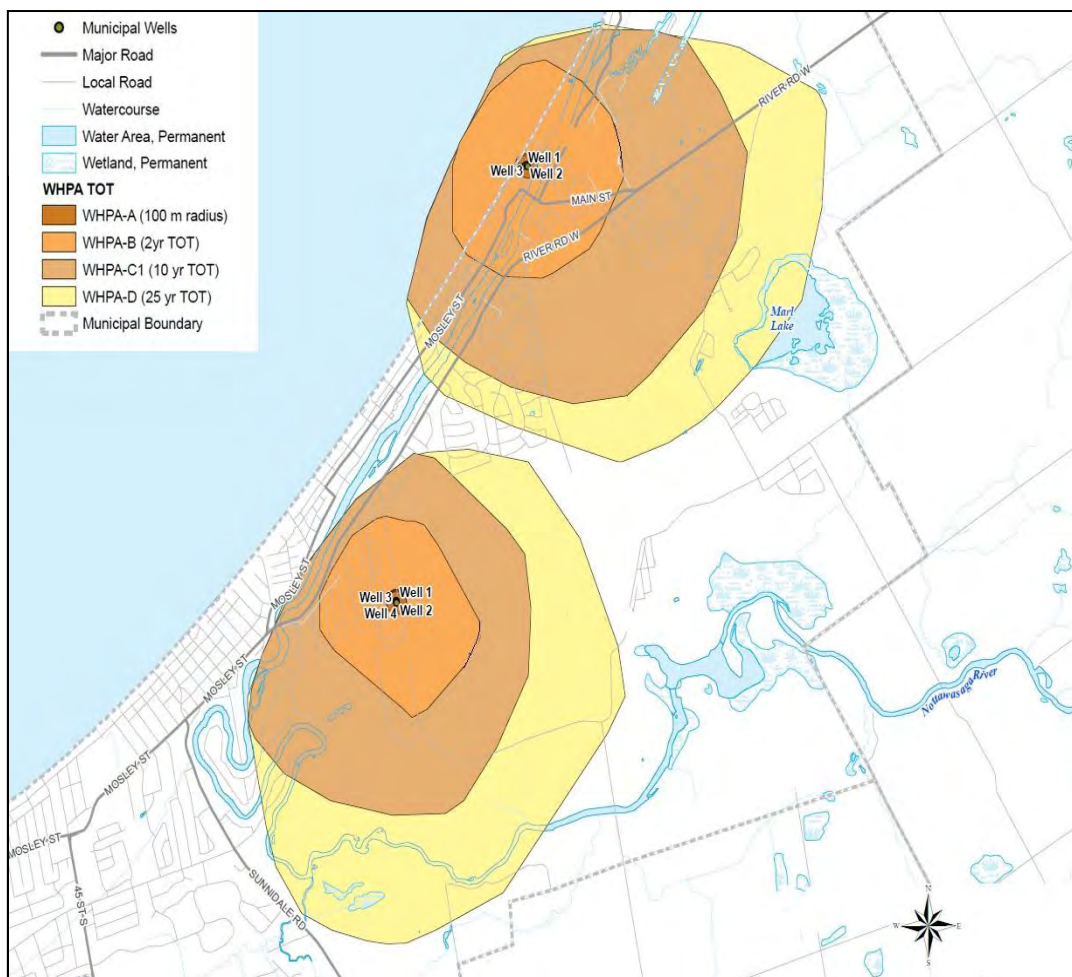
### Case Study- Prioritizing the Risk Management Process Workload

This case study will walk you through the process of developing a work plan to prioritize the risk management process workload. By prioritizing the risk management process workload, the RMO can ensure that all necessary RMPs are established by dates specified in the Source Protection Plan. Prioritizing the workload can be broken down into two key tasks; understanding the workload, and prioritizing the negotiation roll out. Each task involves a series of steps which will be highlighted through this case study. For the study, we will consider the fictional Municipality of ABCD. We will take on the role of the RMO, and work through the multiple steps required to develop an effective work plan.

### Understanding the Workload

#### Step 1: Gain an Understanding of the Local Vulnerable Areas

As a first step, we will need to gain an understanding of the vulnerable areas defined for the Municipality of ABCD. Having an understanding of the vulnerable areas and associated vulnerability scores will allow us to identify where significant threat activities are possible, and in turn determine where s.58 policies will need to be enforced. In order to do this, we will need to consult the local Assessment Report.



Map 1: Wellhead Protection Areas for the Municipality of ABCD

Q. Appendix 6 (continued): Case Study of Workload Prioritization Process

Maps and descriptive text in the relevant Assessment Report emphasize that the Municipality of ABCD exclusively obtains potable water from groundwater sources, and does not operate any surface water based supplies. As a result, Wellhead Protection Areas (WHPAs) are the primary Vulnerable Areas delineated to ensure the protection of the municipal groundwater supply. The groundwater supply is obtained from two well fields comprised of a total of 7 wells; 3 wells in the north well field, 4 wells in the south. Map 1 illustrates the WHPAs associated with each well field in the Municipality of ABCD.

Each wellhead protection area is further assessed for the intrinsic vulnerability (natural vulnerability) of the water supply. Vulnerability scores assigned to zones within the wellhead protection areas provide an indication of the where threats present at the surface will present the greatest risk to water supplies. Generally, areas located in the immediate vicinity of municipal wells are assigned a higher vulnerability score, since threats at these locations would present a greater risk to municipal water supplies. Map 2 illustrates the vulnerability scores assigned within the Wellhead Protection Areas for the Municipality of ABCD. From the map, we can see that the WHPAs for the Municipality of ABCD have a low natural vulnerability, with only a small area around the well designated as a highly vulnerable. Any threat activities identified in these red zones will present the highest potential risk to municipal water supplies.



Map 2: Vulnerability Scores within WHPAs for the Municipality of ABCD

Q. Appendix 6 (continued): Case Study of Workload Prioritization Process

Now that we have an understanding of the local vulnerable areas and associated vulnerability scores, we can determine where threat activities can be significant. Understanding where threat activities can be significant, allows us to identify the areas where the S.58 policies will need to be applied for designated activities. Most threat activities are significant within WHPAs where the vulnerability score is between 8-10. Activities associated with the handling and storage of DNAPLs are an exception to this, and are considered significant threats in any zone within a WHPA with a vulnerability score greater than or equal to 2. Therefore, for the municipality of ABCD, threats identified in the area delineated in red will be significant and may, depending on s.58 policies specified in the local SPP, be subject to s.58 RMP. Any identified DNAPL threats highlighted within the WHPAs will also be considered significant, and may be subject to s.58 RMP policies depending on specifications within the local SPP, and individual circumstances.

**Step 2: Determine how many existing significant drinking water threats have been identified and require an RMP**

Now that we have an understanding of where SDWTs are possible, we can go on to determine the number of existing significant threats that will require an RMP. This will allow us to identify which s.58 policies will need to be enforced, and provide direction on the types of RMPs that will be required.

Threat summary tables contained within the local Assessment Report indicate that within the Municipality of ABCD, there is a total of 20 significant drinking water threats on 20 parcels. 14 of these threat activities are categorized under the handling and storage of DNAPLs. Two significant threats are attributed to the establishment, operation, or maintenance of a system that collects, stores, transmits, treats, or disposes of sewage, while three are classified as the handling and storage of fuel. The remaining threat is attributed to the handling and storage of organic solvent.

*Table 1 : Total Number of Threats - North Well Field*

WHPA	Threat Category	Number of Parcels with Significant Activity Threats
North Well Field	The establishment, operation or maintenance of a waste disposal site within the meaning of Part V or the Environmental Protection Act.	0
	The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.	0
	The application of agricultural source material to land.	0
	The storage of agricultural source material.	0
	The management of agricultural source material.	0
	The application of non-agricultural source material to land.	0
	The handling and storage of non-agricultural source material.	0
	The application of commercial fertilizer to land.	0
	The handling and storage of commercial fertilizer.	0
	The application of pesticide to land.	0
	The handling and storage of pesticide.	0
	The application of road salt.	0
	The handling and storage of road salt.	0
	The storage of snow.	0
	The handling and storage of fuel.	1
	The handling and storage of a dense non-aqueous phase liquid.	14
	The handling and storage of an organic solvent.	1
	The management of runoff that contains chemicals used in the de-icing of aircraft.	0
	The use of land as livestock grazing or pasturing land, an outdoor confinement area, or a farm-animal yard.	0
	<b>Total Threats</b>	<b>16</b>



Q. Appendix 6 (continued): Case Study of Workload Prioritization Process

Table 2 : Total Number of Threats - South Well Field

WHPA	Threat Category	Number of Parcels with Significant Activity Threats
South Well Field	The establishment, operation or maintenance of a waste disposal site within the meaning of Part V or the Environmental Protection Act.	0
	The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.	2
	The application of agricultural source material to land.	0
	The storage of agricultural source material.	0
	The management of agricultural source material.	0
	The application of non-agricultural source material to land.	0
	The handling and storage of non-agricultural source material.	0
	The application of commercial fertilizer to land.	0
	The handling and storage of commercial fertilizer.	0
	The application of pesticide to land.	0
	The handling and storage of pesticide.	0
	The application of road salt.	0
	The handling and storage of road salt.	0
	The storage of snow.	0
	The handling and storage of fuel.	2
	The handling and storage of a dense non-aqueous phase liquid.	0
	The handling and storage of an organic solvent.	0
	The management of runoff that contains chemicals used in the de-icing of aircraft.	0
The use of land as livestock grazing or pasturing land, an outdoor confinement area, or a farm-animal yard.	0	
<b>Total Threats</b>	<b>4</b>	
<b>Total Parcels with Significant Threats (Activities) - All WHPAs</b>		<b>20</b>

Now that we have an understanding of the number and types of significant drinking water threats present in the municipality, the source protection plan will need to be consulted to identify which of the identified threat activities are designated for the purposes of s.58. Using the information we now know about the number and type of existing threats, we can make a s.58 applicability reference sheet that outlines when and where s. 58 policies apply within the municipality. A sample RMP applicability sheet has been completed for the Municipality of ABCD below (Table 3 ).

At this point we will also want to consider any findings brought forward by threats verification work, and refine the s.58 applicability reference sheet accordingly. Prescribed Threat #2 - the establishment, operation or maintenance of a system that collects/stores/treats/disposes of sewage has been identified as a significant threat in the south well field. Activities that fall under this category can be further classified into 4 threat subcategories (Threats 2a-2d) according the local source protection plan. For this case study we will assume that threats verification work has confirmed that the two threat activities identified fall under subcategory 2c. Subcategory 2c addresses threats associated with on-site sewage systems. According the source protection plan, threats that fall under this subcategory are not subject to s.58 RMP policies, and therefore will not need to be addressed through an RMP.

By comparing the number and types of significant drinking water threats present in the municipality against relevant section 58 policies in the local source protection plan, we can determine that a total of 18 RMPs will need to be negotiated ( as shown in Table 3).



*Table 3 : Potential Risk Management Plans Based on Enumerated Significant Threats for the Municipality of ABCD*

Threat #	Threat Category	RMP Policy Applies?	# of RMPs Required
2c	Establishment, operation or maintenance of system that collects /stores/transmits/treats/disposes of sewage – <u>on-site sewage systems</u>	No	n/a
15	Handle/Store Fuel	Yes	3
16	Handle/Store DNAPL	Yes	14
17	Handle/Store Organic Solvent	Yes	1
	<b>TOTAL RMPs</b>		<b>18</b>

**Step 3: Analyze and Sort the RMP Workload**

Now that we have an understanding of the number of risk management plans required to address existing threats, we will want to sort and analyze the information in order to gain an understanding of how we can most effectively prioritize the negotiation roll-out. The number of risk management plans to complete can be sorted by land use category, geographic area, and threat activity category. Viewing the risk management plan workload in a variety of formats provides us with the additional information required to effectively prioritize the workload.

For the municipality of ABCD, we will begin by first sorting the information according to land use category. To do this we will need to know the land use category associated with each of the identified activity threats. The four general land use categories that threat activities can be sorted into include: agriculture, businesses/commercial, municipal lands, and residential properties. Land use information can be obtained from schedules found in official plans, or from the MPAC reference data provided with the digital significant threat information obtained from the source protection authority. As shown in Table 4, using the database software program ‘Excel’, we can easily sort the threats information according the land use category. By sorting the information according to land use, we gain an understanding of the sectors that we will be dealing with, and the types of RMPs that will be required. From the analysis (Table 4) , we can see the majority of the significant drinking water threats are located on properties designated under the “business/commercial’ land use category, meaning that the majority of RMPs will need to be negotiated for the business sector, while only a handful of RMPs will be required for the municipal sector. When deciding how to prioritize the workload, we may choose to negotiate all of the RMPs designated under the ‘business’ land use category first, and then deal with the remaining threats designated under the ‘municipal’ land use category.

Q. Appendix 6 (continued): Case Study of Workload Prioritization Process

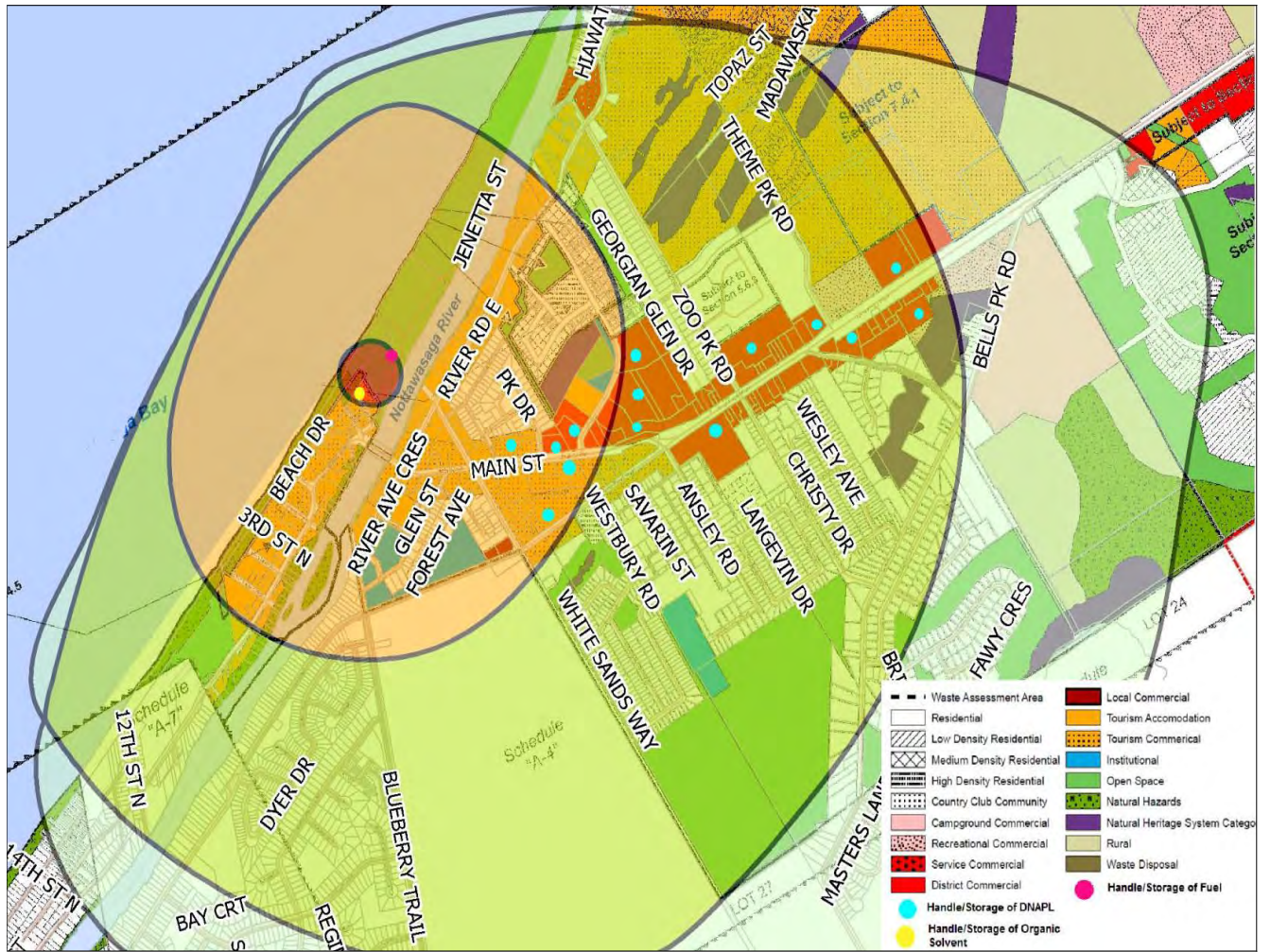
We can also sort our workload according to threat category (as shown in in Table 4) . This will help us understand the specific type of risk management plans that will need to be negotiated. From our analysis we now know that the majority of the threats that will need to be addressed through an RMP are associated with the handling and storage of DNAPLs. We may choose to prioritize negotiations for these threats first, as they make up the largest portion of identified threats and will likely require a greater time commitment.

*Table 4: Analysis of RMP Workload according to Land Use and Threat Category*

Threat #	Threat Category	Associated Land Use Category	RMP Policy Applies ?
15	Handle/Store Fuel	Municipal	Yes
15	Handle/Store Fuel	Municipal	Yes
15	Handle/Store Fuel	Municipal	Yes
16	Handle/Store DNAPL	Business/Commercial	Yes
16	Handle/Store DNAPL	Business/Commercial	Yes
16	Handle/Store DNAPL	Business/Commercial	Yes
16	Handle/Store DNAPL	Business/Commercial	Yes
16	Handle/Store DNAPL	Business/Commercial	Yes
16	Handle/Store DNAPL	Business/Commercial	Yes
16	Handle/Store DNAPL	Business/Commercial	Yes
16	Handle/Store DNAPL	Business/Commercial	Yes
16	Handle/Store DNAPL	Business/Commercial	Yes
16	Handle/Store DNAPL	Business/Commercial	Yes
16	Handle/Store DNAPL	Business/Commercial	Yes
16	Handle/Store DNAPL	Business/Commercial	Yes
16	Handle/Store DNAPL	Business/Commercial	Yes
16	Handle/Store DNAPL	Business/Commercial	Yes
16	Handle/Store DNAPL	Business/Commercial	Yes
17	Handle/Store Organic Solvent	Business/ Commercial	Yes

Finally, using GIS enabled software we can also analyze the workload through mapping. Figures 3 and 4 map our RMP workload according to geographic location; this allows us to see how the workload relates to local vulnerable areas. Maps 3 and 4 illustrate the location of the target threat properties in relation to wellhead protection areas. This allows us to easily view our target work areas, and prioritize negotiations according to geographic location. Looking at the map, we may choose to prioritize the threats associated with the handling and storage of fuel and organic solvent, since these threats are located in higher vulnerability areas. Alternatively, we can also see that the majority of the threats associated with handling and storage of DNAPLs are clustered to one specific geographic area in the northern well field. We may alternatively choose to prioritize these threats, and then deal with the remaining threats dispersed throughout the municipality.

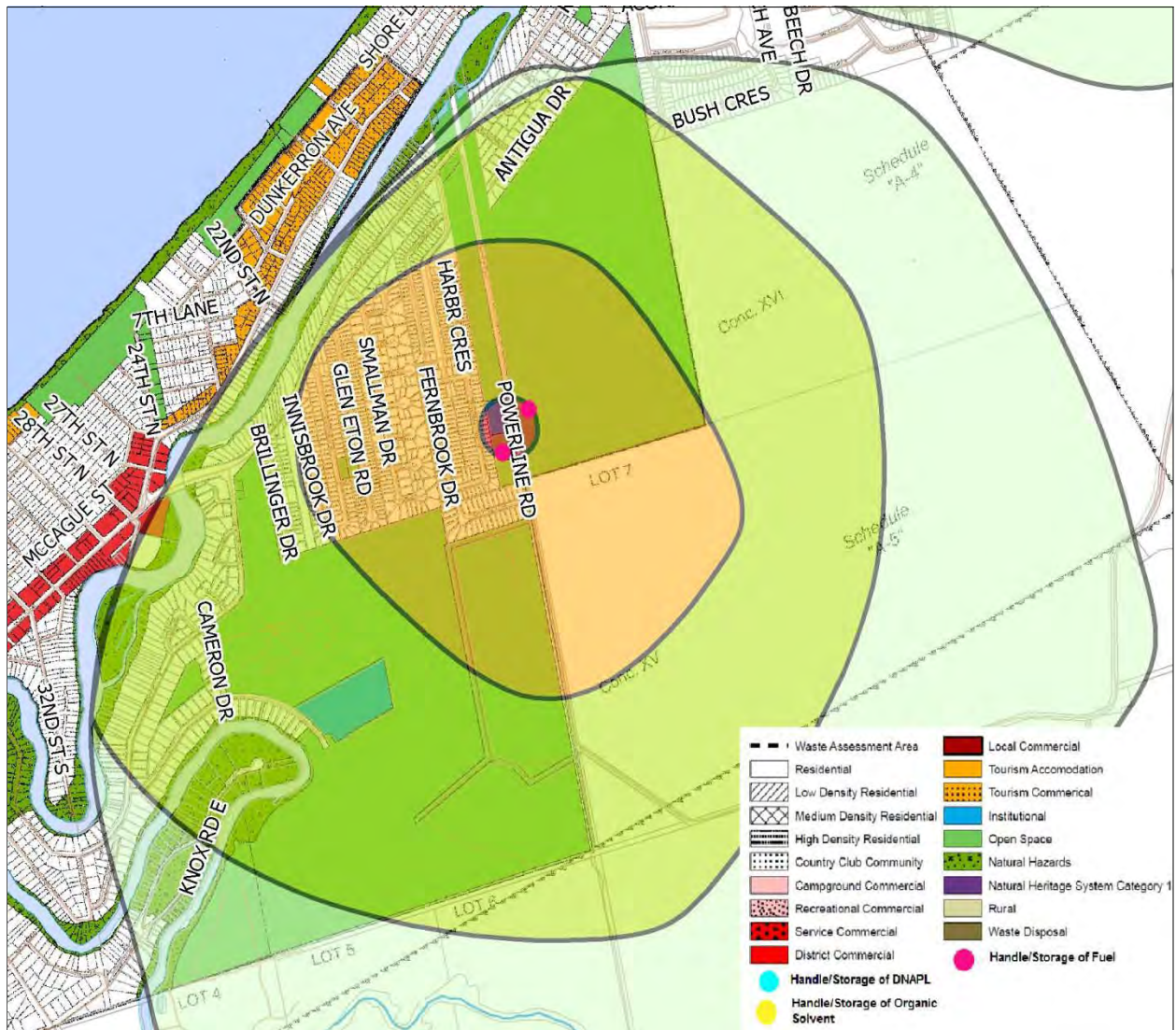
Q. Appendix 6 (continued): Case Study of Workload Prioritization Process



Map 3 : North Well Field WHPA & RMP Workload



Q. Appendix 6 (continued): Case Study of Workload Prioritization Process



Map 4: South Well Field WHPA & RMP Workload

**Step 4: Estimate the Number of Future Threat Activities that will require a risk management plan**

In addition to determining the number of RMPs that will be necessary to address existing threats, we will also need to estimate the number of risk management plans that will need to be negotiated as a result of applications to develop future threat activities. This will require us to gain an understanding of designated growth, settlement, employment, and redevelopment areas planned for the municipality. To obtain this information, we will need to refer to proposed development schedules found in official plans, or consult with the municipal planning department. As shown in Maps 5 and 6, the location of designated vulnerable areas can be compared against proposed development areas outlined in the official plan. Using GIS enabled software it may be possible to map these two pieces of information to gain a thorough understanding of how these areas relate. WHPAs designated for both the north and south well fields overlap future development areas. Further consultation with the planning department will be required to estimate the number of future plans expected to be negotiated each year in these vulnerable areas.

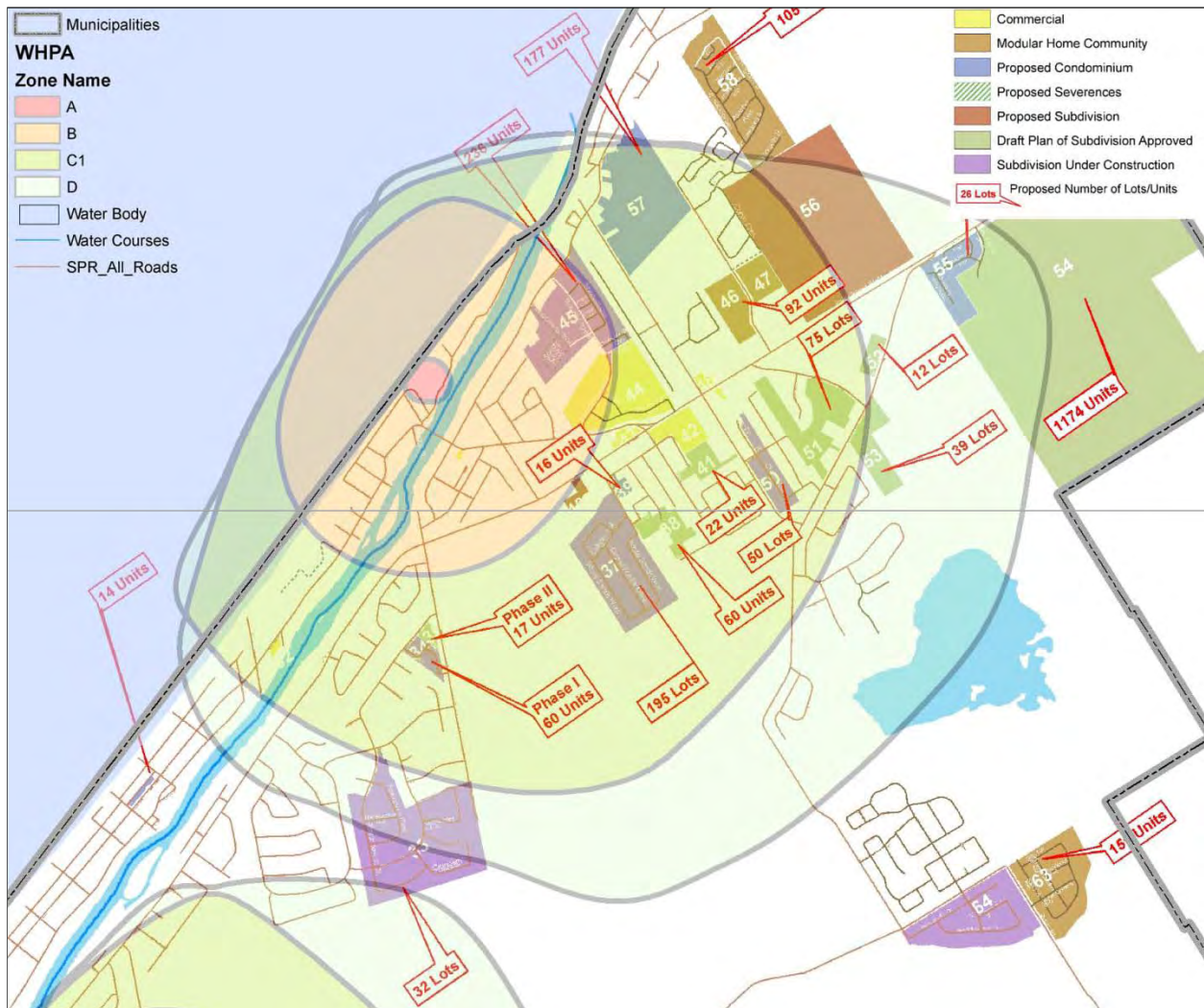


Figure 5: North Well Field WHPAs and Future Development



Q. Appendix 6 (continued): Case Study of Workload Prioritization Process

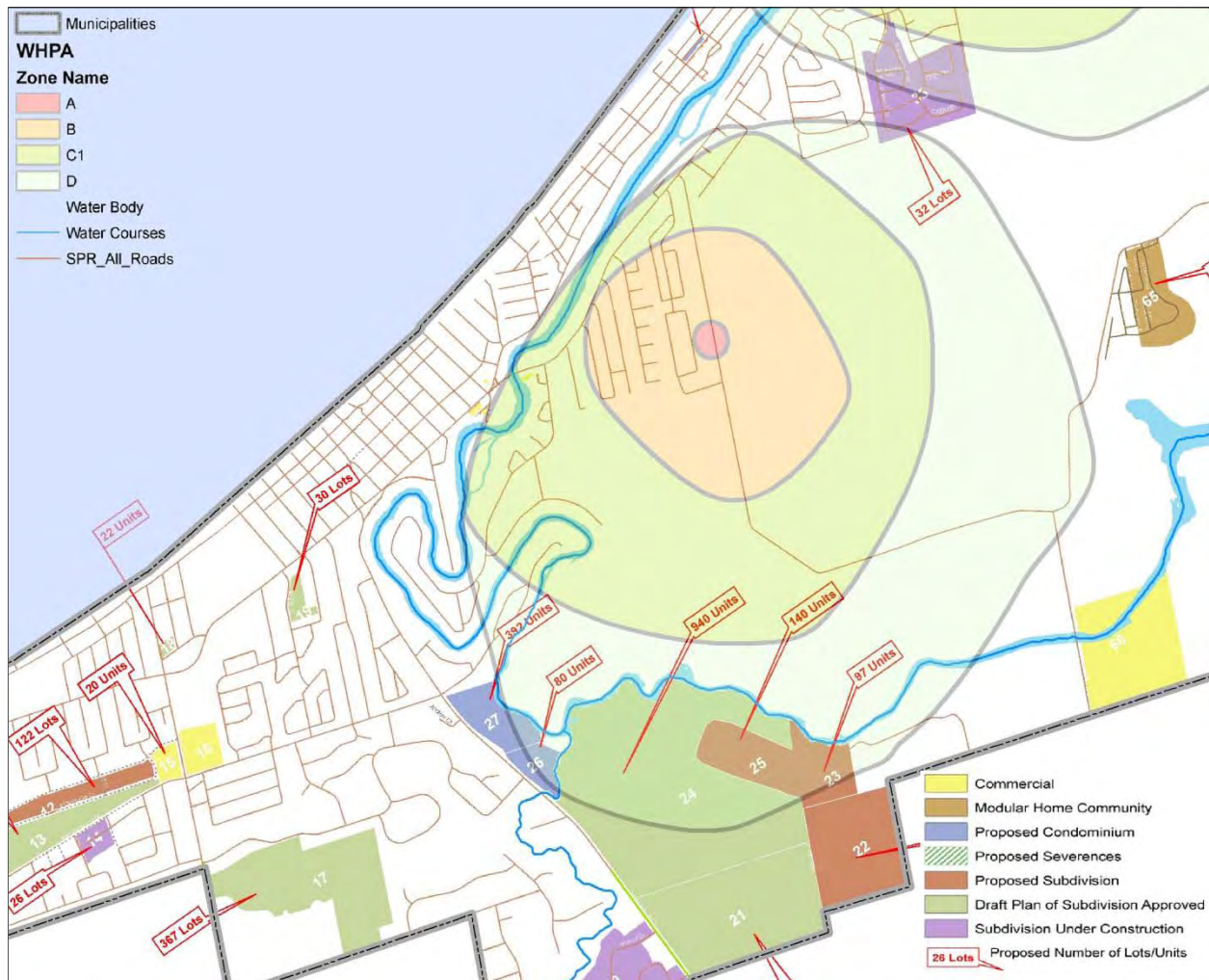


Figure 6: South Well Field WHPAs and Future Development

### **Prioritizing the Negotiation Roll-Out**

#### **Step 5: Prioritize the negotiation roll-out**

Now that we have an understanding of the workload, we can begin to prioritize the negotiation roll-out. To prioritize the negotiation roll out, a work plan that outlines when each risk management plan will be negotiated should be developed. Three main factors will dictate the number of RMPs that will need to be negotiated each year:

- The number of existing significant drinking water threat activities
- The number of anticipated future threat activity applications and
- Timelines established in the Source Protection Plan

Q. Appendix 6 (continued): Case Study of Workload Prioritization Process

The SPP that addresses the Municipality of ABCD requires that RMPs be developed to address all applicable significant drinking water threats within 3 years of plan approval. The following section outlines a couple of the approaches we can implement when prioritizing the RMP workload for the Municipality of ABCD.

**Option 1 – Phased Approach**

Using the phased approach, for the first year of negotiations we would plan to complete an RMP for each of the land use categories identified. This would allow us to gain an understanding of the effort required to complete an RMP from start to finish, and reveal some of the issues that may come up for each sector. For the municipality of ABCD, RMPs will only need to be established for 2 main land use categories. In the first year, we would aim to negotiate a small number of RMPs from each category, as shown in Table 5. For the remaining two years, using the knowledge we gained from year one, we would set realistic time frames to negotiate the outstanding RMPs.

*Table 5: RMP Negotiation Schedule – Phased Approach*

Threat #	Threat Category	Associated Land Use Category	RMP Policy Applies ?	Year of Planned Negotiation
15	Handle/Store Fuel	Municipal	Yes	1
16	Handle/Store DNAPL	Business/ Commercial	Yes	1
16	Handle/Store DNAPL	Business/ Commercial	Yes	1
17	Handle/Store Organic Solvent	Business/Commercial	Yes	1
15	Handle/Store Fuel	Municipal	Yes	2
15	Handle/Store Fuel	Municipal	Yes	2
16	Handle/Store DNAPL	Business/ Commercial	Yes	2
16	Handle/Store DNAPL	Business/ Commercial	Yes	2
16	Handle/Store DNAPL	Business/ Commercial	Yes	2
16	Handle/Store DNAPL	Business/ Commercial	Yes	2
16	Handle/Store DNAPL	Business/ Commercial	Yes	2
16	Handle/Store DNAPL	Business/ Commercial	Yes	3
16	Handle/Store DNAPL	Business/ Commercial	Yes	3
16	Handle/Store DNAPL	Business/ Commercial	Yes	3
16	Handle/Store DNAPL	Business/ Commercial	Yes	3
16	Handle/Store DNAPL	Business/ Commercial	Yes	3
16	Handle/Store DNAPL	Business/ Commercial	Yes	3
16	Handle/Store DNAPL	Business/ Commercial	Yes	3

Q. Appendix 6 (continued): Case Study of Workload Prioritization Process

**Option 2- Even Number Approach**

As an alternative to the phased approach, we may choose to negotiate an even number of RMPs each year to ensure that mandatory timelines set out in the SPP are met. For the Municipality of ABCD, 18 parcels have been identified as requiring a risk management plan. The source protection plan indicates that all plans must be in place within 3 years of SPP approval. This means that 6 plans will need to be negotiated each year (Table 6) It is important to keep in mind that all future threat activities subject to S.58 will also need to be addressed through risk management plans. With the guidance of the planning department, we can determine that a total of 2 applications can be anticipated each year. Adding this to the existing threat activity numbers brings the annual risk management plan negotiation workload up to 8 plans per year.

Now that we have determined the total amount of plans to be anticipated each year, we can further prioritize our negotiations using the insights gained from the analysis we performed in step 3. For this example we will negotiate 6 RMPs per year to address existing threats , and prioritize them according to land use category. RMPs categorized under the municipal land use category will be completed first , followed by RMPs associated with business/commercial land uses.

*Table 6: RMP Negotiation Schedule - Even Number Approach*

Threat #	Threat Category	Associated Land Use Category	RMP Policy Applies ?	Year of Planned Negotiation
15	Handle/Store Fuel	Municipal	Yes	1
15	Handle/Store Fuel	Municipal	Yes	1
15	Handle/Store Fuel	Municipal	Yes	1
17	Handle/Store Organic Solvent	Business/Commercial	Yes	1
16	Handle/Store DNAPL	Business/ Commercial	Yes	1
16	Handle/Store DNAPL	Business/ Commercial	Yes	1
16	Handle/Store DNAPL	Business/ Commercial	Yes	2
16	Handle/Store DNAPL	Business/ Commercial	Yes	2
16	Handle/Store DNAPL	Business/ Commercial	Yes	2
16	Handle/Store DNAPL	Business/ Commercial	Yes	2
16	Handle/Store DNAPL	Business/ Commercial	Yes	2
16	Handle/Store DNAPL	Business/ Commercial	Yes	2
16	Handle/Store DNAPL	Business/ Commercial	Yes	2
16	Handle/Store DNAPL	Business/ Commercial	Yes	3
16	Handle/Store DNAPL	Business/ Commercial	Yes	3
16	Handle/Store DNAPL	Business/ Commercial	Yes	3
16	Handle/Store DNAPL	Business/ Commercial	Yes	3
16	Handle/Store DNAPL	Business/ Commercial	Yes	3
16	Handle/Store DNAPL	Business/ Commercial	Yes	3



## R. Appendix 7: Ontario Farm Environmental Coalition – Farm Assessment Summary

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### **OFEC Framework**

#### **Source Water Protection – Agricultural Training Sessions**

##### **Purpose:**

In response to the implementation of the Clean Water Act (CWA) and the establishment of Source Water Protection Plans, The Ontario Farm Environmental Coalition (OFEC) developed a Farm Assessment Workbook Tool to assist farmers in their preparation for Source Water Protection implementation. The tool is targeted at farmers who will be regulated under the policies of Source Protection Plans. Using the workbook, farmers required to implement Risk Management Plans will be able to evaluate how they are presently addressing the Significant Drinking Water Threat activities (SDWTs) flagged for their property. Following the assessment, farmers will be able to identify how to improve their practices, in order to minimize risks to municipal water supplies. The tool will also allow farmers to enter into a meaningful negotiation with the local Risk Management Officer (RMO) regarding property specific Risk Management Plans.

##### **The Farm Assessment Tool - General Overview:**

The Farm Assessment Tool has been developed to help farmers prepare for their meeting with the RMO. It involves a two-step process that allows the farmer to verify and assess the SDWTs flagged for their property. By carrying out a thorough assessment of their operation, farmers are able recognize where their strengths and weaknesses are in terms of managing risks to drinking water supplies. The 2 step assessment process is described in more detail below.

##### **Step 1 - Farm Sketch and Threats Inventory:**

The farm sketch and threats inventory requires farmers to obtain either a sketch, image, or photograph that illustrates the boundaries of their property, and all of the structures or activities on the property related to potentially significant drinking water threats. This step encourages farmers to determine the exact area of their property that is located in a Wellhead Protections Area (WHPA) or Intake Protection Zone (IPZ). This enables farmers to determine the exact proportion of their farm that should be the focus of attention during the risk management plan negotiation process. Having an accurate understanding of the affected property enables the farmer to conduct an inventory of the Significant Drinking Water Threat activities situated on their property. It also allows farmers to verify the accuracy of the information presented by the risk management official regarding SDWTs believed to be on the farmer's property.

##### **Step 2 – Farm Assessment Worksheets:**

OFEC has developed 2 sets of worksheets that are aimed at helping farmers determine the level at which they are currently addressing the SDWTs that have been identified for their property. The first set of worksheets is intended for properties situated in WHPAs; the second is for properties situated in IPZs. Each set contains 13 worksheets, with each worksheet representing 1 of the 13 agricultural SDWT that may be present on the farmer's property. Farmers are only required to complete the worksheets

R. Appendix 7 (continued): Ontario Farm Environmental Coalition – Farm Assessment Summary

applicable to their farm. Each worksheet presents 3 categories of assessment questions pertaining to either:

- Containment Barriers
- Spatial Barriers
- Contingency Barriers

Under each category, there is a list of target questions specific to a standard practice related to containment, separation, or contingency practices. For each standard practice, the farmer is required to rank the level to which the standard is met. Level 1 represents the lowest level of attainment, meaning that the practice currently in place does not meet design standards at the time of application. Level 2 represents median level of attainment, meaning that the practices currently in place do meet provincial level design standards. Finally, level 3 is representative of the highest level of attainment, meaning that practices currently in place exceed design standards set out by the most recent regulations.

Two sample worksheets can be found below; the first addresses a threat identified within a WHPA, while the second focuses on a threat within an IPZ.

<b>THREAT #8 - APPLICATION OF COMMERCIAL FERTILIZER IN WHPA</b>			
<b>Standard or Practice</b>	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>
	<b>Does not meet standards at time of application</b>	<b>Meets standards at time of application<sup>1</sup></b>	<b>Exceeds standards at time of application</b>
<b>Containment Barrier</b>			
Nutrient Management Plan (NMP)	No NMP  OR Existing NMP with no record keeping	A NMP is in place AND records are maintained  OR For NMA "phased-in" farms > 300 NU, a record of approval has been obtained, AND records are maintained to the Nutrient Management standard	A completed NMP with no "red flags" as assessed through OMAFRA's NMAN software is in place AND records are maintained to the Nutrient Management standard  OR For NMA "phased-in" farms > 300 NU, a record of approval has been obtained, AND the associated NMP has no "red flags" as assessed through OMAFRA's NMAN software, AND records are maintained to the Nutrient Management standard
Calibrate and Maintain Equipment	Application equipment settings are not checked or calibrated	Application equipment is checked but not calibrated by farmer AND manufacturer's instructions are followed to apply intended rate	Application equipment is calibrated by farmer
Cover Crop Use in Fall if Commercial Fertilizer is Applied	No cover crops used  OR Fields receiving fall applied commercial fertilizer do not have an over-winter crop (e.g. winter wheat or hay).	Cover crops or over-winter crops sometimes used when commercial fertilizer is applied on cropped land in late summer or fall.	Cover crops or over-winter crops are always used when commercial fertilizer is applied in late summer or fall.

<sup>1</sup> Must meet minimum regulatory criteria

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**Figure 1:** Sample Assessment Worksheet for Agricultural Threat within WHPA

R. Appendix 7 (continued): Ontario Farm Environmental Coalition – Farm Assessment Summary

<b>THREAT #3 - APPLICATION OF AGRICULTURAL SOURCE MATERIAL IN IPZ</b>			
<b>Standard or Practice</b>	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>
	<b>Does not meet standards at time of application</b>	<b>Meets standards at time of application<sup>1</sup></b>	<b>Exceeds standards at time of application</b>
Application Rates of Nitrogen (N) and Phosphorus (P)	Agronomic or Crop Removal recommended rates for N not considered  OR Agronomic or Crop Removal recommended rates for P not considered	Application rates for both N and P are based on Agronomic or Crop Removal recommended rates.	Application rates for both N and P are based on Agronomic or Crop Removal recommended rates. AND no "red flags" from N-Index or P-Index as calculated in NMAN
<b>Spatial Barrier</b>			
Application Setback Distance to Surface Water <sup>2</sup>	Surface application, < 30% cover, and no incorporation < 13 metres  OR Surface applied to a living crop or residue cover of at least 30% < 3 metres  OR Surface applied and incorporated within 24 hours < 3 metres  OR Injected , or placement in a band below the soil surface < 3 metres	Surface application, < 30% cover and no incorporation = 13 metres  OR Surface applied to a living crop or residue cover of at least 30% = 3 metres  OR Surface applied and incorporated within 24 hours = 3 metres  OR Injected , or placement in a band below the soil surface = 3 metres	Surface application, < 30% cover, and no incorporation > 13 metres  OR Surface applied to a living crop or residue cover of at least 30% > 3 metres  OR Surface applied and incorporated within 24 hours > 3 metres  OR Injected , or placement in a band below the soil surface > 3 metres

<sup>2</sup> Note these setback distances include the width of any vegetative buffer, if present, along surface water edge.

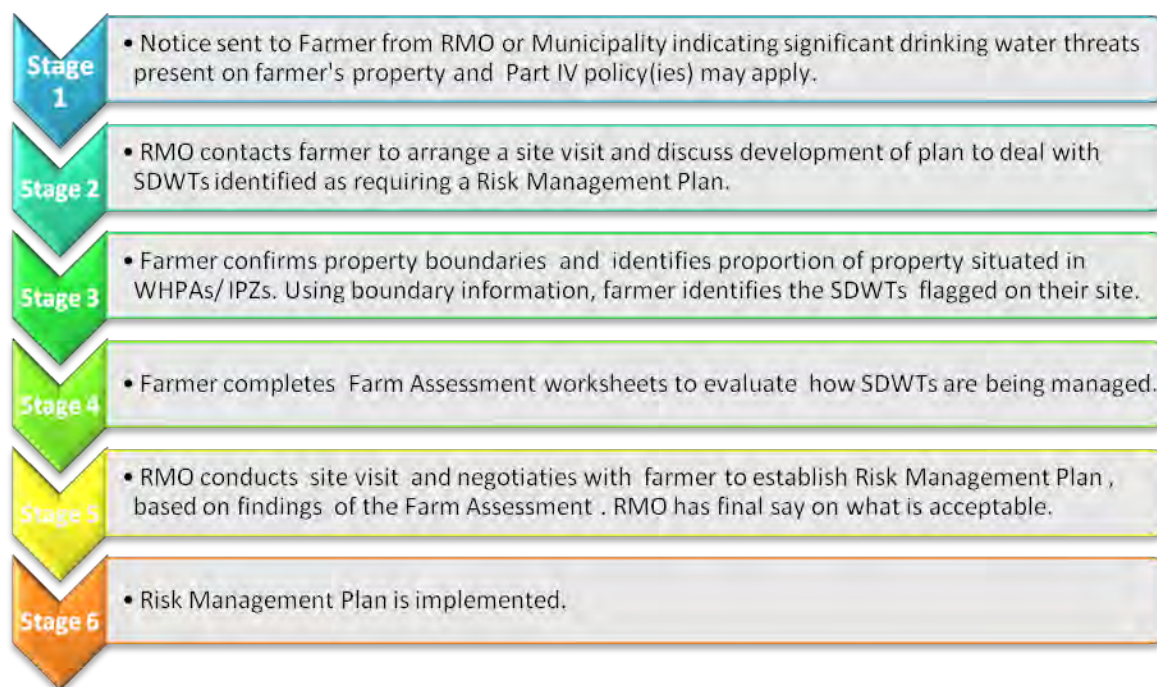
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**Figure 2:** Sample Assessment Worksheet for Agricultural Threat within IPZ

**General Farm Assessment Process for Individual Agricultural Properties:**

The following flowchart outlines the various stages of the Farm Assessment process for Agricultural properties identified as requiring a Risk Management Plan. The RMO or Municipality may identify additional policies that apply to the property

## R. Appendix 7 (continued): Ontario Farm Environmental Coalition – Farm Assessment Summary



### **How can the OFEC Farm Assessment Tool serve RMOs?**

The OFEC Farm Assessment Tool can serve as a useful resource to RMOs when meeting with farmers to verify SDWTs on agricultural properties. The tool requires farmers to determine the exact area of their property situated in WHPAs and IPZs, and therefore provides the RMO with the information required to verify Source Drinking Water Threats within these boundaries. The tool can also be used to aid discussions during negotiations over Risk Management Plans. Through the Farm Assessment worksheets, the RMO will be presented with a summary of how the farmer is presently dealing with identified SDWTs, and how they can further improve their risk management efforts. Worksheets in particular, can help highlight special attention items, and better identify the specific management practices that need to be implemented in order to address identified risks. The tool allows the RMO and farmer to work together to develop a targeted Risk Management Plan based on the findings of the assessment. The tool utilizes the farmer's extensive knowledge of farm operations, and thereby provides the RMO with deeper insight into the potential risks on site.

For more resources and information on the OFEC Farm Assessment Tool please visit:  
<http://www.omafra.gov.on.ca/english/environment/efp/efp.htm>

## S. Appendix 8: Sample Checklist-Style Risk Management Plan Framework by Region of Waterloo

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# Preliminary Risk Management Plan Framework for Chemical Handling

## 1. Introduction/Background

- Property description
- Clearly define the site with a map of it in a local context, identifying significant threats, other prescribed activities, and preferential pathways. Include a scale bar, legend, and north arrow.
- Describe the threats

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## 2. Information on Risk Prevention/Reduction

Provide information on industry standards, regulations, best management practices, and policies that are in place to help prevent contamination from the activity. Include current practices as well as planned practices. For planned practices, include an implementation schedule. Examples of management practices include:

### Risk reduction

- Locating chemical storage, handling, and use in a low risk and vulnerability area
- Increasing separation distances between well heads and intakes (but not necessarily out of high risk/vulnerability)
- Reduction in volume of chemicals stored/handled on site through process or equipment modification
- Replacement of below-ground tanks with above-ground tanks

### Spill/leak prevention measures

- Double walled and/or lined tanks and pipelines
- Instrumentation such as liquid level indicators, leak detectors, and alarm systems
- Backflow prevention
- Corrosion prevention
- Maintenance, inspection, leak testing, and staff training protocols
- Selection of chemically appropriate storage containers
- Separation of non-compatible chemicals

### Spill/leak prevention measures (continued)

- Site security measures such as sealed storage areas and locked doors
- Decontamination/equipment washing areas with oil-water separators and controls for runoff
- Staff training on all spill/leak prevention measures
- Closure plans for unused tanks storage containers and whole facilities

### Spill containment measures

- Bunds, pads, and trays
- Enclosures with sealed floors
- Dykes, trenches, lagoons
- Staff training on all spill containment measures

### Spill response measures

- Spill response plan including notification procedures and specific spill clean-up techniques. Staff training on same.
- Injection of Amierolants
- Post-spill sampling, monitoring, and inspections
- Appropriate disposal of collected materials

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## 3. Monitoring Plan (minimum requirements)

- Procedures and schedules for qualified persons to inspect the site and its contamination prevention measures to ensure that they are functioning as intended
- Comprehensive record-keeping for all chemicals stored/used on the property
- Schedule of reporting to the Region of Waterloo
- Schedule to review and update the plan (e.g. every 5 years or more frequently if major changes occur at the site)

---

## 4. Conclusions and Recommendations

S. Appendix 8 (continued): Sample Checklist-Style Risk Management Plan Framework  
by Region of Waterloo



# Preliminary Risk Management Plan Framework for Nutrient Management

## 1. Introduction/Background

- Property description
- Clearly define the site with a map of it in a local context, identifying significant threats, other prescribed activities, and preferential pathways. Include a scale bar, legend, and north arrow.
- Describe the threats

## 2. Information on Risk Prevention/Reduction

Provide information on industry standards, regulations, best management practices and policies that are in place to help prevent contamination from the activity. Include current practices as well as planned practices. For planned practices, include an implementation schedule. Examples of management practices include:

### Risk reduction

- Moving nutrient storage and/or handling to a low vulnerability area (cessation of application in high vulnerability area)
- Increasing separation distances between well heads and intakes
- Reduction in volume of nutrients stored and/or handled on site

### Modification of application practices

- Effective irrigation systems to reduce runoff
- Confirm the suitability of the soils to the nutrients being applied and rate of application
- Restrict application of nutrients during (and prior to) periods of heavy rain, high wind, snow cover, or frozen ground
- Observe application setbacks from wells, waterways, and seasonally flooded areas
- Pre-till fields to remove preferential pathways
- For application of septage: spread uniformly, use multiple passes to ensure maximum application depth is not exceeded, avoid compaction of the soil where possible, and incorporate into the soil within a few days of application
- Minimize product applied by using reduced or split application rates and slow release nutrients

**If storing salt, nutrients, or pesticides, then spill prevention, containment and response measures will be required, as outlined in the Preliminary RMP Framework for Chemical Handling.**

### Control and treatment of surface runoff, washwater

- Construct a tile drainage system
- Utilize detention basins and berms
- Vegetative filter strips, buffer zones, managed riparian zones
- Treatment using wetlands, bioreactors, monitored natural attenuation, trenches

### Control the generation of manure

- Slatted floors
- Selection of bedding type and amount
- All-in/all-out feeding systems
- Total barn confinement systems

### Herd management

- Prevent stripping of vegetation through reduction of stocking density and/or rotational grazing
- Construct fencing to protect setbacks
- Vaccination to reduce pathogens

### Pretreatment of all nutrients to be applied to remove pathogens

- Stabilization
- pH adjustment
- Aeration
- Aerobic or anaerobic digestion
- Heat treatment
- Composting

## 3. Monitoring Plan (minimum requirements)

- Procedures and schedules for qualified persons to inspect the site and its contamination prevention measures to ensure that they are functioning as intended
- Comprehensive record-keeping of all chemicals stored/used on the property
- Schedule of reporting to the Region of Waterloo
- Schedule to review and update the plan (e.g. every 5 years or more frequently if major changes occur at the site)

## 4. Conclusions and Recommendations

S. Appendix 8 (continued): Sample Checklist-Style Risk Management Plan Framework  
by Region of Waterloo



# Preliminary Risk Management Plan Framework for Salt Management

## 1. Introduction/Background

- Property description
- Clearly define the site with a map of it in a local context, identifying significant threats, other prescribed activities, and preferential pathways. Include a scale bar, legend, and north arrow.
- Describe the threats

## 2. Information on Risk Prevention/Reduction

**If storing salt, nutrients, or pesticides, then spill prevention, containment and response measures will be required, as outlined in the Preliminary RMP Framework for Chemical Handling.**

Provide information on industry standards, regulations, best management practices, and policies that are in place to help prevent contamination from the activity. Include current practices as well as planned practices. For planned practices, include an implementation schedule. Examples of management practices include:

### Risk reduction

- Locating salt and snow storage and/or use in a low-risk and low-vulnerability area
- Increasing separation distances from well heads and intakes (but not necessarily out of high risk/vulnerability)
- Reduction in volume of salt stored on site
- Eliminate sources of water (e.g. downspouts, low spots) to prevent ice formation

### Modification of application practices

- Use of anti-icing agents to prevent ice formation
- Instrumentation (linked to GPS possibly) to measure spreading rates and locations
- Weather monitoring to determine most efficient application times
- Drift control to reduce snow buildup on paved surface

## 3. Monitoring Plan (minimum requirements)

- Procedures and schedules for qualified persons to inspect the site and its contamination prevention measures to ensure that they are functioning as intended
- Comprehensive record-keeping of all chemicals stored/used on the property
- Schedule of reporting to the Region of Waterloo
- Schedule to review and update the plan (e.g. every 5 years or more frequently if major changes occur at the site)

## 4. Conclusions and Recommendations

S. Appendix 8 (continued): Sample Checklist-Style Risk Management Plan Framework  
by Region of Waterloo



# Preliminary Risk Management Plan Framework for Integrated Pest Management

## 1. Introduction/Background

- Property description
- Clearly define the site with a map of it in a local context, identifying significant threats, other prescribed activities, and preferential pathways. Include a scale bar, legend, and north arrow.
- Describe the threats

## 2. Information on Risk Prevention/Reduction

Provide information on industry standards, regulations, best management practices, and policies that are in place to help prevent contamination from the activity. Include current practices as well as planned practices. For planned practices, include an implementation schedule. Examples of management practices include:

### Risk reduction

- Locating nutrient storage and handling in a low risk and vulnerability area
- Increasing separation distances between well heads and intakes (but not necessarily out of high risk/vulnerability)
- Cessation of pesticide application in high vulnerability areas

### Modification of application practices

- Larger nozzle, less pressure, and proper water volume rates to reduce drift
- Avoid times of high winds or prior to heavy rain
- Regularly calibrate pesticide spreaders
- Use of short half-life pesticides
- Management practices to reduce soil erosion
- Scout fields for weeds to confirm need
- Proper plant management to improve plant health and reduce the need for pesticides
- Maintain proper drainage and aeration to encourage the growth of microbes
- Reduce watering to control seepage of pesticides to the ground water
- Plants that attract predatory species, such as birds and bats, can enhance landscaping and naturally reduce pests

**If storing salt, nutrients, or pesticides, then spill prevention, containment and response measures will be required, as outlined in the Preliminary RMP Framework for Chemical Handling.**

### Modification of application practices (continued)

- Manual activities such as spading, hoeing, hand-picking weeds and pests, setting traps, and mulching
- Select healthy seeds and seedlings that are known to resist diseases
- Alternate plants each year. Insects will move to another location where they can find nutrients, and weeds will remain dormant until their nutrient source is replenished
- Ensure the pesticide matches the weed
- Evaluate reduced or split application rates
- Rotating herbicide and pesticide
- Apply pesticides with precision to reduce application volumes

### Control and treatment of surface runoff, washwater

- Construct a tile drainage system
- Utilize detention basins and berms
- Vegetative filter strips, buffer zones, managed riparian zones
- Treatment using wetlands, bioreactors, monitored natural attenuation, trenches

## 3. Monitoring Plan (minimum requirements)

- A procedure and schedule for qualified persons to inspect the site and its contamination prevention measures to ensure that they are functioning as intended
- A comprehensive record keeping of all chemicals stored/used on the property
- A schedule of reporting to the Region of Waterloo
- A schedule to review and update the plan on a regular basis (e.g. every 5 years or more frequently if major changes occur at the site)

## 4. Conclusions and Recommendations



## T. Appendix 9: Sample s. 59 Screening Tool by Region of Waterloo

### APPLICABILITY OF SOURCE PROTECTION PLAN PART IV POLICIES

The information on this form will help the Region determine if a development or building application is subject to any Part IV policies under The Region of Waterloo's Source Protection Plan.

Any applications requiring a Risk Management Plan to be negotiated with the Risk Management Official will be referred to The Region of Waterloo. The Risk Management Official will determine the appropriate stage of the process for the negotiation.

**THIS FORM MAY BE COMPLETED:**

- **ON PAPER** (PLEASE PRINT CAREFULLY) Please fax all paper applications to 519-575-xxxx
- **ON-LINE AT** [www.somewebaddresshere.com](http://www.somewebaddresshere.com)

#### Step 1: PROPERTY AND CONTACT INFORMATION

<b>Name of Applicant:</b>	<b>Number:</b>
<b>Mailing Address:</b>	<b>City:</b>
<b>Street:</b>	<b>Postal Code:</b>
<b>Province:</b>	<b>Phone Number: ( )</b>
<b>Phone Number: ( )</b>	<b>Fax Number: ( )</b>
<b>*Address of Property (if different from above)</b>	<b>Number:</b>
<b>Street:</b>	<b>City:</b>
<b>Province:</b>	<b>Postal Code:</b>

**TYPE OF APPLICATION** (check all that apply)

- |                                            |                                                  |
|--------------------------------------------|--------------------------------------------------|
| <input type="checkbox"/> Building Permit   | <input type="checkbox"/> Minor Variance          |
| <input type="checkbox"/> Consent/Severance | <input type="checkbox"/> Site Plan Approval      |
| <input type="checkbox"/> Zone Change       | <input type="checkbox"/> Condominium             |
| <input type="checkbox"/> Subdivision       | <input type="checkbox"/> Official Plan Amendment |

<b>*Current Use of Property:</b>	<b>Proposed Use of Property:</b>

#### STEP 2: CURRENT AND PROPOSED ZONING AND PROPERTY USE

(Check all boxes that apply)\*

- Property is zoned Residential 1, 2, 3, 4, 5, 6, 7 or 8.  
(Zoning maps are located at [www.somewhereonline.ca](http://www.somewhereonline.ca))
- Buildings are not heated with home heating oil
- There are fewer than 8 parking spaces

\* If all 3 boxes above are checked, proceed to Step 5, otherwise proceed to Step 3.

#### STEP 3: WELLHEAD PROTECTION AREA

Use the tool located at [www.insertwebaddresshere.ca](http://www.insertwebaddresshere.ca) to check if the property is located in a Wellhead Protection Area (WHPA). If you do not have access to the internet, please call the Risk Management Coordinator at 519-575-xxxx.

- NO**, the property is not located in a wellhead protection area. Proceed to Step 5.
- YES**, the property is located in a wellhead protection area. Proceed to Step 4.

#### STEP 4: PROPERTY AND LAND USE ACTIVITIES

Indicate activities that take place on the property under both current and proposed uses. If the activity has an associated Environmental Compliance Approval or Certificate of Approval, please provide the Approval Number. For a more detailed description of each activity or a full list of relevant approvals, refer to the guide entitled "What is the guide called" that can be found at municipal planning departments or online at [www.somewebaddress.ca](http://www.somewebaddress.ca). For further information call the Risk Management Coordinator at 519-575-xxxx.

1414641

Page 1 of 4

T. Appendix 9 (continued): Sample s. 59 Screening Tool by Region of Waterloo

**Note:** for Consent Applications, indicate the current and proposed uses for existing and proposed lots/blocks.

CURRENT	PROPOSED	NOT APPLICABLE
---------	----------	----------------

**STORAGE AND USE OF MANURE, FERTILIZER AND PESTICIDES**

- Application of Manure to Land** **CIRCLE ONE**  
*Is this activity covered under an existing Nutrient Management Plan?* YES/NO  
 Indicate application rate in nutrient units per hectare \_\_\_\_\_
- Animal Yard or Confinement Area Generating More Than 0.5 Nutrient Units Per Hectare**  
*Is this activity covered under an existing Nutrient Management Strategy?* YES/NO  
 Indicate manure generation rate in nutrient units per hectare \_\_\_\_\_
- Storage of Manure in Quantities Greater Than 0.5 Units Per Hectare**  
*Is this activity covered under an existing Nutrient Management Strategy?* YES/NO  
 Indicate size of storage facility in nutrient units per hectare \_\_\_\_\_
- Application of Category 1 Biosolids (e.g.: vegetable culls) to Land**
- Storage of Category 1 Biosolids (e.g.: vegetable culls)**
- Application of Commercial Fertilizer to Land** YES/NO  
*Is this activity covered under an existing Nutrient Management Plan?*  
 Indicate application rate in nutrient units per hectare: \_\_\_\_\_
- Storage Of Commercial Fertilizer** **CIRCLE ONE**  
*Is this activity covered under an existing Nutrient Management Strategy?* YES/NO  
 Indicate total mass of materials stored in kilograms: \_\_\_\_\_
- Application of Pesticide to Land** YES/NO  
*Are you licensed for this activity under the Ontario Pesticide Act?*
- Storage of a Pesticide in Quantities Great than 250kg** YES/NO  
*Are you licensed for this activity under the Ontario Pesticide Act?*

CURRENT	PROPOSED	NOT APPLICABLE
---------	----------	----------------

**WINTER MAINTENANCE**

- Application of Road Salt to Parking Lots/Driveways Larger Than 2000 m<sup>2</sup> (approximately 80 spaces)**  
*Indicate total paved area in m<sup>2</sup> or equivalent number of parking spaces: \_\_\_\_\_*
- Application of Road Salt to Roads**
- Storage of Road Salt**  
*Indicate quantity stored in tonnes: \_\_\_\_\_*
- Snow Storage Area With a Footprint of at Least 0.01 Hectares**

T. Appendix 9 (continued): Sample s. 59 Screening Tool by Region of Waterloo

CURRENT	PROPOSED	NOT APPLICABLE	
			<b>CHEMICAL HANDLING</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>Storage of Degreasers, Dry Cleaning Chemicals and Other SNAPLs in Any Quantity<sup>(1)</sup></b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>Storage of Fuel in Quantities Great Than 250L</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>Storage of Any Thinners, Strippers, Refrigerants and Other Organic Solvents in Quantities Great Than 25L<sup>(2)</sup></b>
			<b>WASTE AND STORM WATER</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>Discharge of Untreated Storm Water (drainage are at least 1 hectare)</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>Industrial Effluent Discharge</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>Operation of a Site For the Deposition, Disposal, Handling, Storage, Transfer, Treatment of Processing of Waste. Note: "waste" includes ashes, garbage, refuse, domestic waste, industrial waste, or municipal refuse and such other materials.</b>
<p>If all lines are checked with "Not Applicable" in every section above, proceed to Step 5, otherwise proceed to Step 6.</p>			
<p>(1) Dense Non-Aqueous Phase Liquids (degreasers, dry cleaning chemicals, etc.) include:                      1-4 dioxane (not a DNAPLs)                      Polycyclic aromatic Hydrocarbons (PAHs)                      Tetrachloroethylene (PCD, tetrachloroethene, Perclene, Tetracap, Dee-Solv...)                      Trichloroethylene (TCE, trichloroethene, Acetylene, trichloride, Westrosol, Vestrol...)                      Vinyl Chloride (VC, chlorethene, ethylene, Vinyl C monomer)</p>			
<p>(2) Organic Solvents (thinners, strippers, refrigerants, etc.) include:                      Carbon Tetrachloride (tetrachloromethane, carbon, tet, Bensinoform, Necatorine, Univerm...)                      Chloroform (TCM, trichloromethane, Freon 20, Methane trichloride, trichloroform...)                      Methylene Chloride (dichloromethane, Freon 30, methane dichloride, Solaesthin, Solmethine...)                      Pentachlorophenol (PCP, Dowcide 7, Acutox, Penta-kil, Santobrite, Thompson's Wood Fix...)</p>			
<p><b>Step 5: COMPLETE THIS SECTION AS DIRECTED FROM STEP 2, 3, OR 4</b></p>			
<p>If directed here from Step 2, 3, or 4, no negotiation of sign-off is required by the Risk Management Official. The Application may proceed as usual with the municipality by submitting a copy of this form. Please also submit this form to the Risk Management Official at <a href="http://www.somwebaddress.ca">www.somwebaddress.ca</a>, or fax a paper copy to 519-575-4452.</p>			
<p>For further information, call the Risk Management Coordinator at 519-575-xxxx.</p>			
<p>The information I have provided above is accurate and complete to the best of my knowledge. I acknowledge that incomplete or inaccurate information may result in the future involvement of the Risk Management Official in the application process.</p>			
<p>_____ Signature of Applicant</p>			<p>_____ Date</p>
<p>Please fax all paper applications to 519-575-xxxx</p>			
<p>1414641</p>		<p>Page 3 of 4</p>	

T. Appendix 9 (continued): Sample s. 59 Screening Tool by Region of Waterloo

**Step 6 COMPLETE THIS SECTION IF YOU COMPLETED ONLY**

If directed here from Step 4, negotiation with the Risk Management Official may be required or an activity may be prohibited. Please submit this form to the Risk Management Official at [www.somewebaddress.ca](http://www.somewebaddress.ca) or fax a paper copy to 519-575-xxxx. For further information, call the Risk Management Coordinator at 519-575-xxxx.

The information I have provided above is accurate and complete to the best of my knowledge. I understand that further application to the municipality may require sign-off from the Risk Management Official.

\_\_\_\_\_  
Signature of Applicant

\_\_\_\_\_  
Date

*If completing a paper form, please fax to 519-575-4452.*

**Step 7 FOR OFFICE USE ONLY**

TO BE COMPLETED BY A RISK MANAGEMENT OFFICIAL

ACTION REQUIRED

- Risk Management Official Involvement no required
- Risk Management plan to be negotiated before current application can be processed by City/Township
- Risk Management Plan to be negotiated at future stage (specify)
  - Building Permit
  - Minor Variance
  - Consent/Severance
  - Site Plan Approval
  - Zone Change
  - Condominium
  - Subdivision
  - Official Plan Amendment
- Activity is Prohibited. Application not to be accepted by City

\_\_\_\_\_  
Signature of Applicant

\_\_\_\_\_  
Date

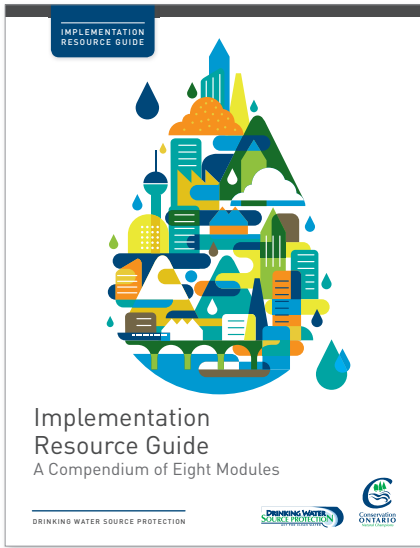
RMO has informed municipality of required action  
RMO has informed applicant of required action



MODULE 6

# Prohibition



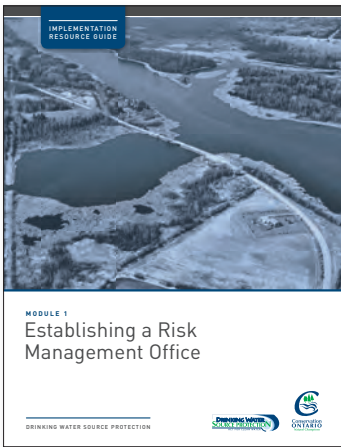


# Implementation Resource Guides

A Compendium of Eight Modules

Look for all eight modules in our Drinking Water Source Protection series. You can find them at [www.conservation-ontario.on.ca](http://www.conservation-ontario.on.ca)

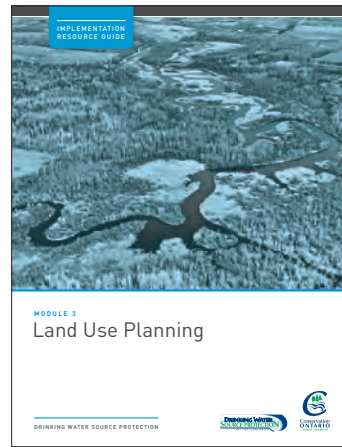
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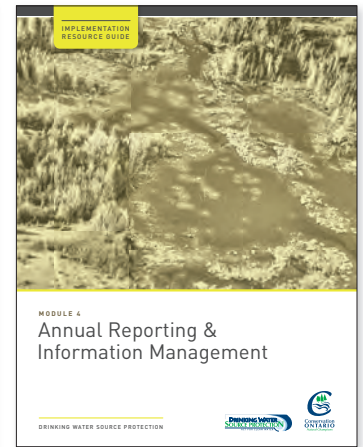
## MODULE 2



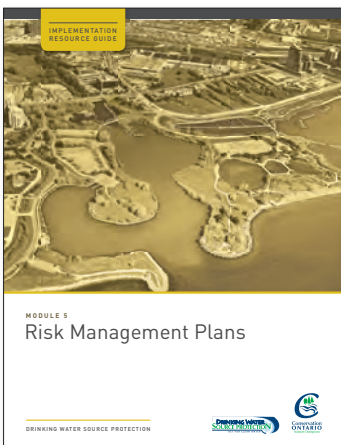
## MODULE 3



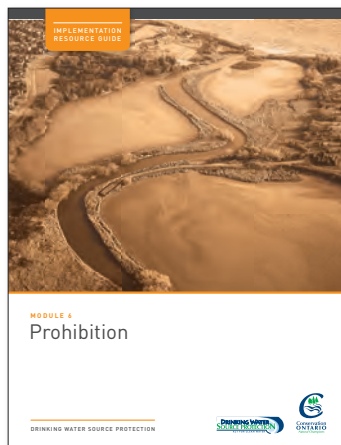
## MODULE 4



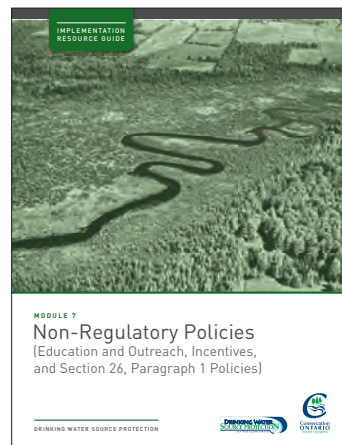
## MODULE 5



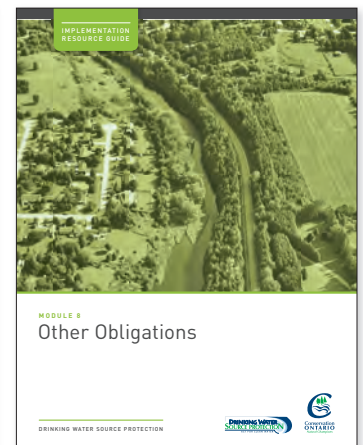
## MODULE 6



## MODULE 7



## MODULE 8



# Module 6: Prohibition

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## Implementation Resource Guide

06/05/2014

Note to Reader: This document is one of a series developed by staff at conservation authorities and Conservation Ontario in support of source protection plan implementation. These documents cover a variety of tools related to plan implementation, but not all will apply in your municipality. Consult your local source protection plan to determine which policies are applicable in your municipality. This document has not been reviewed by legal counsel and is not presented as legal advice.

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## A. Introduction

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The purpose of this module is to explain how the *Clean Water Act, 2006* and source protection plans can result in the prohibition of certain activities that pose significant risk to municipal drinking water systems. Prohibition of activities can be achieved by using various policy approaches, including the new tools established in Part IV of the *Clean Water Act*, land use planning, prescribed instruments, and risk management plans.

In large part, this module focuses on the Section 57 Prohibition tool in Part IV of the *Clean Water Act*. This module is designed to provide municipalities required to prohibit activities with the necessary information to fulfill this obligation. This module is not designed to provide the training required to become a Risk Management Official or Inspector, but to give an overview to the processes and implications for municipalities affected by Section 57 Prohibition policies.

Section 57 of the *Clean Water Act, 2006* provides a policy tool to prohibit activities, and therefore, a strong understanding of how it can be applied will be essential for municipalities. This module will explain how to prepare for prohibition, the roles and responsibilities of those involved, and suggest an implementation process that can be followed to achieve the objectives of the source protection plans.

Section 57 Prohibition can be applied to existing or future activities. This module explains the different approaches that can be taken to address these activities through the implementation of prohibition policies.

## B. General Information

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### *i. Clean Water Act, 2006*

#### Section 57 Prohibition

Section 57 is a provision under Part IV of the *Clean Water Act, 2006*. This provision enables policies to be written into source protection plans that prevent activities identified as existing or future significant drinking water threats from occurring within designated portions of intake protection zones (IPZs) and/or wellhead protection areas (WHPAs). For example, in some cases a policy created under this provision could prohibit the use and/or storage of a large quantity of fuel within a designated area. In other cases, a different policy tool may be used that places limitations only on how fuel is used and/or stored as an alternative to outright prohibition.

Prohibition is considered the strongest tool available in the policy toolbox for reducing risk associated with significant drinking water threats. When source protection committees considered it as a tool to address activities that already exist on the landscape, they did so only

after considering all other feasible options. This tool cannot be used for low or moderate drinking water threats, or for significant threat conditions (a threat from past land activities).

### **Section 59 Restricted Land Uses (Use with Section 57)**

Section 59 Restricted Land Uses is another provision under Part IV of the *Clean Water Act*. To prevent future developments from becoming significant drinking water threats, Section 59 allows for the creation of restricted land use policies that complement Section 57 Prohibition policies. Section 59 supports Section 57 policies by integrating the municipal development review process with Part IV policy tools (i.e. Section 57 and 58). Section 59 is not a standalone provision under the Act; it can be used only in conjunction with Section 58 risk management plan or Section 57 Prohibition policies.

The Section 59 tool provides a screening process or “early flagging system” so that municipalities avoid processing an application under the *Planning Act*, or a building permit that is either subject to Section 57 Prohibition policies, or Section 58 risk management plan policies. Section 59 policies allow for early identification of development applications that cannot proceed under the *Planning Act*, *Building Code*, or *Condominium Act* because the applications seek to enable activities that are identified as prohibited in the source protection plan (i.e. in an IPZ or WHPA). The following types of development applications under the *Planning Act* are prescribed by Ontario Regulation 287/07, Section 62, for the purpose of Section 59 of the *Clean Water Act*:

- requests to amend official plans;
- applications to amend zoning by-laws for both permanent and temporary use;
- applications for approval to undertake development in a site plan control area;
- applications for minor variances;
- applications for approval of plans of subdivision; and,
- consent applications.

### **Risk Assessment (Exclusion under Section 60)**

Section 60 of the *Clean Water Act* allows individuals to apply for an exclusion from source protection plan policies in the area where Part IV applies. More specifically, this provision enables an individual, where applicable, to reassess the site-specific characteristics affecting the underlying vulnerability analyses and vulnerability score. This reassessment must be applied at a site-specific level, and provides an opportunity to reevaluate the risk level of drinking water threat activities in order to determine if the risk level should be lowered. Reducing the risk level from significant to moderate or low would relieve a person of their obligations under Part IV,

namely those associated with Prohibitions (Section 57), and Risk Management Plans (Section 58) in the location in which the Section 60 risk assessment applies<sup>1</sup>.

In order to obtain exclusion under Section 60, the applicant must submit the following items to the Risk Management Official:

- payment of any applicable fees;
- application for exclusion (obtained from Risk Management Office);
- risk assessment (prepared in accordance with Ministry of the Environment's rules and regulations).

The risk assessment must conclude that the risk level is lower than indicated in the assessment report and therefore, confirm the activity under consideration is not a significant drinking water threat at the location specified. The Risk Management Official has the authority to decide whether the risk assessment has satisfied the rules and regulations set out under the Act.

It is highly recommended the Risk Management Official acknowledge receipt of the risk assessment with a letter to the applicant. The letter should specify a date by which the Risk Management Official will notify the applicant as to whether or not the conclusion(s) contained within the risk assessment have been accepted or rejected.

## **Basis for a Challenge**

The rules and regulations pertaining to Section 60 are currently under development and will undergo public consultation. Risk assessments are anticipated to relate to the following technical aspects:

- vulnerability score of a WHPA based on site-specific characteristics such as local geology and hydrogeological characteristics, etc.;
- IPZ delineation based on site-specific characteristics such as drainage pattern of setbacks (120m), high water mark, nature of transport pathway, etc.

Information obtained from risk assessments may be used to inform updates to Assessment Reports where appropriate.

## **ii. Source Protection Plan Requirements – Refer to Your Local Plan**

### **Where It Applies**

When addressing existing threats on the landscape, source protection committees were encouraged to use the Section 57 Prohibition tool as a last resort where the risk is high, and

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<sup>1</sup> Guidance materials to support the development of risk assessments will be added as an appendix to this module when they become available.

when no other available tools can adequately address a significant drinking water threat. Consequently, the tool would usually be used in areas close to municipal wells and intakes with the highest vulnerability scores.

Section 57 policies include a description of the areas where these policies apply. In some cases, the prohibition rules that apply to a particular activity could differ depending on whether the activity already exists, or will occur in the future. For example, a source protection plan could prohibit an existing activity in a WHPA-A, while the same activity could be prohibited in both a WHPA-A and WHPA-B, if it were to occur in the future. In other plans, source protection committees may describe the area that a Section 57 policy applies as “where the activity could be significant.” In these cases, to understand the geographic area, one must refer to the Table of Circumstances established under the Technical Rules for the preparation of Assessment Reports, or corresponding summary tables, and the vulnerability scoring maps contained in the local assessment report. The tables describe the vulnerability scores, areas, and specific situations that make each threat activity significant, and when cross referenced to the vulnerability maps, delineate the areas where the activity would be a significant threat. For this reason, it is important to refer to your local source protection plan for information on the applicable areas of Section 57 Prohibition policies (Also see Module 2: Understanding Where Policies Apply).

## What It Applies To

Section 57 Prohibition policies only apply to significant threats from the list of prescribed drinking water threats as outlined in Ontario Regulation 287/07, s. 1.1, or any other significant drinking water threats designated by the Director of the Source Protection Programs Branch. The regulation outlines two situations where the Part IV tools cannot be applied to significant drinking water threats, and these are identified in Section B (iii).

The specific situations or circumstances to which a prohibition policy applies may be described in the policy text of source protection plans. Other times, the policy text may be more general in nature. For example, a source protection plan policy may use Section 57 Prohibition for road salt storage; however, the circumstance tables specify that only uncovered road salt storage qualifies as a significant threat. In this case, the Section 57 Prohibition policy only applies to uncovered salt storage. The Table of Circumstances (from the Technical Rules for the Preparation of Assessment Reports) also provides further clarification on the specific criteria that would qualify an activity as a significant threat, such as volume thresholds and level of storage (e.g. above grade).

## Timelines for Implementation

Section 57 Prohibition policies may apply to future activities, existing activities, or both. Once a source protection plan is “in effect,” prohibition policies for designated future activities take immediate effect. This means that the Risk Management Official must be in place to monitor any development or planning application that could involve prohibited future activities to

prevent those proposals from being approved. Please see Section E (iii), Section 59 Restricted Land Uses Policy and Notice for additional details on how Section 59 relates to the development application screening process.

Source protection plans may contain transition provision policies that allow exceptions for future drinking water threat activities that have been designated as prohibited (through Section 57 or other tools that achieve the outcome of Prohibition, such as land use planning, prescribed instruments or specified actions), to be treated as “existing” activities and managed, even though they will technically commence after the plan takes effect. Transition provisions allow new activities that are in the process of seeking the necessary approvals to be considered as “existing” (even if they haven’t begun yet) in order to grandfather applications that are already underway. A drinking water threat activity related to an application for the issuance or amendment of a prescribed instrument prior to the day the source protection plan comes into effect is one example of a situation in which a transition provision may apply in the source protection plan.

A source protection plan may also prohibit existing activities. In these cases, the policies designate a specific timeframe to allow a reasonable amount of time before the activity is to be terminated. This timeframe can vary from a minimum of 180 days to several years. Make reference to the local source protection plan to determine how prohibition affects these situations. Figure 1 depicts an example of the decision-making process municipal planning staff could follow when processing development applications for future drinking water threat activities designated as prohibited under Section 57 in a source protection plan.

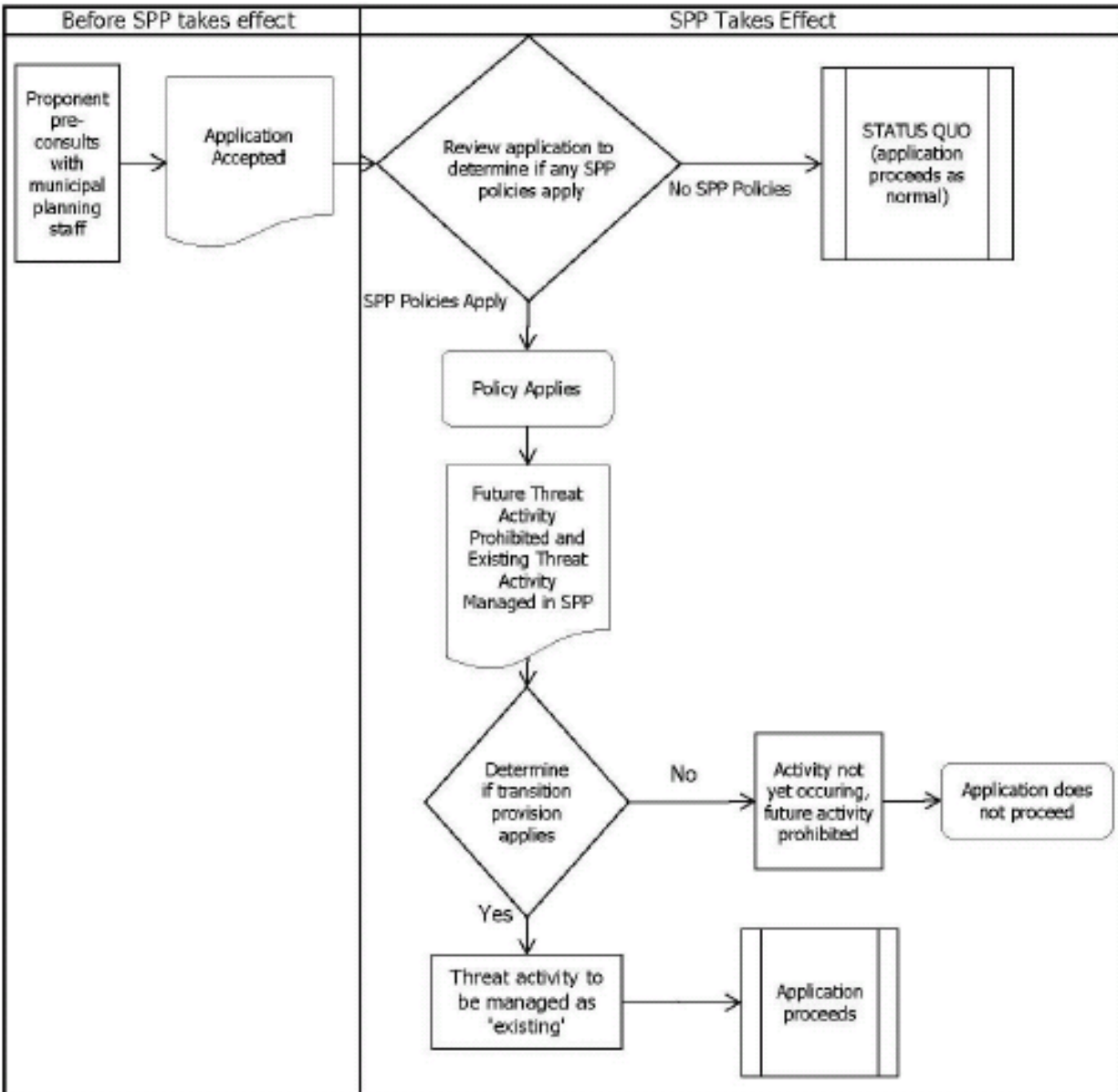


Figure 1: Transition provisions (Adapted from York Region)

### Level of Effort

Municipal staff including clerks, planning staff and building inspectors, as well as Risk Management Officials, will need a solid understanding of the way in which Section 57 Prohibition policies apply to daily business. These staff will need to monitor all new building and planning applications to ensure that what is being proposed is not a prohibited activity (See Section B, Section 59 Restricted Land Uses and Section E, Section 57 Prohibition – Implementing Process). Risk Management Officials will also need to contact anyone who is engaged in an existing prohibited activity and inform them of the timeframe to cease the activity. A follow-up inspection by the Risk Management Inspector may be necessary to ensure that the activity has

ceased. It may be necessary for the inspector to administer subsequent inspections to ensure that the prohibited activity does not start up again.

### **iii. Limitations**

Section 23 of Ontario Reg. 287/07 explains that Section 57 Prohibition can be used to address the risk posed by any of the 21 prescribed drinking water threats where they could be significant, with a few exceptions. These exceptions pertain to waste and sewage threats.

In terms of waste, prohibition cannot be used if the establishment, operation, or maintenance of a waste disposal site (within the meaning of Part V of the *Environmental Protection Act*) requires a Certificate of Approval, or a provisional Certificate of Approval under Part V of the *Environmental Protection Act*. (Note: Certificates of Approval are now known as Environmental Compliance Approvals).

For the sewage threats, Section 57 Prohibition cannot be used if the sewage system requires approval under Section 53 of the *Ontario Water Resources Act*. For example, a septic system with a capacity larger than 10,000 litres per day would not be eligible for prohibition. In addition, if the *Building Code Act, 1992* applies to the system, such as a small/private septic system or holding tank, Prohibition rules under Part IV of the Act do not apply.

Section 57 Prohibition (and Section 58 Risk Management Plans) cannot be used in a source protection plan to address a significant threat condition (e.g. a contaminated site) that results from a past activity and was identified in the Assessment Report.

It is important to note that Section 57 Prohibition can be used on significant drinking water threats beyond the 21 drinking water threats prescribed in the *Clean Water Act*, if the Director approved an activity as a local threat in the Assessment Report. Therefore, it is important the source protection plan be checked for any local threats that may have a Section 57 Prohibition policy associated with them.

### **iv. Methods Other than Section 57 to Prohibit an Activity**

An activity can be effectively prohibited through policies other than Section 57 policies in the source protection plan. This section reviews the other means source protection committees may have used to prohibit a significant drinking water threat activity. The reader may wish to review other modules in this series that relate to the tools described for more details.

#### **Land Use Planning (Municipal Responsibility)**

A source protection plan may have policies requiring a municipality to enact a planning measure, such as a zoning by-law, to prevent a future activity from occurring by restricting associated land uses. This measure would be an effective way of eliminating the possibility of



significant threats being located in an area that could impact a drinking water supply. Official Plans could also help steer land uses associated with these activities to more appropriate locations. A site plan agreement is one tool that could restrict the location of buildings, structures, and roadways on a site, and thereby indirectly restrict the location of activities on a property. This method could be an effective way to achieve the prohibition of certain types of threats, without using outright prohibition of the entire land use. For more information about land use planning policies, please refer to Module 3: Land Use Planning.

### **Prescribed Instrument (Provincial Government Responsibility)**

Source protection plans may contain policies that prohibit certain significant threat activities which require an instrument prescribed in regulations under the *Clean Water Act* (s. 1.0.1 of Ontario Regulation 287/07 identifies the prescribed instruments). For example, activities that require a prescribed instrument such as an Environmental Compliance Approval or Nutrient Management Plan could be prohibited when the prescribed instrument tool is applied through a source protection plan policy. This would mean the Director or other implementing body responsible for issuing, amending, or otherwise creating the instrument, would not issue the instrument, or depending on the geographic area to which the policy applies, make a condition within the approval that would prevent the significant threat activity from occurring within that specific area. This condition would effectively prohibit that particular activity from occurring in the specified location, without using Section 57 Prohibition.

### **Section 58 Risk Management Plans**

Source protection plans may use Risk Management Plans as a policy tool under Section 58 of the *Clean Water Act* (see Module 5: Risk Management Plans).

A source protection plan could require a risk management plan for certain existing types of activities, such as an agricultural operation. Within the risk management plan, some activities may have restrictions on them. For example, the landowner and the Risk Management Official may agree that cattle would not be allowed to graze within a prescribed setback from a watercourse. This measure would effectively prohibit that activity just within that agreed buffer zone.

When a risk management plan is required for a new activity (i.e. a future activity not engaged in prior to the plans' effective date), the activity is prohibited until an approved risk management plan is in place. This means that an approved risk management plan is required before the formal planning process can officially commence. It will be important that the Risk Management Official communicate this message with planning or other approval personnel in the municipal office where the risk management plan has not yet been established. In addition, for plans that include a timeline for the establishment of risk management plans for existing activities, once that timeline passes, the activities are effectively prohibited until the risk management plan is in place.

## C. Preparing for Prohibition

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Municipalities are ultimately responsible to ensure that Section 57 Prohibition policies are implemented in the specific areas indicated in the source protection plan. It is necessary to prepare to fulfill this obligation prior to the source protection plan coming into effect.

Prohibition can apply to both existing and future activities. Most source protection plans provide a timeline by which Section 57 Prohibition applies to existing activities that can vary from 180 days from when the plan comes into effect up to several years (when a plan does not include this date, the *Clean Water Act* default is 180 days after the plan takes effect). Conversely, prohibition of future activities comes into effect on the day the Source protection plan takes effect. For this reason, municipalities need to establish procedures, appoint a Risk Management Official and Inspector, and set up a Risk Management Office prior to the plan coming into effect. This section provides information about preparing for prohibition policy implementation.

### i. Municipality Appoints Risk Management Official and Inspector

Each municipality that is required<sup>2</sup> to prohibit activities as specified in a source protection plan must decide who they will appoint to fulfill the role of the Risk Management Official(s) and Inspector(s) as per Section 47(6) of the *Clean Water Act, 2006* (see Section D (iii)). The Risk Management Official is the primary authority responsible for the negotiation of risk management plans under Section 58 of the Act; whereas, Risk Management Inspectors are responsible for ensuring that persons subject to Part IV policies are in compliance with applicable policy requirements. Both officials and inspectors must have received approved training and certification from the Ministry of the Environment. Further details about these appointments and options available to municipalities are provided in Module 1: Establishing a Risk Management Office.

### ii. Risk Management Office

Establishing a Risk Management Office is a requirement under the prohibition policies. The office could be located in the municipal office, health unit or the conservation authority office. The process for setting up the office is explained in detail in Module 1: Establishing a Risk Management Office.

### iii. Staff Training

The required training for the Risk Management Officials and Inspectors is mentioned in Section C (i) and is regulated by the Ministry of the Environment. However, municipalities should

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<sup>2</sup> Refers to municipalities with by-law making authority under the Municipal Act, 2001, respecting water production, treatment and storage.

consider providing additional operational training to all staff that will play a role in building and planning approvals. This training should include planners, building inspectors, clerks and receptionists. These staff members will need to be aware of the location of vulnerable zones where prohibition policies apply. This will allow them to involve the Risk Management Official immediately should the need arise. Staff should also have a clear understanding of the rationale that supports the prohibition policies.

#### **iv. Communications**

As with any program, communication is critical to ensure that the objectives of the program, including internal and external communication, are being met.

##### **Internal**

Regardless of who is administering prohibition policies, municipalities and conservation authorities (source protection authorities) will benefit from working closely together to create internal processes for communication. The conservation authorities can help explain the rationale for prohibition, develop a strategy to prioritize implementation and annual reporting of the policies. Municipalities can explain how best to integrate the Section 59 policies into their process to catch proposed prohibited activities before they go through the approval process. Together they can develop other approaches and processes to implement prohibition.

##### **External**

Part IV Prohibition needs to be articulated to affected property owners and/or tenants so they know what to expect, how the policy will be implemented, and how it will impact their activities. Communication can happen through letters, phone calls, site visits, or a combination of all three. The *Clean Water Act, 2006* mandates consultation with affected landowners throughout the development of the Assessment Report, and the source protection plan. This previous consultation should mean that people affected by the prohibition policies are already aware of the implications. However, after the source protection plan comes into effect, the timing and the extent of the prohibition policies will still need to be communicated.

Most regions have education and outreach policies that, when implemented, will help to create awareness of the vulnerable areas and which activities are prohibited. Information about which activities are prohibited and where they are prohibited can be provided on source protection region/area websites with links to that information from municipal websites.

#### **v. Site Inspection Protocols**

The legislation gives the Risk Management Inspector the authority to enter property and conduct site inspections to ensure compliance with Section 57 Prohibition policies.

Every property, whether it is industrial, residential, recreational, agricultural, or another land use, has unique characteristics with respective safety and operational concerns. It is therefore important to have an understanding of the typical protocols common to all types of property,

and the protocols unique to the common types of property that the Risk Management Inspector will be visiting. It is also very important to communicate with the landowner to better understand the unique characteristics of the particular property on which the site inspection is being conducted. A municipality, or the body responsible for enforcement, may choose to formalize the protocols around site visits by passing by-laws or regulations establishing and governing inspection programs (see Appendix A - Rules Governing Inspections as Defined under Subsection 62 (3-7, 11) of the Act). See Module 5: Establishing a Risk Management Office for more details.

### **Part of RMO/I Training**

As noted above, all Risk Management Officials and Risk Management Inspectors are required to obtain the appropriate training and certification prior to undertaking responsibilities under Part IV of the *Clean Water Act*, including Section 57 site inspections. This training will provide inspectors with an in-depth understanding of the rules and powers under the Act for conducting site inspections. Some of this information is highlighted in Section C (vi). However, course instructors, training manuals, and the legislation should be consulted for more detailed information.

## **vi. Useful Supporting Documents**

### **Source Protection Plan**

The local source protection plan should be referenced to determine which types of drinking water threat activities are subject to Section 57 Prohibitions and the geographic areas in which the policies apply. In addition, the Tables of Circumstances created under the Technical Rules for the Preparation of Assessment Reports and corresponding summary tables describe the specific situations, areas and vulnerability scores that can determine whether or not each activity is a significant threat. For example, a 900 litre furnace oil tank in a WHPA-A is only a significant threat if it is below or partially below grade. Therefore, it would not be possible to use a Section 57 Prohibition policy to prohibit a tank that was above grade in a WHPA-A. The Risk Management Official and Inspector would determine which local properties may be subject to prohibitions.

### ***Clean Water Act, Regulations***

Part IV of the *Clean Water Act* (and relevant regulations) should be referenced to determine the legislative roles and responsibilities for the implementation and enforcement of Section 57 Prohibitions.

## **D. Prohibition – Roles and Responsibilities**

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This section examines the various roles and responsibilities of those impacted by Section 57 Prohibition policies.

### **i. Property Owner and/or Person Engaged in the Activity**

Consultation and communication is particularly important with prohibition policies because there could be significant financial implications from prohibiting an existing activity. Local source protection authorities were required to contact people engaged in significant threat activities several times during the Assessment Report and source protection plan writing process. As a result, it is expected that most impacted people should have been made aware that an activity on their property will be prohibited prior to the approval of the source protection plans.

Affected property owners should also be aware that the Risk Management Official may be contacting them to confirm that they are in fact involved in an activity that a source protection plan prohibits using Section 57 Prohibition. It will be the responsibility of the property owner and/or the person engaged in the prohibited activity to cease this activity in the timeframe the policy specifies.

### **ii. Risk Management Official**

Appointed Risk Management Officials have a key role related to prohibition policies in the source protection plan. The officials must have received approved training and certification from the Ministry of the Environment. The training includes “powers of entry” training as specified in Section 62 of the *Clean Water Act, 2006*. Risk Management Officials must be versed in the Act and the source protection plan policies and have an understanding of which activities are being prohibited, the specific circumstances under which they are prohibited, where they are prohibited, and when the prohibition takes effect.

It is anticipated that the Risk Management Official will contact all individuals involved in an activity affected by prohibition policies to inform them of the policies and to collect relevant information related to the activity. For existing activities this initial contact will also provide an opportunity to discuss a timeframe in which the activity must cease.

For future activities affected by prohibition policies, Section 59 Restricted Land Uses policies (if used in local source protection plans) provide the Risk Management Official the opportunity to pre-screen all planning and development applications to for activities that would not be allowed by prohibition policies. The purpose of this function is to stop any further review or approval processes if the proposed activities are not allowed.

The Risk Management Official also has a responsibility to report annually to the source protection authority on the number of activities prohibited through Section 57 policies (see Section 81 of the *Clean Water Act* and Section 65 of Ontario Regulation 287/07 for all reporting details). The purpose of this report is to assist the source protection authority in understanding how implementation of source protection plan policies is progressing, in order to determine whether the Section 57 Prohibition policies are effective in addressing significant drinking water threats (see Module 4: Annual Reporting and Information Management for additional information).

### **iii. Risk Management Inspector**

Like the Risk Management Official, the Risk Management Inspector must have received approved training and certification from the Ministry of the Environment. The training includes “powers of entry” training as specified in Section 62 of the *Clean Water Act, 2006*.

It is anticipated that the Risk Management Inspector will arrange periodic inspections of properties that could be involved in prohibited activities to ensure that these activities are not taking place. These inspections may or may not coincide with an inspection required for a risk management plan. The Risk Management Inspector may choose to conduct inspections based on risk and on a random basis rather than scheduled inspections. The Risk Management Inspector training course addresses requirements of the Act, as well as health and safety concerns that may arise while conducting inspections.

In the event that an individual or corporation is not in compliance with a Section 57 Prohibition policy, the Risk Management Inspector may issue an order in an attempt to bring them into compliance. If the individual or corporation fails to achieve compliance, they may be prosecuted. Upon conviction, an individual may be fined not more than \$25,000 for the first offence for each day, or part of a day, that the offence occurs, and \$50,000 per day for any subsequent offence. These fines are doubled for corporations guilty of an offence. The Risk Management Inspector may need to obtain a warrant from a court if the Inspector cannot gain access to the property to conduct an inspection. If the Risk Management Inspector has reasonable grounds to believe that a person is engaging in a prohibited activity contrary to Section 57 Prohibition policies, the inspector may issue an enforcement order requiring the person to comply with the prohibition, by ceasing to engage in that activity. The *Clean Water Act* provides the Risk Management Inspector the authority to prosecute a person who fails to comply with Section 57 Prohibition.

The Risk Management Inspector will need to provide details related to the number of inspections administered each year and any compliance issues so that those details can be included in the annual report prepared by the Risk Management Official.

#### **iv. Municipalities**

A municipality that has the authority to pass by-laws respecting water production, treatment and storage under the *Municipal Act, 2001* is identified as the enforcement authority under the *Clean Water Act*. This means that the municipality is responsible for enforcing the Part IV tools under the Act, including Section 57 Prohibition policies, if the source protection plan includes such policies for that municipality. Alternatively, the *Clean Water Act* includes provisions allowing two or more municipalities to jointly enforce the Part IV, or to enter into an agreement with other bodies, such as neighbouring municipalities, boards of health, planning boards, or a source protection authority. Once such an agreement is established, the other body must enforce the Part IV policies.

Municipalities will find it helpful to have mapping available within the planning and building permit departments and online that indicate areas where Part IV policies apply by the time the approved source protection plan takes effect. Official plans and zoning by-laws will be amended over time to conform to the significant threat policies in plans; however, this process will take time to complete.

#### **v. Source Protection Authority**

The source protection authority is required to collect annual reports about Part IV policy implementation from the Risk Management Officials and prepare a summary of the reports. This summary is included in the annual progress report prepared by the source protection authority under Section 46 of the *Clean Water Act*. The summary, along with other contents of the annual progress report, is made available for review by the source protection committee (see Module 4: Annual Reporting and Information Management). Once the committee has reviewed the annual progress report, the source protection authority sends it with any comments from the committee to the Director of the Source Protection Programs Branch at the Ministry of the Environment. As soon as reasonably possible, the annual progress report will be made public after it is submitted to the Director (as per *Clean Water Act, 2006* Section 46(5)).

The source protection authority will be a great resource and will be able to answer policy or technical questions the Risk Management Officials and Inspectors may have. As well, the source protection authority may assist the municipalities with any education and outreach work related to Section 57 Prohibition policies to ensure consistency and accuracy of any information provided.

#### **vi. Source Protection Committee**

The source protection committee will review and provide any necessary comments on the annual progress report prepared by the source protection authority. The information in the report should help the committee determine whether or not the objectives set out in the source protection plan are being achieved.

The source protection committee may also assist the municipalities with any education and outreach work related to Section 57 Prohibition policies, to ensure consistency and accuracy of any information provided.

### **vii. Businesses and Contractors**

In many cases the Section 57 Prohibition policies will pertain to substances such as fuel, pesticides, fertilizers and hazardous chemicals. Any businesses or contractors involved in supplying or installing equipment to handle or store these materials should be aware of the locations where prohibition is in effect, so that they are not contributing to the contravention of a prohibition policy.

## **E. Section 57 Prohibition – Implementing Process**

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### **i. Identification of Where Section 57 Prohibition Applies**

Each municipality should be very aware of the Section 57 policies and where they apply in their region. WHPAs and IPZs may be included in their Official Plans and zoning maps. Clerks, planners and building inspectors should be aware of and refer to the related maps located in the Assessment Report when considering planning or development applications in areas where Part IV applies. They should also refer to the Section 57 and 59 policies in the source protection plan to determine which activities are prohibited and in which locations (see Sections B (ii) 1 and 2, and C (vi) 1 for additional details).

### **ii. Notification to All Property Owners or Persons Engaged in Activities Subject to Section 57 Prohibition**

It is anticipated that the Risk Management Official will contact anyone engaged in an existing activity that is affected by Section 57 Prohibition policies, in order to inform them of which activities are prohibited and the date by which the activity must cease.

### **iii. Section 59 Restricted Land Uses Policy and Notice**

A Section 59 restricted land uses policy designates land uses in an Official Plan or zoning by-law in the area where Part IV (Section 57 and Section 58) applies. This means that development applications (applications in the area where Section 59 applies and for the land uses named in the policy, such as commercial and industrial uses) need to be screened by the Risk Management Official prior to processing an application. See Figure 2 for an example of the decision-making process municipal planning staff could follow when processing development applications that are subject to Section 59 land use policies.

The Risk Management Official will evaluate the application and determine whether Section 57 applies to the application. If the application involves an activity that is designated as prohibited



under Section 57, the Risk Management Official will not be able to issue a Section 59 notice to proceed with the application. The applicant may either amend the application to eliminate the prohibited threat activity, or pursue the application in a different location where Part IV does not apply, or abandon the application altogether.

If the Risk Management Official reviews the application and is satisfied that Section 57 does not apply, the Official will issue a Section 59 notice to proceed with the application. The Section 59 notice will be part of the complete application requirements and is submitted with the development application (under the *Planning Act* or a building permit) along with any other required information. This means that the Section 59 notice is required in areas where Section 59 applies and the application cannot proceed until the notice is issued. *It is important applicants are made aware that the planning process for their municipal development application cannot proceed to completion until a Section 59 notice has been provided by the Risk Management Official.*

Each municipality that is affected by Section 59 restricted land uses policies will establish an internal process to determine if any planning, development or building applications are related to an area where Section 57 Prohibition policies apply and, if so, how to integrate this review with development review processes. This process will require excellent communications between the Risk Management Official, the municipality, and the proponents.

In jurisdictions with two tiers of municipal government, where the lower tier is responsible for certain applications under the *Planning Act* (i.e. processing building permits) and the upper tier is responsible for Part IV authorities, the two municipalities will need to establish processes to ensure development applications are reviewed by the Risk Management Official in areas where Section 59 applies.

This process is envisioned to operate similarly with existing reviews in a two-tier structure; for example, when an application for a building permit is made at the lower tier and requires an entrance permit onto a regional road from an upper tier. Similarly, for applications in the area where Section 59 applies, the applicant will be required to obtain a Section 59 notice to proceed with the application as part of the complete application requirements. It is critical that all those involved in the process understand the areas where Section 57 and Section 59 policies apply (see sections B (ii) 1 and 2 for additional details).

#### **iv. Inspections**

The Risk Management Inspector will determine when inspections related to Section 57 Prohibition policies will take place. Risk Management Inspectors are anticipated to prioritize site inspections with respect to risks posed by the prohibited activity and to the general public, and decide the frequency of inspections based on a number of factors. For example, prohibited activities that are highly visible probably do not need to be inspected as often as activities that take place within a building. The inspector may also have reason to believe the certain

individuals are not willing to comply with prohibition policies. In that case, more frequent and random inspection may be justified.

The inspector will follow the powers of entry (Section 62 of the *Clean Water Act, 2006*) protocols and training if entry to the property is necessary to conduct the inspections.

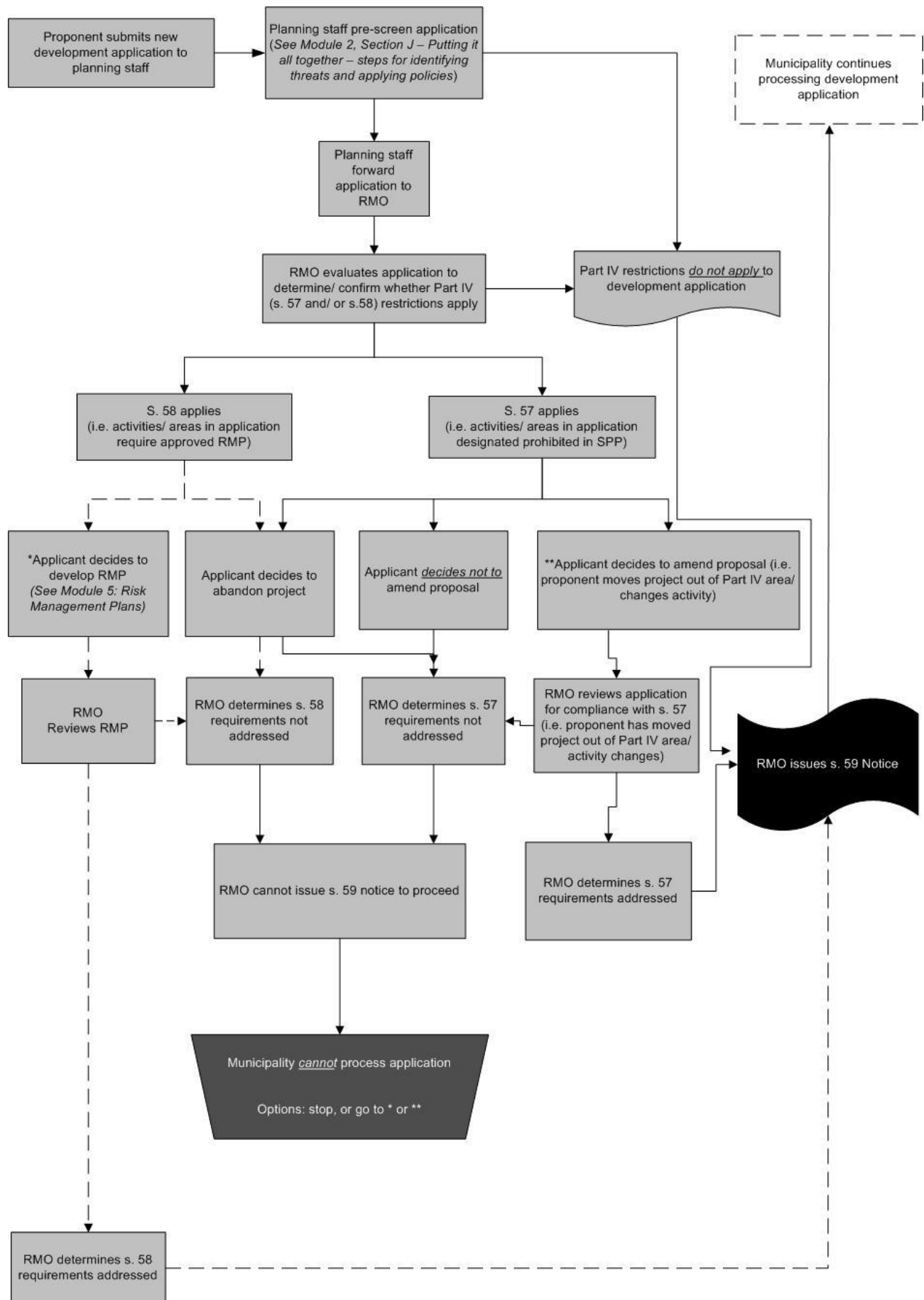


Figure 2: Integrating the Municipal Planning Review Process with Part IV Policy Tools

## Appendices

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### **Appendix A - Rules Governing Inspections as Defined under Subsection 62 (3-7, 11) of the Act**

#### **Risk Management Inspectors:**

- Shall not enter a room used as a dwelling without consent of occupier or a court warrant;
- May be accompanied by any person possessing expert or special knowledge that is related to the purpose of the entry;
- Power to enter property may be exercised at any reasonable time;
- Power to enter property shall not be exercised unless reasonable notice of the entry has been given to the occupier of the property;
- Risk Management Inspector may have to obtain an inspection warrant from a court if the Risk Management Inspector cannot gain access to a property in order to conduct the inspection (e.g. the property owner is actively obstructing entry);
- No force can be used for any purpose.

#### **Powers of a Risk Management Inspector during inspections defined under subsection 62 (8),**

#### **Risk Management Inspectors may:**

- Make necessary excavations (i.e. excavating the soil);
- Require that anything be operated, used or set in motion under conditions specified by the person;
- Take samples for analysis;
- Conduct tests or take measurements;
- Examine, record or copy any document or data in any form, by any method;
- Require the production of any document or data, in any form, related to the purpose of the entry;
- Remove from a place documents or data, in any form, produced under clause (f) for the purpose of making copies;
- Retain samples and copies obtained under subsection 62(8) for any period and for any purpose related to the enforcement of Part IV; and
- Require any person to provide reasonable assistance and to answer reasonable inquiries, orally or in writing.

## **Special considerations**

Before conducting site inspections on private property, the Risk Management Inspector should first prepare for the visit by reviewing the property history. The more the inspector knows about the site before visiting it, the more successful the collection of data during the visit will be. Another important pre-inspection step is to contact the property owner/manager to arrange the visit. This should be done a few business days in advance of when the site inspection will be conducted, and may be preceded by a letter of explanation. Once the inspection has been arranged, consideration should be given to biosecurity and safety issues that could impact the visit.

## **Biosecurity**

Since biological hazards exist in the environment, there is always some risk of contamination occurring during site inspections. However, by following appropriate biosecurity protocols when conducting site inspections, inspectors can ensure that the risk of contamination is reduced to an acceptable level. Biosecurity protocols are particularly important for agricultural properties where disease outbreaks can have serious economic consequences. For agricultural properties, biosecurity is most important for livestock operations and greenhouse facilities. While the risks are considered lower for most crop situations, they are still present. Inspectors should be mindful of the key risk factors which are manure, animal excretions and plant material. Biosecurity involves many steps at different levels which include: import/movement restrictions, industry standards and protocols, vaccination, good husbandry, hygiene, and controlling visitor traffic.

Prior to visiting agricultural properties, Inspectors should call the farm manager to determine biosecurity protocols and parking restrictions. Once the site inspection has been arranged, the general procedure that should be followed when inspectors arrive at an agricultural property is to park vehicles away from barns, traffic areas and feed storage, and not under air intakes or exhausts. Vehicles should be parked facing in the exit direction, and inspectors should wait at the vehicle for the owner or operator to meet them. The owner/operator should be asked if the farm has biosecurity protocols, and any additional measures required by the producer should be respected.

**It is recommended that Risk Management Inspectors possess the following biosecurity equipment for conducting site inspections:**

- Washable or disposable gloves
- Disposable boot covers (heavy gauge 6 mil thickness)
- Washable or disposable coveralls
- Plastic pail and boot brush
- Chemical disinfectant or detergent (e.g. Virkon)
- Container of water (5-10 L)
- Spray bottle of disinfectant solution
- Germicidal hand lotion
- Garbage bags
- Paper towels
- N95 dust mask and hair nets

In general, when conducting site visits on agricultural properties, inspectors should wear clean washable or disposable footwear and not enter any barn or facilities that house animals unless necessary. Coveralls should be worn in animal pastures, and lab coats should be worn in greenhouses as required. All contaminated clothing and equipment should be cleaned or disposed of when leaving the property. Clean biosecurity equipment should be stored separately from dirty equipment in the vehicle, and both the interior and exterior of the vehicle should be kept clean of contaminated materials. If more than one farm site inspection is to be made on the same day, vehicles should be washed in-between visits. Property owners should always be consulted first to determine any property-specific protocols that should be followed.

### **Safety**

An important safety issue for many agricultural and industrial properties is the accountability of individuals who are visiting or have visited their site. Inspectors should expect to sign-in and out at most industrial and agricultural properties when conducting inspections. Inspectors should also ask the property owner whether any safety protocols or regulations apply to the property in advance of the inspection. Personal protective equipment, such as safety goggles or hearing protection, may be required for anyone entering the property.

While conducting Section 57 site inspections, health and safety should always be a priority. In general, if inspectors do not feel safe at any time during a visit, they should leave, postpone the visit, and discuss the matter with their employer. The following are some recommendations that will help ensure safety during site inspections:

- Ask about any special safety procedures
- Carry a cell phone at all times (unless they cause specific hazards to the facility)
- Notify others of the inspection location and check-in with someone before and after visits
- Consider working in pairs
- Be cautious of dogs or other pets on the property
- Take weather related issues into account
- Assess risks to yourself (i.e. hazardous material)
- Have a site official accompany you at all times
- Close fitting clothes should be worn when working with or around moving machinery or equipment

## **Appendix B - Some Terms You Need to Know**

**Agricultural property visit** – In attendance on the agricultural operation, including compounds, laneways, all outbuildings and structures, rooms, pens, walkways, fields, pastures, adjacent watercourses, ditches, drains, or any areas which may contain or be susceptible to contamination by biological hazards that could cause harm to agricultural plants or animals.

**Biosecurity** – The collective measures designed to prevent or minimize the risk to biological system from the introduction and spread of hazards.

**Industrial Spaces** – The use of land or a building on a property for an enterprise or activity involving assembling, fabricating, manufacturing, processing, producing, storing, warehousing or distributing goods or raw materials. Industrial properties also include land that is used for: the transportation of goods or people by railway or by airplane; the production of oil or gas, or mining or quarrying; in connection with a water treatment or sewage facility, or a waste disposal site; in the transformation or generation of electricity; as a salvage yard, including an automobile wrecking yard or premises.

**Personal Protective Equipment (PPE)** – Protective equipment (e.g. safety goggles) that inspectors may be required to wear to be consistent with on-site safety rules or regulations.



## **Appendix C – Sample Notification – Information Letter for Section 57**

**[Name  
Address  
Date]**

To **[XXXX]**,

You have received this letter because the RMO for the **[Municipality Name]** would like to inform you that the Source Protection Plan for the **[SPArea]** was approved by the Ministry of the Environment on **[XX date]**. The effective date for the Source Protection Plan is **[XX date]**.

The Source Protection Plan was developed in accordance with the *Clean Water Act, 2006* and its supporting regulations. The purpose of *the Act* is to protect Ontario's existing and future drinking water sources, in order to safeguard human health and the environment. A key focus of the legislation is the preparation of locally science-based Assessment Reports and Source Protection Plans.

You are encouraged to review the provincially approved **[Area Name]** Source Protection Plan, which is comprised of both the scientific basis for identifying significant threat activities (in the form of the Assessment Report) as well as the local policies designed to address them. The Plan can be found online at [www.conservation-ontario.on.ca](http://www.conservation-ontario.on.ca) or a hard copy can be obtained via the (Municipal Clerk, Risk Management Official, etc).

As you should already be aware, one or more of the activities and areas on your property has been designated in the Source Protection Plan as being subject to Section 57 prohibited activities. Policy # **[XX]** in the Source Protection Plan states that once a Source Protection Plan is in effect, an activity that has been designated as prohibited must cease within the area specified in the Plan on the property address above. The Source Protection Plan sets a date of no longer than **[x]** months for the activity in the designated area to cease.

In order to better understand what is required, please contact the Risk Management Official's Office at **[xxx-xxx-xxxx]**, anytime between **[Monday and Friday, X:XX am to X:XX pm]**, to discuss the specific contents of this notice and to request additional information.

If you wish to call into question the designation of the above activity at that location as a significant drinking water threat, you may do so by submitting an application and completing a site-specific Risk Assessment, under Section 60 of the *Clean Water Act*. For more information on this process, please contact your local Risk Management Official/municipality.

Thank you for your ongoing cooperation in protecting our local sources of drinking water. We look forward to speaking with you in the near future.

***[Provide Contact Information]***

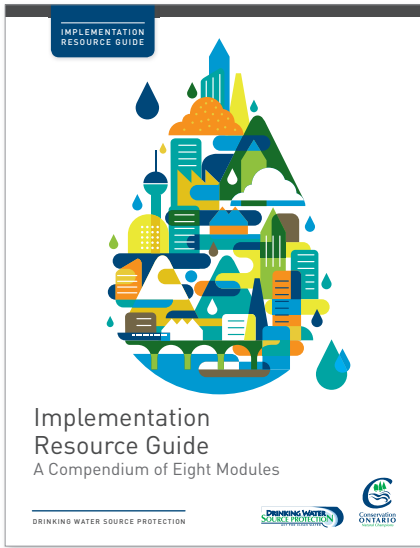


MODULE 7

# Non-Regulatory Policies

(Education and Outreach, Incentives,  
and Section 26, Paragraph 1 Policies)



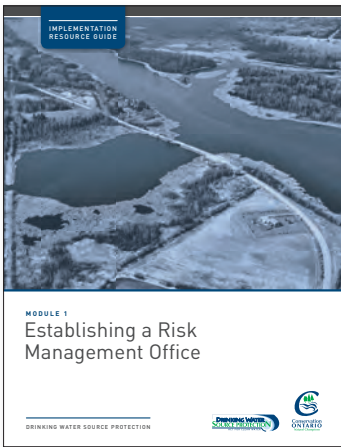


# Implementation Resource Guides

A Compendium of Eight Modules

Look for all eight modules in our Drinking Water Source Protection series. You can find them at [www.conservation-ontario.on.ca](http://www.conservation-ontario.on.ca)

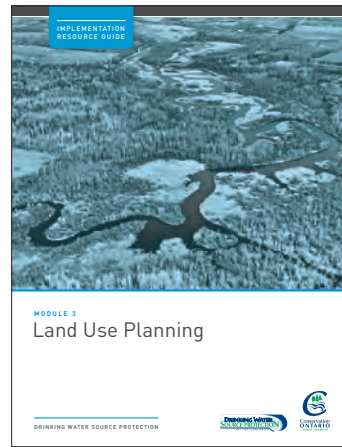
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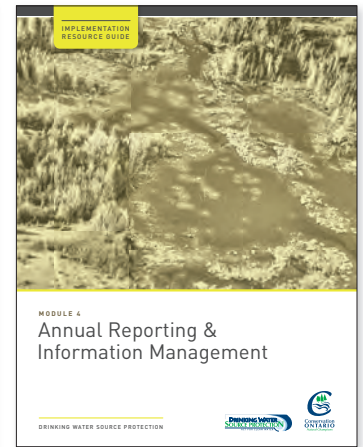
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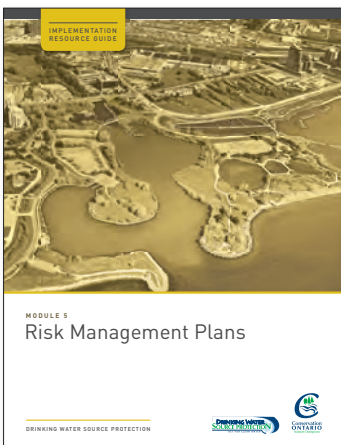
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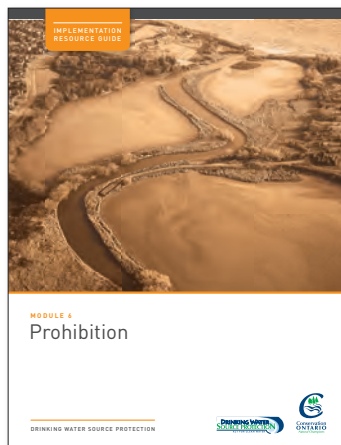
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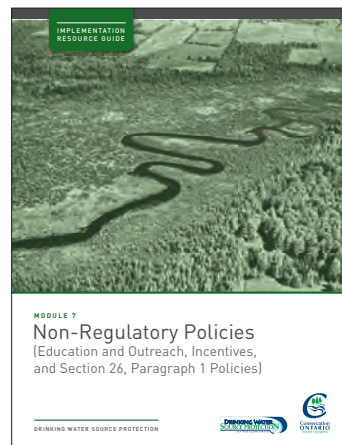
## MODULE 5



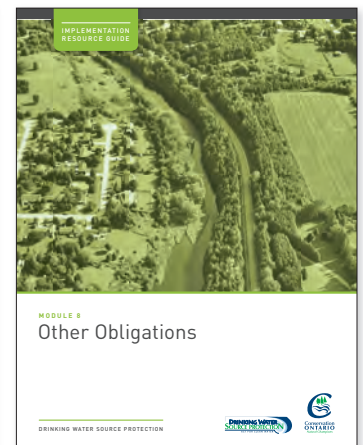
## MODULE 6



## MODULE 7



## MODULE 8



# Module 7: Non-Regulatory Policies (Education and Outreach, Incentives, and Section 26, Paragraph 1 Policies)

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## Implementation Resource Guide

06/05/2013

Note to Reader: This document is one of a series developed by staff at conservation authorities and Conservation Ontario in support of source protection plan implementation. These documents cover a variety of tools related to plan implementation, but not all will apply in your municipality. Consult your local source protection plan to determine which policies are applicable in your municipality. This document has not been reviewed by legal counsel and is not presented as legal advice.

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## A: General Information

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This module aims to provide information to municipalities, and other implementing bodies, on the implementation requirements for the following types of source protection plan policies:

- education and outreach policies (which may be included in plans as ‘threat’ policies or as general education and outreach policies)
- incentive policies (which may be included in plans as ‘threat’ policies or as general education and outreach policies)
- Section 26, Paragraph 1 policies (as set out under Ontario Regulation 287/07 of the Ontario *Clean Water Act, 2006*), which are always ‘threat’ policies and include policies that:
  - specify actions to be taken,
  - establish stewardship programs,
  - specify and promote best management practices (BMPs),
  - establish pilot programs, or
  - govern research.

At the end of this module, you should have a general understanding of the municipality’s role in implementing these types of policies, as well as where to look for further information.

The information contained in this module is current as of the time of writing.

### i. Overview of Non-Regulatory Policies

Source protection plans may contain policies that rely on education and outreach, incentives, or the other non-regulatory tools (Section 26, Paragraph 1 of Ontario Regulation 287/07) to manage drinking water threats. The use of these tools is not limited by the legislation and, therefore, they can be used broadly to address significant, moderate, or low drinking water threats.

When they address significant threats, these tools can be used in combination with regulatory tools. However, many plans use them as a stand-alone approach. There is considerable variability in how these policies have been used across Ontario. You should become familiar with your local source protection plan(s) to determine how these policies are to be implemented.

The following sections provide brief descriptions of the non-regulatory policy tools, and provide some examples of how they have been used in local source protection plans.

## Education and Outreach Policies

Education and outreach policies are intended to increase public awareness of the benefits of drinking water source protection and encourage positive changes in behaviour. They have also been used to improve landowner acceptance of policies in source protection plans. Education and outreach policies may be specific to significant drinking water threats, or they can be used as a broad approach to influence behaviour related to source protection in general. The distinction of whether or not the policy addresses a significant drinking water threat is important when an implementing body is considering if the policy is legally binding on the municipality, which is discussed in more detail in Section A (ii).

Education and outreach programs can take many forms, from the simple and relatively economical, such as mailing letters or fact sheets, to comprehensive programs such as classroom programming or site visits. An education and outreach program could include written materials, community outreach, and/or special activities.

Most education and outreach policies contained in source protection plans do not prescribe methods, allowing the implementing body the flexibility to design a program and deliver it in a manner that is both effective and efficient. Section B (i) of this module provides some general guidance on how to develop and implement education and outreach policies to meet the requirements of local source protection plans. However, you should always refer to your local education and outreach policies to determine whether there are prescribed methods to which the education and outreach program must adhere.

## Incentive Policies

Incentive policies can provide the positive motivation for a voluntary change in behaviour. They are not limited to financial incentives; they could include things like discounted products or community recognition. For example, an incentive policy may set out requirements for municipal household hazardous waste days when it is free to drop off hazardous waste, while the rest of the year it must be brought to a transfer station with a tipping fee.

Similar to education and outreach policies, incentive policies may be applied to specific drinking water threats, or they can be used generally in a source protection plan. Whether or not an incentive policy addresses a significant drinking water threat is important when considering if the policy is legally binding on the municipality, which is discussed in more detail in Section A (ii).

Incentive policies may be general or particular in nature. For example, incentives may be used as a complement to all threats or a group of threats, or they may be used to address a specific drinking water threat, at a specific risk level. Like education and outreach, many incentive policies have been written to provide implementing bodies with flexibility in developing and

delivering incentive programs. Section B (ii) of this module provides some guidance on developing an incentive program to meet the requirements of source protection plan policies.

## Section 26, Paragraph 1 Policies, Including Specify Actions

The last group of non-regulatory policies is often described as the “other” policies. These “other” approaches are authorized under Section 26, Paragraph 1 of Ontario Regulation 287/07 and always relate to one or more drinking water threats:

- specify actions to be taken,
- establish stewardship programs,
- specify and promote best management practices,
- establish pilot programs, or
- govern research.

These policy approaches may be applied alone or in combination with other policy approaches to reduce the risk from specific drinking water threat activities.

See Section B of this module for further information about the “other” policy tools.

### ii. Legal Effect and Implications

Source protection plan policies will have a range of legal effects. The requirements of municipalities and other implementing bodies named in each policy vary according to the risk level of the drinking water threat the policy is addressing, the type of policy tool being used, and the implementing body.

When education and outreach, incentives, or one of the “other” tools are used to address a significant drinking water threat, and municipalities, local boards, or source protection authorities are identified as the implementing body, the policy is legally binding and they must comply with the obligations set out in the policy; these policies can be found in List E, in the Appendix of each source protection plan. For example, if an education and outreach policy addresses a significant drinking water threat and identifies a municipality as the implementing body, the municipality is legally required by Section 38 of the *Clean Water Act* to implement the actions described in the policy. A municipality could encounter increased civil liability if the public experiences harm due to a failure to take appropriate action.

Where these tools are used for moderate and low threats, or when general (e.g. non-threat) education and outreach or incentive policies are included in plans, these policies have no legal effect; these policies are included in List J within the Appendix of each source protection plan. While public bodies are not legally required to implement these policies, the public and other stakeholders may still expect these policies to be implemented to the extent possible, given the



inclusive and consultative process of source protection plan development and the transparent nature of annual reporting that follows implementation.

To determine the legal effect of any policy, reference the source protection plan.

### **iii. Roles and Responsibilities**

There is flexibility in determining who will implement education and outreach, incentives, and the “other” category of policies. Local source protection committees selected the implementing bodies for non-regulatory policies in the source protection plans, and there is considerable variability between areas/regions.

Implementing bodies include municipalities, conservation authorities, source protection authorities, local boards, health units, planning authorities, provincial ministries, etc. Staff members at the local source protection authority can be contacted, or the local source protection plan can be consulted, to find out which combinations of implementing bodies have been identified in the source protection plan policies.

If a municipality falls into more than one source protection region, municipal staff will need to understand the non-regulatory policy requirements for each region in the municipality. For more information about understanding where source protection plan policies apply, refer to Module 2: Understanding Where Policies Apply.

### **iv. Timelines**

Conformity dates for non-regulatory policies are highly variable. In some cases, there is a requirement to implement policies within the first year that a plan takes effect. In other cases, it may be several years. In any case, it is important to begin planning and budgeting for this work as early as possible. The sooner teams initiate these policies, the earlier they can implement protective measures.

## **B: Implementation of Non-Regulatory Policy Tools**

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### **i. Education and Outreach**

Well-designed education and outreach programs can be an effective way to raise public awareness about where drinking water comes from, the importance of protecting it, and what residents, businesses and visitors can do to help keep it safe. Depending on the nature of the policies in the source protection plan, an education and outreach initiative can help ensure people know:

- where vulnerable drinking water areas are located,

- what activities could pose a threat in these areas,
- what actions can help protect drinking water, and
- what other programs, if any, exist to help them start these actions or projects.

Source protection plan policies may actually require several education programs depending on the threat activity, circumstances, policies, and audiences. Where an activity or condition is assessed as a low or moderate threat to drinking water, an outreach program may be delivered fairly broadly, with an emphasis on general best management practices when taking part in activities that could impact drinking water. However, where an activity is assessed as a significant threat to drinking water, a more detailed and individualized program with an emphasis on risk mitigation and/or other property owner requirements might be needed. Again, local source protection plans should be consulted before education and outreach programs are developed. The plans are available online or from local source protection authorities. Education and outreach has been used in source protection plans to:

- **Complement other mandatory policies.** E.g. An education program that precedes the requirement for a risk management plan. In this way, landowners can receive information about risks to drinking water, the need for a risk management plan, and the role of a municipal Risk Management Official.
- **Complement existing programs.** E.g. Providing information on septic system care and maintenance to keep septic systems functioning properly between five-year mandatory inspections that are now required under the Ontario Building Code.
- **Address significant threats when the source protection committee has decided to use non-regulatory tools to address the threat.** E.g. Providing education to residential landowners who store fuel in highly vulnerable areas around municipal drinking water supplies.
- **Address low or moderate threats that cannot be addressed through regulatory measures.** E.g. Encouraging risk reduction when there are outdoor, above-ground heating oil tanks. This kind of education and outreach can add more protection to water, even when a threat is not assessed as significant.
- **Address threats at the household level where the activities do not constitute a significant threat, but the source protection committee may have been concerned about the potential for cumulative impacts from many households.**  
E.g. Many homeowners in one community might use excessive amounts of road salt on their driveways.
- **Raise general awareness of the vulnerable areas.** Encourage good stewardship practices, and promote financial incentive programs, when and where available, that help property owners initiate these practices.

## Objectives and Expected Outcomes

When designing an education and outreach program, municipalities and implementing bodies should consider the learning expectations (or outcomes). In short, what do property owners need to know? A well-designed program includes expectations of what the property owner will understand. The learning needs and expectations will also depend upon the type of threat and the details of the policy.

Some plans may describe in detail how education and outreach must be delivered, while others will have left the details up to the implementing bodies to decide. When it comes to educating property owners about science, legislation, and new rules that impact them, a flyer in the mail may not be enough to meet requirements. It is extremely important to understand the expected outcomes of education and outreach policies. Refer to local source protection plans and explanatory documents for further information. The source protection plan and explanatory document includes:

- the need for each education and outreach program,
- the desired outcome,
- the body implementing the policy,
- the compliance date,
- the details for how education and outreach should be carried out.

## Resources and Tools

Municipalities and other implementing bodies are encouraged to identify existing education materials and capacity, partners in the municipality, and opportunities to expand upon existing programs to address the objectives of the source protection plan policies. The implementing body can then benefit from, and build upon, established partnerships, existing relationships with property owners and residents, current program resources (e.g. staff capacity), and watershed knowledge that has already been developed (e.g. assessment reports, watershed characterizations, watershed report cards, professionally developed education programs).

Examples of existing education programs include:

- Education materials (fact sheets, DVDs, resource guides, etc.) developed by health units, conservation authorities, provincial ministries, and Conservation Ontario (see Conservation Ontario's drinking water source protection tool kit):  
<http://www.conservation-ontario.on.ca/uncategorised/140-source-protection-program-outreach-toolkit>
- Environmental Farm Plans: A voluntary environmental education and awareness program delivered by the Ontario Farm Environmental Coalition. The Ontario Farm Environmental Coalition is also developing a Farm Source Water Protection Framework for farmers to use to understand the source water risks and existing protective

measures on their properties, and to understand what additional measures, if any, may be appropriate. <http://www.omafra.gov.on.ca/english/environment/efp/efp.htm>

- Stewardship Guides for Rural Non-Farm and Seasonal/Shoreline Residents (University of Guelph and Partners):
  - Stewardship Guide for the Lake Huron Coastline:
    - <http://theguide.huronstewardship.on.ca/index.php>.
  - The Rural Landowner Stewardship Guide for the Lake Huron Watershed:
    - [http://theguide.huronstewardship.on.ca/index.php?option=com\\_content&task=view&id=3&Itemid=7](http://theguide.huronstewardship.on.ca/index.php?option=com_content&task=view&id=3&Itemid=7)
- Adult education program about drinking water source protection developed by the Ausable Bayfield Maitland Valley Drinking Water Source Protection Region (2007) – Modules available online at <http://www.sourcewaterinfo.on.ca/>

Local source protection plans may outline how to implement education and outreach policies, or the policies may give municipalities the latitude to design their own programs (sometimes in cooperation with another body, such as a health unit or conservation authority). Municipalities are encouraged to contact personnel from the local source protection area(s) about materials that are already available and plan and budget for any resources that are still needed.

## Methods, Budget and Evaluation

Some of the most effective communications methods for use in education and outreach programs include:

- direct site visits, by appointment, with landowners and residents,
- local public meetings, workshops, or events (with a purposeful, engaging format and information), such as an Open Well event where property owners in wellhead protection areas are invited to see their local municipal well and find out how their drinking water is protected, treated, and distributed,
- direct, addressed letters to landowners and residents (no junk mail)
- phone calls to landowners and residents that produce meaningful results (e.g. tracking information, explaining how a workshop can provide them with information they need to know about policy impacts, soliciting commitments to sign up for a newsletter or attend a workshop, etc.).

An education/ outreach program could also include:

- written materials (e.g. brochures, fact sheets, mass-distributed flyers)
- online materials (e.g. electronic newsletters and e-mail marketing, websites)
- social media (e.g. Facebook postings, Twitter feeds, YouTube videos)
- community outreach (e.g. presentations to community groups, schools, industry organizations)
- special activities (e.g. workshops, demonstrations/tours, videos, school/community programs)
- media liaison/relations (e.g. news releases and photos, meetings with editors to suggest editorial content about protecting water, production of newsworthy content with a drinking water message, interviews)

To develop an appropriate strategy for education and outreach and determine whether more than one strategy is required, carefully consider these questions.

- What education and outreach is required for properties with significant drinking water threat activities or conditions?
  - What (if any) education and outreach is recommended for moderate and low threats?
  - Will different land uses (e.g. residential, commercial, industrial, agricultural) require different education?
  - If education and outreach is required in combination with other policy tools, how will it be delivered?
  - How will education and outreach be delivered when it is being used as a stand-alone tool?
  - Is the education and outreach going to be delivered region-wide, area-wide, or municipality-wide?
  - Is the education targeted to specific vulnerable areas?
  - Are there different education requirements for different drinking water threat activities?
  - Should education and outreach involve the municipal Risk Management Official, and if so, what role would he/she provide?
  - What is the audience's literacy level? Are materials in English sufficient, or do they need translation? What communications channels does the audience prefer (e.g. large files or small files, mobile devices or computers, social media or e-mail, meetings or in-person site visits, e-mail or phone, etc.)?
- Are there any reporting requirements for the implementation of the education and outreach policy? For example, the policy may require a report back on the policy progress to source protection authority.

The answers to some of these questions may be available in the education and outreach policies set out in local source protection plans.

Once a delivery strategy has been developed, the next step is determining the budget. Consider the following list when developing a budget for implementation and delivery of education and outreach policies.

### Staffing Considerations

Estimate staffing costs by determining the level of staffing needed and the amount of staff time required. Some questions to consider:

- Who will need to be involved in the education and outreach program?
- What internal staff are needed, what external consultants or services (e.g. website designer and maintenance, graphic designer, printing supplier, meeting facilitators, translators)?
- Who of the following people need to be involved, and how much of their time is required?
  - chief administrative officer
  - general manager
  - project manager
  - financial administrator
  - educator
  - communicator
  - stewardship professional
  - risk management official/inspector
  - geographic information systems specialist
  - information systems specialist
  - provincial government staff
  - health unit staff
  - administrative assistant
  - front office staff

### Other Budget Considerations

Other considerations that will impact your budget:

- mileage
- meeting/workshop/event costs (rentals, hospitality, meals, etc.)

- printing (education guides or worksheets, letters, guides, flyers, fact sheets, maps, etc.)
- mailing (postage, envelopes, stationery, etc.)
- computers and software
- overhead expenses (telephone, heating, insurance, etc.)
- advertising
- evaluation of effectiveness and cost-effectiveness of education and outreach

Based on available financial and staffing resources, the education and outreach strategy may require adjustments. Keep in mind that most education and outreach policies allow implementing bodies some flexibility.

### Evaluation

An educational design best practice is to evaluate and/or assess what the audience has learned. A mailed pamphlet from the municipality may cover the required content for a property owner, but it can easily go unread. Good education and outreach programs include a combination of strategies to appeal to different types of learners and convey messaging in a way that demonstrates how threats can impact them and encourages them to take action.

Municipalities can choose the evaluation tool they will use to determine that the property owner has demonstrated understanding of the knowledge expectations, and that the source protection plan policy has been effectively delivered. While this may be good practice, it should be noted that source protection plans do not necessarily require an evaluation of the effectiveness of policy implementation. Check the education and outreach, as well as associated monitoring policies, for the requirements. If education and outreach is being used to address significant threats, it is prudent for municipalities and other implementing bodies to document information on the effectiveness of the education and outreach policy. In addition, the municipality (as the implementing body) makes this information available to source protection authorities so they can assess the success of policy implementation in achieving objectives. For more information about annual reporting requirements, please refer to Module 4: Annual Reporting and Information Management.

### Example

Consider the following example of a source protection plan policy and implementation strategy for education and outreach to address the drinking water threat that septic systems pose.

**Education and Outreach Policy Example – Septic Systems Assessed as Significant Threats**  
*Municipalities shall implement an outreach and education program for property owners who own or operate a septic system that is a significant drinking water threat. Delivery of this education and outreach program should be in conjunction with the new mandatory septic re-inspection program required under the Ontario Building Code.*

After considering the education policy, the municipality has determined the following implementation policy details and associated deliverables:

- There are 100 property owners with septic systems identified as significant threats.
- Send a letter to property owners to inform them inspections are required under the Ontario Building Code within five years, provide information on how to maintain a septic system to help protect drinking water, include an invitation to an information workshop, and inform them that a staff member will be contacting them by phone to answer any questions and confirm their attendance at the workshop.
- Liaise with other implementing bodies and subject matter experts to learn about existing septic educational materials; design, prepare and print materials for mail-outs and workshop.
- Phone each of the 100 property owners.
- Hold a workshop that educates property owners about inspection requirements, and how to upgrade their systems, and whether financial incentives are available. Schedule property visits for those people who request them.
- Have appropriate staff members conduct the requested site visits.
- Record the outcomes of education and outreach program in database.
- Have a project manager oversee work and have administration keep records, issue cheques, etc.

<b>Sample Budget</b>			
– Direct Delivery of Education and Outreach to 100 Significant-Threat Septic Properties			
<b>Staffing – Internal</b>			
<b>Staffing</b>	<b>Hours</b>	<b>Hourly Rate</b>	<b>Cost</b>
Education staff	30 days X 7 hours = 210 hours	\$55/hour	\$11,550
Other staff (administration/project management, finance, office, mapping/information technology, communications, etc.)	6 days X 7 hours = 42 hours	(Including salary, benefits, computer fee/depreciation, overhead – heating, insurance, telephone, information technology, etc.)	\$2,310
<b>Total internal staffing costs:</b>			\$13,860
<b>Staffing – External</b>			
Educational design services	20 hours	\$60/hour	\$1,200
Graphic design	10 hours		\$600
Expert speaker for workshop			\$500
<b>Total external staffing costs:</b>			\$2,300
<b>Non-Staffing Costs</b>			
Mileage	2,000 km X 0.45		\$900
Meeting hall rental			\$150
Supplies			\$250
Printing			\$300
<b>Total of non-staffing costs:</b>			\$1,600
<b>Total cost to deliver direct education and outreach to 100 significant-threat properties:</b>			\$17,760



Based on these estimates, a program of direct education and outreach to owners of 100 properties with septic system threats would cost a total of \$17,760, or \$177.60 for each property reached. This example shows a relatively comprehensive education and outreach program that uses a variety of tools and resources. The cost to implement the policy may be less or more than the estimates shown. Budgeting for this policy may depend on the scope and depth of the program, the expectations for the program, and the requirements of the education policy.

Depending on the scope of the education and outreach policies prescribed by local source protection plans, and the capacity of the municipality, the budget for delivery of education and outreach may be quite similar or very different to the one outlined here. This was simply provided for illustrative purposes.

Local implementation of education and outreach will vary across Ontario and will depend on local source protection plan requirements, as well as local needs and conditions. Always consult source protection plans before developing any education and outreach strategies. Contact local source protection authorities for further information, advice and guidance.

## ii. Incentives

Like education and outreach, incentives are a tool that can be used to increase public and stakeholder awareness about the importance of drinking water source protection and/or actions that could reduce the risk of a particular threat activity. Such programs can be used to address one threat, a group of threats, or all threats, and can complement other policy tools.

Source protection planning incentive policies may simply support the continuation of existing programs. For example, most source protection plans encourage the Province of Ontario to continue funding for the Ontario Drinking Water Stewardship Program, a financial incentive program for property owners in the most vulnerable areas.

It is common for source protection plan policies to cite other programs, such as the Environmental Farm Plan, Well Aware, or county clean water projects.

Incentive policies, found in local source protection plans, generally fall into one of two categories:

1. Policies that promote and support existing programs (as discussed),
2. Policies that direct implementers to create new targeted programs.

The following sections of this module will provide some general guidance on how to implement incentive policies that fall into the second category. Incentive programs are rarely created without some kind of education component. Indeed, many source protection plans have incentive policies that are combined with education and outreach, and other non-regulatory policies to manage drinking water threats. As such, much of the guidance provided in Section B (i) is relevant here. Therefore, this section includes only additional information relevant to incentives. Refer to B (i) for further information.

### Objectives and Expected Outcomes

The intent of incentive policies is to promote or encourage specific actions or behaviours. People who voluntarily adopt changes are far more committed than those who are forced to make a change. Incentive programs, which can include monetary incentives (e.g. cost-sharing, grants, and loans) as well as non-monetary incentives (e.g. partnerships, technical assistance, recognition programs, information and education) promote this change in behaviour.

It is important to always consult incentive policies in local source protection plans to determine the local objectives and expected outcomes.

## Resources and Tools

As part of its commitment to safe drinking water, the Ontario Ministry of the Environment launched the Ontario Drinking Water Stewardship Program in 2007. This financial incentive program has helped property owners and businesses take action to reduce threats to local municipal drinking water sources. Valuable lessons from this program can help guide the development of future incentive programs to address drinking water threats.

Based on the success of the Ontario Drinking Water Stewardship Program, these are the key characteristics of a successful incentive program:

- local delivery and accountability, with local community support
- communicating simple, clear, and consistent messages – directly to target audiences of eligible landowners – about the program
- availability of technical support and advice to landowners that includes project planning, assistance in completing applications, providing resource information, lists of local contractors, follow-up to ensure projects have been implemented according to eligibility guidelines
- monitoring, evaluation, and reporting
- maintaining contact with landowners regarding opportunities to involve them in demonstration and promotion of successful projects to others in the watershed.

Conservation authorities and the Ontario Soil and Crop Improvement Association have a long history of delivering other targeted watershed-based financial incentive programs.

Municipalities across the province have supported a number of these programs with funding and technical support, which is often administered by conservation authorities.

The following aspects are common to most of these programs:

- funding is usually accessed through a formal application process and, for most programs, project review and approval is conducted by a local steering committee, or project review committee, made up of local stakeholders
- programs are geared to local land uses
- Assessment Reports, watershed report cards, and other watershed studies may help identify priority areas
- conservation authority extension staff and Soil and Crop Improvement Association field staff are among stewardship professionals who can provide advisory services to landowners to facilitate project implementation and reduce the amount of paperwork required
- a list of eligible best management practices is created

- all programs are cost-shared; landowners share in at least part of the cost - although, in some cases, several programs can be 'stacked' to cover all the landowner's direct costs,
- most programs require site inspection by staff prior to approval and after project completion, and many programs include a monitoring component to assess long-term effectiveness
- funds are transferred after project completion and submission of documentation.

A list of some financial incentive programs, including a tool that links to each watershed, can be found at: <http://www.conservation-ontario.on.ca/what-we-do/watershed-stewardship/watershed-stewardship-programs>

For further information, guidance, or support, municipalities should contact their local Source Protection Authority office.

## Methods, Budget and Evaluation

When developing a strategy for implementing an incentive program, consider first the following five guidelines as recommended by Gardner and Stern (1996):

1. **Use incentives to reward positive behaviour** – Whenever possible, use incentives to reward people for desirable behaviour, such as financial rewards, rather than penalizing people for undesirable behaviour, such as fines.
2. **Make the incentives visible** – For an incentive program to be effective, people must be aware of it. Consider how incentives will be promoted and communicated.
3. **Be cautious about removing incentives** – If incentives are used to motivate a particular behaviour, keep in mind that once the incentive is removed, the internal motivations that people have for engaging in an activity can be undermined.
4. **Carefully consider the size of the incentive** – Study the experience of similar incentive programs to determine the size of the incentive to use.
5. **Use non-monetary incentives** – Although most incentives are monetary, non-monetary incentives, such as social recognition or acknowledgement, can also elicit a strong response.

Financial incentives can remove some of the barriers to adoption, but intrinsic motivation is extremely powerful. Municipal development of an incentives program may include barrier and benefit research, choice theory, community-based social marketing, audience research, and other tools to understand the motivations of property owners to adopt an action, or to decide against an action. For more information on the effectiveness of these tools, review the community-based social marketing information by environmental psychologist Dr. Doug McKenzie-Mohr at <http://www.cbsm.com>.

Incentive programs that are created as a result of agency partnerships may allow those agencies to pool resources, reduce efforts, and increase the size of the incentives being offered. When developing an incentive program, implementing bodies should consider any potential partnerships that could offer these types of benefits. Examples of partnership agencies include:

- conservation authorities
- Ontario Soil and Crop Improvement Association
- stewardship organizations
- local agencies
- general farm organizations and commodity groups
- industry, commerce and other business organizations
- international, national, provincial, and local foundations
- federal, provincial, county, and municipal governments
- community groups including service clubs, business organizations, trail organizations, etc.
- Ducks Unlimited Canada
- local stewardship or woodlot committees
- provincial and local organizations of seasonal and/or shoreline residents

Another way to increase the size of incentives is to combine the incentive program with other funding initiatives. Funding programs may change from period to period. Some examples of other funding programs that may correspond with drinking water source protection incentives include:

- federal agricultural cost-share programs when available,
- funding associated with the development and implementation of Environmental Farm Plans,
- municipal (county or regional) clean water projects,
- Trees Ontario, and
- provincial programs when available.

A professional consultant may provide advisory services to organizations or landowners to assist in all aspects of project implementation, from planning and design through to completion. Another very useful tool for determining which best management practices will reduce threats to drinking water is the provincial Risk Management Measures Catalogue. The catalogue is an online resource created by the Province of Ontario which sets out a list of measures that can be taken to reduce the risk of all drinking water threat activities. The catalogue can be accessed through the following link:

<http://www.trcgauging.ca/RmmCatalogue/>.

Municipalities and other implementing bodies should be ready to satisfy the associated monitoring and reporting requirements outlined in source protection planning policies including program achievements, statistics, project numbers, and reduction in drinking water threats.

## Example

For source protection areas with significant drinking water quantity threats, local source protection plans may contain policies that direct municipalities to implement an incentive program to reduce water consumption.

Due to weather conditions and extra water use in the summer months (from the watering of lawns and gardens), the demand on municipal water services can increase significantly. As a result, many municipalities already employ some kind of water conservation measure. Municipalities could consider providing financial incentives for the purchase of water conserving products, such as rain barrels and low flow toilets, a measure that has already been employed with much success in several communities across Ontario (see Waller et al. (1996) for further information about municipal water conservation efforts).

Case study:

The City of Kitchener provides stormwater credits for reductions in utility bills:  
[http://www.kitchener.ca/en/livinginkitchener/Stormwater\\_credits.asp](http://www.kitchener.ca/en/livinginkitchener/Stormwater_credits.asp).

### iii. Section 26, Paragraph 1 Policies, Including Specify Actions

Ontario Regulation 287/07 spells out the “other” policy tools to deal with drinking water threats that may be included in a source protection plan. These tools include policies that specify certain actions, establish stewardship programs, best management practices, pilot programs, and policies that govern research. The use of Section 26, Paragraph 1 tools in source protection plans is more limited than the use of the other policy tools that were available to source protection committees (except for “specify action” policies). Their use is also quite variable from one area to another. The following section describes each of the Section 26, Paragraph 1 policy tools.

#### Specify Actions

The most common of the “other” tools, and which has been used widely in all source protection plans, is the “specify actions” tool. The “specify actions” tool is quite broad, and covers actions that do not fall within the other policy tool categories, regulatory or non-regulatory. For example, policies which direct a municipality to establish a road salt management and reduction plan uses the specify actions tool, as does a policy which requires routine septic system inspections. This tool is also used in policies that set out actions which rely upon other municipal authorities (e.g. the *Municipal Act*), such as policies which direct a municipality to pass a by-law requiring properties connect with municipal services where wastewater services exist.

### Stewardship Programs

Stewardship programs often include financial and practical technical assistance for landowners to complete a variety of environmental projects. Stewardship policies in source protection plans are generally used in combination with education and outreach, best management practice, and/or incentive policies.

Stewardship programs can include:

- developing technical tools to monitor and assess the state of the watershed,
- providing advice and technical assistance in completing on-the-ground projects,
- promoting community involvement in projects,
- building partnerships with all levels of government, environmental groups, businesses, residents and landowners, and
- creating educational resources.

### Best Management Practices

Best management practices are measures taken to mitigate or prevent impacts to water quality or quantity. Best management practices policies in source protection plans have frequently been combined with stewardship, incentive, and education and outreach policies.

### Pilot Programs

Pilot program policies can be used to implement an activity/project as a test or on a trial basis, before it is put into broader use. Pilot programs have been used as a policy tool by only two source protection committees: the Saugeen Grey Sauble Northern Bruce Peninsula Source Protection Committee and the Cataraqui Source Protection Committee.

### Research

Additional research may be required to determine new, innovative methods or technologies for addressing certain threats, or to better understand where targeted actions to address threats would have the most benefit to source water (e.g. issue contributing area). Policies that govern research have primarily been used as a stand-alone tool in source protection plans to investigate local threats and issue contributing areas.

## **Purpose of Policies**

In general, the Section 26, Paragraph 1 policy tools have been used in a variety of ways which differ considerably from one source protection area to another. Despite this variability, these tools have primarily been used in combination with other policies to provide a comprehensive approach to managing drinking water threat activities.

## Further Information

For full details about the ways that these non-regulatory policies have been used in local source protection areas, and any implementation requirements, local source protection plans and explanatory documents should be referenced. Local source protection authority staff can also provide additional information, advice and guidance with respect to these policies.



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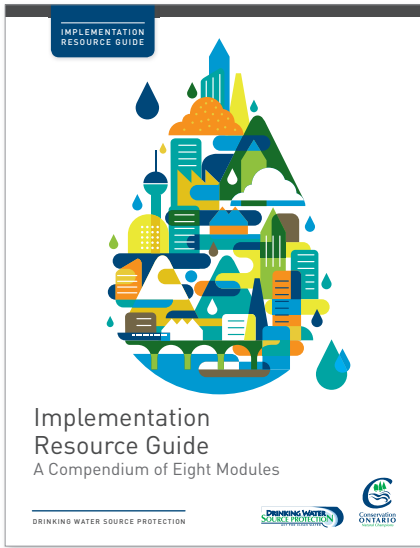
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MODULE 8

# Other Obligations



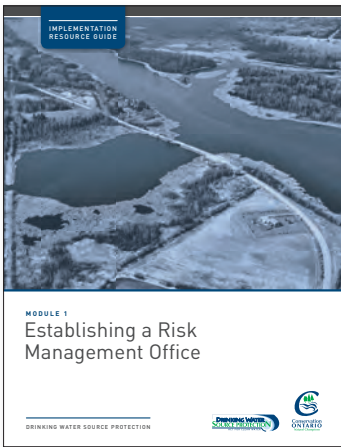


# Implementation Resource Guides

A Compendium of Eight Modules

Look for all eight modules in our Drinking Water Source Protection series. You can find them at [www.conservation-ontario.on.ca](http://www.conservation-ontario.on.ca)

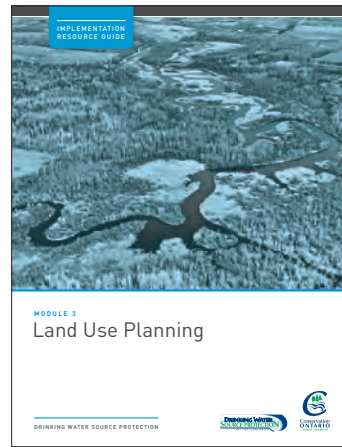
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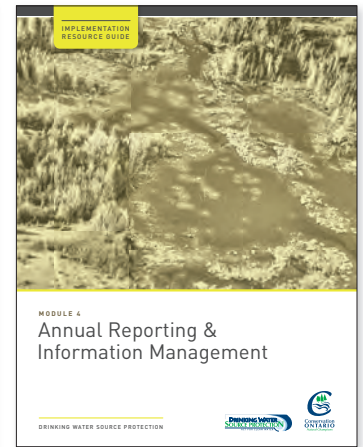
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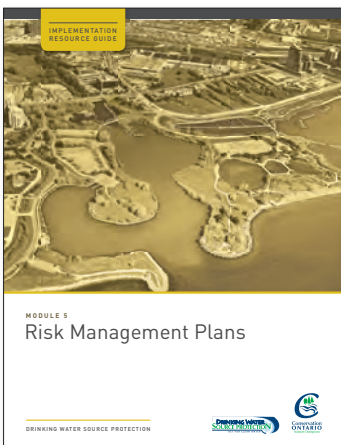
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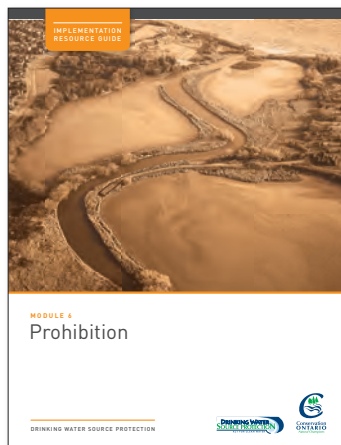
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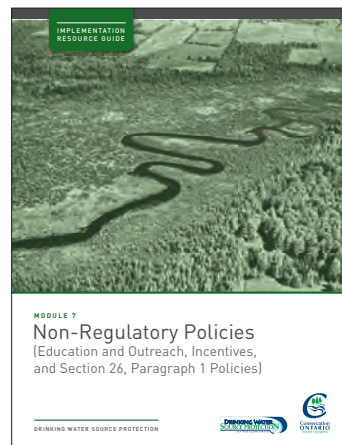
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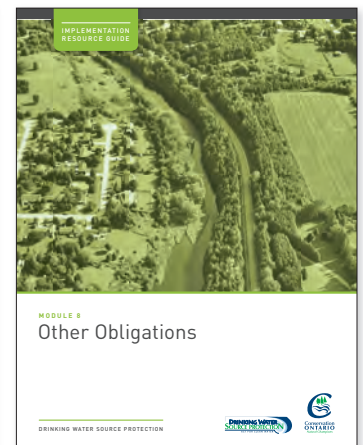
## MODULE 6



## MODULE 7



## MODULE 8



# Module 8: Other Obligations

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## Implementation Resource Guide

06/05/2014

Note to Reader: This document is one of a series developed by staff at conservation authorities and Conservation Ontario in support of source protection plan implementation. These documents cover a variety of tools related to plan implementation, but not all will apply in your municipality. Consult your local source protection plan to determine which policies are applicable in your municipality. This document has not been reviewed by legal counsel and is not presented as legal advice.

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## A. Purpose of This Module

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This module is the eighth in a series of documents which have been developed for use by municipalities to assist with implementation of source protection plans. This module focuses on these subjects:

- I. Mandatory maintenance inspections of septic systems
- II. Transport pathways
- III. Spill prevention, contingency or response plans

## B. Septic System Inspections

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### i. Overview

Onsite sewage systems (commonly called 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 operation and maintenance requirements.

Systems with a design flow of up to 10,000 L/day are subject to regulations under Ontario's *Building Code Act, 1992* and Building Code (O. Reg. 350/06), and are overseen by the local principal authority which may be a municipality, a board of health, or a conservation authority. Any onsite sewage system with a design flow larger than 10,000 L/day must be operated under terms specified in an environmental compliance approval administered by the Ministry of the Environment. Large treatment systems typically service facilities such as schools, campgrounds and larger businesses.

The Ontario Building Code (O. Reg. 350/06) was recently amended 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 (some municipalities already had these types of programs, the Township of Huron-Kinloss for example).

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 in Section G, Appendix 3: Onsite Sewage System Maintenance Inspections (MMAH, 2011).

Maintenance inspections can be undertaken by inspectors appointed by principal authorities (the local agency charged with enforcement of legislation related to small onsite sewage systems governed by the Ontario Building Code) 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:

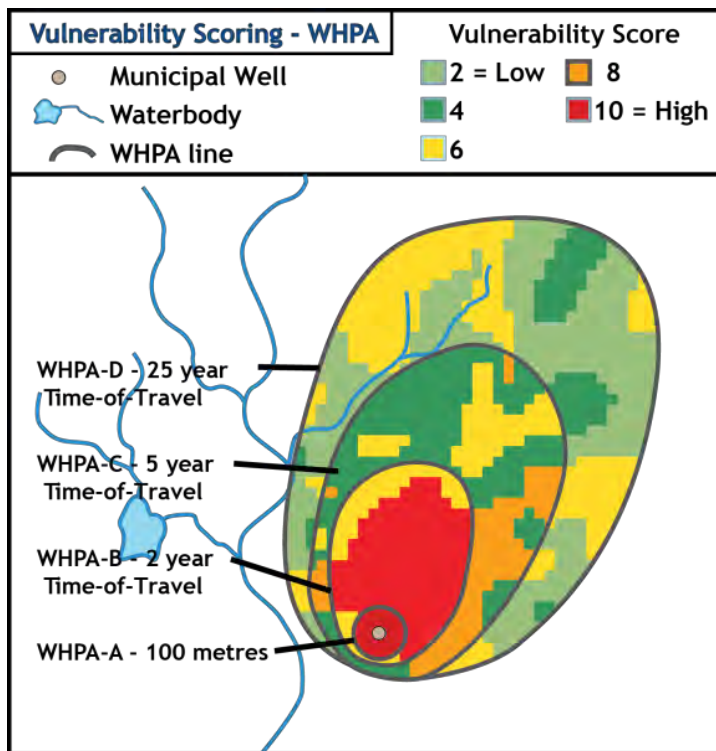
- (1) Subject to Article 1.10.2.5., an inspector shall inspect all sewage systems located in whole or in part in the areas set out in Sentence (2) for compliance with the requirements of section 8.9. of Division B.
- (2) The areas referred to in Sentence (1) are:
  - “(b) areas within a vulnerable area 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 that 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 that Act.”

## ii. Determining Areas Subject to Mandatory Maintenance Inspections

Septic 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 significant threats only in wellhead protection areas (WHPAs) 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. In both cases, all sewage systems subject to the program must be inspected.

Figure 1 illustrates the various vulnerability scores associated with a WHPA. Sewage system maintenance inspections are mandatory only in the red area shown on the map, where the vulnerability score is 10, and where septic systems are considered significant threats. Refer to Module 2 for detailed definitions and descriptions of how vulnerable areas and significant threats are delineated. Maps of vulnerable areas in your community can be found in the Assessment Report prepared by your local source protection authority. Electronic versions of approved assessment reports can be downloaded from your local source protection authority’s website. Alternatively, hard copy versions are available for viewing at your local conservation authority.

Refer to page 11 for further guidance on locating sewage systems within the mandatory inspection area.



**Figure 1:** Wellhead Protection Area and Associated Vulnerability Scores (Ministry of the Environment, 2012)

### iii. Timelines for Maintenance Inspections

The Building Code also establishes timelines for the execution of mandatory maintenance inspections. Inspections for existing systems identified as significant threats should be completed no later than five years after the approval of a local Assessment Report. For a comprehensive list of program completion deadlines established for each source protection area in Ontario, refer to Table 3 in Section E, Appendix 1 of this module. 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 treatment systems subject to maintenance inspection programs will need to be inspected every five years on a recurring basis, following initial inspection.

The Building Code sets out the minimum requirements with which principal authorities must comply when administering maintenance inspection programs. As previously mentioned, under the *Building Code Act* (section 7(1)(b.1)), principal authorities also have the discretion to establish inspection programs in other parts of their jurisdiction, beyond what is mandatory under the Building Code.

#### **iv. How to Implement**

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.

Under the *Building Code Act* section 7(1)(b.1) municipalities are authorized to pass by-laws to help establish and administer sewage system maintenance inspection programs in accordance with the Building Code and *Building Code Act*. By-laws can aid municipalities with the enforcement of sewage system maintenance inspection programs in their community, as well as help define the parameters associated with the inspection program. A sample by-law established for the mandatory maintenance inspection program for the Tay Valley Township is provided in Section F, Appendix 2 for reference.

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.

#### **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. For more information on inspector qualifications, visit the Ministry of Municipal Affairs and Housing website:

<http://www.mah.gov.on.ca/Page9846.aspx>

### **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. A sample third-party inspection certificate form is also available in Section F, Appendix 2.

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.

For more information on how to implement maintenance inspection programs in your community, visit the Ministry of Municipal Affairs and Housing website:

<http://www.mah.gov.on.ca/Page9845.aspx>

### **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.

## **v. Inspection Method**

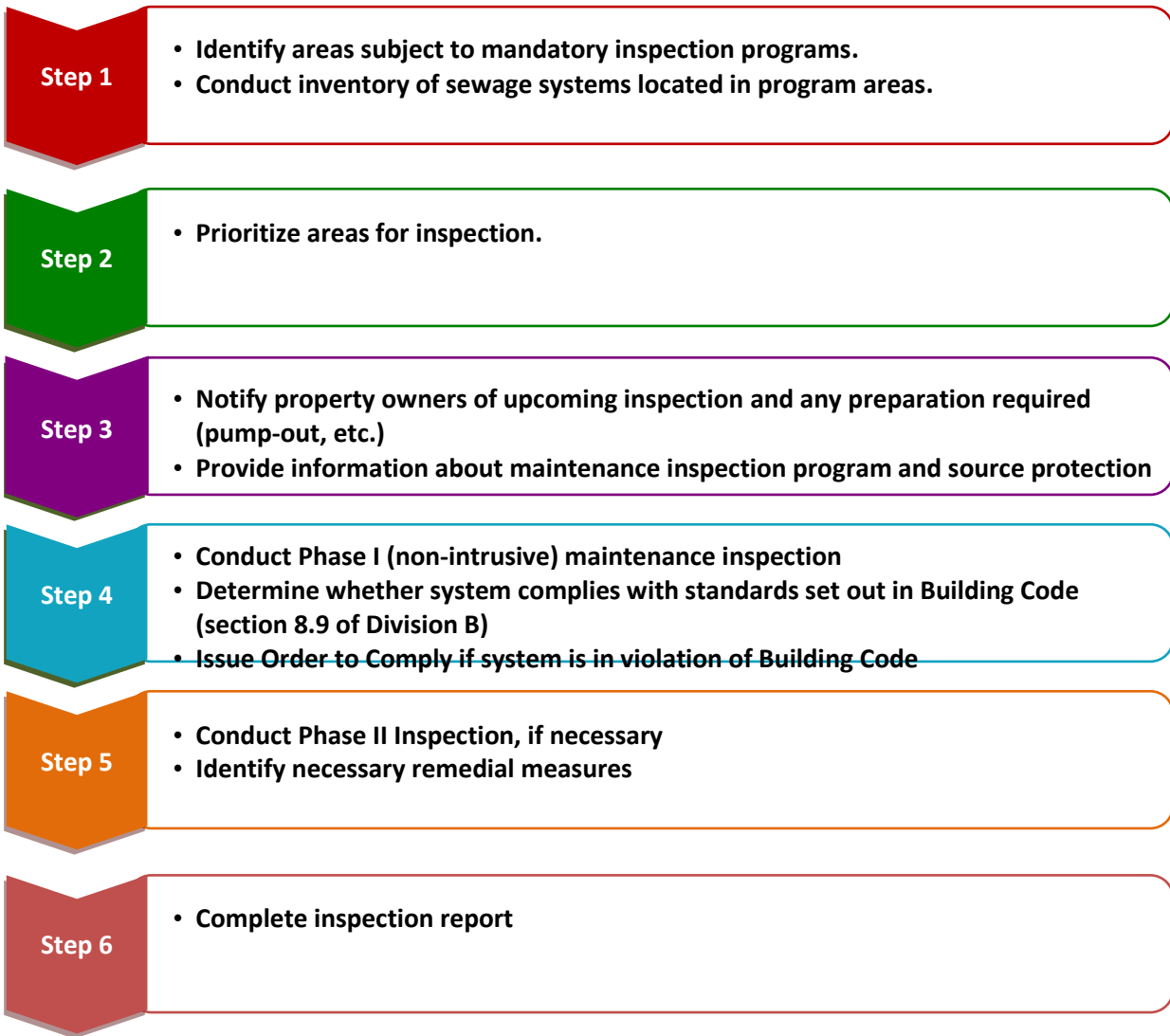
During an inspection, inspectors should aim to identify any defects or failures in the treatment system. An equally important goal of the maintenance inspection should be to determine the risk of future malfunction or failure in the system. Following an inspection, principal authorities should be able 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 may choose to implement a tiered approach, and conduct the assessment in phases. Initial (Phase I) inspections should 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. Consult the document Onsite Sewage System Maintenance Inspections in Section G, Appendix 3 of this module for information on how to plan and conduct onsite sewage system maintenance inspections.



**Figure 2:** Suggested Steps for Setting Up and Implementing a Sewage System Maintenance Program.

### **Step 1: Identification of Sewage System Maintenance Inspection Program Areas and Sewage System Inventory**

To effectively implement an inspection program, principal authorities should first identify the areas in their jurisdiction that are subject to the mandatory maintenance inspections. Identifying these areas will also help authorities decide what additional areas they may want to incorporate into their discretionary programs, if they choose to implement them. Principal authorities will want to refer to Assessment Reports produced by their local source protection committee. Assessment Reports contain maps that delineate areas where sewage systems are subject to mandatory inspection programs. Much of this information is available from the local source protection authority. Electronic versions of Assessment Reports are also available

through your source protection authority's website. Alternatively, hard copies are available for viewing at your local conservation authority.

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 evaluation.

If the principal authority decides to accept third-party inspection certificates as an alternative to conducting inspections, property owners should be allowed appropriate time to retain a qualified person to inspect and to remediate any problems with the system prior to returning the signed certificate. Third-party certificate forms are available through the Ministry of

Municipal Affairs and Housing website (<http://www.mah.gov.on.ca/Page9235.aspx>), and should be issued by principal authorities to third-party inspectors for completion. When third-party inspectors return the certificate, principal authorities have the power to decide whether to accept or reject the certificate. A sample of the form can also be found in Section F, Appendix 2.

When drafting notifications, the principal authority should include 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. The notification may also state whether the principal authority will be accepting third-party inspection certificates and, if so, advise property owners to notify the responsible authorities when they have retained a third party. Educational materials related to source protection could be distributed to homeowners with this notification. The principal authority should consult with the source protection authority to ensure they have all materials.

Find a sample notification letter in Section F, 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 approximate level of ground water

This may be achieved by

- reviewing local maps and records of ground water elevation observed on site or nearby properties, including the local assessment report, if available;
  - observing the conditions of the septic tank and the distribution box for indications of ground water infiltration;
  - observing the elevation of nearby water body, or evidence of ground water infiltration in other subsurface structures; or
  - the use of hand augering.
- 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
- 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 intakes
- soil type and its permeability
- additional sources of hydraulic loading (e.g. surface discharge, roof drains)
- evidence of ponding

- encroachments into the leaching bed area (e.g. building additions, patios, driveways, pools)
- 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 Section F, Appendix 2.

## **vi. What This Means to My Municipality**

If your municipality is the principal authority with jurisdiction over Part 8 of Division B of the Building Code, the municipality must:

- Decide how it will implement the inspection program. Options include establishing a contract with a qualified firm, giving property owners the responsibility of retaining qualified third-party inspectors, or assigning qualified staff to complete inspections.
- Pass by-laws, if necessary, to help establish and administer sewage system maintenance inspection programs and aid in implementation and enforcement of the program in the community.
- Identify the vulnerable areas in which sewage system maintenance inspection programs will be mandatory, as delineated by the local source protection authority. Municipalities have the responsibility to obtain this information and plan their inspection programs within these designated areas. Municipalities may also use this information to determine if they wish to establish a discretionary program to incorporate additional areas for inspection.

- Complete inspection programs within five years of the approval of the local Assessment Report. For a comprehensive list of completion deadlines established for each source protection area in Ontario, refer to Table 3 in Section E, Appendix 1.
- Notify property owners of the commencement and details of the inspection program.

If your municipality is not the principal authority, it is likely the principal authority will make contact to discuss options for the collection of fees for the inspections and other aspects of the program.

### **vii. Consequences of Failing to Establish a Mandatory Sewage System Maintenance Inspection Program under the Building Code**

Where municipalities are 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 a municipality 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 a municipality fails to comply with the requirements of the Building Code, the municipality may be found guilty of an offence. If convicted of an offence, the municipality 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.

### **viii. Inspection Program Comparison**

The Township of Huron-Kinloss, Township of Ramara, and Tiny Township each have septic inspection programs. They have been running their programs for different lengths of time with some differences in their approach. Table 1 highlights some of the key comparison areas. Full case studies with references are in Section H, Appendix 4.

**Table 1: Inspection Program Comparison Chart**

Program (more details provided in Section H, Appendix 4)	Mandatory under <i>Clean Water Act, 2006</i>	Huron-Kinloss Community Septic Inspection Program	Ramara Onsite Sewage Maintenance Inspection Program	Tiny Township Inspection Program
<b>Inspections conducted by</b>	As designated by principal authority	Third-party qualified inspectors coordinated by local engineering firm - B. M. Ross and Associates Limited	Third-party inspection was attempted, discontinued, and replaced by contract with local consulting engineer	Contract with local consulting engineer C.C. Tatham & Associates
<b>Inspection rotation</b>	Every 5 years	Every 6-7 years	Every 5 years	Every 5 years
<b>Area included</b>	Vulnerable areas only for those areas where activity designated as existing or potential significant drinking water threat	All sewage treatment systems in township	Ontario Building Code (OBC) legislated – landowners sent letters	Community program initially, now following OBC requirements
<b>Year of establishment</b>	2011	2007	2011	2002
<b>How program is funded</b>	Per principal authority	Flat rate fee on property tax bill, \$55 for inspection, pump-out at owners expense	Landowner pays township fees and must complete any needed work under stipulated timelines	Landowner pays fees to township for first phase and sewage hauler for pump out
<b>Prioritizing</b>	No later than 5 years after approval of local Assessment Report for existing, within 5 years after source protection plan published for new construction	Perceived risk/no records or 20 years old were inspected first	Volunteers first then as required	High-risk systems first

Program (more details provided in Section H, Appendix 4)	Mandatory under <i>Clean Water Act, 2006</i>	Huron-Kinloss Community Septic Inspection Program	Ramara Onsite Sewage Maintenance Inspection Program	Tiny Township Inspection Program
<b>Steps</b>	At discretion of principal authority conducting the program	<p>Three steps:</p> <ol style="list-style-type: none"> <li>1. Pump-out (if not done in past 12 months)</li> <li>2. Third party inspector performs visual, non-invasive inspection and documents features of property, uses camera to look in tank and takes system history</li> <li>3. Education materials, aerial photo and inspection reports sent to landowner</li> </ol>	<p>Two steps:</p> <ol style="list-style-type: none"> <li>1. Consulting engineer – visual surface inspection</li> <li>2. Property owner must arrange a pump-out and send certificate to township – see samples in Section F, Appendix 2</li> </ol>	<p>Two steps:</p> <ol style="list-style-type: none"> <li>1. Visual surface inspection; any deficiencies are noted and senior inspectors follow up and issue orders for compliance</li> <li>2. Pump-out with written report and receipt submitted to consulting firm</li> </ol>

## C. Transport Pathways, s.27, Clean Water Act

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### i. Overview

Transport pathways may increase the risk of contamination to both surface and subsurface drinking water sources by circumventing the natural protection that soils and overburden create. Their presence may increase the distribution of contaminants horizontally (e.g. sewer lines) and/or vertically (e.g. wells) throughout the drinking water source.

The *Clean Water Act* defines transport pathways as “a condition of land resulting from human activity that increases the vulnerability of a raw water supply of a drinking water system,” (O. Reg. 287/07, s.1). The intent of this legislation is to address artificial (or “constructed”) transport pathways, such as storm sewers, ditches and improperly constructed or abandoned wells. Naturally occurring transport pathways, such as fractured bedrock and karst formations, are accounted for separately under the intrinsic vulnerability assessment that is part of the scoring system for WHPAs.



*Figure 3: Under high flows, municipal drains and storm sewers can rapidly move contaminants toward a surface water intake. (SGSNBP Source Protection Region)*

### ii. Requirement to Report Transport Pathways under the *Clean Water Act*

In an effort to reduce the risk to drinking water sources from transport pathways, s. 27 of O. Reg. 287/07 requires municipalities to report any new transport pathways to the source protection authority and source protection committee. In turn, the source protection authority and source protection committee will make sure the source protection plan (including the Assessment Report section) is appropriately updated to account for the new transport pathways to help ensure the assigned implementing body is implementing all applicable policies.

Considering the extent that water can travel in a given time, transport pathways can influence surface water sources. See Section C (iv) for further details.

Examples of transport pathways that may increase the risk of contamination to surface water sources include:

- drainage ditches
- storm sewers
- tile drains

For groundwater sources, transport pathways act as a conduit that may bypass some of the natural protection offered by soils and other material that overlies an aquifer. See section C (iv) for further details. Examples of transport pathways that may increase the risk of contamination to subsurface water sources include:

- improperly abandoned wells
- aggregate pits
- boreholes
- improperly constructed or maintained wells
- deep excavations, such as trenching for sewer lines



*Figure 4: Poorly maintained wells can provide a conduit for contaminants to travel from the surface down to the aquifer. (SGSNBP Source Protection Region)*

### iii. Reporting Transport Pathways under the *Clean Water Act*

According to O.Reg. 287/07, s. 27(3), if a municipality receives a development application or other application related to a project where the proponent proposes to engage in an activity that could create a new, or modify an existing, transport pathway in a WHPA or IPZ, the municipality must provide notice of the proposal to the source protection committee and source protection authority. A copy of the notice is also provided to the person responsible for the proposal (O.Reg. 287/07, s. 27(4)).

The notice of the proposal must include (O.Reg. 287/07, s.27(3)):

- a description of the proposal
- identity of the person responsible for the proposal

- description of the approvals the person requires to engage in the proposed activity

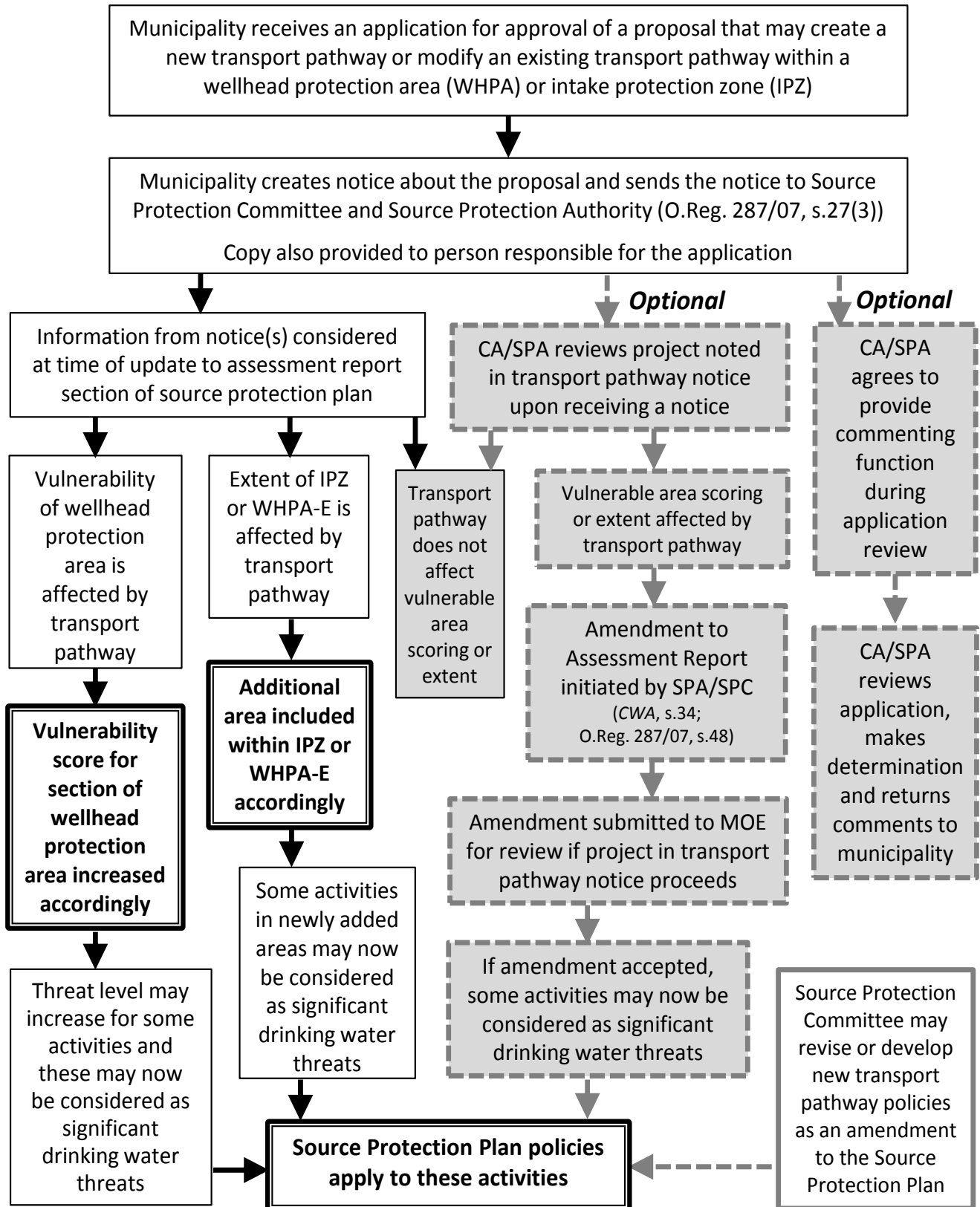
The source protection committee can consider changes to the vulnerability scoring for any transport pathway notices for the respective portion of the vulnerable area. The timing of this review and determination is at the discretion of the source protection committee. The review of transport pathway notices could form part of the terms of reference for an update to the Assessment Report (CWA, s. 36). The time between such updates may be several years, however.

There is an optional process whereby the source protection authority, with the concurrence of the source protection committee, may initiate an amendment to the source protection plan under s. 34 of the *Clean Water Act* (see also O. Reg. 287/07, s.48). The source protection authority could decide to initiate an amendment based on an analysis of the impacts that a project referenced in a transport pathway notice could have. For example, the review process could reveal that a new transport pathway would change the vulnerability score, and, as a result, nearby activities could become significant drinking water threats. Consultation requirements for amendments are specified in O.Reg. 287/07, s. 48 and 50. If the project proceeds, the source protection authority would submit the amendment to the Ministry of the Environment. Once the amendment is approved, the applicable source protection plan policies would apply in that area.

Municipalities could also have the option to include an analysis of the impact of a transport pathway during the application review process. The municipality could use the information from the analysis to better inform its decision on an application. Under the Provincial Policy Statement, “planning authorities shall protect, improve or restore the quality and quantity of water...” (PPS 2005, s. 2.2; also PPS 2014, s. 2.2 (*effective April 30, 2014*)). The municipality could make arrangements with the local conservation authority to undertake a review of an application during its processing before any decision is returned to the proponent. This review process could be part of a service agreement with the conservation authority. Alternatively, the municipality could require the proponent of the application to undertake a study that would achieve a similar determination and submit the report to the municipality as part of the complete application requirements.

Figure 5 depicts the basic reporting process municipalities should follow when a new transport pathway is identified, as well as the options for considering the potential impacts of the transport pathway on nearby activities.



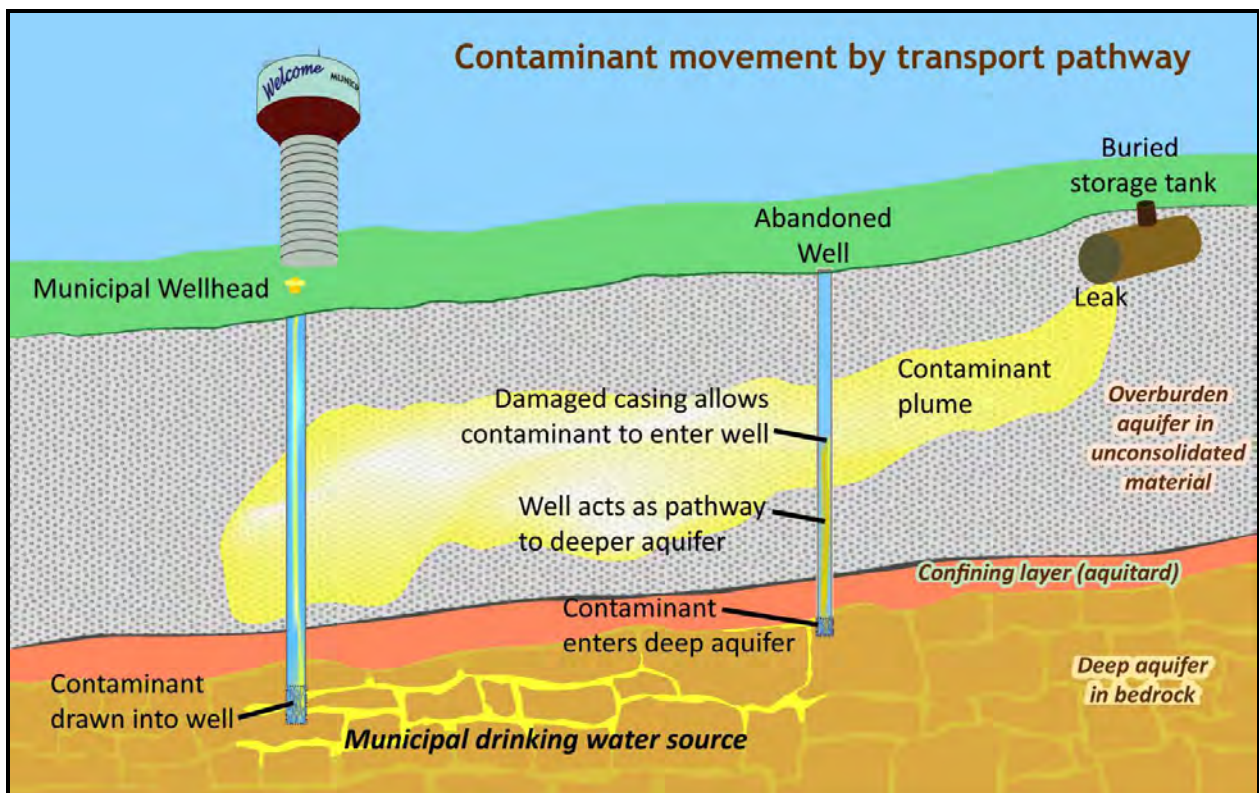


**Figure 5: Process for Reporting New Transport Pathways to Source Protection Authority**

#### iv. Transport Pathways' Effect on Vulnerability or Extent of Vulnerable Area

The source protection authority will compile the information from notices pertaining to any new and/or modified transport pathways and use these to consider amendments to the Assessment Report section of the source protection plan, and/or future updates of these documents.

For WHPAs the transport pathway may trigger a change of the vulnerability scores. The vulnerability scores for groundwater (i.e. WHPAs) are developed by intersecting intrinsic vulnerability with associated time-of-travel capture zones. Technical Rules 38, 39, and 40 allow for the intrinsic vulnerability score to be increased taking into account the impact of transport pathways. Hydrogeological conditions, type and design of transport pathway, cumulative impact, and extent of any assumptions used in the vulnerability assessment, must be considered when determining whether vulnerability of an area is increased (*Clean Water Act*, Technical Rules, December 2009). Notices generated by municipalities about potential new transport pathways will serve as one source of information. See also Vulnerability Scoring for Wellhead Protection Areas in Module 2 for more information.



**Figure 6:** Sample Process of Contaminants Using a Transport Pathway to Migrate from One Aquifer to Another and Cause Contamination of a Municipal Drinking Water Source.

Improperly constructed or maintained wells may allow contaminants to travel in subsurface zones. For example, a failed seal could allow a spill plume in an upper aquifer to enter the well and exit into a deeper part of the same aquifer. The spill could even bypass a confining layer, or aquitard, that normally acts as a barrier between two aquifers and enter a deeper aquifer (see Figure 6). The removal of material in a gravel pit operation may eliminate much of the natural protection between the surface and the groundwater.

If it is determined that the transport pathway(s) would increase the intrinsic vulnerability of part of the WHPA, the vulnerability score of that part may also be increased. Changes to vulnerability scores in the area adjacent to the transport pathway may mean that low or moderate threats become significant drinking water threats. Therefore, some existing activities may become subject to source protection plan policies included in the approved source protection plan (e.g. risk management plans), where they had not been subject to policies prior to the new transport pathways being proposed/created. Future activities may also become subject to source protection plan policies.

Transport pathways affecting surface water sources can result in extended delineation of vulnerable areas, specifically IPZ-2, IPZ-3 and WHPA-E. In urban areas, storm sewers are designed to convey rain and snowmelt away from roads, buildings and structures. A similar function is served by roadside ditches and municipal drains in rural areas. Tile drains in agricultural lands are buried, perforated pipes that work as a subsurface drainage system to collect water percolating in the soil. Some of the water this subsurface system collects will eventually leave the field through outlet pipes to a ditch or watercourse. Because these constructed facilities are hydraulically connected to bodies of water, they are considered part of the flow network when looking at surface water vulnerable areas.

Technical Rules 72-75 allow for the extension of surface water vulnerable area delineations to include an area with a conduit that may decrease travel time of contaminants to an intake (e.g. storm sewers or tile drains). Changes to transport pathways within or near one of these zones may warrant an update to the delineation of the vulnerable zone. Changes to the extent of the vulnerable area delineation may mean that activities previously not subject to policies are now in a vulnerable area where the activity would be considered a significant threat and subject to source protection plan policies.

The source protection committee may choose to revise existing transport pathway policies, if included in the source protection plan, or develop new transport pathways as part of an amendment to the source protection plan, per O.Reg. 287/07, s. 27.

## **v. What This Means for My Municipality**

Transport pathways may increase the risk to drinking water as a result of an activity near the pathway. Transport pathways are different than threat activities, so they need special policy

considerations. Under O.Reg. 287/07, s. 27 (1), municipalities can address transport pathways using the following policy types:

- stewardship programs
- pilot programs
- best management practices
- governing research
- specify actions required to implement source protection plan

Consult the local source protection authority to discuss the types of activities that may create potential transport pathways that would have to be reported and whether any source protection plan policies address transport pathways.

## **D. Spill Prevention, Contingency, or Response Plans**

### **i. Overview**

A spill means a discharge of a pollutant into the natural environment from or out of a structure, vehicle or other container, and that is abnormal in quality or quantity in light of all the circumstances (*Environmental Protection Act*, s. 91(1)). The *Clean Water Act* allows source protection plans to include policies that focus on spill prevention, contingency, or response plans. According to s. 26(6) of O. Reg. 287/07, these policies may specify actions to update spill prevention plans, spill contingency plans, or emergency response plans with respect to spills that occur within a WHPA or surface water IPZ along highways, railway lines or shipping lanes. These policies are not significant threat policies and therefore are not legally binding on municipalities, except in limited situations pertaining to local threats.

Some source protection committees opted to include the transportation of specified substances along corridors as a local threat (the Technical Rules require that these be approved by the Director of the Source Protection Programs Branch of the Ministry of the Environment). In a few cases, the transportation of oil through pipelines has also been included as a local threat.

### **ii. What Are Spill Prevention Plans?**

There are three types of spills plans: spill prevention, spill contingency, and emergency response. The primary objectives are to help prevent or reduce the risk of spills of pollutants and prevent, eliminate or recover from any adverse effects that result or may result from spills. Actions may include notifying appropriate levels of government, as well as the affected members of the public, and the developer of the plan. The impacts as well as the outcomes of most spills are directly related to the level of preparedness.

Spill prevention plans, spill contingency plans, and emergency response plans are continually evolving documents. Major themes outlined in these plans include:

- Prevention: actions taken to prevent spills or emergencies; may be long-term and include capital improvements, regulations, building codes, and public education
- Mitigation: actions taken to reduce or eliminate the effects of a spill or an emergency
- Preparedness: measures taken prior to spill or emergency to ensure effective response; may include plans, procedures, public education, and training, such as for emergency responders
- Response: measures taken to ensure a controlled, coordinated and effective response
- Recovery: measures to assist individuals, businesses and communities to return to a state of normalcy; may include clean up and financial assistance.

Each plan details the actions, documentation, and responses to spills. Changes to any one of the included elements of these plans could necessitate changes to other plan components as well. Updates to these plans could address existing gaps related to protecting municipal drinking water supplies. Note that other source protection plan policies may apply to these activities and that the implementation of these other policies may facilitate the prevention of spills.

The municipality may use the process of reviewing and updating emergency response plans as a communication tool for both the municipality as an organization, and the general public. Within the municipal organization, staff members in different departments would be made aware of vulnerable areas (i.e. WHPA or IPZ) to provide the appropriate response in the event of a spill. These actions may also result in greater public awareness of the location of vulnerable areas.

### **iii. Requirements of Source Protection Plan Policies**

Here are some notes about spill response and contingency policies in source protection plans:

- Fewer than half of the local source protection plans have policies about spills
- Spill policies are not legally binding
- Some plans have opted to include a road signage policy for consistent signage design for vulnerable areas across the province. The signs are intended to increase awareness of the location of vulnerable areas for transport companies, emergency response personnel and the general public.

Refer to the local source protection plan to determine if there are policies that would apply in your municipality. Section I, Appendix 5 contains some examples of spill policies.

## Current legislation/policies/program

Table 2 highlights current legislation, policies and programs at various levels of government which may affect spills plans. Consideration of these elements and vulnerable areas during spills plan development may facilitate communication between agencies, avoid duplication of effort and assist in the protection of drinking water sources. The Thames-Sydenham Source Protection Authority has developed a summary of these laws, policies and programs, [available on its website](#).

**Table 2:** Current legislation, policies and programs applicable to SPP spills policies

Level of Government	Applicable Legislation/Policies/Programs
Federal	<i>Emergency Management Act</i>
	Canadian Regional Emergency Teams
	transCAER (Transportation Community Awareness and Emergency Response) Program
	<b>Marine</b>
	Canada-United States Joint Marine Pollution Contingency Plan
	Canadian Coast Guard Marine Spills Contingency Plan
	Transport Canada's National Marine Oil Spill Preparedness and Response Regime
	St. Lawrence Seaway Management Corporation
	<b>Land</b>
	Canada-United States Joint Inland Pollution Contingency Plan
	National Environmental Emergencies Contingency Plan
	Transportation of Dangerous Goods Act and Regulation
	Chemistry Industry Association of Canada <ul style="list-style-type: none"> <li>• Responsible Care Programs</li> <li>• Transportation Emergency Response Programs</li> </ul>
	Canadian National Railway Emergency Response Plan
Provincial	Environmental Protection Act 1990 <ul style="list-style-type: none"> <li>• Ontario Regulation 224/07-Spill Prevention and Contingency Plans</li> </ul>
	MOE Spills Action Centre
	<i>Emergency Management and Civil Protection Act 1990</i>
	<ul style="list-style-type: none"> <li>• Ontario Regulation 380/04-Standards</li> </ul>
	Province of Ontario Emergency Response Plan
Municipal	Municipal By Laws and Emergency Plan

## General Source Protection Plan Spills Policy Content

When a source protection committee has chosen to include spills policies in its plan, it may also direct that spill prevention and contingency plans or emergency response plans include education and outreach components to:

- Raise awareness of the need for timely and adequate spill response related to the transportation and handling of goods within IPZs and WHPAs
- Provide training to emergency responders, transportation agencies and operators including maps and information about the areas where a spill could be a significant drinking water threat.
- Ensure that the drinking water system operator is alerted in the event of a spill.
- Provide information to the general public, such as what to do in the event of a spill and the reasons for not discharging contaminants like used motor oil onto the ground or into the water.

Some spills policies also direct municipalities to consider:

- location of vulnerable areas when planning new highways or arterial roads
- municipal by-laws to prohibit transportation of specific substances/volumes through vulnerable areas
- signs alerting drivers that they are entering IPZ/WHPAs, particularly emergency responders
- enhancements to emergency response programs that include training and equipment to manage spills
- upgrading/reviewing water treatment response time and equipment
- updates to spill prevention plans, spill contingency plans and emergency response plans to identify all IPZs and WHPAs

In addition, some spills policies may request that the MOE Spills Action Centre review and update procedures to include source protection mapping and communicate spill information to municipal contacts in a timely way. Some spills policies encourage the Ministry of Transportation to conduct a regional and province-wide review of Emergency Detour Routes considering IPZs. Consult your local source protection plan for applicable policies.

### **iv. What It Means for My Municipality**

When a source protection plan has policies related to spills response and contingency plans, the municipality should review the local policies and take action depending on the details of the policy. Where a spills policy addresses a local threat, your municipality may be legally obligated to implement the policy.

Whether or not your local source protection plan includes spills policies, or the spills policies do not apply to your municipality, municipalities are encouraged to consider updating their spill prevention, contingency and emergency response plans as a best management practice and/or communication tool. Having spills response plans in place can protect local water sources beyond the municipal residential drinking water systems included in Assessment Reports and source protection plans.



## E. Appendix 1 – Septic Inspection Program Deadlines

**Table 3:** Inspection Program Completion Deadlines According to Source Protection Authority

Source Protection Area	Assessment Report Approval Date	Deadline for Completion of Inspection Program
Ausable Bayfield Source Protection Area	9 January, 2012	9 January, 2017
Cataraqui Source Protection Area	16 January, 2012	16 January, 2017
Catfish Creek Source Protection Area	29 November, 2010	29 November, 2015
Central Lake Ontario Source Protection Area	18 January, 2012	18 January, 2017
Credit Valley Source Protection Area	10 January, 2012	10 January, 2017
Crowe Valley Source Protection Area	17 January, 2012	17 January, 2017
Essex Region Source Protection Area	25 January, 2012	25 January, 2017
Ganaraska Region Source Protection Area	17 January, 2012	17 January, 2017
Grand River Source Protection Area	12 September, 2012	12 September, 2017
Grey Sauble Source Protection Area	24 January, 2012	24 January, 2017
Halton Region Source Protection Area	11 January, 2012	11 January, 2017
Hamilton Region Source Protection Area	11 January, 2012	11 January, 2017
Kawartha-Haliburton Source Protection Area	17 January, 2012	17 January, 2017
Kettle Creek Source Protection Area	29 November, 2010	29 November, 2015
Lakehead Source Protection Area	21 June, 2011	21 June, 2016
Lakes Simcoe and Couchiching/Black River Source Protection Area	19 January, 2012	19 January, 2017
Long Point Region Source Protection Area	30 May, 2011	30 May, 2016
Lower Thames Valley Source Protection Area	25 March, 2011	25 March, 2016
Lower Trent Source Protection Area	17 January, 2012	17 January, 2017
Maitland Valley Source Protection Area	9 January, 2012	9 January, 2017
Mattagami Region Source Protection Area	29 November, 2010	29 November, 2015
Mississippi Valley Source Protection Area	25 January, 2012	25 January, 2017
Niagara Peninsula Source Protection Area	12 January, 2012	12 January, 2017
North Bay-Mattawa Source Protection Area	30 May, 2011	30 May, 2016
Northern Bruce Peninsula Source Protection Area	24 January, 2012	24 January, 2017
Nottawasaga Valley Source Protection Area	19 January, 2012	19 January, 2017
Otonabee-Peterborough Source Protection Area	17 January, 2012	17 January, 2017
Quinte Source Protection Area	5 May, 2011	5 May, 2016
Raisin Region Source Protection Area	23 January, 2012	23 January, 2017
Rideau Valley Source Protection Area	25 January, 2012	25 January, 2017
Saugeen Valley Source Protection Area	24 January, 2012	24 January, 2017
Sault Ste. Marie Region Source Protection Area	13 January, 2012	13 January, 2017
Severn Sound Source Protection Area	19 January, 2012	19 January, 2017
South Nation Source Protection Area	23 January, 2012	23 January, 2017
St. Clair Region Source Protection Area	7 April, 2011	7 April, 2016
Sudbury Source Protection Area	13 January, 2012	13 January, 2017
Toronto And Region Source Protection Area	10 January, 2012	10 January, 2017
Upper Thames River Source Protection Area	20 January, 2012	20 January, 2017

## F. Appendix 2 - Septic Inspection Sample Documents

### Sample By-Law for Inspection Program

**THE CORPORATION OF TAY VALLEY  
TOWNSHIP BY-LAW NO. 2012-009**

**SEWAGE SYSTEM MAINTENANCE INSPECTION PROGRAMS**

**WHEREAS**, malfunctioning on-site sewage systems can have significant negative impacts on both human health and the environment;

**AND WHEREAS**, in 2000, the Corporation of Tay Valley Township (the "Township"), implemented a septic tank re-inspection program for waterfront properties based on voluntary participation by property owners;

**AND WHEREAS**, Section 7(1)(b.1) of the *Building Code Act*, 1992, S.O. 1992, c. 23, as amended (the "Act"), authorizes the council of a municipality to pass by-laws establishing and governing sewage system maintenance inspection programs in accordance with Division C, Part 1, Section 1.10 of the *Building Code Act*, 1992 - *Ontario Regulation 350/06*, as amended (the "Building Code");

**AND WHEREAS**, the Township Council considers it desirable for the protection of the health, safety and well-being of persons and the environmental well-being of the municipality to exercise its authority to implement a mandatory sewage system maintenance inspection program which will apply to all waterfront properties located in the areas described in Schedule "A" to this By-Law ;

**AND WHEREAS**, the Township Council considers it desirable for the protection of the health, safety and well-being of persons and the environmental well-being of the municipality to continue to offer a voluntary sewage system maintenance program to owners of waterfront properties located in the areas described in Schedule "B" to this By-Law;

**AND WHEREAS**, the above referenced mandatory and voluntary sewage system maintenance inspection programs (collectively the "Sewage System Maintenance Inspection Programs") are described in the Septic System Re-Inspection Program document attached as Schedule "C" to this By-Law;

**AND WHEREAS**, the Township has entered into an agreement with the Mississippi Valley Conservation Authority in accordance with Section 6.2 of the Act to provide for the enforcement of the provisions of the Act and the Building Code relating to sewage systems and to allow the Mississippi Valley Conservation Authority, through its Mississippi Rideau Septic System Office (the "MRSSO") to deliver the Sewage System Maintenance Inspection Programs on behalf of the Township;

NOW THEREFORE BE IT RESOLVED THAT, the Council of the Corporation of Tay Valley Township enacts as follows:

**Sample By-Law for Inspection Program** *(Continued)*

**THE CORPORATION OF TAY VALLEY  
TOWNSHIP BY-LAW NO. 2012-009**

1. GENERAL REGULATIONS

- 1.1 THAT, the mandatory sewage system maintenance inspection program will apply to all waterfront properties located in the areas described in Schedule "A" to this By-Law.
- 1.2 THAT, the voluntary sewage system maintenance inspection program will apply to all waterfront properties located in the areas described in Schedule "B" to this By-Law.
- 1.3 THAT, the Septic System Re-Inspection Program, attached hereto as Schedule "C", be adopted.

2. BY-LAWS TO BE REPEALED

- 2.1 All by-laws or parts thereof and resolutions passed prior to this by-law which are in contravention of any terms of this by-law are hereby rescinded.

3. ULTRA VIRES

- 3.1 Should any sections of this by-law, including any section or part of any schedules attached hereto, be declared by a court of competent jurisdiction to be ultra vires, the remaining sections shall nevertheless remain valid and binding.

4. EFFECTIVE DATE

- 4.1 ENACTED AND PASSED this 13h day of March, 2012.

*for*   
Keith Kerr, Reeve



  
Amanda Mabo, Clerk

## Sample Notification Letter

### **CURRENT DATE**

**NAME  
STREET ADDRESS,  
CITY/TOWN, ON POSTAL CODE**

Dear **Mr. and or Mrs. LAST NAME:**

**RE: Mandatory Maintenance Inspection Program  
MUNICIPAL ADDRESS PROPERTY ROLL NUMBER  
TOWN, DISTRICT**

---

The North Bay-Mattawa Conservation Authority (NBMCA) is required by legislation to conduct maintenance inspections of specific sewage systems that have been identified through the Ontario Clean Water Act's assessment report process. Your property has been identified as a property that is included in the Mandatory Maintenance Inspection Program.

The Ontario Building Code requires that a maintenance inspection be conducted on your property once every five years. The NBMCA has listed your property to participate in the mandatory maintenance inspection program during the 2012 construction season. A NBMCA sewage system inspector will be visiting your property this summer/fall to conduct the required maintenance inspection.

The goal of the program is to inspect existing septic systems to ensure that the existing septic systems are being operated and maintained in accordance with the Ontario Building Code. The objectives of the maintenance inspection program is to determine, at the time of inspection, if the existing septic system is functioning properly, assess the minimum setback requirements and ensure that there is not an unsafe condition associated with the existing septic system.

The maintenance inspection required is a visual inspection that requires input from property owners with regard to septic system: type, age, location and past operation. Additional information regarding water usage is also requested. The information is recorded and compiled into a file of the property, a site inspection is conducted and an evaluation of the system performance is determined.

A questionnaire is enclosed, please complete the form and return it to the NBMCA (North Bay office), alternatively, you may complete the questionnaire and call the NBMCA to advise that the questionnaire is complete and will be available onsite when the inspection is conducted.

Should you have any questions regarding the above, please do not hesitate to contact this office (705) **474-5420**.

Your participation and cooperation in this program is greatly appreciated.

Sincerely,

**THE NORTH BAY-MATTAWA CONSERVATION AUTHORITY**

Manager, On-Site Sewage System Program

Enclosure: Questionnaire

## Sample Property Owner Information Questionnaire



### Mandatory Maintenance Inspection Program Property Owner Information Questionnaire

<b>Property Information:</b>	
Owner/Tenant:	
Municipal Address (of subject property):	
Mailing Address (if different from above):	
Phone Number: (     )	
Size of property (acres):	
Permanent Residence <input type="checkbox"/> Seasonal Residence <input type="checkbox"/> Other: _____	
Would you like to be present during the mandatory maintenance inspection?      Yes <input type="checkbox"/> No <input type="checkbox"/> <b><i>If yes, please contact our office to arrange an appointment (705) 474-5420</i></b>	

<b>Drinking Water Source: (please provide as much detail as possible)</b>	
Dug Well <input type="checkbox"/> Drilled Well <input type="checkbox"/> Other <input type="checkbox"/> Please specify:	
Water filtered?    Yes <input type="checkbox"/> No <input type="checkbox"/> Filter type:	
Water treated?    Yes <input type="checkbox"/> No <input type="checkbox"/> If yes how:	

<b>Sewage Disposal Information:</b>			
Type(s) of septic system in use (please indicate if more than one system services property):			
Is the septic/holding tank: <input type="checkbox"/> Concrete <input type="checkbox"/> Steel <input type="checkbox"/> Plastic <input type="checkbox"/> Unknown			
Age of system:			
Last pump-out date ( <i>if available please attach copy of receipt</i> ):			
Name of pump-out contractor:			
Number of residents		Number of full bathrooms	
Number of bedrooms		Number of half bathrooms	
Number of dishwashers		Number of additional sinks	
Number of garborators		Number of washing machines	
Number of laundry tubs		Number of hot tubs/whirlpool baths	

Please list any previous problems with septic system:

## Sample Property Owner Information Questionnaire *(continued)*

### Site Plan Sketch

N↑

#### Site Plan Drawing:

1. Lot size, property dimensions, roads, existing rights-of-way, easements, or municipal/utility corridors;
2. Show and identify neighboring properties, including wells on adjacent properties (document if any at all);
3. Show the location and size of existing sewage system components (tanks, pump chambers, alarms, distribution bed)
4. Show the direction of surface water flow (grade);
5. Indicate directions of North on the site plan (draw an arrow through the “N” in the direction of north);
6. Show the distances from the sewage system components to all property lines, easements, rights-of-way, driveways, structures, and wells;
7. Show any surface water (creek, pond, lake) on or adjacent to the property and provide the common name.

Sample Inspection Form



# Mandatory Maintenance

## Inspection Program

Permit #: _____	Date: _____ Time: _____
Owner: _____ _____	<input type="checkbox"/> GPS <input type="checkbox"/> Mapping <input type="checkbox"/> Inspection not required
Person in attendance:	Sewage System Class:    2    4    4F    5    Privy Other (Specify): _____

Property Info	Property Address: _____
	Roll Number: _____
	Legal Description: _____
	Property Slope & Description: _____
	Well Present on Site: <input type="checkbox"/> YES <input type="checkbox"/> NO
	Any Occurrences on Property: <input type="checkbox"/> YES <input type="checkbox"/> NO
Set Backs	Distance from waterbody (m): _____
	Distance from dwelling to bed (m): _____
	Distance from dwelling to tank (m): _____
	Distance from well to septic (m): _____

Any sign of malfunction or concern?  YES     NO

Comment: \_\_\_\_\_  
\_\_\_\_\_



**Sample Inspection Form** *(continued)*

**Diagram**

(include all distances and points of interest, eg. well, waterbodies, etc)

N↑

**Re-Inspection completion status**

**Date of Completion:** \_\_\_\_\_

**Time of Completion:** \_\_\_\_\_

**Inspector Signature:** \_\_\_\_\_

Sample third-party inspection certificate

**Certificate Mandatory Sewage System Maintenance Inspection Program**  
(pursuant to Article 1.10.2.5 of Division C of the Building Code)

**Certificate Number:** \_\_\_\_\_ **Date Certificate Issued:** \_\_\_\_\_

**Address of Property on which Sewage System is Located:** (hereinafter called the “Property”)

\_\_\_\_\_

**Owner of Property on which Sewage System is Located:**

\_\_\_\_\_

**Certificate issued to** (name and address of Principal Authority):

\_\_\_\_\_

**Certification**

Person Signing Certificate:

(Name, Address, Business telephone number, Building Code Identification Number, if applicable)

\_\_\_\_\_

\_\_\_\_\_

I certify that:

- (a) I am a person described in Sentence 1.10.1.3.(3) of Division C of the Building Code.
- (b) I have conducted an inspection of the sewage system located at the Property.
- (c) I am satisfied on reasonable grounds that the sewage system located on the Property is in compliance with the requirements of Section 8.9 of Division B of the *Building Code*.

**Certificate issued by:**

Name: \_\_\_\_\_

Complete as applicable:

BCIN: \_\_\_\_\_

- I am the holder of a licence, a certificate of practice or a temporary licence under the *Architects Act*.
- I am a person who holds a licence or a temporary licence under the *Professional Engineers Act*.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

This certificate is approved by the Minister of Municipal Affairs and Housing under the *Building Code Act, 1992*

[Personal information contained in this form and schedules is collected under the authority of clause 34(2.2)(d) of the *Building Code Act, 1992*, and will be used in the administration and enforcement of the *Building Code Act, 1992*. Questions about the collection of personal information may be addressed to: a) the Chief Building Official of the municipality or upper-tier municipality to which this application is being made, or, b) the inspector having the powers and duties of a chief building official in relation to sewage systems or plumbing for an upper-tier municipality, board of health or conservation authority to whom this application is made, or, c) Director, Building and Development Branch, Ministry of Municipal Affairs and Housing 777 Bay St., 2nd Floor. Toronto, M5G 2E5 (416) 585-6666.]

## **G. Appendix 3 - Ministry of Municipal Affairs and Housing Sewage System Maintenance Inspection Guide**

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### **On-Site Sewage System Maintenance Inspections**

March 2011

## Building and Development Branch Ministry of Municipal Affairs and Housing

### Introduction

The *Building Code Act, 1992* and Building Code (Ontario Regulation 350/06) regulate the design, construction and renovation of treatment systems which are located wholly on the property which they serve (i.e. “on-site”) and have a design sewage capacity of 10,000 litres/day or less.<sup>1</sup> Such systems typically provide treatment for smaller buildings such as houses, cottages and small businesses.

Enforcement of the on-site sewage provisions of the *Building Code Act, 1992* and Building Code is the responsibility of local enforcement bodies, or “principal authorities”, – the municipality, the board of health or the conservation authority, depending on the location within Ontario.

Ontario’s Building Code (Ontario Regulation 350/06) was recently amended to establish and govern mandatory on-site sewage system maintenance inspection programs, to be administered in certain areas by local enforcement bodies. The recent amendments to the Building Code also govern discretionary on-site sewage system maintenance inspection programs established by local enforcement bodies.

The Ministry of Municipal Affairs and Housing, in consultation with the Ministry of the Environment, has developed this document for principal authorities to provide information and highlight certain issues respecting inspections undertaken in connection with on-site sewage system maintenance inspections programs.

**Note:** This document has been prepared for explanatory purposes only and does not form part of the regulations, and is not intended to provide legal or other professional advice. Persons requiring such advice should consult their legal or professional advisors.

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<sup>1</sup> “sewage system” is defined in Article 1.4.1.2. of Division A of the Building Code (Ontario Regulation. 350/06) as follows:

*Sewage system* means,

- (a) 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,
- (b) a *greywater* system,
- (c) a cesspool,
- (d) a *leaching bed* system, or
- (e) 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,

- (f) have a *design capacity* of 10,000 litres per day or less,
- (g) 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
- (h) are located wholly within the boundaries of the lot or parcel of land on which is located the *building* or *buildings* they serve.

## Authority for Inspections

Sewage system maintenance inspections are generally intended to determine whether a sewage system is in substantial compliance with the operation and maintenance requirements outlined in Section 8.9 of Division B or, in the case of discretionary programs, with the requirements enforced by the program. These inspections are undertaken by inspectors appointed by Principal Authorities in respect of maintenance inspection programs:

- Required under Article 1.10.2.3. of Division C of the Building Code (“Mandatory Programs”); and
- Established by Principal Authorities under by-laws, resolutions or regulations under clause 7(1)(b.1) of the *Building Code Act, 1992* (“Discretionary Programs”).

## Identification of Sewage System Maintenance Inspection Program Areas and Sewage System Inventory

As a first step, Principal Authorities will need to identify areas that would be subject to Mandatory Programs (these areas are set out in Article 1.10.2.3. of Division C of the Building Code) and, where applicable, Discretionary Programs.

As a next step, Principal Authorities will need to identify existing sewage systems located within areas subject to Mandatory Programs and Discretionary Programs. These sewage systems may be identified by reviewing:

- a) Assessment reports, in consultation with the local source protection authority, to identify septic systems identified as part of the assessment report threat enumeration;
- b) Permit applications submitted under the *Building Code Act, 1992*;
- c) Certificates of approval or use permits issued under the Environmental Protection Act;
- d) Orders issued under the *Building Code Act, 1992*;
- e) Records of problems and complaints;
- f) Water use records;
- g) 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);
- h) Lists of properties with residential or other uses not serviced by sewage works administered by the Ministry of the Environment [or municipal services]; and/or
- i) Field surveys.

## Inspection Notification

Mandatory inspection programs require that all systems be inspected every five years. In doing so, Principal Authorities may choose to prioritize areas for inspection based on:

- Proximity to a municipal residential drinking water well or surface water intake as identified in the local assessment report;

- Known groundwater or surface water contamination related to sewage;
- Previous drinking water issues at a well or intake that may be related to sewage, as identified in the local assessment report;
- Age of on-site sewage system;
- Systems without records.

Principal Authorities may find it helpful to notify property owners of the intention to inspect their property. Such notifications may include notice of:

- a) Any applicable fees to be charged;
- b) Procedural information;
- c) Whether the Principal Authority accepts third-party certificates as an alternative to conducting an inspection and, if so, requesting owners to notify the Principal Authority if they have retained a third party for this purpose;
- d) A contact name within the Principal Authority, and
- e) The legislative authority for the inspection program.

It may be helpful to send such notifications well in advance of the inspection to give the opportunity for the property owner (or representative) to be on site on the day of the inspection and to gather information and records which may assist in the inspection, and also to give the property owner the opportunity to undertake remedial work prior to the inspection.

Where the Principal Authority has determined that it will accept third-party certificates as an alternative to conducting an inspection, the Principal Authority should provide sufficient time:

- a) for the property owner to consider retaining a person qualified to sign such a certificate;
- b) if a person is retained, for the person to inspect the sewage system; and
- c) for any necessary remedial work to be carried out where this will be necessary before the person may sign the certificate.

## **Inspections**

### Maintenance Inspections - Overview

These guidelines provided in this document set out a progressive audit approach to maintenance inspections for sewage systems, as with most inspections under the *Building Code Act, 1992*. Under this approach, initial inspections are designed to be non-intrusive tests and will generally avoid significant disturbance to the system and to the surrounding soil area. Where concerns are identified, more tests may follow.

A Phase I maintenance inspection may be sufficient to establish compliance with Section 8.9. of the Building Code or with the standards enforced under a Discretionary program. A follow-up Phase II inspection (described below) is required where the Phase I inspection indicates a defect or failure of the system.

### Phase I – Maintenance Inspections

Inspections generally begin with a review of available material, including material collected in the identification phase, and reports from previous inspections.

The purpose of Phase I maintenance inspections is to:

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

Phase I maintenance inspections generally avoid significant disturbance to the system and the surrounding soil area. During the course of a Phase I maintenance inspection, the inspector would normally identify:

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

- k) Documentation of previous effluent sampling test results where required (i.e., under Article 8.9.2.4. of the Building Code).

#### Phase II – Follow-Up Maintenance Inspections

It may be appropriate to undertake more intensive follow-up maintenance inspections where:

- a) The Phase I maintenance inspection has identified that the septic system is at risk of future malfunction or failure, or
- b) The Phase I inspection detected a malfunction or failure, but did not reveal the reason (e.g., location or nature) of malfunction or failure.

Phase II inspections will be familiar to Principal Authorities in terms of usual Building Code enforcement activities (i.e., investigation of potentially failing sewage systems, inspections due to neighbour complaints). These inspections may typically include examinations of the following elements:

- a) The depth of the sludge layer and the distance from the top of the sludge layer and the outlet tee;
- b) The thickness of the scum layers;
- c) The distance between the bottom of the scum/grease layer and the bottom of the outlet tee;
- d) The distance between the top of the scum layer and the top of the outlet tee;
- e) The physical condition of the inlet and outlet; and
- f) The condition of the effluent filter, if utilized.

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

- a) The existence of a maintenance agreement and the date of latest servicing;
- b) 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); and
- c) Operational problems or system malfunction before or, at the time of inspection.

Where 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:

- a) Clearance distances to environmental features, wells and surface water intakes;
- b) Soil type and its permeability;
- c) Additional sources of hydraulic loading (e.g. surface discharge, roof drains);
- d) Evidence of ponding;
- e) Encroachments into the leaching bed area (e.g. building additions, patios, driveways, pools); and
- f) 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:

- a) Evaluation of in-home plumbing and estimates of water usage;



- b) Conducting a leak diagnostics;
- c) Conducting a flow trial;
- d) Conducting a dye tracing test; or
- e) Excavating a cross section of the leaching bed.

### **Inspection Reports**

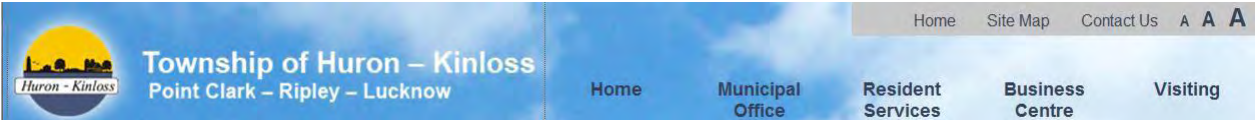
Principal Authorities may wish to maintain documentation in respect of maintenance inspections, which could include the following information:

- a) Identification of the property attended;
- b) Identification of any information collected as part of the inspection;
- c) Status of deficiencies noted in previous inspections;
- d) Deficiencies identified during the current visit;
- e) The legislative authority for the inspection program; and
- f) Enforcement action taken.

## H. Appendix 4 – Further Materials from Septic Case Studies

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### Huron-Kinloss Website



### Community Septic Inspection Program

The Township of Huron-Kinloss initiated the Huron-Kinloss Community Septic Inspections (HK- CSI) program in the spring of 2007. The goal of this program is to encourage regular maintenance of septic systems, through mandatory inspections. If unmaintained, septic systems are a threat to public health and the environment. Regular maintenance, however, can ensure that systems work efficiently and safely, protecting the natural environment. Through the program, every property with a septic system (including outhouses/pit privies) will be inspected on a rotating basis over a six to seven year period.

If you own a septic system in the Township of Huron-Kinloss, here's what you need to know about the HK-CSI program:

- Property owners must call the Township (519-395-3735) to book an appointment for an inspection.
- Inspections are done between spring and fall, weather permitting.
- Appointments are available Monday to Thursday between 9:00 am and 1:00 pm, with some evening and Saturday appointments available as well.
- If you haven't had your septic tank pumped in the last twelve months, it is recommended that you have it pumped prior to the inspection.
- Inspections are carried out by a qualified Ontario Building Code Part 8 Sewage Systems inspector.
- At no time during the inspection will you be asked for payment. The program is funded by a flat rate of \$55 on the annual tax bill of properties with a septic system.
- Once an inspection is completed, property owners are mailed an inspection report which includes an aerial photograph of the property outlining the location of the septic system.
- If you sell your property, please leave the inspection report for the new owners.

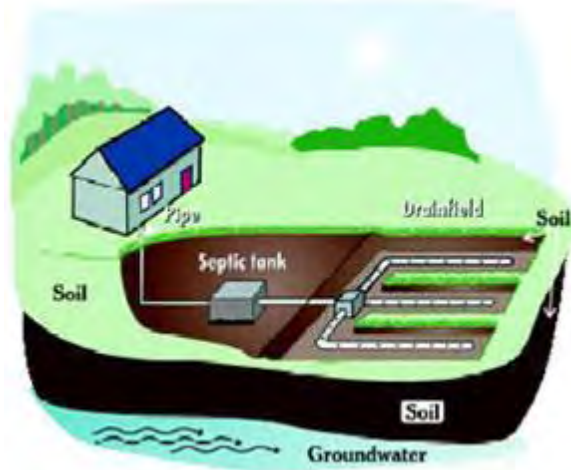
Visit our blog at [hkcsi.blogspot.com](http://hkcsi.blogspot.com) for additional information or to post any comments you have.

The Huron-Kinloss septic inspection program represents a proactive step on the part of the Township and the citizens in addressing the possibility of septic systems affecting surface and groundwater quality. The project was developed as a response to requests from property owners throughout the Township and designed to complement the existing water quality monitoring program.

Septic systems are a common method of waste treatment and disposal within the Township; it is estimated that there are approximately 2800 private septic systems along the lakeshore and in the rural areas of the Township. Properly maintained systems are very effective in treating and disposing of

wastes, however, poorly designed, installed or maintained systems can have serious environmental and health impacts. With these impacts in mind, the Township implemented a septic inspection program to identify systems with deficiencies and work with property owners to ensure that their septic system operates properly.

On a 7 to 8 year inspection cycle, all septic systems in the Township will be inspected. Each year, between 300 and 400 tanks will be inspected. The inspection is a non-invasive, visual inspection carried out by a qualified Part 8 inspector. Pump outs are not mandatory, but are recommended. Also, if tank levels are too high during the inspection, the inspector can order a pump out. The inspector, when on site, will document the location of buildings, wells, watercourses and property lines in respect to the location of the septic system. Vegetation around the drainfield and any septage leaks will also be noted. For inspections it is recommended that the property owner is present to answer any questions the inspector may have. After an inspection, the property owner will receive the results of the inspection and notice if any follow up actions are required.



Inspections will first be conducted on properties identified as high risk. High risk properties are those that have no record of an approved septic system or the existing system is greater than 20 years old. After the high risk systems have been inspected, moderate risk (systems between 10 and 20 years in age) and low risk (systems less than 10 years old) systems will be inspected.

The HK-CSI is funded by a flat rate of \$55, assigned per eligible property on the annual taxes. A flat rate is assigned to the annual taxes so that property owners will not be charged for anything at the time of inspection.

If you have any questions about the HK-CSI, please contact the Township of Huron Kinloss municipal office at 519-395-3735.

**Program Statistics**

2007-2012 Risk Rating Statistics							
Risk Assessment	2007	2008	2009	2010	2011	2012	TOTAL
Low	202 (75%)	214 (60%)	212 (58%)	198 (48%)	279 (46%)	155 (48%)	1260 (54%)
Medium	63 (23%)	129 (36%)	134 (35%)	195 (4%)	305 (50%)	149 (47%)	975 (42%)
High	5 (2%)	13 (4%)	17 (5%)	19 (5%)	21 (4%)	17 (5%)	92 (4%)

<b>TOTAL</b>	<b>270</b>	<b>356</b>	<b>363</b>	<b>412</b>	<b>605</b>	<b>321</b>	<b>2327</b>
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Rating Definition:

Low

Medium Age

Medium Minor Repairs

Medium Non-Conforming (to current Ontario Building Code standards)

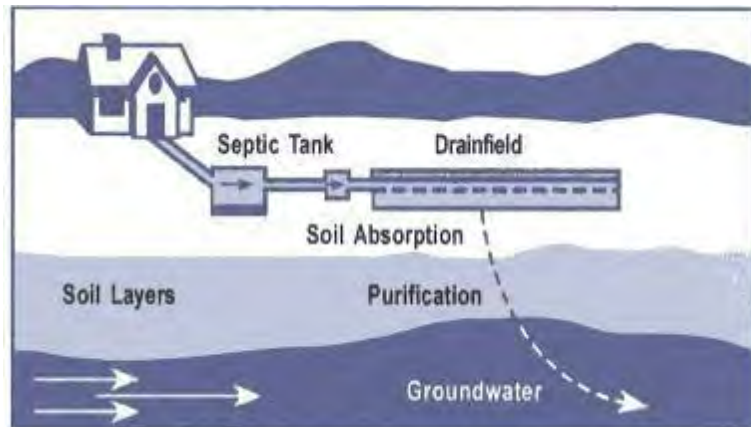
High - Environmental Hazard

High - Structurally Unsafe

## Septic System Information

In many small communities and rural areas, septic systems are a common method of waste disposal and treatment. Septic systems are common in these areas because they are the most cost effective and efficient waste treatment technology. If properly designed, installed and maintained, a septic system can service a home for up to 25 years. However, poorly designed, installed or unmaintained systems may be a hazard to the environment and public health through inadequately treated wastes.

Septic systems treat household wastes onsite using a series of natural processes. These natural processes occur in the different components of the septic system. The two major components of septic system are the septic tank and the drainfield (which is also known as the leach field or a weeping bed). Some systems may include a distribution box between the septic tank and the drainfield. Distribution boxes are concrete or plastic structures that ensure effluent from the septic tank is evenly distributed to the drainfield.



A typical septic system with septic tank and drainfield

The septic tank is a watertight container that is either single or double chambered and buried beneath the ground. Most tanks are made of concrete, but fibreglass and plastic tanks are also available. Tanks come in a variety of sizes; most homes will have tanks sized between 500 and 2500 gallons. All tanks have an inlet, which is connected to the sewer pipe from the house, and an outlet, which is attached to the drain field. At both the inlet and the outlet there is a 'Tee' or baffle, which keeps the waste flowing in the right direction. At the top of the tank there is an access port, which allows for top of the tank pumping. The access port should always be accessible, in case an emergency pump out is needed.

In the septic tank, the first stage of waste treatment occurs. When household waste enters the tank, the solid part of the waste separates from the liquid. The solids collect at the bottom forming a 'sludge' layer.

On top the liquid, oil and grease collect and form the 'scum' layer. Bacteria in the tank then begin to naturally decompose the wastes in the sludge and scum layers. The wastewater that remains between the sludge and scum layers is gradually pushed out into the drain field for another stage of treatment.

The drainfield consists of a series of trenches, typically 1 to 3 feet below the surface. In each trench is a length of perforated pipe, surrounded by either gravel or coarse sand. The size of the drainfield is dependent on the expected wastewater flow and soil quality. Wastewater flows into the drain field and is distributed throughout the series of pipes. Slowly, the wastewater percolates out of the pipes into the gravel or sand liner and then the soil below. The liner and soil filter out nutrients, bacteria, metals and other chemicals from the waste water. The treated water continues to move through the soil to enter the groundwater supply.



Regular pumping of the septic tank keeps the system functioning properly and prevents solids from entering and clogging the drain field. Septic tanks should be pumped every 3 to 5 years. Unpumped systems can allow excess nutrients and disease causing bacteria to move through the system and pollute groundwater. Signs of system failure include foul odour, soggy lawns, slow drains in the house and lush vegetation growth over the drainfield. If you see any of these signs, contact a septic professional to deal with the problem. Never try to inspect or repair a tank yourself, as the bacteria in the septic tank produce deadly gases.

Septic system maintenance, in addition to regular pumping includes conserving water and watching what goes into the septic system. Conserving water by fixing leaky taps and installing water-saving showerheads and faucets can reduce the total amount of waste water entering the system. This prevents the drainfield and septic tank from being overloaded. To maintain the environment within the tank and ensure that the sludge and scum layers do not accumulate to excess, care should be taken when disposing of household materials. Some materials, such as chemical cleaners, bleach, paint, cigarette butts, paper towels, kitty litter and coffee grinds, should never enter the septic system. Also, products advertised as septic system additives, enhancers, starters or rejuvenators are not necessary to maintain a septic system.

Maintaining your septic system is important, not only for the environment and public health, but also for your pocket book! Replacements or repairs can be very costly. The best way to avoid unnecessary costs and extend the lifetime of your septic system is to simply maintain it! As the old adage goes, an ounce of prevention is worth a pound of cure.

## Septic System Maintenance

Septic system maintenance is important: it helps to prevent system failure which is beneficial for the environment and your pocketbook! Failed systems are expensive to repair or replace and can have

serious environmental consequences. A few simple maintenance steps can help your septic system function longer and safer.

### **Conserve Water**

- Using water wisely prevents saturation of the soil in the drainfield.
- Fix leaky faucets and running toilets
- Use washing machines and dishwashers when there's enough for a full load
- Don't let the water run when washing hands or brushing teeth.
- Avoid taking long showers
- Install water saving faucets and shower heads
- Reduce water use by toilets by installing a low flow toilet or a toilet dam

### **Be gentle to the drainfield!**

- Space out water use over a few days. Don't do all the laundry in one day.
- Divert roof drains, surface water and sump pumps away from the drainfield
- Don't plant anything but grass near your septic tank or drainfield. Roots can damage the pipes
- Don't let anyone drive anything over the drainfield – this includes snowmobiles and ATVs
- Don't build or plant any gardens or trees over the drainfield

### **Watch what you flush**

Some chemicals and household products can harm your septic system

Avoid letting chemicals like paint, varnish, paint thinner, pesticides, nail polish remover, household cleaners and bleach go down drains or toilets.

Don't flush: coffee grinds, dental floss, cigarette butts, kitty litter, sanitary napkins, condoms, antibacterial soap, paper towels or kitchen wastes.

### **Pump it!**

Get your tank pumped every 3-5 years by a professional – this may be the most important part of maintaining your septic system

## **Contacts**

Township of Huron-Kinloss  
21 Queen St., Ripley ON N0G 2R0  
info@huronkinloss.com  
519-395-3735 Fax: 519-395-4107

Matt Farrell  
Chief Building Official  
cbo@huronkinloss.com  
519-395-3735

## Ramara Pump-out Certificate



NAME OF HOME OWNER: \_\_\_\_\_

ADDRESS OF PROPERTY: \_\_\_\_\_

DATE OF PUMPING: \_\_\_\_\_

TANK:            CONCRETE: \_\_\_\_\_ STEEL: \_\_\_\_\_ PLASTIC: \_\_\_\_\_

SEPTIC TANK: \_\_\_\_\_ OR HOLDING TANK: \_\_\_\_\_

SIZE OF TANK: \_\_\_\_\_

T'S IN PLACE?    YES \_\_\_\_\_    NO \_\_\_\_\_

EFFLUENT LEVEL:    CORRECT HEIGHT \_\_\_\_\_

                                 ABOVE OUTLET \_\_\_\_\_

                                 BELOW OUTLET \_\_\_\_\_

OVERALL CONDITION OF TANK?    GOOD \_\_\_\_\_    FAIR \_\_\_\_\_    POOR \_\_\_\_\_

LIDS?    GOOD \_\_\_\_\_    FAIR \_\_\_\_\_    POOR \_\_\_\_\_

NOTES: \_\_\_\_\_

\_\_\_\_\_

PUMPED BY: \_\_\_\_\_ (NAME OF COMPANY)

NAME OF PUMPER: \_\_\_\_\_ (PRINT)

SIGNATURE: \_\_\_\_\_

## Ramara Notification Letter



# THE CORPORATION OF THE TOWNSHIP OF RAMARA

*Proud History - Progressive Future*

March 28, 2013

Dear Property Owner:

**Re: TOWNSHIP OF RAMARA  
MANDATORY ON-SITE SEWAGE SYSTEM MAINTENANCE  
INSPECTIONS**

As you learned through our previous notices effective on January 1<sup>st</sup>, 2011 and January 19<sup>th</sup>, 2012 the Ontario Building Code was amended by Ontario Regulation 315/10 to establish and govern mandatory on-site sewage system maintenance inspection programs to be administered by municipalities in Ontario. To satisfy this requirement, the Township chose to accept third party certificates as an alternative to municipal inspections. However due to the lack of response, that program has been discontinued. Moving forward the Township's consulting engineer, C.C. Tatham & Associates Ltd., has been retained to complete the inspection of the remaining properties over the next 3 years. Property owners that submitted a third party certificate up to March 28, 2013 will not be inspected under the new program until the next five year program.

There are two components of the -inspection program. The first is a visual surface inspection of your sewage system, which will be completed by C.C. Tatham & Associates Ltd. staff for the Township of Ramara. The property owner does not need to be in attendance for this inspection. The cost including the Township administration fee is \$150, payable to the Township of Ramara within 30 days of invoicing. If payment is not received by the Township of Ramara within 30 days of invoicing, the inspection fee will be added to the property tax bill. If a deficiency is noted during the inspection, the property owner(s) will be notified in writing by C.C. Tatham & Associates Ltd. and they must take the necessary steps to correct the deficiency within the timeline stipulated.

If your property is serviced by underground utilities, a locating company will be visiting your property prior to the inspection, at no cost to you. All lines will be located with small flags or paint for safety purposes. The ground will not be dug up or disturbed during the inspection, but soil probes will be used to locate the septic tank and leaching bed.

**THE SECOND COMPONENT OF THE ...INSPECTION PROGRAM IS THAT YOU ARE RESPONSIBLE FOR ARRANGING TO HAVE YOUR SEPTIC OR HOLDINGTANK PUMPED OUT BY A LICENSED SEWAGE HAULER. You must**

P.O. Box 130, Brechin, Ontario L0K 1B0, (705) 484-5374 Toll Free 1-800-663-4054 (for 689 exchange only) Fax (705) 484-0441  
Email: [ramara@ramara.ca](mailto:ramara@ramara.ca) Web Site: [www.ramara.ca](http://www.ramara.ca)



## **Ramara Notification Letter** *(continued)*

request the hauler provide a written report confirming the date of the pump-out and the condition

and size of the tank. We have provided the local sewage haulers with an appropriate report form. This report is to be completed and signed by the hauler. You **must** submit a copy of the report to the Township of Ramara no later than September 30 of the year of the inspection.

You will be advised by separate notice the year which your property will be inspected.

We appreciate your co-operation with this proactive program that is focused on protecting Ontario's drinking water, the natural environment and supports the implementation of the Ontario Clean Water Act, 2006.

**FOR FURTHER INFORMATION, PLEASE CONTACT OUR BUILDING  
DEPARTMENT AT EXTENSION 234.**

2297 Highway 12  
P.O. Box 130  
Brechtin, ON L0K 1B0  
Phone: (705) 484-5374  
Fax: (705) 484-0441  
Email: [ramara@ramara.ca](mailto:ramara@ramara.ca)  
Hours: 9:00 a.m. to 4:30 p.m. Monday to Friday

## I. Appendix 5 – Spills Policy Examples

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The proposed Cataraqui Source Protection Plan (August 2012) includes five policies that either require or call for enhancements to spill prevention and response planning (see 4.3.1-NB, 4.3.2-CW, 4.3.3-NB, 7.2.17 (sewage hauling via barges), and 7.6.2-NB (MTO Wolfe Island ferry));

The implementation of this type of policy may include:

- a. Addition of vulnerable area maps to relevant documents;
- b. Consideration of key drinking water risks in the vulnerable area (e.g. highways, railways, large storages) as well as other “significant” risks that could leak and/or spill;
- c. Consideration of typical ground and surface water flow elevations/directions within the vulnerable area, with reference to the modeling used to define that area;
- d. Preparation of updated procedures and the development of additional capacity (i.e. equipment, consulting arrangements, staffing), as necessary, to properly account for (a), (b) and (c);

The review of spill prevention and response plans may also provide an opportunity for the water treatment plant operator to ensure that they have procedures in place for intake/well closures, notification of disruptions to service (e.g. hospitals, industry, media, public, and schools), alternate water sources/supplies, etc.

Some Source Protection Committees identified additional local threats and subsequently developed spills plan policies in the source protection plan. For example, the Director approved the following local threats in the Thames-Sydenham Source Protection Region, in vulnerable areas of the St. Clair Region Source Protection Area:

- Transportation of fuel and fertilizer along provincial highways, county and local roads, railways, and waterways passing through the various vulnerable areas in the St. Clair Region Source Protection Area; and
- Transportation of liquid petroleum products through pipelines that cross the St. Clair Region Source Protection Area and may result in a spill into the St. Clair River

The classification of these activities as either a significant, moderate or low drinking water threat is dependent on the location of the corridor as defined by the event based modelling exercise, the type of substance, and the volume or mass of the substance resulting from a spill.