



# Approved

## South Georgian Bay Lake Simcoe Source Protection Plan

This document contains the  
Source Protection Plans for:

- Lakes Simcoe and Couchiching /  
Black River Source Protection Area
- Nottawasaga Valley Source Protection Area
- Severn Sound Source Protection Area

Approval Date: January 26, 2015

Effective: July 1, 2015

Amended: February 15, 2018



## PREFACE

This document was prepared by staff in the South Georgian Bay Lake Simcoe source protection region. It has been reviewed and approved by the South Georgian Bay Lake Simcoe source protection authorities to be submitted to the Ministry of Environment for approval in the summer of 2014.

The objective of this document is to provide the policies that the committee has developed to protect existing and future municipal drinking water sources.

The policies contained within this document are approved. If you have any questions about this document or the South Georgian Bay Lake Simcoe source protection region, please contact the source protection staff at the Lake Simcoe Region Conservation Authority at 1-800-465-0437 or 905-895-1281 or <http://www.ourwatershed.ca>.

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February 15, 2018



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government of Ontario

## **SUMMARY OF AMENDMENTS**

- 1) May 14, 2015: Policy LUP-3 amended to include the words “where possible” to align with policy SEWG(a)-1 (Pg. 146). Amendment endorsed by SPAs and SPC, April 2015.
- 2) January 10, 2017: The tables in Section 18 (Summary of Policies Used) amended to remove septic systems as a threat within the chloride Issue Contributing Area.
- 3) February 15, 2018: Section 7.2 amended to summarize consultation undertaken for an amendment of Chapter 6 of the Nottawasaga Valley Source Protection Area Assessment Report. Timing for Conformity to Policies (Section 15) amended to include reference to new threats identified in amendments to the Assessment Report.

## Table of Contents

1	What is Source Water? .....	9
2	Purpose and Objectives of a Source Protection Plan .....	9
2.1	Walkerton, the Catalyst for Source Water Protection in Ontario.....	9
2.2	The Clean Water Act .....	11
2.3	Private Drinking Water Systems .....	12
2.4	First Nation Drinking Water Systems .....	12
3	An Overview of the 19 Source Protection Regions in Ontario.....	12
4	The South Georgian Bay Lake Simcoe (SGBLS) Source Protection Region .....	15
5	Roles and Responsibilities .....	17
5.1	Province: Ontario Ministry of the Environment (MOE).....	18
5.2	Source Protection Authority (SPA).....	18
5.3	Source Protection Committee (SPC) .....	19
5.4	Conservation Authority (CA) .....	20
5.5	Municipality.....	21
5.6	First Nation .....	22
6	Relationship to Other Source Protection Planning Documents .....	23
6.1	Terms of Reference .....	23
6.2	The Assessment Reports .....	23
6.3	The Explanatory Document .....	24
7	The Consultation Process: Overview.....	25
7.1	Terms of Reference .....	25
7.2	Assessment Reports.....	26
7.2.1	Draft Proposed Assessment Reports .....	26
7.2.2	Proposed Assessment Reports.....	27
7.2.3	Updated Assessment Reports .....	27
7.2.4	2014 Updated Assessment Reports.....	28
7.3	Source Protection Plan .....	30
7.3.1	Notice of Commencement of Source Protection Planning .....	30
7.3.2	Pre-Consultation .....	30
7.3.3	Formal Consultation.....	32
7.3.4	Revised Proposed Consultation .....	33
8	Drinking Water Vulnerability Analysis and Threats Calculation .....	35

8.1	The Four Vulnerable Areas.....	35
8.1.1	Wellhead Protection Areas (WHPA).....	35
8.1.2	Intake Protection Zones (IPZ) .....	38
8.1.3	Highly Vulnerable Aquifers (HVA) .....	40
8.1.4	Significant Groundwater Recharge Areas (SGRA) .....	41
8.2	Prescribed Threats .....	42
8.3	Identifying Potential Significant Threats .....	44
8.3.1	Vulnerability Scoring / Threats-Based Approach .....	44
8.3.2	Issues Approach .....	46
8.3.3	Event-Based Approach .....	46
8.4	Transport Pathways.....	47
9	Policy Development.....	48
10	Range of Policy Tools Available .....	49
10.1	S. 57 Prohibition (Pro) .....	49
10.2	S. 58 Risk Management Plans (RMP) .....	49
10.3	S.59 Restricted Land Uses (RLU).....	50
10.4	Prescribed Instruments (PI) .....	50
10.5	Land Use Planning (LUP) .....	50
10.6	Incentives (INCENT).....	50
10.7	Education and Outreach (EDU) .....	50
10.8	Other (Oth) .....	51
10.9	Specify Action (Other: SA) .....	51
10.10	Monitoring Policies (MON) .....	51
11	Legal Effect .....	52
12	How the Policies Are Organized and Numbered.....	53
13	Definitions .....	55
14	Transition Provisions .....	59
15	Timing for Conformity to Policies .....	60
16	The Policies .....	63
16.1	Threat #1: The establishment, operation or maintenance of a waste disposal site within the meaning of Part V of the Environmental Protection Act .....	64
16.1.1	Threat #1(a): Application of untreated septage .....	64
16.1.2	Threat #1(b): Waste disposal sites .....	66
16.1.3	Threat #1(c): Mine tailings.....	70

16.2	Threat #2: The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage .....	72
16.2.1	Threat #2(a): Stormwater management .....	72
16.2.2	Threat #2(b): Wastewater treatment plants/sewer systems .....	75
16.2.3	Threat #2(c): On-site sewage systems .....	78
16.2.4	Threat #2d: Industrial effluent .....	80
16.3	Threat #3: The application of agricultural source material to land .....	82
16.4	Threat #4: The storage of agricultural source material .....	85
16.4.1	Threat #3 and #4: Application and storage of agricultural source material – issues contributing area: nitrate for Georgian Sands and Lafontaine .....	88
16.5	Threat #5: The management of agricultural source material (aquaculture) .....	90
16.6	Threat #6: The application of non-agricultural source material (NASM) to land .....	90
16.7	Threat #7: The handling and storage of non-agricultural source material (NASM) .....	95
16.8	Threat #8: The application of commercial fertilizer to land .....	99
16.9	Threat #9: The handling and storage of commercial fertilizer .....	101
16.9.1	Threat #8 and #9: Application, handling and storage of commercial fertilizer – issues contributing area: nitrate for Georgian Sands and Lafontaine .....	103
16.10	Threat #10: The application of pesticides to land .....	105
16.11	Threat #11: The handling and storage of pesticides .....	107
16.12	Threat #12: The application of road salt .....	109
16.13	Threat #13: The handling and storage of road salt .....	111
16.13.1	Threat 12 and 13: Application, Handling and Storage of Road Salt-issues contributing area: salt for the City of Barrie .....	113
16.14	Threat #14: The storage of snow .....	115
16.14.1	Threat 14: The storage of snow – issues contributing area: snow storage for the City of Barrie .....	117
16.15	Threat #15: The handling and storage of fuel .....	118
16.16	Threat #16: The handling and storage of a dense non-aqueous phase liquid (DNAPL) .....	121
16.17	Threat #17: The handling and storage of an organic solvent .....	123
16.18	Threat #18: The management of run-off that contains chemicals used in the de-icing of aircraft .....	125
16.19	Threat #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 .....	127
16.20	Threat #20: An activity that reduces the recharge of an aquifer .....	135

16.21	Threat #21: The use of land as livestock grazing or pasturing land, an outdoor confinement area or a farm-animal yard.....	138
17	Additional Policies .....	142
17.1	Conditions Policies .....	143
17.3	Georgian Sands Issue Contributing Area Transport Pathway Policies .....	144
17.4	Restricted Land Use Policies .....	146
17.5	Land Use Planning Policies .....	148
17.6	Education and Outreach Policies .....	154
17.7	Incentive Policies .....	160
17.8	Monitoring Policies .....	162
18	Summary of Policies Used .....	163
19	List of Acronyms.....	173
20	Glossary of Terms.....	175
21	Appendix A: Policy Lists as Required Under Section 34 of the Clean Water Act .....	191
22	Designations in accordance with Director instructions under Ontario Regulation 287/07.....	198

## **List of Tables**

Table 1: Municipalities in the South Georgian Bay Lake Simcoe Source Protection Region.....	22
Table 2: Well Count, by Municipality .....	37
Table 3: Surface Water Intakes, by Municipality .....	39
Table 4: Risk Scoring.....	45
Table 5: Policy Numbering Protocol .....	54

## **List of Figures**

Figure 1: Multi Barrier Approach .....	10
Figure 2: Source Protection Regions in Ontario .....	14
Figure 3: Map of South Georgian Bay Lake Simcoe Source Protection Region.....	15
Figure 4: Roles and Responsibilities .....	17
Figure 5: Source Protection Authorities .....	18
Figure 6: Current Source Protection Committee Membership .....	20
Figure 7: Municipal Workshop, November 1, 2011 .....	31
Figure 8: Wellhead Protection Area (WHPA).....	36
Figure 9: Intake Protection Zone (IPZ) .....	38
Figure 10: Highly Vulnerable Aquifer (HVA) .....	40
Figure 11: Significant Groundwater Recharge Area (SGRA) .....	41
Figure 12: Policy Tools Available to SPCs .....	49



## **1 WHAT IS SOURCE WATER?**

Source water is any untreated water found in rivers, lakes and underground aquifers which is used for the supply of raw water for drinking water systems.

Source water protection is the action taken to protect that raw source of municipal drinking water from overuse and pollution.

## **2 PURPOSE AND OBJECTIVES OF A SOURCE PROTECTION PLAN**

Under the Clean Water Act, the objectives of a source protection plan are:

1. to protect existing and future drinking water sources in the source protection region
2. to ensure that, for every area identified in the assessment reports as an area where an activity is or would be a significant drinking water threat:
  - i. the activity never becomes a significant drinking water threat; or
  - ii. if the activity is occurring when the source protection plan takes effect, the activity ceases to be a significant drinking water threat.

The Clean Water Act requires the source protection plan to include, at a minimum, policies to address all significant drinking water threats.

The foundation of the plan is sound scientific knowledge. But there is more than science to the plan. It is, in large part, about land use activities and the impact of that activity on drinking water quality and quantity.

The chapters that follow provide a more detailed history around source protection planning in Ontario and information about the South Georgian Bay Lake Simcoe source protection region in particular.

This document then outlines the actual policies to be implemented in order to protect municipal drinking water. Following the policies are chapters defining acronyms used and a glossary of terms. At the end of the document are a number of appendices as required by the Clean Water Act.

### **2.1 Walkerton, the Catalyst for Source Water Protection in Ontario**

In May 2000, heavy rains washed *Escherichia coli* (E. coli) bacteria into a well that provided water to the municipal water system in the small town of Walkerton, Ontario. A series of human

and mechanical failures allowed the bacteria to get through the treatment system and into the municipal water supply. As a result, seven people died and more than 2,300 became ill. The tragedy received international attention and provoked a public enquiry, led by Justice Dennis O'Connor of the Supreme Court of Ontario.

Justice O'Connor's investigation resulted in two reports, with 121 total recommendations, released in early 2002.

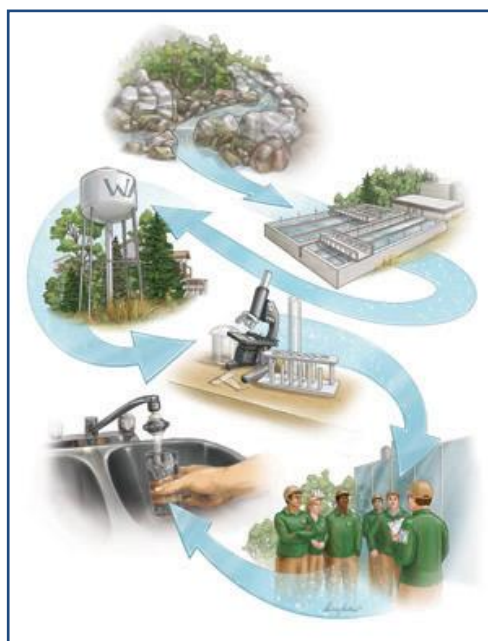
*"The best way to achieve a healthy public water supply is to put in place multiple barriers that keep water contaminants from reaching people," Justice Dennis O'Connor.*

Justice O'Connor identified five parts to the multi-barrier system:

- source water protection
- adequate treatment
- a secure distribution system
- proper monitoring and warning systems
- strategic responses to adverse conditions

With the exception of source water protection, four of the five barriers relate directly to "end of pipe" municipal water treatment systems. The government's response to these four barriers was in the passing of the Safe Drinking Water Act and the Sustainable Water and Sewage Systems Act in 2002.

Figure 1: Multi Barrier Approach



Justice O'Connor felt that the first barrier in the multi-barrier system, source protection, had to be addressed differently. He saw it as a local planning process to be done "as much as possible at a local (watershed) level by those who will be most directly affected (municipalities and other affected local groups)."

He outlined a broad framework for a source protection plan. O'Connor recommended protecting municipal water supplies on a watershed basis, an area of land where all water drains to the same lake or river. Groundwater and surface water systems are linked and activities upstream

can affect water downstream, regardless of political boundaries. Thus, developing a source protection plan on a watershed basis made economic and scientific sense. This recommendation led the Province of Ontario to embark on the development of the Clean Water Act, 2006.

## **2.2 The Clean Water Act**

The Clean Water Act introduces a new level of protection for Ontario's drinking water resources that focuses on protecting water before it enters the drinking water treatment system. The Act establishes a locally driven, science-based, multi-stakeholder process to protect municipal residential drinking water sources and designated private drinking water sources. This process is meant to promote the shared responsibility of all stakeholders to protect local sources of drinking water from threats to both water quantity and water quality.

The Clean Water Act is not designed to protect all of the province's water resources. The Act has a more narrow focus – sources of water that have been designated by a municipality as being a current or future source of residential municipal drinking water for the community. The Ontario Water Resources Act and the Environmental Protection Act and other provincial and federal laws remain the chief vehicles for protecting the quality and quantity of Ontario's water resources; the Clean Water Act and the source protection planning process it establishes provides additional protection to select sources of water.

Prior to the Walkerton tragedy, the province focused on protecting water resources on the basis of the resources' ecological and recreational values, not on the basis of the critical public health goal of maintaining secure water supplies for public consumption. The Clean Water Act puts the goal of public health protection and preserving present and planned sources of drinking water front and centre.

The Clean Water Act has a more narrow focus than other rules governing water resources. This legislation is dedicated to sources of water that have been designated by a municipality as being a current or planned source of residential municipal drinking water

## **2.3 Private Drinking Water Systems**

Maintaining safe and secure private drinking water systems is the responsibility of homeowners, institutions and businesses who own their own water systems and are regulated separately under the Safe Drinking Water Act and the Health Protection and Promotion Act.

Private drinking water systems can be included in a source protection plan if a municipality expressly designates a private system, for example, if there is a known concern with a private drinking water source. The Minister of the Environment also has the authority to designate a private drinking water system for inclusion into a source protection plan. In this version of the source protection plan, there are no private systems that are included.

## **2.4 First Nation Drinking Water Systems**

A drinking water system serving, or planned to serve, a First Nation reserve can also be included in the source protection planning process. This can only take place if the Minister of Environment receives a copy of a resolution of the Band Council requesting that the system be included in the source protection planning process. At the time of this writing, there are three First Nation drinking water systems within the province that are included in the program (Rama First Nation, Kettle and Stony Point First Nation, Six Nations of the Grand River). In the South Georgian Bay Lake Simcoe source protection region, the Chippewas of Rama First Nation drinking water system is formally included in the source protection program. On February 4, 2014, Ontario Regulation 287/07 was amended under the Clean Water Act to formally include the Chippewas of Rama First Nation into the South Georgian Bay Lake Simcoe source water protection planning process.

## **3 AN OVERVIEW OF THE 19 SOURCE PROTECTION REGIONS IN ONTARIO**

With the Clean Water Act and its first regulations coming into force in 2006, source protection areas and regions and the 19 corresponding source protection committees were established.

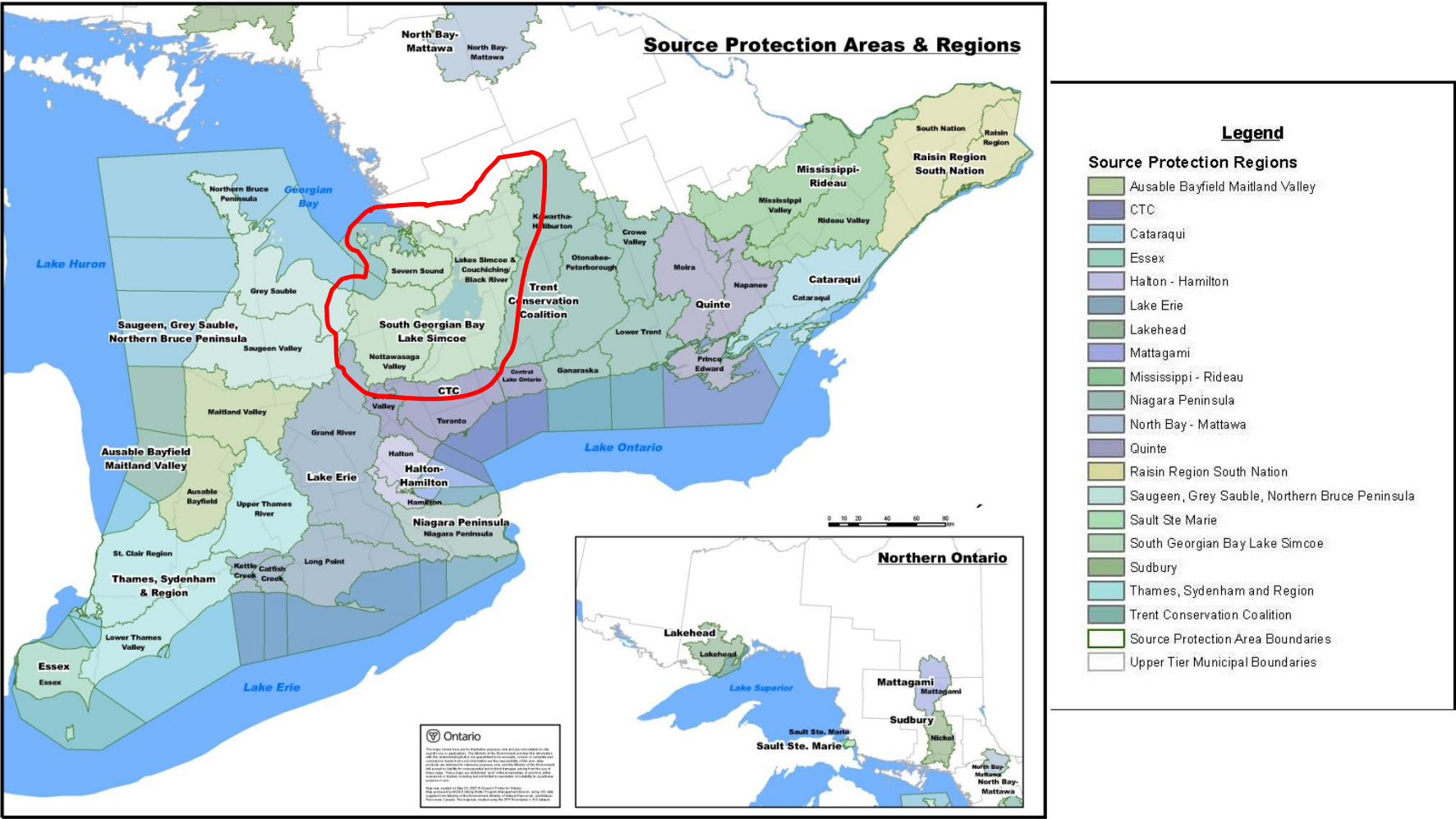
It is the source protection committees who are ultimately responsible for preparing local source protection plans.

Source protection regions were initially established using the existing conservation authority boundaries as outlined under the Conservation Authorities Act. Ontario Regulation 284/07 (source protection areas and regions), made under the Clean Water Act, alters the boundaries of each of these source protection areas so that they better encompass watersheds.

The Clean Water Act provides that there be one source protection committee for each source protection region. It is the source protection committees who are ultimately responsible for preparing local source protection plans – plans which establish local policies on how significant drinking water threats will be reduced or eliminated, who is responsible for taking action, when action must be taken and how progress will be measured.

On the next page is a map (see Figure 2) showing the 19 source protection regions in the province of Ontario. The South Georgian Bay Lake Simcoe source protection region is outlined in red.

Figure 2: Source Protection Regions in Ontario





## 4 THE SOUTH GEORGIAN BAY LAKE SIMCOE (SGBLS) SOURCE PROTECTION REGION

The South Georgian Bay Lake Simcoe source protection region (see Figure 3) contains four watersheds and spans over 10,000 km<sup>2</sup>, from the Oak Ridges Moraine in the south to the Canadian Shield in the north and is comprised of the Black-Severn, Lake Simcoe, Nottawasaga Valley and Severn Sound watersheds. The region contains portions of the Niagara Escarpment, Oak Ridges Moraine, Oro Moraine, Peterborough Drumlin Fields, Simcoe Uplands and Lowlands and the Canadian Shield.

*Figure 3: Map of South Georgian Bay Lake Simcoe Source Protection Region*

The region includes:

- four watersheds
- fifty-two municipalities
- three First Nations communities
- 277 municipal supply wells
- 16 municipal surface water intakes

The region is complex and diverse in terms of geology, physiology, population, and development pressures, with many, often conflicting, water uses including drinking water supply, recreation, irrigation,



agriculture, commercial and industrial uses, as well as ecosystem needs.

These differences represent a significant challenge for the development of a source water protection plan because of the associated variability of available information upon which to base the technical work, the differing stresses on water resources related to development pressure and population growth, and the differences in the nature, density and locations of threats to the quality and quantity of water resources.

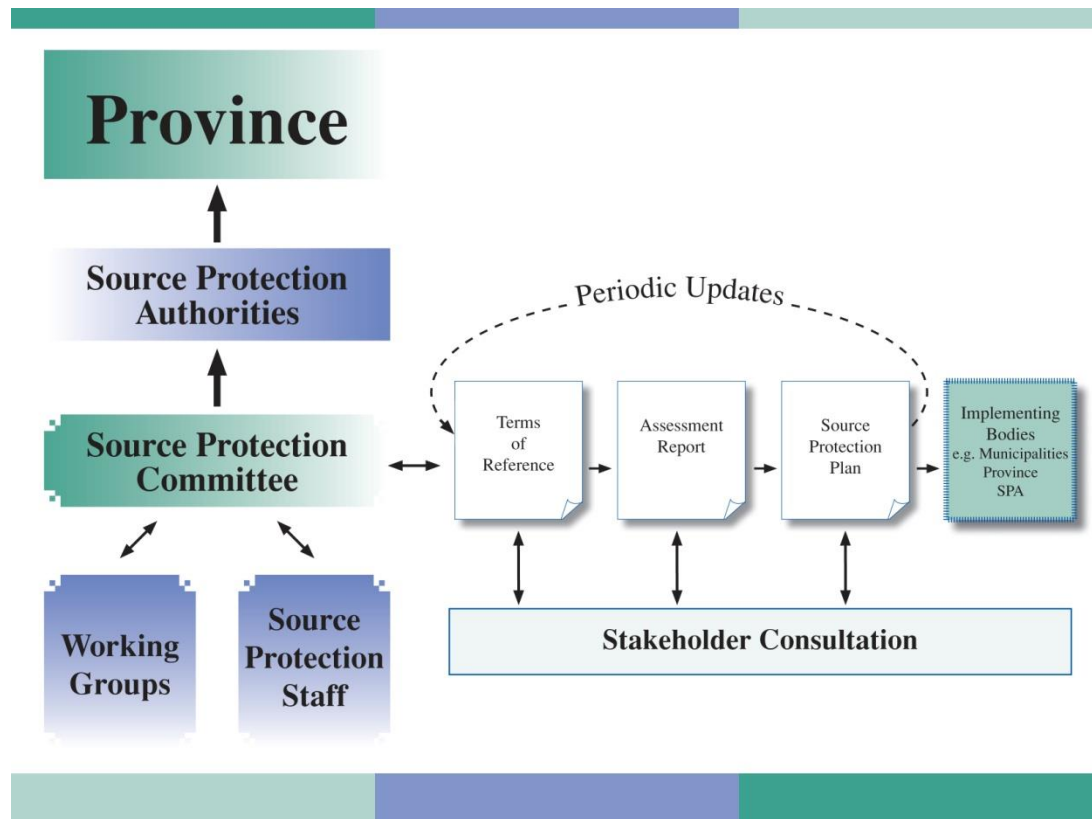
In the next chapter, the various stakeholders and their roles in the source protection planning process will be described.



## 5 ROLES AND RESPONSIBILITIES

Figure 4 provides an illustration of the relationship between the various players in the source protection planning process. As can be seen, a number of stakeholders have been involved in the source protection planning process. Following the figure is a greater description of each of the stakeholder roles.

*Figure 4: Roles and Responsibilities*



## 5.1 Province: Ontario Ministry of the Environment (MOE)

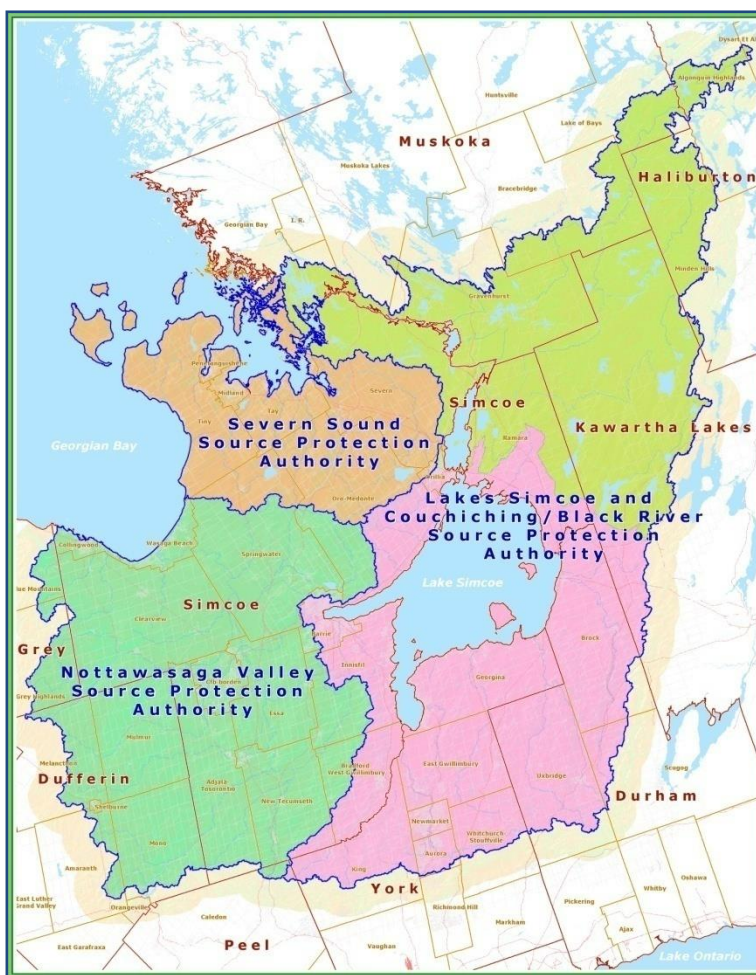
The Province sets the rules (largely through the Clean Water Act), provides ongoing guidance, approves the documents submitted (terms of reference, assessment reports and source protection plan) and is responsible for implementation of significant threat policies and designated Great Lakes policies associated with prescribed provincial approvals or permits of provincially regulated facilities.

## 5.2 Source Protection Authority (SPA)

The source protection authority *Figure 5: Source Protection Authorities*

is a new body created under the Clean Water Act. The source protection authority's make-up is based on the boards of directors of existing conservation authorities. Initially, it had the important role of laying the groundwork for the new source protection process in each watershed. This included creating the source protection committees and engaging municipalities in that process of creation.

In the South Georgian Bay Lake Simcoe source protection region, there are three source protection authorities, depicted in Figure 5:



1. Lakes Simcoe and Couchiching-Black River (lead SPA)
2. Nottawasaga Valley
3. Severn Sound

The lead source protection authority coordinates the efforts of all the source protection authorities within that region and takes on unique roles and responsibilities, some of which are outlined in the Clean Water Act and regulations and some of which are set out in an agreement between the source protection authorities in the region. The Act requires that there be an agreement between the source protection authorities in a region to govern the relationship between the lead and the other source protection authorities. In the South Georgian Bay Lake Simcoe source protection region, the Lake Simcoe Region Conservation Authority plays the role of lead source protection authority.

The source protection authority's role has changed over time. Once the source protection committees were created, the source protection authority's role became focused on supporting the source protection committee in its duties. Once the source protection plan is approved, the source protection authority will continue to have a role in policy implementation, monitoring and reporting.

### **5.3 Source Protection Committee (SPC)**

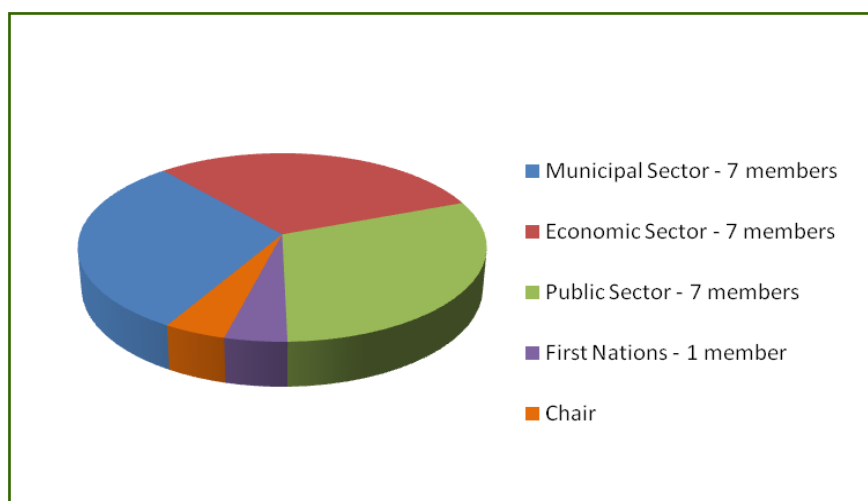
In addition to a source protection authority, the Clean Water Act created a second watershed-level body, the source protection committee. The source protection committee is the primary authority for making decisions at the watershed level.

The Clean Water Act provides that there will be one source protection committee for each source protection region. The lead source protection authority established the source protection committee. The chair of the source protection committee, however, was appointed by the Minister of Environment in August 2007

The source protection committee is made up of local citizens in the watersheds, who applied for that role and were selected by the source protection authority based on a competitive process. The number of committee members varies by region. In the South Georgian Bay Lake Simcoe source protection region, there are 21 committee members, plus the chair, plus one member from Rama First Nation (see Figure 6). Of the 21 members, one third represent the economic sector, one third represent the municipal sector and one third are from the public sector.

The source protection committee is responsible for preparing the terms of reference, the assessment reports and the source protection plan. The committee is also responsible for ensuring that stakeholders and the public are consulted throughout the process, both before the plan is approved and afterwards, as the source protection plan is periodically updated.

*Figure 6: Current Source Protection Committee Membership*



#### **Municipal**

John Boucher  
Clayton Cameron  
Richard Forward  
Wendy Kemp  
Rick Newlove  
Herb Proudley  
Stan Wells

#### **Public Sector**

Dianne Corrigan  
Bob Duncanson  
Stephanie Hobbs  
Tom Kurtz  
Alex Millar  
Fred Ruf  
Larry Slomka

#### **Economic**

Gerry Brouwer  
Colin Elliot  
Chris Galway  
John Hemsted  
David Ketcheson  
Colin Nisbet  
Dave Ritchie

#### **Chair**

Lynn Dollin  
**Rama First Nation**  
Fred Jahn

## **5.4 Conservation Authority (CA)**

Through agreement with the source protection authority, the conservation authority provides staff, expertise, and experience in watershed-based work and understanding of stakeholders within the local watershed to share information, facilitate cooperation among communities and stakeholders and help pull together the terms of reference, assessment reports and source protection plan, under the guidance of the source protection committee.

In the South Georgian Bay Lake Simcoe source protection region, the conservation authority partners are:

- Lake Simcoe Region Conservation Authority
- Nottawasaga Valley Conservation Authority
- Severn Sound Environmental Association

Although not technically a conservation authority, the Severn Sound Environmental Association acts much like a conservation authority and was thus given unique status by the Ministry of Environment to participate in the program in the same manner as a conservation authority.

## **5.5 Municipality**

Municipalities are a key partner in the source protection process and work closely with the source protection committee and source protection authorities. Municipalities have a primary role of implementing the source protection plan once it's in place.

While municipalities have a long history of working together with conservation authorities at the watershed level, the process established under the Clean Water Act represents a new way for municipalities to work. Because threats to drinking water are being addressed on an ecologically significant scale, the watershed, this represents an entirely new process for some municipalities, who may own the water system, or may be responsible for planning, or both, or neither, and have never had to systematically consider the implications of their decision on the drinking water of others, or vice versa. From a hydrological perspective, it is a natural fit to involve conservation authorities, whose boundaries are based on watersheds. From an operational point of view, however, this may represent a departure for some municipalities.

In the South Georgian Bay Lake Simcoe source protection region, there are 52 different municipalities, as represented in Table 1 below.

*Table 1: Municipalities in the South Georgian Bay Lake Simcoe Source Protection Region*

Adjala-Tosorontio	Dufferin County	Lake of Bays	Penetanguishene
Algonquin Highlands	Durham Region	Melancthon	Ramara
Amaranth	Dysart et Al	Midland	Scugog
Aurora	East Gwillimbury	Minden Hills	Severn
Barrie	Essa	Mono	Shelburne
Blue Mountains	Georgian Bay Township	Mulmur	Simcoe County
Bracebridge	Georgina	Muskoka District	Springwater
Bradford West Gwillimbury	Gravenhurst	Muskoka Lakes	Tay
Brock Township	Grey County	New Tecumseth	Tiny
Caledon	Grey Highlands	Newmarket	Uxbridge
City of Kawartha Lakes	Haliburton County	Orillia	Wasaga Beach
Clearview	Innisfil	Oro-Medonte	Whitchurch-Stouffville
Collingwood	King Township	Peel Region	York Region

## 5.6 First Nation

A drinking water system serving, or planned to serve, a First Nation reserve can also be included in the source protection planning process. This can only take place if the Minister of Environment: (1) receives a copy of a resolution of the Band Council requesting that the system be included in the source protection planning process; and (2) the province passes a regulation under the Clean Water Act to include the system.

Within the South Georgian Bay Lake Simcoe source protection region, there are 3 First Nation communities: Chippewas of Rama, Chippewas of Georgina Island and Beausoleil.

The Rama First Nation Band Council passed a resolution to the Minister of Environment requesting that their drinking water system be included in the source water protection program. On February 4, 2014 Ontario Regulation 287/07 was amended under the Clean Water Act to formally include the Rama First Nation drinking water system in the South Georgian Bay Lake Simcoe source water protection planning process.

## **6 RELATIONSHIP TO OTHER SOURCE PROTECTION PLANNING DOCUMENTS**

While the source protection plan is a stand-alone document, there are supplementary documents that have been developed for those who may wish to obtain more information about source water protection.

1. Terms of Reference
2. Assessment Reports
3. Explanatory Document

### **6.1 Terms of Reference**

There are three terms of reference documents; one for each watershed area within the South Georgian Bay Lake Simcoe source protection region:

1. Lakes Simcoe and Couchiching-Black River source protection area
2. Nottawasaga Valley source protection area
3. Severn Sound source protection area

The terms of reference documents were the first documents to be completed. They are the work plans that describe who does what, when and how much it will cost. The terms of reference were submitted to the Ministry of Environment in December 2008 and approved in June 2009.

### **6.2 The Assessment Reports**

As with the terms of reference documents, there are three assessment reports – one for each watershed area within the South Georgian Bay Lake Simcoe source protection region:

1. Lakes Simcoe and Couchiching-Black River source protection area
  - a. Part 1: Lake Simcoe Watershed
  - b. Part 2: Black-Severn River Watershed
2. Nottawasaga Valley source protection area
3. Severn Sound source protection area

The assessment reports summarize a series of technical studies that outline vulnerable areas on maps and provide a total count of potential significant drinking water threats to every drinking water system as prescribed by the province. They describe the local watershed and assess available water supply and include maps of the vulnerable areas.



The assessment reports are 'living documents' that will be periodically updated and amended as new information becomes available. The assessment reports, in addition to describing vulnerable areas and risks to drinking water, also provide the technical information needed to assist the source protection committee in its work of developing the source protection plan.

The assessment reports are based on the completion of detailed technical studies. These reports underwent a peer review process that enabled scientists and other experts to evaluate the technical work for technical completeness and whether it met the provincial rules and guidelines.

The South Georgian Bay Lake Simcoe proposed assessment reports were submitted to the Ministry of Environment for approval in December 2010. Since that time, additional research was identified for inclusion in the assessment reports. The amended proposed assessment reports were submitted to the Ministry of the Environment for its approval on August 30, 2011. Ministry approval was received on January 19, 2012.

If you have a hard copy of this document, the assessment reports are provided on DVD in the inside front cover. If you are reading this document electronically, you can find the assessment reports online at: [http://www.ourwatershed.ca/documents/assessment\\_reports.php](http://www.ourwatershed.ca/documents/assessment_reports.php).

### **6.3 The Explanatory Document**

The explanatory document explains in detail how the policies in the source protection plan were developed. The explanatory document is required by legislation and accompanies the source protection plan. It includes a detailed record of the rationale that was used to select the policies in the source protection plan. In short, it documents the 'thinking' behind the source protection plan.

The explanatory document also includes a record of all the comments received during consultation. This record includes the source protection committee's response to those comments.

The explanatory document will be of interest to the source protection authority, stakeholders, the Minister and members of the general public who may wish to understand the information that the source protection committee used to prepare the plan. By disclosing the underlying rationale that was used to select specific policy approaches, the explanatory document supports a transparent decision making process.



The explanatory document, like the assessment reports, is a living document that will be updated periodically to incorporate new information.

## **7 THE CONSULTATION PROCESS: OVERVIEW**

Public involvement and consultation has been a strong priority in this program with many requirements legislated in the development of the source protection plan. A variety of approaches and different media were used to engage the public, including:

- media releases
- newspaper advertisements
- letters to landowners
- public open houses
- door-to-door canvassing
- the publication and distribution of newsletters and other informational brochures
- hosting and maintaining a website
- presentations to municipal councils, First Nations Band Councils, community and business groups
- attendance at trade shows, environmental fairs and festivals

Early attempts at public engagement drew limited response and interest. However, as the program evolved and after repeated attempts at communication, public response at the community and municipal level has increased. Interest peaked in the fall of 2010 with the release of the assessment reports. Hundreds of landowners attended five open houses that were held to coincide with the publication of the assessment reports.

### **7.1 Terms of Reference**

Terms of reference open houses were held on May 22, 2008 in Barrie, June 4, 2008 in Newmarket, June 5, 2008 in Midland and June 13, 2008 in Utopia. To publicize the open houses, a notice was placed on the [www.ourwatershed.ca](http://www.ourwatershed.ca) website and newspaper advertisements were posted in 13 local newspapers on May 1 and 2, 2008.

Because it was believed that municipal knowledge of source water protection was still in its infancy, and because of the fact that there are 52 municipalities in the region, a series of four half-day municipal workshop sessions were developed to give municipal partners the opportunity to meet with staff and source protection committee members and engage in a more direct manner. The events were heavily advertised directly to municipal stakeholders and drew

between 50 and 75 participants per event including both staff and politicians. The workshops were held on April 2, May 29, September 17 and October 29, 2009. Evaluations gathered at the end of each session indicated they were very well received and so additional workshops built on the same theme continued over the following years. Details follow in the sections below.

## **7.2 Assessment Reports**

As part of the consultation on the assessment reports, efforts beyond those required by legislation were undertaken to further engage the municipal audience. Meetings were offered to each municipality in the source protection region to allow them to meet with staff one-on-one and see the assessment reports in advance of public consultation. Emails were sent to each municipality and were followed up with hard copy packages that included information specific to each municipality.

Following on the success of the workshops held in 2009, two more municipal workshops were hosted in 2010 to assist municipalities with the publication of the assessment reports. Both municipal staff and politicians attended the workshops held on September 7 in Wasaga Beach and September 8 in Beaverton.

### **7.2.1 Draft Proposed Assessment Reports**

The draft proposed assessment reports were posted on the website ([www.ourwatershed.ca](http://www.ourwatershed.ca)) on September 3, 2010, marking the beginning of the first round of public consultations. The consultation period ended on October 8, 2010. Below is a listing of communications activities that took place.

- a. Website posting ([www.ourwatershed.ca](http://www.ourwatershed.ca)) on September 3, 2010.
- b. Letters were sent out on September 3, 2010 to approximately 20,000 residents identified as owning property in a vulnerable area
- c. A copy of the notice sent to
  - i. municipalities
  - ii. neighbouring source protection regions
  - iii. source protection authority chairs
  - iv. First Nations Chiefs in our source protection region
- d. E-mail notice was sent to public works and planning directors at all 52 municipalities on August 31, 2010
- e. Media release issued on September 3, 2010

- f. Newspaper notice published in 17 newspapers during the first week of September 2010
- g. Open houses were held as follows:
  - Sat, Sept 25, 1 – 5pm, North Simcoe Sport and Recreation Centre, Midland (95 attendees)
  - Tues, Sept 28, 4 – 8pm, Glenway Golf and Country Club, Newmarket (96 attendees)
  - Thurs, Sept 30, 4 – 8pm, ODAS Park, Orillia (76 attendees)
  - Tues, Oct 5, 4 – 8pm, Nottawasaga Inn, Alliston (63 attendees)
  - Wed, Oct 6, 4 – 8pm, Lions Gate Banquet Centre, Barrie (87 attendees)
- h. E-mail update to SPA members in late August, 2010

#### 7.2.2 Proposed Assessment Reports

The Proposed Assessment Reports were posted on the website ([www.ourwatershed.ca](http://www.ourwatershed.ca)) on October 22, 2010, marking the beginning of the second round of public consultations. The consultation period ended on November 22, 2010. Below is a listing of communications activities that took place.

- a. Posting on our website ([www.ourwatershed.ca](http://www.ourwatershed.ca)) on October 22, 2010
- b. Copy of notice sent to:
  - i. municipalities on October 22, 2010
  - ii. neighbouring source protection regions on October 22, 2010
  - iii. source protection authority chairs on October 22, 2010
  - iv. First Nations Chiefs in our source protection region on October 22, 2010
- c. E-mail notice to Directors of Works/Planning (not required) sent on October 22, 2010
- d. Media release issued on Friday, October 22, 2010
- e. Newspaper notice published in 17 newspapers during the last week of October 2010

#### 7.2.3 Updated Assessment Reports

The updated assessment reports were posted to the website on May 30, 2011 which marked the start of the formal consultation period which lasted 30 days (May 30 to June 30, 2011).

Letters went to approximately 60 landowners whose properties were newly identified as having a potential significant threat as a result of the updates made to this latest version of the assessment reports. Communities impacted included Orangeville, Orillia, Collingwood, Midland, Uxbridge and Barrie. Notices about the updated assessment reports were placed in local newspapers serving those communities.

Additionally, letters went to the Chief of the three First Nations communities in the source protection region, and the clerk at the Townships of Mono and Tay and the Town of Collingwood.

Because the Rama First Nation intake protection zone was added to this latest update, an open house was held at the Rama First Nation Community Centre on June 22, 2011 from 4 – 6pm. The open house was hosted by the First Nation community and several source protection committee members and staff attended.

#### 7.2.4 2014 Updated Assessment Reports

##### Formal consultation

A letter was sent to property owners in the Ballantrae and Midland fourth street wellhead protection areas on November 22, 2013, and March 21, 2014 notifying of the new vulnerable areas, and clean water act requirements.

Pre-consultation took place from March 11 to April 9, 2014. E-mail notification was distributed to all implementing bodies on March 11 advising of this pre-consultation period.

Formal consultation took place from April 24 to May 23, 2014 on both the Assessment Reports and Source Protection Plan/Explanatory Documents. The following activities were undertaken during formal consultation.

A letter was sent to all implementing bodies (municipalities, ministries, associations) to provide them with the information about the formal consultation and let them know this was another opportunity for them to submit comments.

Advertisements were posted in local newspapers advertising of the formal consultation period and of the opportunities to meet with staff and source protection committee members at two Open Houses to be held on May 6 in the Town of Midland and May 7 in the community of Gormley. This latter Open House was held jointly with our neighboring source protection region, CTC Source Protection Region.

Advertisements for the Gormley Open House were posted in a variety of local newspapers, jointly with CTC Source Protection Region. Newspapers included: Aurora, Markham, Richmond Hill, Stouffville, Thornhill, Vaughan, King City and Uxbridge. York Region also posted the details of the Open House on their website at york.ca.

Advertisements for the Midland Open House were placed in the local Midland newspaper.

Our website at [www.ourwatershed.ca](http://www.ourwatershed.ca) was updated to include information about the formal consultation along with links to all the documents, how to submit comments and how to access the documents in person. No comments were received from the general public.

Finally, a media release was distributed to local media on April 24, 2014 to support the formal consultation period and Open Houses. The release was picked up by one local Midland newspaper, the Midland Mirror.

#### 7.2.5 2017 Updated Assessment Report

Formal consultation took place from May 14 to June 19 2015. The following activities were undertaken during formal consultation.

A letter was sent to property owners in the Wellhead Protection Areas associated with the Shelburne municipal water supply system in May 2015, notifying them of the changes to the municipal water supply system, the new vulnerable areas, and clean water act requirements.

A letter was sent to all implementing bodies (municipalities, ministries, associations) to provide them with the information about the formal consultation and let them know this was another opportunity for them to submit comments.

Advertisements were posted in local newspapers advertising of the formal consultation period and of the opportunities to meet with staff and source protection committee members from the Lake Erie Source Protection Region at an Open House held on March 30 2015 in the Township of Amaranth Recreation Hall. Staff from the South Georgian Bay – Lake Simcoe Source Protection Region attended the Open House to support formal consultation.

Our website at [www.ourwatershed.ca](http://www.ourwatershed.ca) was updated to include information about the formal consultation along with links to all the documents, how to submit comments and how to access the documents in person.

No outstanding concerns were identified during formal consultation.

## **7.3 Source Protection Plan**

### **7.3.1 Notice of Commencement of Source Protection Planning**

On May 9, 2011, letters advising of the commencement of source protection planning were distributed to municipal clerks, the Chiefs of First Nations, and the secretary/treasurer of each municipality's committee of adjustment.

On May 11, 2011, letters went to approximately 5,000 landowners where activities if occurring on their properties could be potential significant threats. The letters advised of the commencement of source protection planning, that the plans have the potential to impact them and that there was funding available through the *Ontario Drinking Water Stewardship Program*, a funding program designed to assist property owners address significant threats.

In anticipation of the possibility that the landowner mailing might generate calls to municipalities, on May 2, 2011 an email update was distributed to all municipal contacts (including directors of public works, directors of planning and chief building officials) to let them know about the upcoming letter distribution and to invite them to another series of municipal workshops to be held on May 12 and 13, 2011.

These two half-day municipal workshops were held on May 12 in Innisfil and May 13 in Orillia. Approximately 75 municipal representatives attended each session including both staff and politicians. As with earlier workshops, session evaluations rated them extremely positive.

Over the course of the past few years, a list has been collected that contains the names of interested members of the public. This list was generated through attendance lists at open houses and also through an online form on the [www.ourwatershed.ca](http://www.ourwatershed.ca) website that individuals could sign up to be kept up-to-date on the source water protection program.

With the high public attendance at the five Fall 2010 assessment report open houses, this list has grown to house over 500 names. In early spring 2010, a two page source water protection newsletter/update was created and distributed to the names on that list. The newsletter provided an update on source water protection and included general information about the development of source protection plans.

### **7.3.2 Pre-Consultation**

Pre-consultation was a requirement in the legislation that obliged the source protection committee to consult with implementing bodies (such as municipalities) on the draft policies in

advance of formal consultation with the public. Pre-consultation took place from October 7, 2011 to January 13, 2012. The following activities were undertaken during pre-consultation.

A letter was sent on September 6, 2011 to all implementing bodies (municipalities, ministries, associations) to provide them with advance notice of the impending pre-consultation that was set to begin in October.

The contents of this letter was coordinated with staff at neighbouring source protection regions so that municipalities that straddle more than one source protection region received coordinated messaging.

Official notice of pre-consultation was distributed to all implementing bodies on October 7 and was followed by another series of workshops that took place as follows:

October 7: City of Kawartha Lakes

October 25: County of Haliburton

November 1: Simcoe County and Muskoka District

November 3: Simcoe County

November 15: Durham Region

November 23: York Region

November 25: Lakes Simcoe Couchiching-  
Black River source protection authority

November 30: Peel Region

December 6: Dufferin County

December 7: Grey County

December 16: Nottawasaga Valley source  
protection authority

*Figure 7: Municipal Workshop, November 1, 2011*



The purpose of these workshops was to allow implementers the opportunity to meet with source protection staff and committee members in an informal one-on-one session to review the draft policies and explanatory document and allow them to ask questions to ensure their formal comments on the policies are as well informed as possible.

### 7.3.3 Formal Consultation

First formal consultation on the draft proposed source protection plan and explanatory document began on March 26, 2012. The deadline for comments was originally scheduled for May 25, 2012 but was extended to June 15, 2012 as a result of receiving an extension from the Ministry of Environment. Notice of this extension to June 15 was sent to implementing bodies via email on May 22, 2012. Whereas the legislative requirements state that the first formal consultation must be at least 35 days, the source protection committee initially approved a 61 day consultation period that was then extended to 82 days.

The start of first formal consultation was marked with the following activities:

1. Notices sent to all municipal clerks, implementing bodies, First Nations and adjacent source protection regions advising of the start of formal consultation
2. Notices to landowners with properties that have been identified as having potentially significant threats
3. The draft proposed source protection plan and explanatory document was posted on the website at [www.ourwatershed.ca](http://www.ourwatershed.ca)
4. A media release was distributed as well as notices in local newspapers throughout the source protection region.
5. Four open houses were held as follows:

Monday, April 16 from 5:30 to 8:30 pm at the Brooklea Golf and Country Club in Midland

Thursday, April 19 from 5:30 to 8:30 pm at the Holiday Inn Express in Newmarket

Saturday, April 21 from 11am to 2pm at Liberty North in Barrie

Tuesday, April 24 from 5:30 pm to 8:30 pm at the Best Western Mariposa Inn in Orillia

Comments submitted during the first formal consultation period must be considered by the source protection committee before going out to the second formal consultation.

Second formal consultation took place from August 27, 2012 until October 5, 2012, and was marked by letters to clerks at all municipalities, other implementing bodies, First Nations, adjacent source protection regions, and anyone who submitted written comments during the first formal consultation period. The proposed source protection plan was also posted on the [www.ourwatershed.ca](http://www.ourwatershed.ca) website, and hard copies were made available for the public to view at



one of three locations during business hours: Lake Simcoe Region Conservation Authority, Nottawasaga Valley Conservation Authority and the Severn Sound Environmental Association.

Comments submitted during the second formal consultation do not affect the content of the proposed source protection plan, and were attached to it when submitted to the Ministry of Environment on October 22, 2012.

#### 7.3.4 Revised Proposed Consultation

##### Pre Consultation

Pre-consultation with implementing bodies on the Revised Proposed Source Protection Plan and Explanatory Document began on March 11, 2014 and ended on April 9, 2014. Notice of the pre-consultation went out to all implementing bodies and municipalities via e-mail on March 11, 2014. The comments received during this pre-consultation period were brought forward to the source protection committee for consideration at their April 16, 2014 meeting.

##### Formal Consultation

Formal consultation took place from April 24 to May 23, 2014. The following activities were undertaken during formal consultation.

A letter was sent to all implementing bodies (municipalities, ministries, associations) to provide them with information about the formal consultation and let them know this was another opportunity for them to submit comments.

Advertisements were posted in local newspapers advising of the formal consultation period and of the opportunities to meet with staff and source protection committee members at two Open Houses to be held on May 6 in the Town of Midland and May 7 in the community of Gormley. This latter Open House was held jointly with our neighbouring source protection region, CTC Source Protection Region.

Advertisements for the Midland Open House were posted in the local Midland newspaper as well as with the local municipalities (Midland and Orillia) who posted the information about the Open House on their websites.

Advertisements for the Gormley Open House were posted in a variety of local newspapers, jointly with CTC Source Protection Region. Newspapers included: Aurora, Markham, Richmond Hill, Stouffville, Thornhill, Vaughan, King City and Uxbridge. York Region also posted the details of the Open Houses on their website at york.ca.

Our website at [www.ourwatershed.ca](http://www.ourwatershed.ca) was updated to include information about the formal consultation along with links to all the documents, how to submit comments and how to access the documents in person. No comments were received from the general public.

Finally, a media release was distributed to local media on April 24, 2014 to support the formal consultation period and Open Houses. The release was picked up by one local Midland newspaper, the Midland Mirror.

## **8 DRINKING WATER VULNERABILITY ANALYSIS AND THREATS CALCULATION**

### **8.1 The Four Vulnerable Areas**

This chapter gives an overview of the methodology and definitions developed by the Province of Ontario's Ministry of the Environment (MOE) to identify drinking water threats. These processes are important components in the multi-barrier approach to protecting drinking water sources from contamination and overuse. Source protection technical work is focused on the identification and assessment of drinking water quality and quantity threats and issues affecting four different types of vulnerable areas.

#### **8.1.1 Wellhead Protection Areas (WHPA)**

Wellhead protection areas are areas on the land around a municipal well, the size of which is determined by how quickly water travels underground to the well, measured in years (see Figure 8).

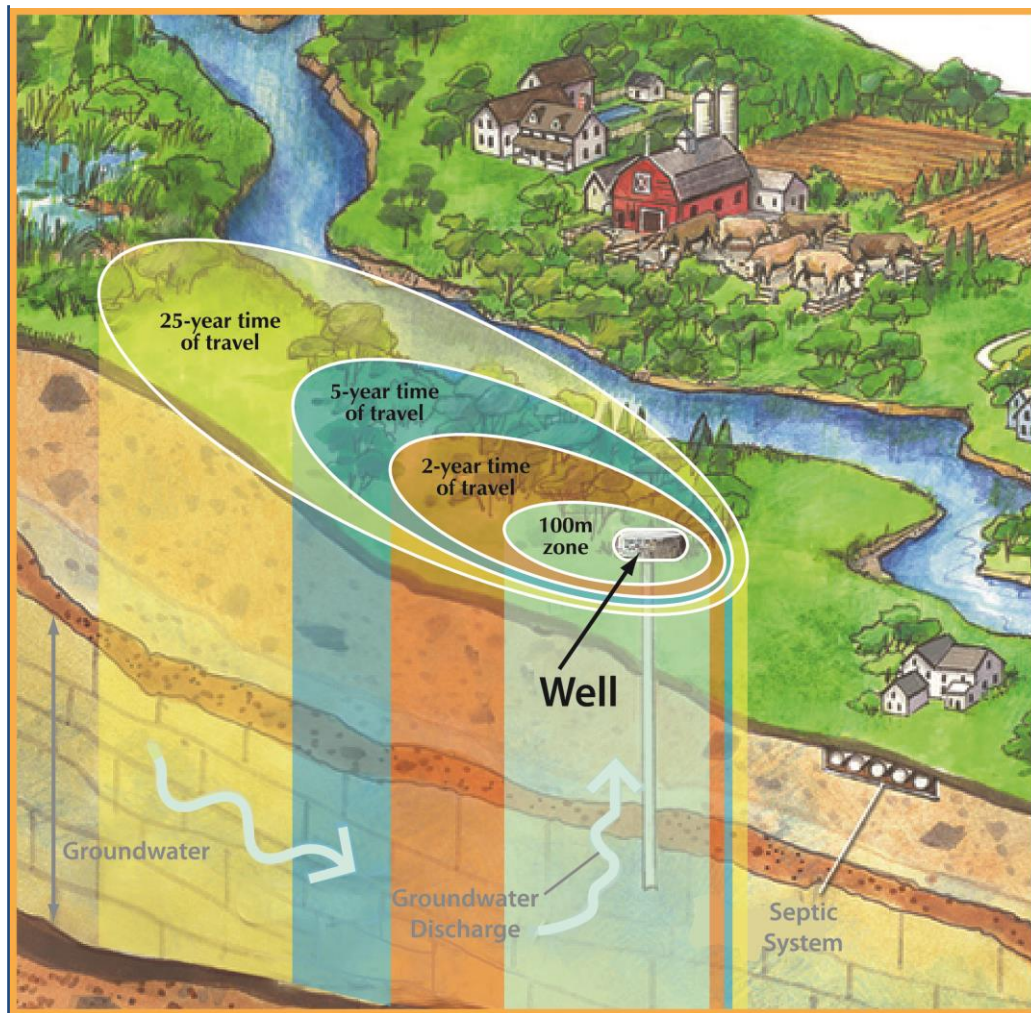
For source protection planning, the Clean Water Act required that a standard 100 metre radius circle be provided around each municipal well; this is called the WHPA – A. The WHPA – B represents the 2-year time of travel. The WHPA – C represents the 5-year time of travel and the WHPA – D represents the 25-year time of travel. In situations where a WHPA was delineated before April 30, 2005, a WHPA-C1 may apply instead of a WHPA-C. A WHPA-C1 represents the 10 year time of travel.

A WHPA-E is the vulnerable area for groundwater well supplies which are under the direct influence of surface water (GUDI). WHPA-E considers the vulnerability of well water supplies with respect to the transport of potential contaminants along surface water pathways that influence the GUDI well. WHPA-E is delineated using same technical rules as an IPZ-2.

The vulnerable areas are not always represented by a perfect circle; this is a function of how water travels underground. It can be influenced by a number of factors such as the slope of land, the depth of the well, the type of sediment (for example, water travels faster through sand than it does through clay). The “circles” around wellhead protection areas were drawn based on scientific research that took all these factors into consideration.

Table 2 provides a list of the number of wells throughout the South Georgian Bay Lake Simcoe source protection region. This research was undertaken in the development of the assessment reports and details about each specific well can be found in those documents.

Figure 8: Wellhead Protection Area (WHPA)



*Table 2: Well Count, by Municipality*

SPA	Upper Tier Municipality	Lower Tier Municipality	Well Count
Lakes Simcoe Couchiching / Black River	Barrie		10
	City of Kawartha Lakes		5
	Orillia		2
	Durham Region	Brock	8
		Uxbridge	3
	Simcoe County	Ramara	5
		Severn	1
		Bradford West Gwillimbury	2
		Innisfil	7
		Oro-Medonte	10
		Ramara	5
	York Region	Aurora	6
		East Gwillimbury	9
		King	5
		Newmarket	6
		Whitchurch Stouffville	3
Nottawasaga Valley	Barrie		4
	Dufferin County	Mono	1
		Mulmur	3
		Shelburne	5
	Peel Region	Caledon	1
	Simcoe County	Adjala-Tosorontio	14
		Clearview	19
		Essa	10
		Innisfil	3
		New Tecumseth	11
		Oro-Medonte	3
		Springwater	22
		Wasaga Beach	7
Severn Sound	Orillia		1
	Simcoe County	Midland	11
		Oro-Medonte	9
		Penetanguishene	7
		Severn	8
		Springwater	5
		Tiny	46
		Total	277



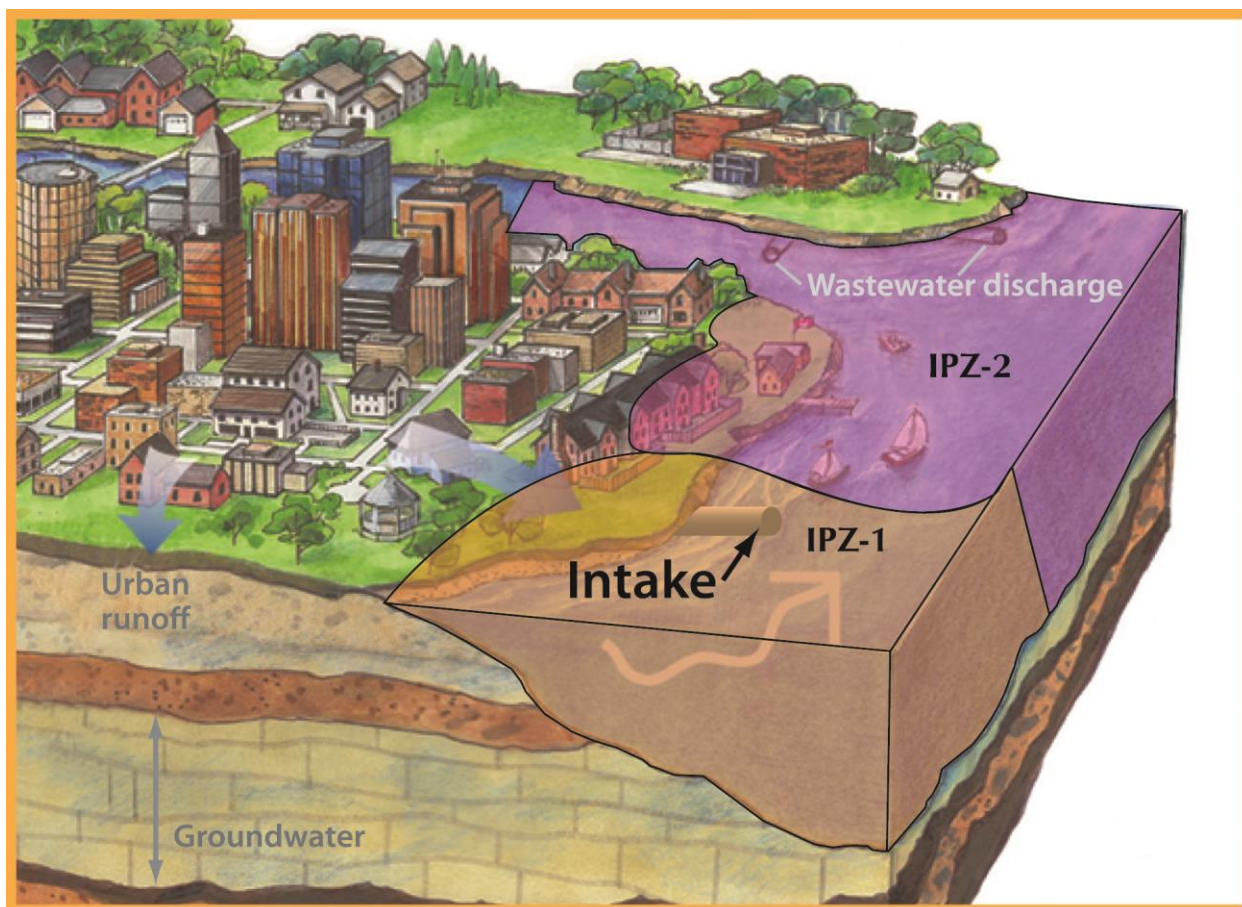
### 8.1.2 Intake Protection Zones (IPZ)

Intake protection zones are the area on the water and land surrounding a municipal surface water intake.

The size of each zone is determined by how quickly water flows to the intake, in hours. Because surface water travels much faster than groundwater, the intake protection zone is drawn primarily for emergency response purposes. The IPZ-1 is a one kilometre circle around the intake. The IPZ-2 is the area where water can reach the intake in a specified time, in the South Georgian Bay Lake Simcoe source protection region, the minimum time of two hours applies to all intakes. There is also an IPZ-3 (not illustrated below) where activities further away from the intake could still have an impact on water quality.

Figure 9 provides an illustration of an intake protection zone and Table 3 provides a list of the 16 surface water intakes in the South Georgian Bay Lake Simcoe source protection region.

*Figure 9: Intake Protection Zone (IPZ)*



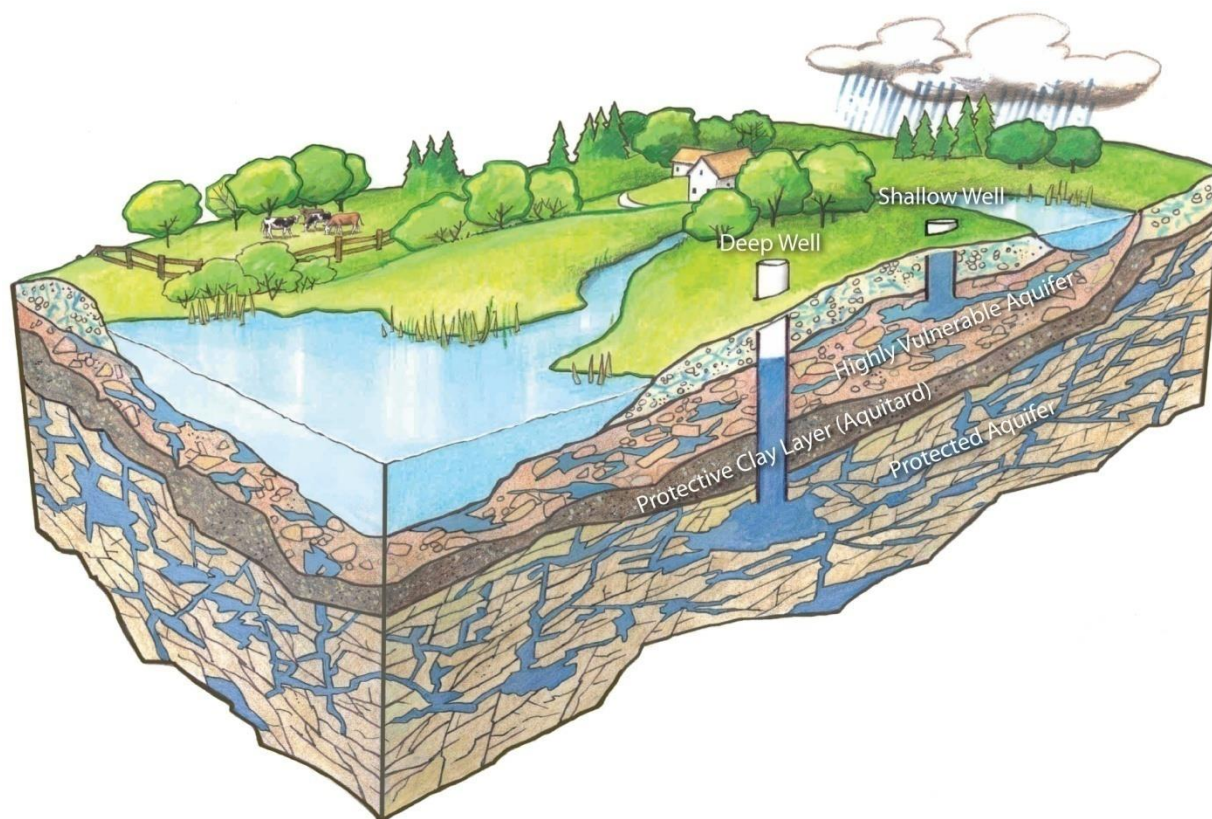
*Table 3: Surface Water Intakes, by Municipality*

SPA	Upper Tier Municipality	Lower Tier Municipality	Intake Count
Lakes Simcoe Couchiching / Black River	Barrie		1
	Orillia		1
	Rama First Nation		1
	Durham Region	Brock	1
	Muskoka District	Georgian Bay	1
	Simcoe County	Innisfil	1
	Simcoe County	Ramara	2
	Simcoe County	Severn	3
	York Region	Georgina	2
Nottawasaga Valley	Simcoe County	Collingwood	1
Severn Sound	Simcoe County	Tay	2
		Total	16

### 8.1.3 Highly Vulnerable Aquifers (HVA)

An aquifer is an area underground that is highly saturated with water – enough water that it can be drawn for human use. A highly vulnerable aquifer is one that is particularly susceptible to contamination because of either its location near the ground's surface or because of the type of materials found in the ground around it (for instance, clay versus sand versus fractured rock). Figure 10 provides an illustration of a highly vulnerable aquifer.

*Figure 10: Highly Vulnerable Aquifer (HVA)*

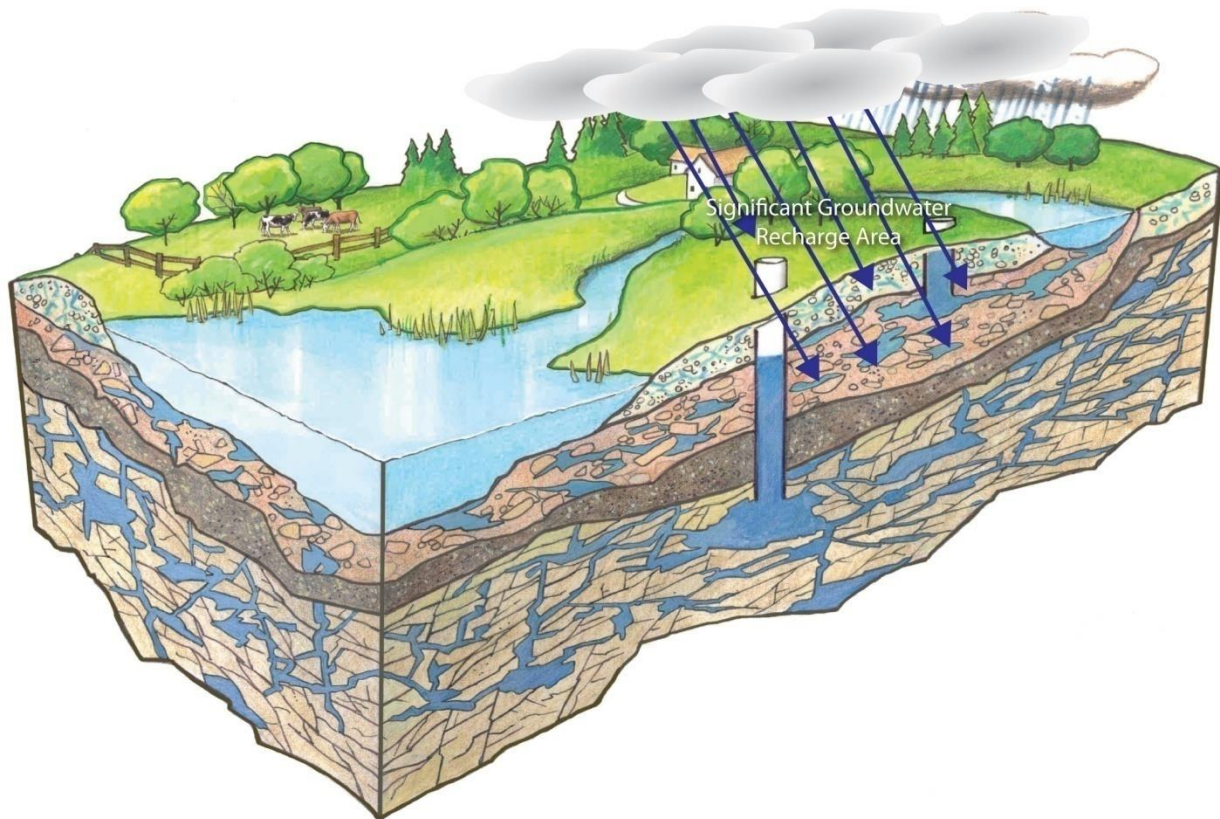




#### 8.1.4 Significant Groundwater Recharge Areas (SGRA)

These are areas on the landscape that are characterized by porous soils, such as sand or gravel, that allows the water to seep easily into the ground and flow to an aquifer. A recharge area is considered significant when it helps maintain the water level in an aquifer that supplies a community with drinking water. Figure 11 provides an illustration of a significant groundwater recharge area.

*Figure 11: Significant Groundwater Recharge Area (SGRA)*



## 8.2 Prescribed Threats

A drinking water threat is defined in the Clean Water Act 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” (Section 2(1)).

The Clean Water Act requires that policies must be written for every area where the 21 prescribed threats could be significant:

1. The establishment, operation or maintenance of a waste disposal site within the meaning of Part V or the Environmental Protection Act.
  - a. Untreated septage
  - b. Waste disposal
  - c. Mine tailings
2. The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.
  - a. Stormwater management
  - b. Wastewater treatment plants/sewer systems
  - c. On-site sewage systems
  - d. Industrial effluent
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.

A significant threat has the potential to cause harm, but does not necessarily mean it is currently harming water sources.

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.

### **8.3 Identifying Potential Significant Threats**

Land use activities have been inventoried in vulnerable areas and potential significant threats have been identified. All of this information can be found in the technical assessment reports.

Just because one of the 21 activities is identified as a significant threat does not mean that it is currently harming the water or that it will in the future. Determining whether or not a threat actually exists is a complex process.

The Ministry of Environment has prescribed 21 drinking water threats as being significant, moderate or low. The source protection plan must, at a minimum, include policies for areas where threats or would be significant.

There are three possible approaches to identifying drinking water threats, described below:

#### **8.3.1 Vulnerability Scoring / Threats-Based Approach**

In this approach, circumstances such as the type and volume of a chemical being used are related to the vulnerability of the well to contamination at the location where the activity is occurring. By combining these two crucial pieces of information (circumstances and vulnerability) it is determined if the activity is considered a low, moderate or significant drinking water threat.

The vulnerability scoring approach relies upon the extensive Tables of Drinking Water Threats, referred to as “threats tables”, created by the Ministry of Environment to identify and rank drinking water threats. A variety of circumstances are outlined in the threats tables for each of the 21 prescribed drinking water threats. The threats tables were created to provide a consistent approach across all source protection regions in Ontario.

The threats tables link the hazard rating of an activity and the vulnerability scores for the specific location to determine if the activity is either a significant, moderate or low drinking water threat.

The risk score is determined through the use of the following equation:

$$R = V \times HR$$

Where:

**R** is Risk Score

**V** is Vulnerability of the source water (Vulnerability Score on a scale of 1 – 10)

**HR** is the Hazard Rating of the threat (scale of 1 – 10)

The chemical hazard ratings are determined by considering circumstances such as toxicity, environmental fate, quantity and method of release. The vulnerability scores are calculated from the wellhead protection area (WHPA-A, B, C or D) and the intrinsic vulnerability which is a measure of how easily a contaminant would travel from the surface to the water supply aquifer. The relationship between risk score and threat classification is summarized in Table 4: Risk Scoring below.

*Table 4: Risk Scoring*

Risk Score Range	Drinking Water Threat Classification
80 – 100	Significant
60 - < 80	Moderate
> 40 - < 60	Low

The threats tables separate circumstances into chemical and pathogen-based contaminants, and are outlined for each of the drinking water quality threats. There are over 1,900 unique combinations of chemical circumstances and approximately 30 pathogen circumstances that may result in an activity being classified as a threat. It should be noted here that the presence of DNAPLs (dense non-aqueous phase liquids) are considered significant threats if they occur anywhere within the five year time of travel of a wellhead protection area (WHPA-A, B, C, C<sub>1</sub>).

The more than 1,900 threat circumstances have been sorted into “summary” threats tables for each type of vulnerable area and possible vulnerability score to show all

possible circumstances that an activity is or would be a low, moderate or significant threat. The summary tables are available on the Ministry of Environment’s website at [www.ene.gov.on.ca/environment](http://www.ene.gov.on.ca/environment) (use the search engine and type in “threats tables”).

In addition to activities being a potential threat, an existing contamination associated with a past activity can also be classified as a threat. Threats associated with existing contamination are

Dense non-aqueous phase liquids, or DNAPLs, (pronounced dee-napple) are chemicals that are more dense than water and generally do not dissolve readily in water, but remain as a distinct liquid in surface or ground waters.

If spilled, they tend to sink into the ground and can contaminate the deepest groundwater resources (and those in between).

These chemicals can be quite toxic to humans and/or the environment, even at low levels, which means that even if only a little gets into the water, it would be harmful to consume.

called “conditions”. Whether a condition is classified as a low, moderate or significant threat is based on the wellhead protection area and if off-site contamination is occurring or the condition is on a property or well related to the drinking water system.

### 8.3.2 Issues Approach

A drinking water “issue” is a documented problem with the quality of the source water. The contaminant must be present at a concentration that may result in the deterioration of the quality of water for use as a source of drinking water or it must be shown that there is a trend of increasing concentrations of the parameter. Every elevated parameter in the raw water is not necessarily considered an issue.

When identifying issues, it is necessary to consult with the operators of the system, and the municipality if they are not the operator, to determine if the raw water quality presents a problem for them. Elevated parameters are not considered to be an issue when they are known to be naturally occurring and do not present a problem for the water treatment plant operator. For issues caused by human activities, the assessment report must include a plan to delineate the area contributing to an issue at the water treatment plant.

Once a drinking water issue is identified, then any activities or conditions that may be causing that issue need to be identified. This is called the issue approach to identifying drinking water threats.

The first step is to identify an “issue contributing area” in the vicinity of the location at which the issue has been observed. The issue contributing area may be different than the vulnerable area (wellhead protection area or intake protection zone).

In the second step, specific drinking water threats that could reasonably be expected to contribute to the issue are identified. All such threats are automatically classified as significant. For each issue identified in the assessment reports, there is a plan through which issue contributing areas and related drinking water threats will be further identified in future editions.

A “condition” is defined as a past land use activity which may pose a problem to water quality.

An “issue” is defined as a documented water quality problem.

### 8.3.3 Event-Based Approach

The event-based approach was designed to address threats to drinking water in systems drawing water from larger surface water bodies where the vulnerability scores are generally low.

In the South Georgian Bay Lake Simcoe source protection region, this approach was only used for modeling IPZ-3 zones for drinking water systems in Georgian Bay and Severn Sound.

## 8.4 Transport Pathways

The vulnerability of an aquifer may be increased by any land use activity or feature that disturbs the surface above the aquifer, or which artificially enhances flow to that aquifer. Constructed or man-made preferential pathways (transport pathways) to aquifers such as large and small diameter wells and excavations can have a significant impact locally on the vulnerability of an aquifer. The Ministry of Environment's Technical Rules 39-40 state that a transport pathway can increase intrinsic vulnerability from a low to a medium or high vulnerability and from a medium to high vulnerability. When determining whether the vulnerability of an area has increased, the following factors shall be considered, as per Technical Rule 41.

- Hydrogeological conditions:
- The type and design of any transport pathways
- The cumulative impact of any transport pathways
- The extent of any assumptions used in the assessment of the vulnerability of the groundwater.

Examples of features that may provide a transport pathway that could result in an increase in vulnerability of a water supply source include:

- Existing wells or boreholes
- Unused or abandoned wells
- Pits and quarries
- Mines

In the South Georgian Bay Lake Simcoe source protection region, domestic wells that intersect with the municipal supply wells were the most commonly identified transport pathway.

Criteria used to determine if a domestic well should be considered a transport pathway included:

- Whether the well intersects with the municipal supply aquifer
- Density of wells (the more wells there are within an area that intersects the municipal aquifer, the greater the risk to drinking water)
- Age of well (as a proxy for integrity of the annular seal)

In the South Georgian Bay Lake Simcoe source protection region, domestic wells that intersect with the municipal supply aquifers were the most commonly identified transport pathway.



- Height of the well casing above ground surface

For municipal surface water supplies, natural or anthropogenic transport pathways may contribute to the Intake Protection Zone 2 (IPZ-2) where discharges on abutting lands are included in the two-hour time of travel to the water intake, or IPZ-3 where contaminants released during an extreme event could be transported to the intake.

## **9 POLICY DEVELOPMENT**

Before the source protection committee could begin the task of researching and creating policies to protect drinking water sources, a full understanding of the vulnerable areas on the landscape and what threats existed in those vulnerable areas needed to take place.

With the vulnerable areas identified and the threats enumerated in the assessment reports, the next step for the source protection committee was to develop policies. In order to do this, a policy and planning working group (PPWG) was established to begin the detailed research needed to inform the work on policy development. The group was comprised of a number of source protection committee members as well as a number of municipal planning staff, as well as conservation authority and source protection authority planning and technical support staff from throughout the source protection region. The group began meeting in 2009 and continued meeting monthly until 2012. Meetings were dedicated to better understanding the nature of the 21 threats and how the threat can be reduced. This was accomplished through a number of methods. First, environmental scans provided background information about what other regions, both in Canada and internationally, were doing to protect their water. Research was conducted on each of the 21 threats and background materials were made available to members of the working group. Expert guest speakers were invited to meetings to provide additional information and guidance and to act as resources for follow-up questions. This research allowed the working group to better understand the nature of the threats, where they existed on the landscape, what measures were already in place to protect water, and what gaps potentially existed that needed to be filled.

The environmental scan, background research and meetings with guest speakers took place in 2009 and 2010; policy consideration began in late 2010 and into 2012.

## 10 RANGE OF POLICY TOOLS AVAILABLE

The source protection committee had a variety of policy tools available to use when drafting policies. Figure 12 below illustrates the degree of restriction between each of the options. The Clean Water Act introduces brand new powers to municipalities with the authority to pass by-laws for water protection, treatment and storage. These are known as “Part IV Powers” and are the most restrictive. “Softer” tools such as Education and Outreach programs are less

*Figure 12: Policy Tools Available to SPCs*



restrictive. The authority to enforce Part IV may be delegated or assigned or a partnership may be entered into with another body such as a neighbouring municipality or a conservation authority by agreement.

If it is found that existing legislation already exists, the source protection plan will recognize that existing legislation, rather than duplicate efforts.

### 10.1 S. 57 Prohibition (Pro)

The source protection committee may choose to prohibit activities that pose significant threats. Prohibition is meant to be a “tool of last resort” for existing threat activities, meaning that the committee may only do so if they are convinced no other method will reduce the risk, or the risk that the activity poses is so unacceptable that it may not be permitted to continue.

### 10.2 S. 58 Risk Management Plans (RMP)

Risk management plans are intended to be negotiated between a risk management official (RMO) and a landowner, but can also be imposed by the RMO. The RMO must be satisfied that a risk management plan will ensure the threat to drinking water ceases to be significant.

### **10.3 S.59 Restricted Land Uses (RLU)**

Restricted land use policies do not eliminate a land use, but ensure that activities in the designated area are assessed for their potential risk. This can be seen as a screening tool for municipalities when reviewing applications, to prevent the unintentional approval of applications that would lead to the creation of significant drinking water threats. This tool is used in conjunction with risk management plans or prohibition.

### **10.4 Prescribed Instruments (PI)**

A prescribed instrument is a permit or other legal document issued by the provincial government allowing an activity to take place. Examples would be a nutrient management plan under the Nutrient Management Act or an Environmental Compliance Approval for sewage works under the Ontario Water Resources Act. These instruments usually contain provisions to protect human health and the environment. Source protection policies can require that an instrument be examined and amended, if necessary, to better manage a drinking water threat. Policies can also prohibit new instruments from being issued to prevent the creation of new threats.

### **10.5 Land Use Planning (LUP)**

These are policies that affect land use planning decisions. These could fall under the Planning Act and Condominium Act. These policies may be to manage or eliminate (through prohibiting it from being established) a threat activity through a land use policy that is implemented through land use planning decisions (such as Official Plans, Zoning By-laws and Site Plan Controls).

### **10.6 Incentives (INCENT)**

Incentives are intended to promote or encourage specific actions or behaviours. They can include financial incentives or cost share programs but could also include community recognition programs or awards.

### **10.7 Education and Outreach (EDU)**

Considered a non-regulatory or “soft” tool, the source protection committee usually uses these policies in conjunction with other types of policies. If the source protection committee decides to use a soft tool to address a significant drinking water threat as a stand-alone tool, it must explain why the policy is sufficient to ensure that the threat will cease to be significant.

### **10.8 Other (Oth)**

These policies specify an action to be taken to achieve the plan's objectives. These policies may be mandatory depending on the body responsible for implementation. "Other" approaches include policies that:

- specify certain actions be taken by a particular person or body to implement the source protection plan or achieve the plan's objectives
- establish stewardship programs
- specify and promote best management practices
- establish pilot programs
- govern research

### **10.9 Specify Action (Other: SA)**

Specify Action policies are a non-legally binding commitment. They assign a discretionary obligation on the implementing body to achieve the objectives of the plan. Any policy set out in the plan that is not one of the following policies is a Specify Action policy:

- a significant threat policy
- a designated Great Lakes policy
- a policy to which section 45 of the Clean Water Act applies (Monitoring)
- a policy to which clause 39 (1) (b) of the Clean Water Act applies (Land Use Planning – Have Regard For)
- a policy to which clause 39 (7) (b) of the Clean Water Act applies (Prescribed Instruments – Have Regard For)

### **10.10 Monitoring Policies (MON)**

Generally speaking, monitoring policies are provided to track the implementation of the threat policy to gauge, over time, the effectiveness of the policy. Documentation and reporting back by the implementing body on the actions taken is necessary to assure the source protection committee or source protection authority, as appropriate, that the policy has been implemented and is effective at reducing the risk to drinking water sources.

This annual reporting can inform the next update to the source protection plan and whether the policies are addressing the risk. Based on the information in the annual reports, the source protection committee can decide whether amendments to the policies are required.

## **11 LEGAL EFFECT**

This source protection plan and the policies contained within will have legal effect in the province according to Section 31 of the Clean Water Act. The requirements of the implementing bodies named in each policy vary according to the degree of threat the policy is addressing. The policy tool also has an impact on the requirements on implementing bodies. It should be noted that provincial appeal bodies, such as the Ontario Municipal Board, are also bound by the legal effect of the various policies in the plan.

There are three “levels” or “categories” of legal effect:

1. **Must Conform To / Comply With (MC):** Must follow direction of policy
  - The Clean Water Act requires municipalities, local boards or source protection authorities to comply with any obligations imposed on it to address a significant drinking water threat/condition, regardless of the particular tool or approach used in the policy.
  - The Act requires decisions under the Planning Act and Condominium Act, 1998 to conform with significant threat/condition policies.
  - The Act required decisions related to prescribed instruments to conform with significant threat/condition policies.
  - Persons carrying out significant threat activities must conform with policies that use Part IV powers under the Clean Water Act.
  - The source protection plan must designate a public body<sup>1</sup> to carry out monitoring required by the Clean Water Act and these public bodies must conform with the obligations set out in the monitoring policies.

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<sup>1</sup> Public body is defined in section 2 of the CWA and means “a municipality, local board or conservation authority, a ministry, board, commission, agency or official of the Government of Ontario, or a body prescribed by the regulations”. Based on this definition, a commission like the Niagara Escarpment Commission is a public body, whereas any federal government ministry and the TSSA are not.

2. **Have Regard For (HR):** Must consider policy when making decision

- The Act requires decisions under the Planning Act and Condominium Act, 1998 to have regard to moderate and low threat/condition policies.
- The Act required decisions related to prescribed instruments to have regard to moderate and low threat/condition policies

3. **Not Legally Binding (NLB):** Good to follow but not required

The source protection plan includes other types of policies that, while the committee may determine are important to achieving the plan's objectives, are not given legal effect by the Act. These include:

- Significant, moderate and low threat/condition policies to be implemented by bodies other than municipalities, local boards or source protection authorities and which do not rely on Part IV, prescribed instrument or Planning Act tools.
- Other permitted policies governing:
  - Incentive programs and education & outreach programs, including for systems not in terms of reference
  - The update of spills prevention, contingency or response plans along highways, railways or shipping lanes
  - Climate conditions data collection
  - Transport pathways in WHPA or IPZ.
- Optional monitoring policies (i.e. moderate/low threats in areas where the threat could never become significant and monitoring of other permissible plan policies) to be implemented by bodies other than municipality, local boards or source protection authorities.

## **12 HOW THE POLICIES ARE ORGANIZED AND NUMBERED**

Chapter 16 contains the bulk of the policies that have been drafted for the South Georgian Bay Lake Simcoe source protection region. In this chapter, the policies are organized by threat type. Each threat type begins with a brief description of the threat, provides a summary describing what circumstances make the threat significant, and then is followed by a table or tables listing the threat policies applicable to that threat.

The chapter that follows (Chapter 17) includes more policies, and is organized by policy type. This was done in response to feedback received during pre-consultation about excess policy repetition. Policies in this section are: Restricted Land Uses, Land Use Planning, Education and Outreach, Incentives and Stewardship, and Monitoring. Table 5 below provides an outline of how the policies have been numbered.

*Table 5: Policy Numbering Protocol*

<b>Policy Threat or Type</b>	<b>Acronym</b>
Threat 1 (a) – Hauled Sewage	WAST(a)-1
Threat 1 (b) – Waste Disposal	WAST(b)-1
Threat 1 (c) – Mine Tailings	WAST(c)-1
Threat 2 (a) – Stormwater	SEWG(a)-1
Threat 2 (b) – Waste Water Treatment Plant/sewer	SEWG(b)-1
Threat 2 (c) – Onsite sewage System	SEWG(c)-1
Threat 2 (d) – Industrial Effluent Discharge	SEWG(d)-1
Threat 3 – ASM Application	ASM(App)-1
Threat 4 – ASM Handling & Storage	ASM(Store)-1
Threat 5 – Aquaculture	ASM(Aqua)-1
Threat 6 – NASM Application	NASM(App)-1
Threat 7 – NASM Handling & Storage	NASM(H&S)-1
Threat 8 – Fertilizer Application	FERT(App)-1
Threat 9 – Fertilizer Handling and Storage	FERT(H&S)-1
Threat 10 – Pesticide Application	PEST(H&S)-1
Threat 11 – Pesticide Handling and Storage	PEST(App)-1
Threat 12 – Road Salt Application	SALT(App)-1
Threat 13 – Road Salt Handling and Storage	SALT(H&S)-1
Threat 14 – Snow Storage	SNOW-1
Threat 15 – Fuel Handling & Storage	FUEL-1
Threat 16 – DNAPL	DNAPL-1
Threat 17 – Organic Solvents Handling & Storage	SOLV-1
Threat 18 – Aircraft De-icing	DeICE-1
Threat 19 – Water Taking	DEMD-1
Threat 20 – Reducing Recharge	RCHG-1
Threat 21 – Livestock	LSTOCK-1
Issues Contribution Area Policies	THREAT-Acronym-ICA-1 ie/ SALT-ICA-1
Restricted Land Use	RLU-1
Land Use Planning	LUP-1
Education and Outreach	EDU-1
Incentives and Stewardship	INCENT-1
Monitoring	MON-1
Conditions	COND-1
Transport Pathway	TP-1



## **13 DEFINITIONS**

### **Contemporary Standard**

Means a current standard that incorporates the most recent technological advancements and sound science.

### **Development (as defined by the Provincial Policy Statement):**

Means the creation of a new lot, a change in land use, or the construction of buildings or structures, requiring approval under the Planning Act, but does not include:

- activities that create or maintain infrastructure authorized under an environmental assessment process;
- works subject to the Drainage Act; or
- underground or surface mining or minerals or advanced exploration on mining lands in the significant areas of mineral potential in Ecoregion 5E, where advance exploration has the same meaning as under the Mining Act.

### **Environmental Compliance Approval**

Is a new approval that has replaced the Certificate of Approval (C of A) and the section 53 Ontario Resources Act (OWRA) approvals. This change came into effect October 31, 2011.

### **Existing Threat, Activity & Uses**

An existing threat, activity and/or use are defined as:

(a) a use, a building or structure that is used and continues to be used for the purpose for which it was erected.

(b) a minor alteration or replacement building or structure that has the same capacity as an existing lawful building or structure and provides greater protection to sources of drinking water and where there is no change in use and where the replacement structure will bring the building or structure into closer conformity with the Source Protection Plan.

(c) an activity that is presently occurring or has occurred within the last ten years from the date of approval of the source protection plan .

(d) where an existing activity is permitted an expansion, alteration or replacement of a use, activity, building or structure that reduces the risk of contaminating drinking water shall be permitted.

### **Future Threat, Activity & Uses**

A future threat, activity and/or use are defined as:

(a) a new building or structure at a location in a vulnerable area that commences after the Source Protection Plan takes effect.

(b) new structures or buildings for a new land use that did not exist on the day before the Source Protection Plan comes into effect.

(c) an activity that has not occurred within the last ten years from the date of the approval of the Source Protection Plan.

(d) new agricultural activities on lands that had not been previously used or zoned for any agricultural purposes in the past ten years within vulnerable areas.

(e) an expansion, alteration or replacement of a use, activity, building or structure that does not reduce the risk of contaminating drinking water is considered a future activity and subject to the future policy.

For clarity, a future threat, activity or use does not include a change in land ownership, the rotation of agricultural lands among crop or fallow conditions provided the lands are zoned for agricultural uses and remain zoned for agricultural uses.

### **Hydrogeological Study**

A study that characterizes the hydrogeology of the site which demonstrates, through an evaluation of anticipated changes in the water balance between pre-development and post-development, how such changes shall be mitigated.

### **Incidental Volumes for Personal/Domestic Use**

Means standard size containers that are used for personal or domestic activities. This will exclude larger volumes used in activities, such as hobbies, businesses/home businesses.

### **Issues Contributing Area (ICA)**

The area of land where drinking water threats may contribute to a known drinking water issue. For example, if Trichloroethylene (TCE) is determined to be an issue, the area from which the source of TCE is determined is called the issues contributing area.

### **Non-Agricultural Source Material (NASM)**

Are materials from non-agricultural sources that can be applied to agricultural lands. The Nutrient Management Act stipulates land application standards based on the quality and category of NASM being applied. The act identifies three categories of NASMs:

Category 1: unprocessed plant material (e.g. vegetable culls).

Category 2: processed plant material (e.g. organic waste materials from a bakery)

Category 3: pulp and paper biosolids and animal-based materials (e.g. organic residual material from meat processing plant) and municipal sewage biosolids.

### **Risk Management Plan (RMP)**

A site-specific document, approved by a risk management official or person with qualifications as defined in Part IV of the Clean Water Act, that outline actions required to address identified significant drinking water threats, and should include and account for risk management measures that are already in place. A RMP can be thought of as a means of applying regulatory controls to an activity or activities; it is a plan that regulates how significant drinking water threats are managed – one which offers the opportunity for local agreement and negotiation.

### **Site Alteration**

Activities such as filling, grading and excavation that would change the landform and natural vegetative characteristics of land but does not include,

- a) the construction of facilities for transportation, infrastructure, utilities and uses by a public body as defined in Section 2 of the Clean Water Act, or
- b) activities for works under the Drainage Act; or
- c) the carrying out of agricultural practices on land that has been used for agricultural purposes on the date the source protection plan came into effect.

#### **WHPA-Q1**

An area delineated through a Tier 3 Water Budget and Water Quantity Risk Assessment as being the combined area that is the cone of influence of the well and the whole of the cones of influence of all other wells that intersect that area.

#### **WHPA-Q2**

An area delineated through a Tier 3 Water Budget and Water Quantity Risk Assessment as being the area that includes the WHPA-Q1 and any area where a future reduction in recharge would significantly impact that area.

## 14 TRANSITION PROVISIONS

Transition provisions have been developed to recognize those situations where an applicant has either obtained an approval-in-principle to proceed with a development application or where a complete application has already been made to a planning approval authority that are 'in process' on the date the Source Protection Plan comes into effect. They are not designed to allow proponents to ignore or circumvent the provision contained in this Plan.

Policy Number	Legal Effect	Policy Text
TRANS-1	MC	<p>Where a policy in this plan prohibits a "future" threat activity, the policy for managing "existing" drinking water threats activities applies in the following cases even though those activities will commence after the Source Protection Plan comes into effect:</p> <p>1) A drinking water threat activity that is related to a development proposal where a complete application was made under the Planning Act or Condominium Act prior to the day 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.</p> <p>2) A drinking water threat activity that is related to an application for a Building Permit, which has been submitted in compliance with Division C 1.3.1.3 (5) of the Ontario Building Code Act or a development permit under the Niagara Escarpment Development Control Area prior to the day the Source Protection Plan comes into effect.</p> <p>3) A drinking water threat activity that is related to an application made for the issuance or amendment of a prescribed instrument prior to the day the source protection plan comes into effect.</p>

## 15 TIMING FOR CONFORMITY TO POLICIES

Below are the timelines for implementation of the policies that have been approved by the source protection committee.

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text
TIME-1	RMP	MC	RMO	E	For existing activities designated for the purpose of Section 58 of the Clean Water Act, a risk management plan must be established no later than 5 years from the date the source protection plan takes effect. For existing activities added through amendments to the Assessment Report, a risk management plan must be established no later than 5 years from the date the amended source protection plan takes effect.
TIME-2	RMP	MC	RMO	F	On the date the source protection plan takes effect, or when Source Protection Plan amendments take effect, all future activities designated for the purpose of Section 58 of the Clean Water Act require a risk management plan to be established prior to engaging in the designated activity in the area where the threat could be significant.
TIME-3	Pro	MC	RMO	E	For the purpose of Section 57 of the Clean Water Act, Section 57 does not apply to a person engaged in the designated activity in the area where the threat could be significant until 365 days after the day the source protection plan takes effect. For areas which are added through amendments to the Assessment Report, Section 57 does not apply to a person engaged in that activity until 365 days after the day the amended source protection plan takes effect.

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text
TIME-4	Pro	MC	RMO	F	On the date the source protection plan takes effect, or when Source Protection Plan amendments take effect, all future activities designated for the purpose of Section 57 of the Clean Water Act are prohibited in the area where the threat could be significant.
TIME-5	PI	MC	MOE, OMAFRA	E	All existing prescribed instruments shall be amended to conform with the applicable significant threat policy within 5 years after the source protection plan takes effect, or on a schedule determined by the Director based on a prioritized review of the instruments that govern significant drinking water threat activities. For existing activities added through amendments to the Assessment Report, prescribed instruments shall be amended within 5 years of the date the amended source protection plan takes effect, or on a schedule determined by the Director based on a prioritized review of the instruments that govern significant drinking water threat activities.
TIME-6	PI	MC	MOE, OMAFRA	F	All future prescribed instruments shall comply with the applicable significant drinking water threat policies on the day the source protection plan takes effect, or when Source Protection Plan amendments take effect.
TIME-7	LUP	MC	MUN	F	Official Plans and Zoning By-Laws shall be updated to conform with the applicable significant drinking water threat policies in accordance with Section 26 of the Planning Act.



Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text
TIME-8	EO	MC	SPA, MOE	E	The education and outreach program is to be developed and initiated within 3 years from the date the source protection plan takes effect.

## **16 THE POLICIES**

Please be advised that, pursuant to Section 14 of Ontario Regulation 287/07 under the Clean Water Act, the Town of Innisfil has passed a resolution to discontinue the use of the Goldcrest well system, which is currently included in this source protection plan.

Once the resolution is passed, the municipality has five years to discontinue the use of wells or system in order to have it exempted from the requirements of the Clean Water Act and the policies of this source protection plan.

When the municipality sends a notice to the source protection committee and source protection authority that the well, intake or system has been taken out of service (and it must be taken out of service within five years of passing the resolution to qualify for the exemption), the source protection authority may then amend the source protection plan, pursuant to Section 34 of the Act, to remove the well, intake or system.

Section 51 of the regulation provides the source protection authority the ability to make minor amendments to the plan, such as correcting errors, without having to go through formal consultation and seek Minister's approval.

## 16.1 Threat #1: The establishment, operation or maintenance of a waste disposal site within the meaning of Part V of the Environmental Protection Act

### 16.1.1 Threat #1(a): Application of untreated septage

Untreated septage, known informally as sewage, consists of the raw, untreated liquids and solids that are pumped out of septic and holding tanks. These tanks can be found on residential, commercial and industrial properties. Untreated septage, which has not been treated to reduce pathogens, is considered waste. Significant threats are associated with circumstances related to application of the untreated septage to land within vulnerable areas. The primary circumstance that determines whether an activity is a significant drinking water threat is the area of land (hectares) that the untreated septage is applied to. The combination of vulnerable area, vulnerability score and circumstance that typically result in a significant drinking water threat are provided in the table below.

Circumstances and Vulnerability Score Needed for a Significant Threat			
Threat Type	Circumstance Summary	Vulnerability Score	
		WHPA	IPZ & WHPA-E
Chemical	1 - 10 ha		10
	> 10 ha	10	9 - 10
Pathogen	Any quantity being applied	10 (* WHPA - A & B only)	8 - 10

(Note: This table is provided as a guide only and may not capture all circumstances leading to a significant threat. All circumstances leading to a significant threat are provided in the Tables of Drinking Water Threats, found at the Ontario Ministry of Environment website.)

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
WAST(a)-1	PI	MC	MOE	E/F	The existing and future application of untreated septage to land is prohibited where the activity is or would be a significant drinking water threat.	MON-2
WAST(a)-2	PI	HR	MOE	F	Where the future application of untreated septage to land would be a moderate or low drinking water threat, the MOE shall ensure that the Environmental Compliance Approval that governs the application of untreated septage to land is managed in accordance with applicable legislation and policy.	MON-2
WAST(a)-3	Oth: Re	NLB	MOE	F	The MOE should undertake research around untreated septage treatment options and the opportunity to create environmentally friendly usable by-products (e.g. compost) to negate the need of spreading untreated septage within vulnerable areas where the activity is or would be a significant, moderate or low drinking water threat.	MON-2
<p>The following policies also apply: LUP-1. Note: all of the above referenced policies also apply to the Georgian Sands and Lafontaine issues contributing areas for nitrate.</p>						

### 16.1.2 Threat #1(b): Waste disposal sites

The Environmental Protection Act (EPA) provides a definition for a “waste disposal site”. In general terms, a waste disposal site is any land, building, or structure in connection with the depositing, disposal, handling, storage, transfer, treatment or processing of waste (which includes ashes, garbage, refuse, domestic waste, industrial waste, municipal refuse, etc.). Operational activities associated with these sites are also included in the definition. Generally, waste disposal site Environmental Compliance Approvals are issued under the EPA, and are required prior to the establishment, extending, or ongoing operation of a waste disposal site. The primary circumstances that determine whether an activity is a significant drinking water threat are the types of materials being disposed (e.g. petroleum, municipal), the storage location (e.g. above or below grade) and the area of land of the disposal site (hectares). The combination of vulnerable area, vulnerability score and circumstances that typically result in a significant drinking water threat are provided in the table below.

Circumstances and Vulnerability Score Needed for a Significant Threat						
Land Disposal of	WHPA			IPZ / WHPA-E		
	< 1 ha	1 - 10 ha	> 10 ha	< 1 ha	1 - 10ha	> 10 ha
	Vulnerability Score					
Petroleum Refining Waste			10		10	9-10
Hazardous, Liquid and Industrial Waste	10	10	10		10	9-10
Municipal Waste	10	10	8-10		10	9-10
Industrial and Commercial Waste	10	10	8-10		10	9-10
Storage Location	WHPA			IPZ / WHPA-E		
	At or above grade	Partially Below Grade	Below Grade	At or above grade	Partially Below Grade	Below Grade
	Vulnerability Score					
PCB Waste	10	10	10	10		
Hazardous Waste or Liquid Industrial	10	10	10	9-10	9-10	
Combined Rate of	WHPA					

Discharge of all Wells at the Site (m <sup>3</sup> )	380 - 38,000	38,000 - 380,000	380,000 - 3,800,000	3,800,000 - 38,000,000	> 38,000 000	
	Vulnerability Score					
Liquid Industrial Waste	10	10	10	10	8-10	

(Note: This table is provided as a guide only and may not capture all circumstances leading to a significant threat. All circumstances leading to a significant threat are provided in the Tables of Drinking Water Threats, found at the Ontario Ministry of Environment website.)

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
WAST(b)-1	RMP	MC	RMO	E	Where the Environmental Protection Act does not require an approval, the existing establishment, operation or maintenance of a waste disposal site within the meaning of Part V of the Environmental Protection Act (PCB Waste Storage and the storage of hazardous liquid industrial waste, excluding the storage of wastes described in clauses p,q,r,s,t,u of the definition of hazardous waste (O.Reg 347)) is designated for the purposes of Section 58 of the Clean Water Act, and therefore requires a risk management plan where the activity is a significant drinking water threat. The risk management plan, at a minimum, will be based on contemporary standards, and include appropriate terms and conditions to ensure the activity ceases to be a significant drinking water threat.	MON-6
WAST(b)-2	PRO	MC	RMO	F	Where the Environmental Protection Act does not require an approval, the future establishment, operation or maintenance of a waste disposal site within the meaning of Part V of the Environmental Protection Act (PCB waste management system and the storage of hazardous liquid industrial waste, excluding the storage of wastes described in clauses p,q,r,s,t , u of the definition of hazardous waste (O.Reg 347)) is designated for the purpose of Section 57 of the Clean Water Act, and is therefore prohibited where the activity would be a significant drinking water threat.	MON-6



Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
WAST(b)-3	PI	MC	MOE	E	Where the existing establishment, operation or maintenance of a waste disposal site within the meaning of Part V of the Environmental Protection Act is a significant drinking water threat, the MOE shall ensure the Environmental Compliance Approval that governs the establishment, operation or maintenance of a waste disposal site includes appropriate terms and conditions to ensure the activity ceases to be a significant drinking water threat.	MON-2
WAST(b)-4	PI	MC	MOE	F	The future establishment, operation or maintenance of a waste disposal site within the meaning of Part V of the Environmental Protection Act is prohibited where the activity would be a significant drinking water threat.	MON-1
WAST(b)-5	Oth	MC	MUN	E/F	Municipalities responsible for waste management are required to consider ways in which additional opportunities for household hazardous waste disposal can be provided to those handling and storing pesticides, organic solvents, and DNAPLs to ensure they are properly removed from vulnerable areas where the activity is or would be a significant drinking water threat.	MON-1
The following policies also apply: LUP-1, EDU-7, EDU-12, INCENT-1, INCENT-2.						

### 16.1.3 Threat #1(c): Mine tailings

Mining operations relate to the removal of all metallic minerals and twenty (20) non-metallic minerals from the ground in accordance with the Mining Act. Examples of metallic minerals include gold, silver and copper. Non-metallic minerals include graphite, mica, wollastonite and phosphate rock. Mining operations do not include aggregate operations that require approval under the Aggregate Resources Act. Examples of aggregate include sand, gravel, limestone and granite.

Tailings are the waste materials left over after processing to extract the mineral of interest. They are typically made up of waste ground rock, spent processing water and reagents. Some tailings are reactive and produce acid after they are deposited. Tailings are transported to the impoundment area as a slurry (water/waste mixture) and excess water is decanted to the environment. Reactive tailings can solubilise metals of concern to drinking water. The most common types of storage facilities are pits and surface impoundment structures.

The circumstances determining whether an activity is a significant drinking water threat relate specifically to the storage of tailings from mining operations and whether the tailings are stored in a pit or surface impoundment structure. The combination of vulnerable area, vulnerability score and circumstances that typically result in a significant threat are provided in the table below.

Vulnerability Score Needed to be a Significant Threat		
Storage Location of Tailings	WHPA	IPZ / WHPA- E
	Vulnerability Score	
Pit	10	
Impoundment Structure at Surface	10	9 - 10

*(Note: This table is provided as a guide only and may not capture all circumstances leading to a significant threat. All circumstances leading to a significant threat are provided in the Tables of Drinking Water Threats, found at the Ontario Ministry of Environment website.)*

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
WAST(c)-1	PI	MC	MOE	E	Where the existing disposal of mine tailings is a significant drinking water threat, the MOE shall ensure that the Environmental Compliance Approval that governs the disposal of mine tailings includes appropriate terms and conditions to ensure that the activity ceases to be a significant drinking water threat.	MON-2
WAST(c)-2	PI	MC	MOE	F	The future disposal of mine tailings is prohibited where the activity would be a significant drinking water threat.	MON-2
No additional policies apply.						

## 16.2 Threat #2: The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage

### 16.2.1 Threat #2(a): Stormwater management

The definitions pertaining to stormwater are found in the Ontario Water Resources Act and Ontario Regulation 525/98. Stormwater refers to rainwater run-off, water run-off from roofs, snowmelt and surface run-off. Some additional examples would include lawn watering and car washing since this water also makes its way into water bodies through the storm sewer system. Under the Clean Water Act, the threat to drinking water is limited to stormwater management facilities. A stormwater management facility is defined as a facility for the treatment, retention, infiltration or control of stormwater<sup>2</sup>.

The circumstances determining whether an activity is a significant drinking water threat relate specifically to the drainage area (hectares) associated with the stormwater management facility discharge (discharge is defined as including addition, deposition, emission or leakage). The combination of vulnerable area, vulnerability score and circumstances that typically result in a significant threat are provided in the table below.

Circumstances and Vulnerability Score Needed for a Significant Threat						
Drainage Area	WHPA			IPZ / WHPA-E		
	1 - 10 ha	10 - 100 ha	> 100 ha	1 - 10 ha	10 - 100 ha	> 100 ha
	Vulnerability Score					
Discharge from Stormwater Management Facility		10	10	10	9 - 10	8 - 10

(Note: This table is provided as a *guide only* and may not capture all circumstances leading to a significant threat. All circumstances leading to a significant threat are provided in the Tables of Drinking Water Threats, found at the Ontario Ministry of Environment website.)

<sup>2</sup> For additional clarification, a stormwater management facility does not include storm sewers, as defined under Ontario Regulation 525/98

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
SEWG(a)-1	PI	MC	MOE	E/F	<p>Where the existing and future establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of stormwater is or would be a significant drinking water threat, the MOE shall ensure that the Environmental Compliance Approval that governs the establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of stormwater include appropriate terms and conditions to ensure that the activity ceases to be or does not become a significant drinking water threat<sup>3</sup>. Such conditions may include:</p> <p>1) permitting the expansion of an existing facility where the expansion does not pose a significant drinking water threat.</p> <p>2) permitting retrofits to existing facilities where the retrofit will discharge the stormwater outside of the significant drinking water threat area.</p>	MON-2

<sup>3</sup> Note that within the greater City of Barrie (salt) issues contributing area SEWG(a)-1 applies only to facilities for the treatment, retention, infiltration or control of stormwater, not facilities that transmit stormwater.

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
SEWG(a)-2	Oth (Re)	NLB	MOE	E	The MOE is encouraged to consider conducting research to identify risks from infiltration ponds to aquifers used as a drinking water source, and to review contemporary technology for the design and operation of stormwater management facilities that can protect municipal drinking water systems. The research outcome should update stormwater management planning and design guidelines, the Tables of Circumstances, and be applied within vulnerable areas where the activity is a significant drinking water threat.	MON-2
The following policies also apply: LUP-3, LUP-5, EDU-6, EDU-12, INCENT-1, INCENT-2.						
Within the greater City of Barrie (salt) issues contributing area, all of the above policies as well as the following policies also apply: LUP-3, LUP-5, EDU-6, EDU-8, INCENT-1, INCENT-2.						

### 16.2.2 Threat #2(b): Wastewater treatment plants/sewer systems

The following activities associated with wastewater treatment plants and sewer systems may result in significant threats to drinking water:

- Sewage treatment plant effluent discharges (including lagoons): All sewage treatment plants release treated wastewater that is called effluent. The effluent can be directly released to a watercourse or water body or its release from a lagoon can be scheduled.
- Storage of sewage (treatment plant tanks): Many sewage treatment plants have sewage storage tanks as part of the treatment process.
- Sewage treatment plant by-pass discharge to surface water: Sometimes the capacity at a sewage treatment plant is overwhelmed and partially treated or untreated sanitary waste is released into the receiving water body. This is generally as a result of an extreme weather event (for example, significant rainfall or snow melt) where the sanitary sewer network is not completely isolated from stormwater. Combined sewers or sewer networks with inflow/infiltration issues are the root cause of bypasses.
- Sanitary sewers and related pipes: these are the pipes that collect sanitary waste from all the serviced buildings in the area.

The circumstances determining whether an activity is a significant drinking water threat relate primarily to the discharge rate of the treatment plant. The combination of vulnerable area, vulnerability score and circumstances that typically result in a significant threat are provided in the table below.

Circumstances and Vulnerability Score needed for a Significant Threat						
Discharge Rate of the Treatment Plant (m <sup>3</sup> /day)	WHPA			IPZ / WHPA-E		
	2,500 - 17,500	17,500 - 50,000	> 50,000	2,500 - 17,500	17,500 - 50,000	> 50,000
	Vulnerability Score					
		10	10*	10	9 - 10	8 - 10

(Note: This table is provided as a guide only and may not capture all circumstances leading to a significant threat. All circumstances leading to a significant threat are provided in the Tables of Drinking Water Threats, found at the Ontario Ministry of Environment website.)

\* If the discharge contains vinyl chloride or another DNAPL then the treatment system is a significant threat in areas with a vulnerability score of 8 – 10.



Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
SEWG(b)-1	RMP	MC	RMO	E	Where the Ontario Water Resources Act does not require an approval, the existing establishment, operation or maintenance of a wastewater treatment plant and associated sewer systems is designated for the purposes of Section 58 of the Clean Water Act, and therefore requires a risk management plan where the activity is a significant drinking water threat. The risk management plan will include appropriate terms and conditions to ensure that the existing activity ceases to be a significant drinking water threat.	MON-6
SEWG(b)-2	PI	MC	MOE	E	Where the existing establishment, operation or maintenance of a sewage treatment plant, sanitary sewers and related pipes, sewage treatment plant by-pass discharge to surface water, and sewage treatment plant effluent discharge (including lagoons) is a significant drinking water threat, the MOE shall ensure that the Environmental Compliance Approval that governs these activities includes appropriate terms and conditions to ensure that the activity ceases to be a significant drinking water threat.	MON-2
SEWG(b)-3	PI	MC	MOE	F	The future establishment, operation or maintenance of a sewage treatment plant, sewage treatment plant by-pass discharge to surface water, and sewage treatment plant effluent discharge (including lagoons) is prohibited where the activity would be a significant drinking water threat.	MON-2

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
SEWG(b)-4	PI	MC	MOE	F	Where the future establishment, operation or maintenance of sanitary sewers and related pipes would be a significant drinking water threat, the MOE shall incorporate appropriate terms and conditions into the Environmental Compliance Approval to ensure the activity does not become a significant drinking water threat.	MON-2
SEWG(b)-5	Oth	MC	MUN	E	Municipalities shall consider the implementation of programs to remove connections of stormwater sources to sanitary sewers to reduce surges in volumes during inflow/outflow, the removal of combined sewer overflow outlets to surface water and the establishment of upgrade priorities that focus on vulnerable areas where the activity is a significant drinking water threat.	MON-1
<p>The following policies also apply: LUP-4, INCENT-1, INCENT-2. All of the above referenced policies also apply within the Georgian Sands and Lafontaine issues contributing area.</p>						

### 16.2.3 Threat #2(c): On-site sewage systems

The definition of on-site sewage systems includes systems that store or treat human waste on-site, but does not include sewage treatment plants. These systems come in a variety of forms including earth pit privies, privy vaults, grey water systems, cesspools, leaching bed systems and associated treatment units, and holding tanks. Leaching bed systems with septic tanks or holding tanks are the systems most commonly used.

There are two categories of systems: small and large. Small systems (those with a design flow less than or equal to 10,000 L/day) are subject to approval under the Ontario Building Code Act which may be administered by the municipalities, conservation authorities or local health units. Small systems most frequently service individual residences in rural areas, hamlets or small villages that do not have municipal or communal sewage services.

Large systems (those with a design flow greater than 10,000 L/day) are subject to approval by the Ministry of the Environment under the Ontario Water Resources Act. Any systems which cannot be located within the confines of a single property (no matter its size) are also subject to approval by the Ministry of the Environment under the Ontario Water Resources Act. The requirements are described in more detail below. Schools, campgrounds, larger businesses and communal systems are examples of facilities that may require a large system.

Circumstances and Vulnerability Score Needed for a Significant Threat		
Circumstance	WHPA	IPZ / WHPA-E
	Vulnerability Score Needed	
Subject to Ontario Building Code Act, 1992 (small systems – less than or equal to 10,000 L / day)	10	10
Subject to Ontario Water Resources Act (large systems - greater than 10,000 L / day)	10	10

*(Note: This table is provided as a guide only and may not capture all circumstances leading to a significant threat. All circumstances leading to a significant threat are provided in the Tables of Drinking Water Threats, found at the Ontario Ministry of Environment website.)*

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
SEWG(c)-1	PI	MC	MOE	E	Where an existing large (more than 10,000 litres) on-site sewage system is a significant drinking water threat, MOE shall ensure that the Environmental Compliance Approval that governs the on-site sewage system includes appropriate terms and conditions to ensure that the activity ceases to be a significant drinking water threat.	MON-2
SEWG(c)-2	PI	MC	MOE	F	The future establishment of a large (more than 10,000 litres) on-site sewage system is prohibited where the activity would be a significant drinking water threat.	MON-2
SEWG(c)-3	Oth (Municipal Act)	MC	MUN	E	Where services and capacity exist, municipalities are encouraged to consider enacting by-laws to require mandatory connection to municipal waste water systems in vulnerable areas where the on-site sewage system is a significant drinking water threat.	MON-1
SEWG(c)-4	Oth	MC	MUN	E/F	Municipalities shall implement an inspection program for small on-site sewage systems that are located in vulnerable areas where they are a significant drinking water threat in accordance with the Ontario Building Code.	MON-1
<p>The following policies also apply where there is no issues contributing area: LUP-1, LUP-6, INCENT-1, INCENT-2, INCENT-3, EDU-6, EDU-12.</p> <p>The following policies also apply within the Georgian Sands and Lafontaine issues contributing area (nitrate): LUP-1, LUP-7, LUP-8, INCENT-1, INCENT-2, INCENT-3, EDU-6, EDU-12.</p>						

#### 16.2.4 Threat #2d: Industrial effluent

Industrial sewage works are any works for the collection, transmission, treatment or disposal of effluent generated from industrial operations. These works include, but are not limited to:

- processing and cooling water streams, including discharges from heat pump systems
- industrial sewage lagoons and biological treatment plants
- wastewater treatment systems for sectors such as pulp and paper and meat processing facilities
- quarry and mine de-watering systems and wash plants
- landfill leachate treatment systems
- groundwater remediation treatment systems, including mobile units
- river/harbour dredging projects with treatment facilities on-shore

The combination of vulnerable area, vulnerability score and circumstances that result in a significant drinking water threat are provided in the table below.

Circumstances and Vulnerability Score Needed for a Significant Threat		
Industrial Effluent- Discharge to Surface Water	WHPA	IPZ
	Vulnerability Score	
		8 - 10

(Note: This table is provided as a guide only and may not capture all circumstances leading to a significant threat. All circumstances leading to a significant threat are provided in the Tables of Drinking Water Threats, found at the Ontario Ministry of Environment website.)

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
SEWG(d)-1	PI	MC	MOE	E	Where the existing discharge of industrial effluent is in an area where this activity is a significant drinking water threat, the MOE shall ensure that the Environmental Compliance Approval that governs the discharge of industrial effluent includes appropriate terms and conditions to ensure that the activity ceases to be a significant drinking water threat.	MON-2
SEWG(d)-2	PI	MC	MOE	F	The future discharge of industrial effluent is prohibited where the activity would be a significant drinking water threat.	MON-2
The following policies also apply: INCENT-1, INCENT-2.						

### 16.3 Threat #3: The application of agricultural source material to land

According to Ontario Regulation 267/03 General, under the Nutrient Management Act, agricultural source materials (ASM) include the following materials that may be produced on a farm:

- manure produced by farm animals, including bedding materials
- run-off from farm-animal yards and manure storages
- wash water that has not been mixed with human body waste (e.g. from the milking centre)
- organic materials produced by intermediate operations that process the above materials (e.g. mushroom compost)
- anaerobic digestion output that does not include sewage bio-solids or human body waste (anaerobic digestion is a process used to decompose organic matter by bacteria in an oxygen-limited environment)
- regulated compost (which contains dead farm animals).

The primary consideration for reducing or eliminating drinking water threats related to the application and storage of agricultural source material is to make sure nitrogen, phosphorus and pathogens do not enter surface water or groundwater.

Significant drinking water threats occur when both the percentage of managed lands and accompanying nutrient unit thresholds are met as indicated in the table below.

Circumstances and Vulnerability Score Needed for a Significant Threat		
Circumstance	WHPA	IPZ / WHPA-E
	Vulnerability Score	
< 40 % managed & > 1.0 NU/acre	10	10
40 - 80 % managed & 0.5 - 1.0 NU/acre	10	9-10
40 - 80 % managed & > 1.0 NU/acre	10	9-10
> 80 % managed & < 0.5 NU/acre	10	9-10
> 80 % managed & > 1.0 NU/acre	10	9-10
pathogens	10	8-10

< = Less than, > = Greater than, NU = nutrient units

(Note: This table is provided as a guide only and may not capture all circumstances leading to a significant threat. All circumstances leading to a significant threat are provided in the Tables of Drinking Water Threats, found at the Ontario Ministry of Environment website.)



Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
ASM(App)-1	RMP	MC	RMO	E/F	The existing and future application of agricultural source material to land is designated for the purposes of Section 58 of the Clean Water Act, and therefore requires a risk management plan for areas outside of WHPA-A and IPZ-1 for those not phased in under the Nutrient Management Act, where the activity is or would be a significant drinking water threat. The risk management plan, at a minimum, will be based on contemporary standards, reflect appropriate nutrient management practices, and ensure the activity ceases to be or does not become a significant drinking water threat.	MON-6
ASM(App)-2	Pro	MC	RMO	E/F	Where the Nutrient Management Act does not require an approval, the existing and future application of agricultural source material to land is designated for the purposes of Section 57 of the Clean Water Act, and is therefore prohibited within WHPA-A and IPZ-1, where the activity would be a significant drinking water threat.	MON-6
ASM(App)-3	PI	MC	OMAFRA	E/F	The existing and future application of agricultural source material to land is prohibited within WHPA-A and IPZ-1, for those phased in under the Nutrient Management Act.	MON-3

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
ASM(App)-4	PI	MC	OMAFRA	E/F	Where the existing and future application of agricultural source material to land is in an area where this activity is or would be a significant drinking water threat outside of WHPA-A or IPZ-1, and the activity requires an approval under the Nutrient Management Act, OMAFRA shall ensure that the nutrient management plan or strategy that governs the application of agricultural source material to land includes appropriate terms and conditions to ensure that the activity ceases to be or does not become a significant drinking water threat.	MON-3
<p>The following policies also apply: RLU-1, EDU-1, EDU-12, INCENT-1, INCENT-2, INCENT-5. Please see section 16.4.1 for a list of policies that apply within the Georgian Sands and Lafontaine issues contributing area.</p>						

## 16.4 Threat #4: The storage of agricultural source material

Livestock density, expressed as nutrient units, is used as the measure for the potential for generating nitrogen and phosphorus in agricultural source material. Storage of Agricultural Source Material may also be a significant threat in areas where it may result in the presence of pathogens in the surface or ground water. Significant drinking water threats associated with the storage of agricultural source material to land can occur in vulnerable areas with the identified vulnerability score shown in the table below.

Circumstances and Vulnerability Score Needed for a Significant Threat						
Nutrient Units Generated Annually	WHPA			IPZ / WHPA-E		
	at or above grade	partially below grade	below grade	at or above grade	partially below grade	below grade
	Vulnerability Score					
0.5 - 1.0 NU/acre	10	10	10	10	10	10
> 1.0 NU/acre	10	10	10	10	9 - 10	9 - 10
Pathogen	10	10	10	8-10	10	10

< = Less than, > = Greater than, NU = nutrient units

(Note: This table is provided as a guide only and may not capture all circumstances leading to a significant threat. All circumstances leading to a significant threat are provided in the Tables of Drinking Water Threats, found at the Ontario Ministry of Environment website.)

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
ASM(Store)-1	RMP	MC	RMO	E	The existing storage of agricultural source material is designated for the purposes of Section 58 of the Clean Water Act, and therefore requires a risk management plan for those not phased in under the nutrient management act, where the activity is a significant drinking water threat. The risk management plan, at a minimum, will be based on contemporary standards, reflect appropriate nutrient management practices, and ensure the activity ceases to be a significant drinking water threat.	MON-6
ASM(Store)-2	Pro	MC	RMO	F	Where the Nutrient Management Act does not require an approval, the future storage of agricultural source material is designated for the purposes of Section 57 of the Clean Water Act, and is therefore prohibited where the activity would be a significant drinking water threat.	MON-6

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
ASM(Store)-3	PI	MC	OMAFRA	E	Where the existing storage of agricultural source material is in an area where the activity is a significant drinking water threat, and the activity requires an approval under the Nutrient Management Act, OMAFRA shall ensure that the nutrient management plan or strategy that governs the storage of agricultural source material to land includes appropriate terms and conditions to ensure that the activity ceases to be a significant drinking water threat.	MON-3
ASM(Store)-4	PI	MC	OMAFRA	F	The future storage of agricultural source material is prohibited where the activity would be a significant drinking water threat.	MON-3
<p>The following policies also apply: LUP-1, RLU-1, EDU-1, EDU-12, INCENT-1, INCENT-2, INCENT-5.</p> <p>Please see Section 16.4.1 for a list of policies that apply within the Georgian Sands and Lafontaine issues contributing area.</p>						

16.4.1 Threat #3 and #4: Application and storage of agricultural source material – issues contributing area: nitrate for Georgian Sands and Lafontaine

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
ASM(ICA)-1	RMP	MC	RMO	E / F	The existing and future storage and application of agricultural source material to land is designated for the purposes of Section 58 of the Clean Water Act and therefore requires a risk management plan where the vulnerability score is less than 10 and the activities are or would be significant drinking water threats. The risk management plan, at a minimum, will be based on contemporary standards, reflect appropriate nutrient management practices, and ensure the activity ceases to be or does not become a significant drinking water threat.	MON-6
ASM(ICA)-2	Pro	MC	RMO	E/F	Where the Nutrient Management Act does not require an approval, the existing and future storage and application of agricultural source material to land is designated for the purposes of Section 57 of the Clean Water Act, and is therefore prohibited where the vulnerability score is 10, and the activities would be a significant drinking water threat.	MON-6

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
ASM(ICA)-3	PI	MC	OMAFRA	E/F	Where the existing and future storage and application of agricultural source material to land is in an area where the activity is or would be a significant drinking water threat and the vulnerability score is less than 10, and the activity requires an approval under the Nutrient Management Act, OMAFRA shall ensure that the nutrient management plan or strategy that governs the storage and application of agricultural source material to land incorporates terms and conditions to ensure that the activity ceases to be or does not become a significant drinking water threat.	MON-3
ASM(ICA)-4	PI	MC	OMAFRA	E/F	The existing and future storage and application of agricultural source material to land is prohibited where the vulnerability score is 10 and the activities would be a significant drinking water threat.	MON-3
The following policies also apply: LUP-1, EDU-1, EDU-12, INCENT-1, INCENT-2, INCENT-5, INCENT-6.						



### **16.5 Threat #5: The management of agricultural source material (aquaculture)**

Aquaculture involves farm-raising cultured fish either on land or in the water. Land-based facilities cultivate fish using tanks, raceways or ponds that have water aeration and circulation systems to oxygenate the water and to remove water products. Cage operations cultivate fish in cages directly in lakes and rivers. The Ontario Ministry of the Environment (MOE) Tables of Drinking Water Threats identify pathogens as contaminants that could make their way into surface and groundwater as a result of the management of agricultural source material (ASM) from aquaculture.

According to the Ministry of Environment tables of drinking water threats, this activity cannot be a significant drinking water threat. As such, no policies have been developed for this threat.

### **16.6 Threat #6: The application of non-agricultural source material (NASM) to land**

According to Ontario Regulation 267/03 General under the Nutrient Management Act, non-agricultural source materials include the following materials that are intended to be applied to land as nutrients, but that are not produced on a farm:

- Pulp and paper biosolids
- Sewage biosolids
- Anaerobic digestion output where less than 50% of the total material is on-farm anaerobic digestion materials (anaerobic digestion is a process used to decompose organic matter by bacteria in an oxygen-limited environment)
- Any other material that is not from an agricultural source and that is capable of being applied to land as a nutrient (such as materials from dairy product or animal food manufacturing).

Non-agricultural source material that will be applied to fields on a farm can be stored in a permanent nutrient storage facility (usually a steel or concrete tank), or on a temporary field nutrient storage site (only for solid non-agricultural source material stored for more than 24 hours). There are restrictions about what types of non-agricultural source material can be stored on a farm and for how long.

The primary consideration for reducing or eliminating drinking water threats related to the application, handling and storage of non-agricultural source material is to make sure it does not enter surface water and/or groundwater.

The circumstances determining whether an activity is a significant drinking water threat are based on the percentage of managed lands and nutrient units per hectare (chemical threats) and the origins of the non-agricultural source material (pathogen threats). The combination of vulnerable area, vulnerability score and circumstances that typically result in a significant drinking water threat are provided in the table below.

Circumstances and Vulnerability Score Needed for a Significant Threat		
Circumstance	WHPA	IPZ / WHPA-E
	Vulnerability Score	
< 40 % Managed & > 1.0 NU/acre	10	10
40 - 80 % Managed & 0.5 - 1.0 NU/acre	10	9 - 10
40 - 80 % Managed & > 1.0 NU/acre	10	9 - 10
> 80 % Managed & < 0.5 NU/acre	10	10
> 80 % Managed & > 1.0 NU/acre	10	9 - 10
Pathogens (generated at meat plant)	10	8 - 10

< = Less than, > = Greater than, NU = nutrient units

(Note: This table is provided as a guide only and may not capture all circumstances leading to a significant threat. All circumstances leading to a significant threat are provided in the Tables of Drinking Water Threats, found at the Ontario Ministry of Environment website.)

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
NASM(App)-1	RMP	MC	RMO	E/F	Where the Nutrient Management and Environmental Protection Acts do not require an approval, the existing and future application of category 1 non-agricultural source material to land is designated for the purposes of Section 58 of the Clean Water Act, and therefore requires a risk management plan for areas outside of WHPA-A and IPZ-1 where the activity is or would be a significant drinking water threat. The risk management plan, at a minimum, will be based on contemporary standards, reflect appropriate nutrient management practices, and ensure the activity ceases to be or does not become a significant drinking water threat.	MON-6
NASM(App)-2	Pro	MC	RMO	E/F	Where the Nutrient Management and Environmental Protection Acts do not require an approval, the existing and future application of category 1 non-agricultural source material to land is designated for the purposes of Section 57 of the Clean Water Act, and is therefore prohibited within WHPA-A and IPZ-1 where the activity is or would be a significant drinking water threat.	MON-6

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
NASM(App)-3	PI	MC	MOE, OMAFRA	E	<p>Where the existing application of category 1, 2 and 3 non-agricultural source material to land requires approval under the Nutrient Management Act or Environmental Protection Act, and is in an area where it is a significant drinking water threat, OMAFRA and/or MOE shall ensure that the Environmental Compliance Approval:</p> <p>1) Prohibits the application of category 1 non-agricultural source material within WHPA-A and IPZ-1, and includes appropriate terms and conditions to ensure the activity ceases to be a significant drinking water threat outside of WHPA-A/IPZ-1.</p> <p>2) Prohibits the application of category 2 and 3 non-agricultural source material within WHPA-A, WHPA-B and IPZ-1 where the activity is a significant drinking water threat and includes appropriate terms and conditions to ensure that the activity ceases to be a significant drinking water threat outside of WHPA-A, WHPA-B and IPZ-1.</p>	MON-2, MON-3

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
NASM(App)-4	PI	MC	MOE, OMAFRA	F	The future application of category 2 and 3 non-agricultural source material is prohibited where the activity would be a significant drinking water threat. Where the future application of category 1 non-agricultural source material to land requires an approval under the Nutrient Management Act or Environmental Protection Act, OMAFRA and/or MOE shall ensure that the Environmental Compliance Approval prohibits the application of category 1 non-agricultural source material within WHPA-A and IPZ-1, and includes appropriate terms and conditions to ensure the activity does not become a significant drinking water threat outside of WHPA-A and IPZ-1.	MON-2, MON-3
NASM(App)-5	Oth (Re)	NLB	MOE, OMAFRA	E	The MOE and OMAFRA are encouraged to consider continuing research regarding soil limiting factors relevant to non-agricultural source material, and to reflect that research in the management of non-agricultural source material sites located in vulnerable areas where the application of non-agricultural source material to land is a significant drinking water threat.	MON-2, MON-3
<p>The following policies also apply: RLU-1, EDU-1, EDU-12, INCENT-1, INCENT-2. All of the above referenced policies and INCENT-6 also apply within the Georgian Sands and Lafontaine issues contributing area (nitrate).</p> <p>See "Definitions" section of this document for descriptions of category 1, 2, 3 NASM.</p>						

## 16.7 Threat #7: The handling and storage of non-agricultural source material (NASM)

The circumstances determining whether an activity is a significant drinking water threat are based on the mass of nitrogen in the non-agricultural source material (chemical threats) and the origins of the non-agricultural source material (pathogen threats). The combination of vulnerable area, vulnerability score and circumstances that typically result in a significant drinking water threat are provided in the table below.

Circumstances and Vulnerability Score Needed for a Significant Threat						
Mass of nitrogen found in NASM	WHPA			IPZ / WHPA-E		
	at or above grade	partially below grade	below grade	at or above grade	partially below grade	below grade
	Vulnerability Score					
0.5 - 5 tonnes		10	10	10	10	
> 5 tonnes	10	10	10	9-10	9-10	
Pathogen (generated at meat plant)	10	10	10	8-10	10	10

< = Less than, > = Greater than

(Note: This table is provided as a guide only and may not capture all circumstances leading to a significant threat. All circumstances leading to a significant threat are provided in the Tables of Drinking Water Threats, found at the Ontario Ministry of Environment website.)

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
NASM(H&S)-1	RMP	MC	RMO	E/F	Where the Nutrient Management and Environmental Protection Acts do not require an approval, the existing and future handling and storage of category 1 non-agricultural source material is designated for the purposes of Section 58 of the Clean Water Act and therefore requires a risk management plan for areas outside of WHPA-A and IPZ-1 where the activity is or would be a significant drinking water threat. The risk management plan, at a minimum, will be based on contemporary standards, reflect appropriate nutrient management practices, and ensure the activity ceases to be or does not become a significant drinking water threat.	MON-6
NASM(H&S)-2	Pro	MC	RMO	E/F	Where the Nutrient Management and Environmental Protection Acts do not require an approval, the existing and future handling and storage of category 1 non-agricultural source material is designated for the purposes of Section 57 of the Clean Water Act, and is therefore prohibited within WHPA-A and IPZ-1 where the activity is or would be a significant drinking water threat.	MON-6



Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
NASM(H&S)-3	PI	MC	MOE, OMAFRA	E	<p>Where the existing handling and storage of category 1, 2 and 3 non-agricultural source material requires approval under the Nutrient Management Act or Environmental Protection Act and is in an area where it is a significant drinking water threat, OMAFRA and/or MOE shall ensure that the Environmental Compliance Approval:</p> <p>1) prohibits the handling and storage of category 1 non-agricultural source material within WHPA-A and IPZ-1, and includes appropriate terms and conditions to ensure the activity ceases to be a significant drinking water threat outside of WHPA-A/IPZ-1.</p> <p>2) prohibits the handling and storage of category 2 and 3 non-agricultural source material within WHPA-A / IPZ-1 where the activity is a significant drinking water threat, and includes appropriate terms and conditions to ensure that the activity ceases to be a significant drinking water threat outside of WHPA-A / IPZ-1.</p>	MON-2, MON-3

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
NASM(H&S)-4	PI	MC	MOE, OMAFRA	F	<p>The future handling and storage of category 2 and 3 non-agricultural source material is prohibited where the activity would be a significant drinking water threat.</p> <p>Where the future handling and storage of category 1 non-agricultural source material requires an approval under the Nutrient Management Act or Environmental Protection Act, OMAFRA and/or MOE shall ensure that the Environmental Compliance Approval prohibits the handling and storage of category 1 non-agricultural source material within WHPA-A and IPZ-1, and include appropriate terms and conditions to ensure the activity does not become a significant drinking water threat outside of WHPA-A and IPZ-1.</p>	MON-2, MON-3
<p>The following policies also apply: LUP-1, RLU-1, EDU-1, EDU-12, INCENT-1, INCENT-2.</p> <p>The above policies and INCENT-6 also apply to the application of non-agricultural source material in the Georgian Sands and Lafontaine issues contributing area.</p>						

## 16.8 Threat #8: The application of commercial fertilizer to land

Commercial fertilizer is a manufactured substance containing nitrogen, phosphorus, potassium or other plant food intended for use as a plant nutrient. For the purposes of the drinking water source protection initiative, commercial fertilizer does not include agricultural source material or non-agricultural source material.

Significant drinking water threats occur when both the percentage of managed lands and accompanying nutrient unit thresholds are met as shown in the table below.

Circumstances and Vulnerability Score Needed for a Significant Threat		
Circumstance	WHPA	IPZ/ WHPA-E
	Vulnerability Score	
< 40 % Managed & > 1.0 NU/acre	10	10
40 - 80 % Managed & 0.5 - 1.0 NU/acre		10
40 - 80 % Managed & > 1.0 NU/acre	10	9 - 10
> 80 % Managed & < 0.5 NU/acre	10	10
> 80 % & 0.5 - 1.0	10	9 - 10
> 80 % Managed & > 1.0 NU/acre	10	9 - 10

< = Less than, > = Greater than, NU = nutrient units

(Note: This table is provided as a guide only and may not capture all circumstances leading to a significant threat. All circumstances leading to a significant threat are provided in the Tables of Drinking Water Threats, found at the Ontario Ministry of Environment website.)

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
FERT(App)-1	RMP	MC	RMO	E/F	Existing and future application of commercial fertilizer to land is designated for the purposes of Section 58 of the Clean Water Act, and therefore requires a risk management plan for those not phased in under the Nutrient Management Act, where the activity is or would be a significant drinking water threat. The risk management plan will include appropriate terms and conditions to ensure that the application of commercial fertilizer ceases to be a significant drinking water threat. The risk management plan shall require fertilizers to be applied using best agronomic practices on the advice of a certified crop advisor, that soil tests (NPK) be carried out and that proper farm practices regarding crop rotation be applied, as appropriate.	MON-6
FERT(App)-2	PI	MC	OMAFRA	E/F	Where the existing and future application of commercial fertilizer to land is in an area where this activity is or would be a significant drinking water threat, and the activity requires an approval under the Nutrient Management Act, OMAFRA shall ensure that the nutrient management plan or strategy that governs the application of commercial fertilizer to land includes appropriate terms and conditions to ensure that the activity ceases to be or does not become a significant drinking water threat.	MON-3
<p>The following policies also apply: RLU-1, EDU-1, EDU-12, INCENT-1, INCENT-2, INCENT-5. Note: Please see section 16.9.1 for a list of policies that apply within the Georgian Sands and Lafontaine issues contributing area.</p>						

### **16.9 Threat #9: The handling and storage of commercial fertilizer**

Significant threats associated with the handling and storage of commercial fertilizer can only occur if the vulnerability score is 10. The circumstance for this to occur would be commercial fertilizer stored for retail sale or in relation to its application in which the total mass, in any form, including liquid or solid, is more than 2,500 kilograms.

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
FERT(H&S)-1	RMP	MC	RMO	E	The existing handling and storage of commercial fertilizer is designated for the purposes of Section 58 of the Clean Water Act, and therefore requires a risk management plan for those not phased in under the Nutrient Management Act, where the activity is a significant drinking water threat. The risk management plan, at a minimum, will be based on contemporary standards and shall require: 1) liquid fertilizer to be stored in double-walled tanks or secondary containment facilities, with collision protection, 2) dry fertilizer to be stored undercover on impervious floor surfaces with no drainage outlets so that the handling and storage of commercial fertilizer ceases to be a significant drinking water threat.	MON-6
FERT(H&S)-2	Pro	MC	RMO	F	Future handling and storage of commercial fertilizer is designated for the purposes of Section 57 of the Clean Water Act, and is therefore prohibited where the activity would be a significant drinking water threat.	MON-6
The following policies also apply: LUP-1, RLU-1, EDU-1, EDU-12, INCENT-1, INCENT-2, INCENT-5. Note: Please see section 16.9.1 for a list of policies that apply within the Georgian Sands and Lafontaine issues contributing area.						

16.9.1 Threat #8 and #9: Application, handling and storage of commercial fertilizer – issues contributing area: nitrate for Georgian Sands and Lafontaine

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
FERT(ICA)-1	RMP	MC	RMO	E/F	<p>The existing and future application, handling and storage of commercial fertilizer to land is designated for the purposes of Section 58 of the Clean Water Act, and therefore requires a risk management plan for those not phased in under the Nutrient Management Act, where the vulnerability score is less than 10. The risk management plan, at a minimum, will be based on contemporary standards and shall require:</p> <p><u>Application</u></p> <ol style="list-style-type: none"> <li>1) all fertilizers to be applied using best agronomic practices based on the advice of a certified crop advisor;</li> <li>2) that soil tests (NPK) be conducted; and</li> <li>3) that proper farm practices regarding crop rotation be applied, as appropriate.</li> </ol> <p><u>Handling and Storage</u></p> <ol style="list-style-type: none"> <li>1) liquid fertilizer to be stored in double-walled tanks or secondary containment facilities, with collision protection;</li> <li>2) dry fertilizer to be stored under cover on impervious floor surfaces with no drainage outlets so that the application, handling and storage of commercial fertilizer ceases to be or does not become a significant drinking water threat.</li> </ol>	MON-6

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
FERT(ICA)-2	Pro	MC	RMO	E/F	Where the Nutrient Management Act does not require an approval, the existing and future handling, storage and application of commercial fertilizer is designated for the purposes of Section 57 of the Clean Water Act, and is therefore prohibited where the vulnerability score is 10, and the activity is or would be a significant drinking water threat.	MON-6
FERT(ICA)-3	PI	MC	OMAFRA	E/F	Where the existing and future application of commercial fertilizer to land is in an area where the vulnerability score is less than 10 and the activity is or would be a significant drinking water threat, and requires approval under the Nutrient Management Act, OMAFRA shall ensure that the nutrient management plan or strategy that governs the application of commercial fertilizer include appropriate terms and conditions to ensure the activity ceases to be or become a significant drinking water threat. Such conditions may include: 1) requiring all fertilizers to be applied using best agronomic practices based on the advice of a certified crop advisor; 2) that soil tests (NPK) be conducted; 3) that proper farm practices regarding crop rotation be applied, as appropriate.	MON-3
FERT(ICA)-4	PI	MC	OMAFRA	E/F	The existing and future application of commercial fertilizer to land is prohibited where the vulnerability score is 10 and the activities would be a significant drinking water threat.	MON-3
The following policies also apply: LUP-1, RLU-1, EDU-1, EDU-12, INCENT-1, INCENT-2, INCENT-5, INCENT-6.						



### 16.10 Threat #10: The application of pesticides to land

There are eleven (11) chemicals listed in the Ontario Ministry of the Environment Tables of Drinking Water Threats that could make their way into surface and groundwater as a result of the application of pesticides to land, and through spills resulting from the improper handling and storage of pesticides. These chemicals are listed below:

- Atrazine
- Dicamba
- Dichlorophenoxy Acetic Acid (2,4-D)
- Dichloropropene-1,3
- Glyphosate
- MCPA (2-methyl-4-chlorophenoxyacetic acid )
- Mecoprop
- Metalaxyl
- Metolachlor or s-Metolachlor
- Pendimethalin
- MCPB (2-methylphenoxy) butanoic acid

Significant drinking water threats associated with the application of pesticide to land can occur in vulnerable areas with the identified vulnerability score shown in the table below. Note that different pesticides have different vulnerability score requirements to be significant.

Circumstances and Vulnerability Score Needed for a Significant Threat		
Circumstance	WHPA	IPZ / WHPA-E
	Vulnerability Score	
< 1 ha		10
1 - 10 ha	10	9 - 10
> 10 ha	10	8.1 - 10

*(Note: This table is provided as a guide only and may not capture all circumstances leading to a significant threat. All circumstances leading to a significant threat are provided in the Tables of Drinking Water Threats, found at the Ontario Ministry of Environment website.)*

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
PEST(App)-1	RMP	MC	RMO	E/F	The existing and future application of pesticides to land is designated for the purposes of Section 58 of the Clean Water Act, and therefore requires a risk management plan where the activity is or would be a significant drinking water threat. The risk management plan, at a minimum, will be based on contemporary standards, and shall require that pesticides be applied by a certified or registered professional in keeping with prescribed label rates to ensure that the activity ceases to be or does not become a significant drinking water threat.	MON-6
PEST(App)-2	Oth	NLB	OMAFRA, MOE	E	OMAFRA and MOE are encouraged to review and, where appropriate, amend pest management training courses to incorporate additional precautions and considerations to address pesticide application in vulnerable areas where the activity is a significant drinking water threat.	MON-2 MON-3
The following policies also apply: RLU-1, EDU-1,EDU-12, INCENT-5						

### 16.11 Threat #11: The handling and storage of pesticides

Significant drinking water threats associated with the handling and storage of pesticide to land can occur in vulnerable areas with the identified vulnerability score shown in the table below.

See previous section for applicable chemicals.

Circumstances and Vulnerability Score Needed for a Significant Threat		
Circumstance	WHPA	IPZ / WHPA-E
	Vulnerability Score	
Stored for retail or for use in extermination (250 - 2,500 kg - any form)	10	10
Stored at a facility where it is manufactured, processed or from which it sold, wholesaled, including stored related solely for retail and extermination (> 2,500 kg)	10	9 - 10

(Note: This table is provided as a guide only and may not capture all circumstances leading to a significant threat. All circumstances leading to a significant threat are provided in the Tables of Drinking Water Threats, found at the Ontario Ministry of Environment website.)

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Monitoring Policy Requirements
PEST(H&S)-1	RMP	MC	RMO	E	The existing handling and storage of pesticides is designated for the purposes of Section 58 of the Clean Water Act, and therefore requires a risk management plan where the activity is a significant drinking water threat. The risk management plan, at a minimum, will be based on contemporary standards and include appropriate terms and conditions to ensure the activity ceases to be a significant drinking water threat.	MON-6
PEST(H&S)-2	Pro	MC	RMO	F	Future handling and storage of pesticides is designated for the purposes of Section 57 of the Clean Water Act, and is therefore prohibited where the activity would be a significant drinking water threat.	MON-6
The following policies also apply: LUP-1, RLU-1, EDU-1, EDU-12, INCENT-5.						

## 16.12 Threat #12: The application of road salt

Road salt defines any inorganic chloride salt product used to maintain human safety on roads and pedestrian areas. The majority of road salt is used as a de-icer or an ice prevention agent, but limited use for dust suppression also occurs. The most commonly used products are sodium chloride and calcium chloride because they are effective and inexpensive.

The primary circumstance that determines whether an activity is a significant drinking water threat is the size of impervious surface in a vulnerable area. The combination of vulnerable area, vulnerability score and circumstance that typically result in a significant drinking water threat are provided in the table below.

Circumstances and Vulnerability Score Needed for a Significant Threat		
Circumstance	WHPA	IPZ / WHPA - E
	Vulnerability Score	
Application area is 8 - 80 % impervious surface		10
Application area is ≥ 80 % impervious surface	10	9 - 10

(Note: This table is provided as a guide only and may not capture all circumstances leading to a significant threat. All circumstances leading to a significant threat are provided in the Tables of Drinking Water Threats, found at the Ontario Ministry of Environment website.)

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
SALT(App)-1	RMP	MC	RMO	E/F	With the exception of personal domestic use, the existing and future application of road salt is designated for the purposes of Section 58 of the Clean Water Act, and therefore requires a risk management plan where the activity is or would be a significant drinking water threat. The risk management plan, at a minimum, will include terms and conditions to require a reduction in salt application, and comply with contemporary standards to ensure the application of road salt ceases to be or does not become a significant drinking water threat.	MON-6
SALT(App)-2	Oth (Re)	NLB	MTO, OGRA, AMO	F	The MTO, in collaboration with OGRA and AMO, shall be encouraged to undertake research, and share results, into cost effective alternatives to salt application, new mitigative technologies, and innovative practices that do not compromise public safety, in vulnerable areas where the application of salt would be a significant drinking water threat.	MON-3
The following policies also apply: LUP-2, RLU-1, EDU-3, EDU-12, INCENT-1, INCENT-2. Please see Section 16.13.1 for a list of policies that apply within the City of Barrie issues contributing area (salt).						

### 16.13 Threat #13: The handling and storage of road salt

The primary circumstance that determines whether the handling and storage of road salt is a significant drinking water threat is if the salt is stored in a storage facility that exposes it to precipitation, runoff, or snow melt, and the quantity stored is greater than 500 tonnes. The chemicals of concern are chloride and sodium. The combination of vulnerable area, vulnerability score and circumstance that typically result in a significant drinking water threat are provided in the table below.

Circumstances and Vulnerability Score Needed for a Significant Threat		
	WHPA	IPZ & WHPA-E
Quantity Stored	Vulnerability Score	
500 - 5,000 tonnes		10
> 5,000 tonnes	10	9 - 10

*(Note: This table is provided as a guide only and may not capture all circumstances leading to a significant threat. All circumstances leading to a significant threat are provided in the Tables of Drinking Water Threats, found at the Ontario Ministry of Environment website.)*

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
SALT(H&S)-1	RMP	MC	RMO	E	The existing handling and storage of road salt is designated for the purposes of Section 58 of the Clean Water Act, and therefore requires a risk management plan where the activity is a significant drinking water threat. The risk management plan, at a minimum, will include terms and conditions that mirror a salt management plan, and comply with contemporary standards to ensure the handling and storage of road salt ceases to be a significant drinking water threat.	MON-6
SALT(H&S)-2	Pro	MC	MUN	F	Future handling and storage of road salt is designated for the purposes of Section 57 of the Clean Water Act, and is therefore prohibited where the activity would be a significant drinking water threat.	MON-6
The following policies also apply: LUP-1, RLU-1, EDU-3, EDU-12, INCENT-1, INCENT-2.						



16.13.1 Threat 12 and 13: Application, Handling and Storage of Road Salt-issues contributing area: salt for the City of Barrie

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
SALT(ICA)-1	RMP	MC	RMO	E/F	With the exception of personal domestic use the existing and future application of road salt is designated for the purposes of Section 58 of the Clean Water Act, and therefore requires a risk management plan where the activity is or would be a significant drinking water threat within WHPA-A of the ICA. The risk management plan, at a minimum, will include terms and conditions to require a reduction in salt application, and comply with contemporary standards to ensure the application of road salt ceases to be or does not become a significant drinking water threat.	MON-6
SALT(ICA)-2	RMP	MC	RMO	E/F	With the exception of personal domestic use, the existing and future handling and storage of road salt is designated for the purposes of Section 58 of the Clean Water Act, and therefore requires a risk management plan where the activity is or would be a significant drinking water threat, within WHPA-A of the ICA, and outside of WHPA-A where road salt is stored in quantities equal to or greater than 5 tonnes. The risk management plan, at a minimum, will include terms and conditions that mirror a salt management plan, and comply with contemporary standards to ensure the handling and storage of road salt ceases to be or does not become a significant drinking water threat.	MON-6

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
SALT(ICA)-3	SA	MC	MUN	E/F	To manage the existing and future application of road salt, the City of Barrie shall optimize its use and management of salt, and implement practices to minimize the loss of salt to the environment and the impact of salt on drinking water. Primary arterial and collector roads in the ICA shall be prioritized for snow ploughing or removal, street sweeping and cleaning after the winter control season has ended.	MON-1
The following policies also apply: SALT(App)-2, LUP-2, RLU-1, EDU-3, EDU-8, EDU-12, INCENT-1, INCENT-2, INCENT-6						

## 16.14 Threat #14: The storage of snow

Snow removed (ploughed) from roads and parking lots can be contaminated with salt, oil, grease and heavy metals from vehicles, litter, and airborne pollutants. This drinking water threat includes:

- snow that is pushed into large piles on a property (e.g. stored in parking lots),
- snow transported to a central site from other locations (e.g. snow disposal sites),

The circumstances in the MOE Tables of Drinking Water Threats are divided into four groups:

1. 0.01 to 0.5 ha (hectares)
2. Greater than 0.5 ha and up to 1 ha
3. Greater than 1 ha and up to 5 ha
4. Greater than 5 ha

In general, the greater the snow storage area (and therefore the volume of snow stored), the greater the inherent risk to drinking water. Snow storage below grade could be a significant threat in a wellhead protection area (WHPA) with a vulnerability score of 10. Also, storage of snow at or above grade in an area greater than 1 ha can be a significant threat in a wellhead protection area with a vulnerability score of 10 or an intake protection zone with a vulnerability score of 9 or higher. Snow storage would be a moderate or low drinking water threat in areas with a vulnerability score between 4.8 and 8.1.

The combination of vulnerable area, vulnerability score and circumstance that typically result in a significant drinking water threat are provided in the table below.

Circumstances and Vulnerability Score Needed for a Significant Threat				
Storage Area	WHPA		IPZ & WHPA-E	
	At or Above Grade	Below Grade	At or Above Grade	Below Grade
	Vulnerability Score			
0.01 - 0.5 hectares		10	10	
0.5 - 1 hectares		10	10	
1 - 5 hectares	10	10	9-10	
> 5 hectares	10	10	9-10	

(Note: This table is provided as a *guide only* and may not capture all circumstances leading to a significant threat. All circumstances leading to a significant threat are provided in the Tables of Drinking Water Threats, found at the Ontario Ministry of Environment website.)

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
SNOW-1	RMP	MC	RMO	E	The existing storage of snow is designated for the purposes of Section 58 of the Clean Water Act, and therefore requires a risk management plan, where the activity is a significant drinking water threat. The risk management plan, at a minimum, will be based on contemporary standards and shall ensure that the storage of snow and associated run-off ceases to be a significant drinking water threat.	MON-6
SNOW-2	Pro	MC	RMO	F	Future storage of snow is designated for purposes of Section 57 of the Clean Water Act, and is therefore prohibited where the activity would be a significant drinking water threat. Except in emergency situations as determined by the risk management official and the public works department, emergency snow storage will be permitted only outside of WHPA-A.	MON-6
The following policies also apply: LUP-1, RLU-1, EDU-3, EDU-12, INCENT-1, INCENT-2, INCENT-4.						

16.14.1 Threat 14: The storage of snow – issues contributing area: snow storage for the City of Barrie

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
SNOW(ICA)-1	RMP	MC	RMO	E/F	With the exception of personal domestic use, the existing and future storage of snow is designated for the purposes of Section 58 of the Clean Water Act, and therefore requires a risk management plan where the activity is or would be a significant drinking water threat within WHPA-A of the ICA. The risk management plan, at a minimum, will be based on contemporary standards, and shall ensure that the storage of snow ceases to be or does not become a significant drinking water threat.	MON-6
The following policies also apply: RLU-1, EDU-3, EDU-12, INCENT-1, INCENT-2, INCENT-4, INCENT-6						

## 16.15 Threat #15: The handling and storage of fuel

This category of drinking water threat includes the handling of liquid fuel as well as its storage. The types of storage facilities to be considered are defined in Ontario Regulation 213/01 (Fuel Oil) or Ontario Regulation 217/01 (Liquid Fuels). Both of these regulations are made under the Technical Standards and Safety Act, 2000. Facilities where fuel is manufactured or refined are also to be considered. The types of fuel storage facilities include:

Ontario Reg. 217/01 – A facility is defined as:

- permanent or mobile retail outlets
- bulk plant
- marinas
- cardlocks/keylocks
- private outlets
- farms

Residential properties that store greater than 250 L of fuel oil below grade or partially below grade (including within a basement) are also categorized as a significant drinking water threat.

The primary circumstance that determines whether an activity is a significant drinking water threat is related to quantity and type of fuel, and whether or not it is stored above, below or partially below grade. The combination of vulnerable area, vulnerability score and circumstance that typically result in a significant drinking water threat are provided in the table below.

Circumstances and Vulnerability Score Needed for a Significant Threat												
Fuel Quantity	WHPA						IPZ / WHPA-E					
	Below Grade		Partially Below Grade		Above Grade		Below Grade		Partially Below Grade		Above Grade	
	Liquid Fuel	Fuel Oil	Liquid Fuel	Fuel Oil	Liquid Fuel	Fuel Oil	Liquid Fuel	Fuel Oil	Liquid Fuel	Fuel Oil	Liquid Fuel	Fuel Oil
≥ 250 L	10	10	10	10								
≥ 2,500 L	10	10	10	10	10	10	10		10	10	10	10

(Note: This table is provided as a guide only and may not capture all circumstances leading to a significant threat. All circumstances leading to a significant threat are provided in the Tables of Drinking Water Threats, found at the Ontario Ministry of Environment website.)

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
FUEL-1	RMP	MC	RMO	E	With the exception of personal domestic use, the existing handling and storage of fuel is designated for the purposes of Section 58 of the Clean Water Act, and therefore requires a risk management plan where the activity is a significant drinking water threat. The risk management plan will include appropriate terms and conditions to ensure the handling and storage of fuel ceases to be a significant drinking water threat, and at a minimum, complies with contemporary standards. The risk management plan may include such conditions as: 1) secondary containment 2) spill/leak detection (monitoring processes) 3) collision protection (bollards)	MON-6
FUEL-2	Pro	MC	RMO	F	Future handling and storage of fuel is designated for the purposes of Section 57 of the Clean Water Act, and is therefore prohibited where the activity would be a significant drinking water threat.	MON-6
FUEL-3	Oth: (SA)	MC	SPA	E/F	The local Source Protection Authority shall request from the Technical Standards and Safety Authority (TSSA) inspection reports on Private Fuel Outlets in areas where the handling and storage of fuel is a significant drinking water threat. To aid in the implementation of Part IV policies, the TSSA will provide this information to the Source Protection Authority for distribution to Risk Management Officials. The local source protection authority will report back to TSSA any data about leaks and other concerns observed, as they relate to TSSA's mandate to enforce Ore 213/217 (as amended).	MON-5

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
FUEL-4	Oth: (SA-Municipal Act)	MC	MUN	E	Municipalities shall develop a by-law to require the removal of fuel tanks from abandoned properties within 1 year of known abandonment, and unused tanks from occupied properties once no longer in use within vulnerable areas where the handling and storage of fuel is or would be a significant drinking water threat.	MON-1
The following policies also apply: LUP-1, RLU-1, EDU-2, EDU-12, INCENT-1, INCENT-2						



### **16.16 Threat #16: The handling and storage of a dense non-aqueous phase liquid (DNAPL)**

The Ministry of Environment Tables of Drinking Water Threats identify five (5) types of dense non-aqueous phase liquids that could make their way into surface and groundwater as a result of a spill from the handling or storage of these chemicals. The following chemicals could threaten the safety of drinking water sources in certain situations:

- 1,4-Dioxane
- Tetrachloroethylene (Perchloroethylene [PCE])
- Trichloroethylene [TCE]
- Vinyl Chloride [VC]
- Polycyclic Aromatic Hydrocarbons [PAHs]

Any amount of a dense non-aqueous phase liquids is considered a significant threat within a WHPA-A, B, C or C1 (where the vulnerability score is greater than or equal to 2). Any amount of a dense non-aqueous phase liquid is considered a significant threat within an IPZ or WHPA-E with a vulnerability score of 10.

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
DNAPL-1	RMP	MC	RMO	E	The existing handling and storage of DNAPLs (excluding incidental volumes for personal/domestic use) is designated for the purposes of Section 58 of the Clean Water Act, and therefore requires a risk management plan where the activity is a significant drinking water threat. The risk management plan, at a minimum, will promote above-ground storage and handling, and include terms and conditions to ensure the handling and storage of DNAPLs ceases to be a significant drinking water threat.	MON-6
DNAPL-2	Pro	MC	RMO	F	Future handling and storage of DNAPLs in any quantity (excluding incidental volumes for personal/domestic use) is designated for the purposes of Section 57 of the Clean Water Act, and is therefore prohibited where the activity would be a significant drinking water threat.	MON-6
DNAPL-3	Oth: (Re)	NLB	MOE	E	The MOE is encouraged to consider undertaking research into DNAPL alternatives that can be used to phase out their use within vulnerable areas where the activity is or would be a significant, moderate or low drinking water threat in the Province of Ontario.	MON-2
<p>The following policies also apply: RLU-1, LUP-1, EDU-2, EDU-10, EDU-12, INCENT-1, INCENT-2. All of the above referenced policies and INCENT-6 apply to the Orillia, Coldwater and Cannington issues contributing area (TCE).</p>						

### 16.17 Threat #17: The handling and storage of an organic solvent

The Ontario Ministry of the Environment Tables of Drinking Water Threats identifies four (4) organic solvents that could make their way into the groundwater as a result of a spill from the handling and/or storage of these chemicals.

The following chemicals could threaten the safety of drinking water sources in certain situations:

- Carbon tetrachloride
- Chloroform
- Methylene chloride (Dichloromethane)
- Pentachlorophenol

Most organic solvents are used in industrial and commercial applications. These chemicals can be found in small quantities in common household products such as paints, adhesives, degreasers and cleaning agents.

The primary circumstance that determines whether an activity is a significant drinking water threat is related to the quantity stored and location (above, below or partially below grade). The combination of vulnerable area, vulnerability score and circumstance that typically result in a significant drinking water threat are provided in the table below.

Circumstances and Vulnerability Score Needed for a Significant Threat						
Quantity Stored	WHPA			IPZ / WHPA-E		
	At or Above Grade	Partially Below Grade	Below Grade	At or Above Grade	Partially Below Grade	Below Grade
	Vulnerability Score					
25 - 250 L		10	10			
250 - 2500 L	10	10	10	10	10	
> 2500 L	10	10	10	10	10	

(Note: This table is provided as a guide only and may not capture all circumstances leading to a significant threat. All circumstances leading to a significant threat are provided in the Tables of Drinking Water Threats, found at the Ontario Ministry of Environment website.)

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
SOLV-1	RMP	MC	RMO	E	The existing handling and storage of organic solvents is designated for the purposes of Section 58 of the Clean Water Act, and therefore requires a risk management plan where the activity is a significant drinking water threat. The risk management plan, at a minimum, will be based on contemporary standards and include appropriate terms and conditions to ensure the activity ceases to be a significant drinking water threat.	MON-6
SOLV-2	Pro	MC	MUN	F	The future handling and storage of organic solvents is designated for the purposes of Section 57 of the Clean Water Act, and is therefore prohibited where the activity would be a significant drinking water threat.	MON-6
SOLV-3	Oth: (SA)	NLB	MOE	E	The MOE is encouraged to consider undertaking research into organic solvent alternatives that can be used to phase out their use within vulnerable areas where the activity is or would be a significant, moderate or low drinking water threat in the Province of Ontario.	MON-2
The following policies also apply: LUP-1, RLU-1, EDU-2, EDU-12, INCENT-1, INCENT-2						

### **16.18 Threat #18: The management of run-off that contains chemicals used in the de-icing of aircraft**

The Ontario Ministry of the Environment Tables of Drinking Water Threats identifies dioxane-1, 4 and ethylene glycol as contaminants that could make their way into surface and groundwater as a result of runoff containing aircraft de-icing materials being discharged to land or water. Ethylene glycol is the active ingredient in de-icing fluids, and dioxane-1, 4 is a contaminant from the de-icing process. These chemicals could threaten the safety of drinking water sources in certain situations.

The primary circumstance that determines whether an activity is a significant drinking water threat is the airports classification (remote, small, regional or national). The combination of vulnerable area, vulnerability score and circumstance that typically result in a significant drinking water threat are provided in the table below.

Circumstances and Vulnerability Score Needed for a Significant Threat		
Circumstance	WHPAS	IPZ / WHPA-E
	Vulnerability Score	
Run-off discharges to land or water	10	9 - 10

*(Note: This table is provided as a guide only and may not capture all circumstances leading to a significant threat. All circumstances leading to a significant threat are provided in the Tables of Drinking Water Threats, found at the Ontario Ministry of Environment website.)*

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
DeICE-1	Oth	NLB	Airport Authorities or operators	F	Airport Authorities or operators, in their consideration of any new airport facilities in areas where threats to drinking water would be significant, are encouraged to include appropriate design standards and management practices to prevent run-off from airport de-icing facilities from becoming a significant drinking water threat.	MON-4
DeICE-2	Oth	MC	SPA	F	By February 1 of each year, the local SPA shall collect from the Canadian Environmental Assessment Agency, data on the number of environmental assessments initiated for new airport facilities within vulnerable areas where the run-off of chemicals used in the de-icing of aircraft would be a significant drinking water threat.	MON-5
No additional policies apply to this threat.						

### **16.19 Threat #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**

In the South Georgian Bay Lake Simcoe source protection region, all of the water quantity threats identified and to be identified are specific to groundwater settings. Both the taking of water from a municipal aquifer (without returning the water to that unit) and the reduction of recharge to a municipal aquifer result in a depletion of available supply that could impair the long-term viability of a water system.

Unlike water quality threats, where the threat level is the product of vulnerability score (or the location) and hazard score (of the activity), water quantity threats are a function of risk and tolerance.

Risk refers to the likelihood that the drinking water system could require more water under average monthly pumping conditions than is available in the local area under modeled scenarios of drought. Tolerance refers to the predicted ability of the water system to meet peak demands under modeled scenarios of drought.

The table below explains the circumstances surrounding how and where significant and moderate drinking water quantity threats with respect to groundwater are identified.

Circumstances and Vulnerability Score Needed for a Significant Threat			
Activity (Drinking Water Threat)	Circumstance	Area where Activity is a Significant Drinking Water Threat	Area where Activity is a Moderate Drinking Water Threat
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.	1. An existing taking, an increase to an existing taking or a new taking.	The local area from which the water is or would be taken if the area relates to one or more wells and it was assessed to have a risk level of significant in accordance with Part IX.	The local area from which the water is or would be taken if the area relates to one or more wells and it was assessed to have a risk level of moderate in accordance with Part IX.
	2. The water is or would be taken from within a WHPA-Q1		

Circumstances and Vulnerability Score Needed for a Significant Threat			
Activity (Drinking Water Threat)	Circumstance	Area where Activity is a Significant Drinking Water Threat	Area where Activity is a Moderate Drinking Water Threat
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.	1. An increase to an existing taking or a new taking.	The local area from which the water is taken if the area relates to one or more wells and it was assessed to have a risk level of moderate in accordance with Part IX.	
	2. The water is or would be taken from within a WHPA-Q1.		
	3. Section 34 of the <i>Ontario Water Resources Act</i> requires a permit to take water in respect of the increase or new taking.		
	4. Despite the local area from which the water is or would be taken having been assessed for the purposes of the latest assessment report to have a risk level of moderate in accordance with Part IX, the local area would be assessed to have a risk level of significant if the increase to the existing taking or the new taking were factored into the risk level assessment.		



Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement	Applicable Local Area (WHPA-Q1)
DEMD-1	PI	MC	MOE	E/F- Significant Risk Area  F- Moderate Risk Area	Where an existing or future activity in a WHPA Q1 identified as having a significant or moderate risk level takes water from an aquifer without returning the water to the same aquifer, and is a significant drinking water threat, the MOE shall ensure that the Permit to Take Water that governs the water taking includes appropriate terms and conditions to ensure that: 1) municipal water supply requirements will be met on a sustainable basis 2) the water taking will not affect the ability of the aquifer to meet municipal water supply requirements, and 3) hydrological integrity is not adversely affected, and that the activity ceases to be or does not become a significant drinking water threat.	MON-2	Orangeville (Mono, Amaranth), Tiny (Whip-Poor-Will)  York (York, Bradford, Durham), Midland, Penetanguishene

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement	Applicable Local Area (WHPA-Q1)
DEMD-2	Oth: (SA)	MC	MUN	F- Moderate Risk Area  E/F- Significant Risk Area	Within the WHPA-Q1 identified as having a significant or moderate risk level, where the taking of water from an aquifer without returning the water to the same aquifer is or would be a significant drinking water threat, York Region, Midland, Penetanguishene and Tiny Township shall develop and implement a management plan using the water quantity risk assessment findings, modeling tool, and other available observation data to ensure consumptive demand ceases to be or does not become a significant drinking water threat.	MON-1	York, Midland, Penetanguishene, Whip-Poor-Will

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement	Applicable Local Area (WHPA-Q1)
DEMD-3	Oth: (SA)	MC	MUN	F	Within a WHPA Q1 assigned a significant or moderate risk level where the taking of water from an aquifer without returning the water to the same aquifer is or would be a significant drinking water threat, municipalities responsible for the water shall develop and/or update water conservation plans to ensure they remain an effective tool to support sustainable water use.	MON-1	York (York, Bradford, Durham), Orangeville (Mono, Amaranth), Midland, Penetanguishene, Tiny
DEMD-4	Oth: (SA)	NLB	MOE	E/F	Within a WHPA-Q1 where the taking of water from an aquifer is or would be a significant drinking water threat, the MOE is encouraged to adopt and fund the on-going maintenance of the Tier 3 numerical models. The on-going maintenance of the Tier 3 numerical models includes: 1) Supporting environmental monitoring efforts to address data gaps and improve simulations of cumulative impacts; and 2) Incorporating new information as appropriate into the Tier 3 models to provide	MON-4	York (York, Bradford, Durham), Orangeville (Mono, Amaranth), Midland, Penetanguishene, Tiny

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement	Applicable Local Area (WHPA-Q1)
					decision makers with a tool to make informed water management decisions, and to ensure the activity ceases to be or does not become a significant drinking water threat.		
DEMD-5	Oth: (SA)	NLB	MOI, MMAH	F	MOI and MMAH should consider local water quantity availability when developing population and employment forecasts in municipalities that encompass local areas where the threat is significant.	MON-4	Orangeville (Mono, Amaranth)
DEMD-6	Oth: (Re)	NLB	MOE	E	MOE shall continue its water conservation outreach initiatives and undertake a program analysis to determine whether using social marketing research could optimize outreach to improve water conservation in areas where the withdrawal of water from an aquifer without returning it to the aquifer is a significant drinking water threat.	MON-2	Orangeville (Mono, Amaranth)

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement	Applicable Local Area (WHPA-Q1)
DEMD-7	Oth: (SA)	MC	MUN	E	The Dufferin County municipalities that share a water source within a Tier 3 Water Budget WHPA Q1 identified as having significant water quantity threats shall develop a Joint Municipal Water Supply Management model within 3 years of approval of the Source Protection Plan, to facilitate the planning and management of water supply sources to ensure that water quality and quantity is maintained or improved such that activities cease to be or do not become a significant drinking water quantity threat in the WHPA Q1.	MON-1	Orangeville (Mono, Amaranth)
DEMD-8	Oth: (SA)	NLB	MOE, MOI, MMAH, MNR	E	Where municipalities share a water source within a WHPA Q1 identified as having significant drinking water threats, the MOE, in collaboration with MOI, MMAH and MNR, is encouraged to support municipal efforts that focus on finding collaborative and mutually beneficial solutions to address water servicing constraints.	MON-4	Orangeville (Mono, Amaranth)

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement	Applicable Local Area (WHPA-Q1)
<p>These policies only apply within the water quantity vulnerable area known as the WHPA Q1. The WHPA Q1 is identified through the completion of a Tier 3 Water Budget and Risk Assessment</p> <p>The following policies also apply to the Tier 3 WHPA-Q1s:</p> <p>Orangeville (Mono, Amaranth): LUP-9, EDU-4, INCENT-1, INCENT-2</p> <p>York Local Area (York, Bradford, Durham): LUP-10, EDU-4, INCENT-1, INCENT-2</p> <p>Midland &amp; Penetanguishene Local Area: ): LUP-10, EDU-4, INCENT-1, INCENT-2</p> <p>Whip-Poor-Will Local Area: LUP-10, EDU-4, INCENT-1, INCENT-2</p>							

## 16.20 Threat #20: An activity that reduces the recharge of an aquifer

In the South Georgian Bay Lake Simcoe source protection region, all of the water quantity threats identified and to be identified are all specific to groundwater settings. Both the taking of water from a municipal aquifer (without returning the water to that unit) and the reduction of recharge to a municipal aquifer result in a depletion of available supply that could impair the long-term viability of a water system.

The table below explains the circumstances surrounding how and where significant and moderate drinking water quantity threats that cause a reduction in recharge to an aquifer are identified.

Circumstances and Vulnerability Score Needed for a Significant Threat			
Activity (Drinking Water Threat)	Circumstance	Area where Activity is a Significant Drinking Water Threat	Area where Activity is a Moderate Drinking Water Threat
An activity that reduces recharge to an aquifer.	1. An existing activity, a modified activity or a new activity.	The local area from which the water is or would be taken if the area relates to one or more wells and it was assessed to have a risk level of significant in accordance with Part IX.	The local area from which the water is or would be taken if the area relates to one or more wells and it was assessed to have a risk level of moderate in accordance with Part IX.
	2. The activity is or would be wholly or partly located within a WHPA-Q2.		
An activity that reduces recharge to an aquifer.	1. A modified activity or a new activity.	The local area from which the water is or would be taken if the area relates to one or	
	2. The activity is or would be wholly or partly located within a WHPA-Q2.		

	<p>3. Despite the local area from which the water is or would be taken having been assessed for the purposes of the latest assessment report to have a risk level of moderate in accordance with Part IX, the local area would be assessed to have a risk level of significant if the modified activity were factored into the risk level assessment.</p>	
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		<p>more wells and it was assessed to have a risk level of moderate in accordance with Part IX.</p>	
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Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Monitoring Policy Requirement
<p>This threat is being dealt with through the land use planning process. See the land use planning policy section for addition information (pg. 138). Policies addressing Threat 20 only apply within the water quantity vulnerable area known as the WHPA-Q2. The WHPA Q2 is identified through the completion of a Tier 3 Water Budget and Risk Assessment (Orangeville, York &amp; Midland). The following policies also apply to the Tier 3 WHPA-Q2s:</p> <p>Orangeville (Mono, Amaranth): LUP-11, LUP-12, LUP-14 EDU-5, EDU-12</p> <p>York (York, Bradford, Durham): LUP-11, LUP-12, LUP-13, LUP-15</p> <p>Midland and Penetanguishene: LUP-11, LUP-12, LUP-13, LUP-15</p> <p>Whip-Poor-Will: LUP-11, LUP-12, LUP-13, LUP-15</p>						

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

The Ontario Ministry of the Environment Tables of Drinking Water Threats identify nitrogen, total phosphorus and pathogens (such as *E. coli*) as contaminants that could make their way into surface and groundwater from outdoor livestock areas. Nitrogen is a concern for both surface and groundwater. Total phosphorous is only considered for surface water because excessive inputs result in eutrophication and can cause toxic algae blooms.

These nutrients and pathogens found in animal manure could threaten the safety of drinking water sources in certain situations. Generally speaking, keeping greater numbers of livestock in a space intensifies the accumulation of nutrients and pathogens, thereby increasing the risk of contamination and the requirement for more active management. As such, the ranking of drinking water threat in the Tables of Drinking Water Threats increases proportional to the concentration of manure in a given area.

### Livestock Grazing and Pasturing Land

A nutrient unit (NU) compares livestock based on the nutrient content (nitrogen and phosphorus) found in manure. A NU is based on the manure equivalent of nutrients contained in 43 kg of nitrogen or 55 kg of phosphate, varying according to livestock type. (For example - 300 NU = 2,400 dairy goats or 210 large frame Holsteins). As nutrients from one dairy goat does not equal nutrients from one large frame dairy cow, under the Nutrient Management Act animals were all standardized to Nutrient Units so that they could be treated equitably.

The circumstance for pathogens that determines whether an activity is a significant drinking water threat relates to the use of land as livestock grazing or pasturing land for one or more animals. The chemical circumstances (nitrogen and total phosphorus) are based on the number of animals on the farm and field area as summarized in the table below.

<b>Circumstances and Vulnerability Score Needed for a Significant Threat</b>		
<b>Nutrient Units</b>	<b>WHPA</b>	<b>IPZ / WHPA-E</b>
	<b>Vulnerability Score</b>	
<b>0.5 - 1 NU / acre</b>		<b>10</b>
<b>&gt; 1 NU / acre</b>	<b>10</b>	<b>9 - 10</b>

### Outdoor Confinement Areas and Farm-Animal Yards

The circumstance for pathogens that determines whether an activity is a significant drinking water threat relates to land where one or more animals are kept in an outdoor confinement area or farm animal yard. As summarized in the table below, chemical circumstances (nitrogen and phosphorus) are based on amount of nutrient generated per hectare over a year.

Circumstances and Vulnerability Score Needed for a Significant Threat		
Number of confined animals in area	WHPA	IPZ / WHPA-E
	Vulnerability Score	
120 to less than or equal to 300 NU/ha/year		10
Greater than 300 NU/ha/year	10	9 - 10

*(Note: This table is provided as a guide only and may not capture all circumstances leading to a significant threat. All circumstances leading to a significant threat are provided in the Tables of Drinking Water Threats, found at the Ontario Ministry of Environment website.)*

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
LSTOCK-1	Pro	MC	RMO	E/F	Existing and future livestock grazing and pasturing is designated for the purposes of Section 57 of the Clean Water Act, and is therefore prohibited where the number of animals on the land at any time is sufficient to generate nutrients at an annual rate that is greater than 0.5 nutrient units/acre where the activity is or would be a significant drinking water threat.	MON-6
LSTOCK-2	RMP	MC	RMO	E/F	Existing and future outdoor confinement areas and farm-animal yards are designated for the purposes of Section 58 of the Clean Water Act, and therefore require a risk management plan for those not phased in under the Nutrient Management Act where the activity is a significant drinking water threat outside of WHPA-A/IPZ-1. The risk management plan, at a minimum, will be based on contemporary standards, reflect appropriate nutrient management practices and ensure the activity ceases to be or does not become a significant drinking water threat.	MON-6
LSTOCK-3	PRO	MC	RMO	E/F	Where the Nutrient Management Act does not require an approval, existing and future outdoor confinement and farm-animal yards is designated for the purposes of Section 57 of the Clean Water Act, and is therefore prohibited within WHPA-A/IPZ-1.	MON-6
LSTOCK-4	PI	MC	OMAFRA	E/F	Where existing and future outdoor confinement areas and farm-animal yards are in an area where the activity is or would be a significant drinking water threat outside of WHPA-A/IPZ-1, and the activity requires an approval under the Nutrient Management Act, OMAFRA shall ensure that the nutrient management plan or strategy that governs the outdoor confinement area or farm-animal yard include appropriate terms and conditions to ensure the activity ceases to be or does not become a significant drinking water threat.	MON-3

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
LSTOCK-5	PI	MC	OMAFRA	E/F	Existing and future outdoor confinement areas and farm-animal yards are prohibited within WHPA-A/IPZ-1, where the activity would be a significant drinking water threat.	MON-3
<p>The following policies also apply: LUP-1, RLU-1, EDU-1, EDU-12, INCENT-1, INCENT-2, INCENT-5. All of the above referenced policies and INCENT-6 also apply within the Georgian Sands and Lafontaine issues contributing area (nitrate).</p>						

## **17 ADDITIONAL POLICIES**

In this chapter are additional policies related to conditions and also those policies that are grouped together by policy type, to reduce the repetitive nature of listing the same policy wording that applies to many threats.

Conditions are defined as existing contaminations associated with a past activity that has the potential to affect the quality of drinking water. For example, a previous gas station which no longer exists, but has left contamination in the ground from poorly stored fuel or a fuel leak. The contamination source of some conditions will not be able to be readily traced back to past business or land use activity. Two municipalities within the South Georgian Bay Lake Simcoe source protection region have been identified with existing conditions: the City of Barrie and the Town of Penetanguishene. The table below provides a summary of the existing conditions within each municipality.

The City of Barrie's groundwater system has the following conditions associated with it:

- TCE
- Petrohydrocarbons
- BTEX (benzene, toluene, ethylbenzene and xylenes) & petroleum hydrocarbons)
- Vinyl Chloride.

The Robert Street well in Penetanguishene has TCE as a condition.

These identified conditions are a result of historical activities that cannot be accurately linked back to any one person or property. The following policies have been drafted to allow the source protection authority to monitor the activities and planning applications that occur within the wellhead protection areas, to gather additional information that may ultimately resolve the conditions, leading to their removal from the assessment reports.

The policy tables that follow the conditions policies are listed by policy type. This was done to reduce the repetitive nature of providing the same policy wording in each threat. The policies are listed by type: restricted land use, land use planning, education and outreach, incentives and stewardship and monitoring.

## 17.1 Conditions Policies

Policy Number	Tool	Implementer	Legal Effect	Existing /Future	Policy Text	Policy Monitoring Requirement
COND-1	Mon	MOE, MUN	MC	E	The MOE, City of Barrie and Town of Penetanguishene is directed to provide each year to the SPA a report of the actions taken, if any, in relation to the contaminated site that has been identified as a significant threat, by MOE, City of Barrie, Town of Penetanguishene or other persons or bodies over the previous calendar year.	MON-1
COND-2	Mon	MUN	MC	E	To monitor the change in the condition over time, the local planning approval authority shall notify the SPA of applications under the Planning Act affecting a site identified as a significant drinking water threat condition.	MON-1

### 17.3 Georgian Sands Issue Contributing Area Transport Pathway Policies

Policy Number	Tool	Implementer	Legal Effect	Existing /Future	Policy Text	Policy Monitoring Requirement
TP-1	SA: BMP through Education/ Outreach	SS SPA (lead) Tiny Township	NLB	E	<p>The Severn Sound Source Protection Authority, in collaboration with the Township of Tiny, shall undertake an education and outreach program to inform the owners and operators of transport pathways within the Georgian Sands Issue Contributing Area for Nitrate about the following:</p> <ol style="list-style-type: none"> <li>1) The potential for the transport pathway to endanger the municipal water supply</li> <li>2) Best management practices for upgrading transport pathways to minimize the potential for impacts to the water supply; and</li> <li>3) For wells subject to O.Reg 903 of the Ontario Water Resources Act, their legal obligations with respect to well construction, maintenance, and abandonment.</li> </ol>	MON-5



Policy Number	Tool	Implementer	Legal Effect	Existing /Future	Policy Text	Policy Monitoring Requirement
TP-2	SA: BMP through Incentives	MOE	NLB	E	<p>The Ministry of the Environment should be encouraged to make incentive programs available to property owners within the Georgian Sands Issue Contributing Area for Nitrate that have Transport Pathways to:</p> <ol style="list-style-type: none"> <li>1) Decommission sub-standard wells</li> <li>2) Upgrade and complete required on-going maintenance of wells</li> <li>3) Incorporate best management practices to ensure the transport pathway does not pose a risk to the municipal water supply.</li> </ol>	MON-2

## 17.4 Restricted Land Use Policies

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
RLU-1	RLU	MC	RMO	E/F	<p>All land uses in the zoning by-laws within the Lakes Simcoe and Couchiching-Black River, Nottawasaga Valley and Severn Sound source protection areas are designated for the purpose of Section 59 of the Clean Water Act, with the exception of residential uses, in all areas where the following activities are or would be a significant drinking water threat.</p> <ul style="list-style-type: none"> <li>3. Application of agricultural source material to land</li> <li>4. Handling and storage of agricultural source material</li> <li>6. Application of non-agricultural source material</li> <li>7. Handling and storage of non-agricultural source material</li> <li>8. Application of commercial fertilizer to land</li> <li>9. Handling and storage of commercial fertilizer</li> <li>10. Application of pesticide to land</li> <li>11. Handling and storage of pesticide</li> <li>12. Application of road salt</li> <li>13. Handling and storage of road salt</li> <li>14. Storage of snow</li> <li>15. Handling and storage of fuel</li> <li>16. Handling and storage of DNAPLs</li> <li>17. Handling and storage of organic solvents</li> <li>21. Use of land as livestock grazing, or pasturing land, an outdoor confinement area of farm animal yard.</li> </ul> <p>Despite the above policy, a Risk Management Official may issue written direction specifying the situations under which a planning authority or building official may be permitted to make the determination that a site-specific land use is not designated for the purposes of</p>	MON-6

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
					<p>Section 59. Where such direction has been issued, a site-specific land use is not designated for the purposes of Section 59, provided that the planning authority or building official, as the case may be, is satisfied that:</p> <p>a) The application complied with circumstances specified in the written direction from the Risk Management Official; and</p> <p>b) The applicant has demonstrated that a significant drinking water threat activity designated for the purposes of Section 57 or 58 will not be engaged in, or will not be affected by the application.</p>	

## 17.5 Land Use Planning Policies

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
LUP-1	LUP	MC	Planning Approval Authority	F	<p>Planning Approval Authorities shall amend their planning documents to prohibit future:</p> <ul style="list-style-type: none"> <li>1) waste disposal sites within the meaning of Part V of the Environmental Protection Act (excluding storage of wastes described in clauses (p), (q), (r), (s), (t), or (u) of the definition of hazardous waste (O.Reg 347) and storage of hazardous or liquid industrial waste)</li> <li>2c) large (more than 10, 000 L) on-site sewage systems</li> <li>4) agricultural source material storage facilities</li> <li>7) non-agricultural source material storage facilities</li> <li>9) commercial fertilizer storage facilities</li> <li>11) pesticide storage facilities</li> <li>13) road salt storage facilities</li> <li>14) snow storage facilities</li> <li>15) fuel storage</li> <li>16) DNAPL storage</li> <li>17) organic solvent storage</li> <li>21) outdoor confinement or farm animal yard in WHPA-A/IPZ-1</li> </ul> <p>in vulnerable areas where the activity is or would be a significant drinking water threat.</p>	MON-1
LUP-2	LUP	MC	Planning Approval Authority	F	<p>To address the application of road salt, vulnerable areas where this threat would be significant shall be subject to site plan control to ensure that, where possible:</p> <ul style="list-style-type: none"> <li>1.The extent and location of impervious surfaces such as parking lots, roadways and sidewalks are minimized,</li> <li>2.Site grading and drainage is designed to reduce ponding, and</li> <li>3.Run-off is either directed outside of vulnerable areas or to storm sewers.</li> </ul>	MON-1

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
LUP-3	LUP	MC	Planning Approval Authority	F	Planning Approval Authorities shall amend their planning documents to ensure the design of new stormwater management facilities reduces the risk of contaminating drinking water, and where possible directs the discharge of stormwater outside of vulnerable areas, where the activity would be a significant drinking water threat.	MON-1
LUP-4	LUP	MC	Planning Approval Authority	F	Planning Approval Authorities shall amend their planning documents to locate new (private or municipal) sewage system infrastructure, wherever possible, outside of the vulnerable area where it would be a significant drinking water threat.	MON-1
LUP-5	LUP	MC	Planning Approval Authority	F	Planning Approval Authorities are encouraged to include policies in their official plans to address stormwater pond discharges and sanitary sewers and related pipes by requiring master environmental servicing plans (MESPs) as part of a complete application to avoid locating threats associated with development infrastructure in all vulnerable areas.	MON-1
LUP-6	LUP	MC	Planning Approval Authority	F	In the area where a future small on-site sewage system would be a significant drinking water threat, new development may be permitted only where the lot size for any proposed development that would include a small on-site sewage treatment system is based on the most current version of MOE's guidelines for individual on-site servicing. Lots of record that exist on the effective date of the source protection plan are exempted.	MON-1
LUP-7	LUP	MC	Planning Approval Authority	F	Planning Approval Authorities shall amend their planning documents to prohibit new small on-site sewage systems within WHPA-A of the issue contributing area.	MON-1

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
LUP-8	LUP	MC	Planning Approval Authority	F	In the issues contributing area and outside the WHPA-A, where a future small on-site sewage system would be a significant drinking water threat, new development may be permitted only where the lot size for any proposed development that would include a small on-site sewage treatment system is based on the most current version of MOE's guidelines for individual on-site servicing. Lots of record that exist on the date of approval of the source protection plan are exempted.	MON-1

Land Use Planning Policies that Address Water Quantity Threats

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement	Applicable Local Area
LUP-9	LUP	MC	Planning Approval Authority	F	Where the future taking of water from an aquifer without returning it to the same aquifer would be a significant drinking water threat, Planning Approval Authorities shall only permit new development or site alteration where it can be demonstrated that any increase in water demand can be demonstrated on a sustainable basis as determined by the MOE in accordance with the Source Protection Plan and Ontario Water Resources Act.	MON-1	Orangeville (Mono, Amaranth)

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement	Applicable Local Area
LUP-10	LUP	MC	Planning Approval Authority	F	Where the future taking of water from an aquifer without returning it to the same aquifer would be a significant drinking water threat, Planning Approval Authorities shall only permit new development or site alteration where it has been demonstrated that any increase in water demand beyond the allocated demand is sustainable as determined by the MOE in accordance with the Source Protection Plan and Ontario Water Resources Act.	MON-1	York (Bradford, Durham) Midland, Penetanguishene, Whip-Poor-Will
LUP-11	LUP	MC	Planning Approval Authority	F	Planning Approval Authorities are encouraged to amend their planning documents to protect significant groundwater recharge areas from incompatible development or site alteration that may reduce the recharge of an aquifer within WHPA-Q2.	MON-1	York (Bradford, Durham) Midland, Penetanguishene, Whip-Poor-Will Orangeville (Mono, Amaranth)

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement	Applicable Local Area
LUP-12	LUP	MC	Planning Approval Authority	F	Planning Approval Authorities shall only permit new major development (excluding single detached residential, barns and non-commercial structures that are accessory to an agricultural operation) in a WHPA-Q2 where the activity would be a significant drinking water threat, where it can be demonstrated through the submission of a hydrogeological study that the existing water balance can be maintained through the use of best management practices such as low impact development. Where necessary, implementation and maximization of off-site recharge enhancement within the same WHPA-Q2 to compensate for any predicted loss of recharge from the development.	MON-1	York (York, Bradford, Durham) Midland, Penetanguishene, Whip-Poor-Will Orangeville (Mono, Amaranth)
LUP-13	LUP	MC	Planning Approval Authority	F	Planning Approval Authorities shall require the use of best management practices such as low impact development to maintain pre-development recharge rates for non-major developments or site alterations in a WHPA-Q2 assigned a moderate risk level, where the activity would be a significant drinking water threat.	MON-1	York (York, Bradford, Durham) Midland Penetanguishene Whip-poor-will



Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement	Applicable Local Area
LUP-14	LUP	MC	Planning Approval Authority	F	Planning Approval Authorities shall be encouraged to examine municipal water supply servicing constraints when approving settlement area expansions within WHPA-Q2 where an activity is or would be a significant drinking water threat.	MON-1/MON-4	Orangeville (Mono, Amaranth)
LUP-15	LUP	MC	Planning Approval Authority	F	Planning Approval Authorities shall be encouraged to examine municipal water supply servicing constraints when approving settlement area expansions beyond areas assessed in the Tier 3 assessment, within a WHPA-Q2 where an activity that reduces the recharge of an aquifer is or would be a significant drinking water threat.	MON-1/MON-4	York (Bradford, Durham)  Midland, Penetanguishene, Tiny (Whip-poor-will).

## 17.6 Education and Outreach Policies

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
EDU-1	EO	MC	SPA (lead) MUN	E	The local SPA, in collaboration with municipalities, shall undertake an education and outreach program, and use materials developed by the MOE where possible to target those, applying, handling or storing: 3/4) agricultural source material 6/7) non-agricultural source material 8/9) commercial fertilizer 10/11) pesticides; and 21) those using the land for livestock grazing, pasturing, outdoor confinement or farm-animal yard within vulnerable areas where the activity would be a significant drinking water threat. The program will promote best management practices to safeguard water supplies from various agricultural related drinking water threats and include a component on timely fertilizer application practices. The program will be carried out in consultation with the Ontario Soil and Crop Improvement Association and others, where appropriate.	MON-5

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
EDU-2	EO	MC	SPA (lead) MUN	E	<p>The local SPA, in collaboration with municipalities, shall undertake an education and outreach program, and use materials developed by the MOE where possible to target those, handling or storing:</p> <p>15 ) fuel</p> <p>16) dense non-aqueous phase liquids (DNAPLs); and</p> <p>17) organic solvents</p> <p>within vulnerable areas where the activity would be a significant drinking water threat. The program will promote pollution prevention by explaining the importance of proper storage and disposal of hazardous waste, and will promote the use of alternatives to DNAPLs. The program will also focus on providing homeowners and fuel suppliers with information on the proper handling and storage of fuel from a source water protection perspective. The program will be carried out in consultation with the municipality responsible for waste and TSSA, where appropriate.</p>	MON-5
EDU-3	EO	MC	SPA (lead) MUN	E	<p>The local SPA, in collaboration with municipalities, shall undertake an education and outreach program, and use materials developed by the MOE where possible to target municipalities, property managers, and the salt application industry, applying, handling and storing: road salt and snow within vulnerable areas where the activity would be a significant drinking water threat. The program will promote pollution prevention by explaining the importance of proper salt application, storage and run-off management of salt and snow to safeguard water supplies. The program will be carried out in consultation with AMO and OGRA.</p>	MON-5

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
EDU-4	EO	NLB	MOE	F	The MOE shall be encouraged to maintain and enhance education and outreach programs focusing on water conservation in areas where taking water from an aquifer without returning the water to the same aquifer would be a significant drinking water threat. Note: This policy applies to the following local areas-York (Bradford, Durham), Midland, Penetanguishene, Whip-Poor-Will Orangeville (Mono, Amaranth).	MON-4
EDU-5	EO	MC	SPA (lead) MUN	E	The local SPA, in collaboration with municipalities, is encouraged to undertake an education and outreach program that focuses on the importance of maintaining groundwater recharge within areas where the reduction of recharge is a significant drinking water threat. Note: This policy only applies to the Orangeville Local Area (Mono, Amaranth).	MON-5
EDU-6	EO	MC	SPA (lead) MUN	E	The local SPA, in collaboration with municipalities, shall undertake an education and outreach program targeting those establishing, operating or maintaining: 1. A system that collects, stores or transmits, treats or disposes of sewage (Threat # 2a and 2c) within vulnerable areas where the activity would be a significant drinking water threat. The program will promote the importance of source water protection, the proper disposal of hazardous waste and proper care and maintenance of septic systems.	MON-5

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
EDU-7	EO	MC	SPA (lead) MUN	E/F	The local SPA, in collaboration with municipalities, shall undertake an education and outreach program, and use materials developed by the MOE where possible, targeting those establishing, operating or maintaining a waste disposal site within the meaning of Part V of the Environmental Protection Act (Threat # 1b) within vulnerable areas where the activity would be a significant drinking water threat. The program will promote the importance of source water protection, with a particular focus on the proper handling, storage and disposal of wastes described in clauses p, q, r, s, t, u of the definition of hazardous waste O.Reg 347).	
EDU-8	EO	MC	MUN	E	The City of Barrie shall undertake an education and outreach program targeting those who apply and handle road salt or store road salt and snow within the Barrie issues contributing area. The program will promote the importance of proper snow storage and salt application, handling and storage.	MON-5
EDU-9	EO: SA	NLB	MOE	E	The Ministry of Environment should undertake community-based social marketing research, in consultation with local source protection authorities. The research should be targeted at fostering behaviour aimed at protecting drinking water by understanding the barriers to behaviour. The results of this research would be shared with source protection authorities to implement education and outreach activities at a local level within vulnerable areas where significant drinking water threats are or would be present.	MON-2

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
EDU-10	EO	NLB	MOE	E	The MOE shall petition Health Canada to include products containing DNAPLs (TCE, PAHs and vinyl chloride, 1, 4 Dioxane and PCE) and organic solvents (chloroform, carbon tetrachloride, pentachlorophenol, methylene chloride) as controlled products, requiring cautionary labelling about the dangers these products pose to sources of drinking water.	MON-2
EDU-11	EO	NLB	MOE, MTO, MUN	E/F	<p>In accordance with Section 22 (7) of the Clean Water Act, the Ministry of Transportation, in collaboration with the Ministry of the Environment as well as in consultation with source protection authorities (SPAs), should design a sign to the appropriate provincial standards, to identify the locations of wellhead protection areas and intake protection zones. The Ministry of Transportation should manufacture, install and maintain the signs along provincial highways within the wellhead protection areas with a vulnerability score of 10, and/or within an intake protection zone or wellhead protection area E with a vulnerability score of 8 or higher.</p> <p>Municipalities will be responsible for the purchase, installation and maintenance of appropriate signs designed by the province in collaboration with the SPAs. These signs should be placed, at a minimum, where municipal arterial roads are located within a wellhead protection areas with a vulnerability score of 10, and/or an intake protection zone or wellhead protection area E with a vulnerability score of 8 or higher.</p> <p>The above policies will be implemented as part of an overall education and outreach plan within each Source Protection Area.</p>	MON-1

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
EDU-12	EO	NLB	MOE	E	<p>The MOE is encouraged to develop education materials to aid in the implementation of education and outreach programs to address the following significant drinking water threats:</p> <ul style="list-style-type: none"> <li>1b) waste disposal sites</li> <li>2a) stormwater management facilities</li> <li>2c) on-site sewage systems</li> <li>3) application of agricultural source material to land</li> <li>4) storage of agricultural source material</li> <li>6) application of non-agricultural source material to land</li> <li>7) handling and storage of non-agricultural source material</li> <li>8) application of commercial fertilizer to land</li> <li>9) handling and storage of commercial fertilizer</li> <li>10) application of pesticides to land</li> <li>11) handling and storage of pesticides</li> <li>12) application of road salt</li> <li>13) handling and storage of road salt</li> <li>14) storage of snow</li> <li>15) handling and storage of fuel</li> <li>16) handling and storage of DNAPLs</li> <li>17) handling and storage of organic solvents</li> <li>20) an activity that reduces the recharge of an aquifer</li> <li>21) use of land as livestock grazing or pasturing, an outdoor confinement area or farm-animal yard.</li> </ul>	MON-2

## 17.7 Incentive Policies

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
INCENT-1	In	NLB	MOE	E	The MOE is encouraged to undertake a review of the Ontario Drinking Water Stewardship Program funding program and include expansions to the program to address vulnerable areas where significant drinking water threats are present.	MON-2
INCENT-2	In	MC	SPA	E	If stewardship program funding is extended, local source protection authorities should implement risk reduction projects through the stewardship program in vulnerable areas where significant drinking water threats are present.	MON-5
INCENT-3	In	MC	MUN	E	Municipalities are encouraged to consider incentives that can be offered to landowners to improve the use and care of septic systems where this activity is a significant drinking water threat.	MON-1
INCENT-4	In	MC	MUN	E	Municipalities are required to consider opportunities that could be made available to promote the effective storage of snow, where this activity is a significant drinking water threat.	MON-1
INCENT-5	In	NLB	OSCIA	E	To address significant drinking water threats related to agricultural activities (application, handling and storage of agricultural source material, pesticides and fertilizers) the OSCIA is encouraged to prioritize the Environmental Farm Plan monies for use within vulnerable areas where significant drinking water threats are present.	N/A



Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text	Policy Monitoring Requirement
INCENT-6	In	NLB	MOE	E	<p>The MOE is requested to continue its funding to municipalities and source protection authorities under source protection programs to continue local research into issues (nitrogen, pathogen, sodium, chloride, TCE) to determine where the following activities are a contributing source of the contaminant in the Issues contributing areas:</p> <ul style="list-style-type: none"> <li>a) Application and storage of ASM;</li> <li>b) Application, handling and storage of NASM;</li> <li>c) Use of land as livestock grazing or pasturing land, an outdoor confinement area or farm-animal yard. O. Reg. 385/08, s. 3;</li> <li>d) Application, handling and storage of fertilizer;</li> <li>e) Septic systems governed under the Building Code Act and the Ontario Water Resources Act;</li> <li>f) Discharge of untreated stormwater from a stormwater retention pond;</li> <li>g) Handling and storage of road salt; and</li> <li>h) Handling and storage of DNAPLs.</li> </ul>	MON-2

## 17.8 Monitoring Policies

Policy Number	Tool	Legal Effect	Implementer	Existing /Future	Policy Text
MON-1	Mon	MC	MUN	E/F	By February 1 of each year, municipalities shall report to the local source protection authorities on the steps taken in the previous calendar year to implement these significant threat policies and recommendations, where appropriate.
MON-2	Mon	MC	MOE	E/F	By February 1 of each year, the MOE shall report to the local source protection authority on the steps taken in the previous calendar year to implement these significant threat policies, and recommendations, where appropriate.
MON-3	Mon	MC	OMAFRA/ MTO	E/F	By February 1 of each year, OMAFRA / MTO shall report to the local source protection authority on the steps taken in the previous calendar year to implement these significant threat policies and recommendations, where appropriate.
MON-4	Mon	MC	Planning Approval Authorities	E/F	By February 1 of each year, Provincial Planning Approval Authorities shall report to the local source protection authority on the steps taken in the previous calendar year to implement the significant threat policies and recommendations, where appropriate.
MON-5	Mon	MC	SPA	E/F	The local source protection authority shall include in the annual report, documentation on the risk reduction efforts they administered throughout the year.
MON-6	Mon	MC	RMO	E/F	By February 1 of each year, risk management officials shall report annually to the local source protection authority with the information required in Section 65 of Regulation 287/07 related to the previous calendar year on the significant threat policies that designate an activity for the purpose of Section 58 risk management plans or Section 57 prohibition.

## 18 SUMMARY OF POLICIES USED

### Summary of Policies Used (Existing Threats)

Pol #	Threat	Pro	RMP	RLU	PI	LUP	E&O	In	Oth
1a	Application of Hauled Sewage				√-Prohibit where significant				
1a ICA	Application of Hauled Sewage				√-Prohibit where significant				
1b	Waste Disposal		√- PCB/ hazardous liquid industrial waste		√- Manage		√- (pqrst u)	√	√- Create opportunities for household hazardous waste disposal
1c	Mine Tailings				√- Manage				
2a	Stormwater*				√- Manage		√	√	√- Research new stormwater management technologies and update design standards
2a- ICA	Salt Barrie				√- Manage		√	√	√- Research new stormwater management technologies and update design standards
2b	Waste Water		√		√ - Manage			√	√- Remove Connections
2b ICA	Waste Water		√		√ - Manage			√	√- Remove Connections
2c	Septics				√ - Manage (Large)		√	√	√- Septic Inspections √- By-law to encourage hook-up

### Summary of Policies Used (Existing Threats)

Pol #	Threat	Pro	RMP	RLU	PI	LUP	E&O	In	Oth
2c ICA	Septics/Nitrate				√ - Manage (Large)		√	√	√- Septic Inspections √- By-law to encourage hook-up
2d	Industrial Effluent				√ - Manage			√	
3	ASM-App	√ - WHPA-A/IPZ-1	√- outside WHPA-A/IPZ-1	√	√-Prohibit WHPA-A/IPZ-1 manage elsewhere		√	√	
4	ASM- H&S		√ - everywhere Sig	√	√ - manage where significant		√	√	
3/4 ICA	Nitrate ASM	√- vulnerability score of 10	√ - manage where vulnerability is less than 10	√	√ -Prohibit vulnerability score 10 manage where vulnerability is less than 10		√	√	
5	ASM-M (Aquaculture)								

### Summary of Policies Used (Existing Threats)

Pol #	Threat	Pro	RMP	RLU	PI	LUP	E&O	In	Oth
6	NASM-App	√ - Cat 1 WHPA- A/IPZ-1	√- Cat 1 outside WHPA- A/IPZ-1	√	√- prohibit CAT 2 & 3 (WHPA- A,B/IPZ-1) manage elsewhere		√	√	√- Research Soil limiting factors
7	NASM-H&S	√ - Cat 1 WHPA- A/IPZ-1	√- Cat 1 outside WHPA- A/IPZ-1	√	√- prohibit CAT 2 & 3 (WHPA- A/IPZ-1) manage elsewhere		√	√	
6/7 ICA	Nitrate NASM	√ - Cat 1 WHPA- A/IPZ-1	√- Cat 1 outside WHPA- A/IPZ-1	√	√- prohibit CAT 2 & 3 (WHPA- A/IPZ-1) manage elsewhere		√	√	
8	Fertilizer-App		√	√	√ - manage		√	√	
9	Fertilizer- H&S		√	√			√	√	
8/9 ICA	Nitrate Fertilizer	√ - vulnerabili ty score 10	√- where vulnerabilit y score is less than 10	√	√-prohibit vulnerability score 10, manage elsewhere		√	√	
10	Pesticide-App		√	√			√	√	√- OMAFRA & MOE review Pest Management Courses

### Summary of Policies Used (Existing Threats)

Pol #	Threat	Pro	RMP	RLU	PI	LUP	E&O	In	Oth
11	Pesticide-H&S		√	√			√	√	
12	Salt-App		√	√			√	√	
13	Salt-H&S		√	√			√	√	
12/13 ICA	Salt (Barrie)		√ - WHPA-A/excluding personal domestic use	√			√	√	√ -Prioritize street sweeping on primary arterial/collector roads; optimize use and management of salt
14	Snow-S		√	√			√	√	
14 ICA	Snow-S(Barrie)		√ - WHPA-A/excluding personal domestic use	√			√	√	
15	Fuel- H & S		√- excluding personal domestic use	√			√	√	√- SPA to obtain info from TSSA. √-By-law for unused fuel tanks
16	DNAPLs-H&S		√	√			√- (personal/domestic use)	√	√- Label Identification √- MOE research alternatives

### Summary of Policies Used (Existing Threats)

Pol #	Threat	Pro	RMP	RLU	PI	LUP	E&O	In	Oth
16 ICA	TCE (Orillia, Coldwater & Cannington)		√	√			√- (personal/domestic use)	√	√- Label Identification √- MOE research alternatives
17	Organic Solvents- H&S		√	√			√-	√	√- Research alternatives
18	De-icing								
19	Take Water				√-PTTW include appropriate terms and conditions		√- Province	√	√- MOE to research social marketing and share this information √- management measures √- on-going Tier 3 model maintenance
20	Reduce Recharge						√-		
21	Livestock Grazing	√- grazing/pasturing >0.5 NU/acre √-FAY/OC WHPA-A/IPZ-1	√-manage FAY/OC outside WHPA-A/IPZ-1	√	√-manage FAY/OC outside WHPA-A/IPZ-1		√	√	
21 ICA	Nitrate Livestock Grazing	√- grazing/pasturing >0.5 NU/acre √-FAY/OC WHPA-A	√-manage FAY/OC outside WHPA-A		√-manage FAY/OC outside WHPA-A				

Black=MC

Blue=HR

Green=NLB

### Summary of Policies Used (Future Threats)

Pol #	Threat	Pro	RMP	RLU	PI	LUP	E&O	In	Oth
1a	Application of Hauled Sewage				√- prohibit where significant √- manage mod & low	√			√-MOE research alternative methods
1a-ICA	Application of Hauled Sewage				√- prohibit where significant √- prohibit mod & low	√			√-MOE research alternative methods
1b	Waste Disposal	√- PCB/hazardous liquid industrial waste			√-prohibit	√	√- pqrstu		√- Create opportunities for household hazardous waste disposal
1c	Mine Tailings				√-prohibit				
2a	Storm Water				√-manage	√-where possible locate outside of vuln' areas √-develop master environmental servicing plans			
2a-ICA	Chloride Barrie				√-manage	√-where possible locate outside of vuln' areas √-develop master environmental servicing plans			
2b	Waste Water				√-prohibit sewage treatment plants &by-pass discharge. √-Manage sanitary sewers and related pipes.	√			
2b-ICA	Waste Water				√-prohibit sewage treatment plants &by-	√			



### Summary of Policies Used (Future Threats)

Pol #	Threat	Pro	RMP	RLU	PI	LUP	E&O	In	Oth
					pass discharge. √-Manage sanitary sewers and related pipes.				
2c	Septics				√-prohibit (large) where significant	√- allow small based on lot size and study.			√- connection where services exist
2c ICA	Septics/Nitrate				√-prohibit (large) where significant	√- prohibit in WHPA-A √-Allow small based on lot size and study elsewhere			√- connection where services exist
2d	Industrial Effluent				√-prohibit where significant				
3	ASM-A	√-prohibit WHPA-A/IPZ-1	√- outside WHPA-A/IPZ-1	√	√-Prohibit WHPA-A/IPZ-1 manage elsewhere				
4	ASM- H&S	√-prohibit where significant		√	√-prohibit where significant	√			
3/4 ICA	Nitrate ASM	√- vulnerability score of 10	√ - manage where vulnerability is less than 10	√	√ -Prohibit vulnerability score 10 manage where vulnerability is less than 10	√			
5	ASM-M (Aquaculture)								
6	NASM-A	√- Cat 1prohibit WHPA-A/IPZ-1	√- Cat 1outside WHPA-A/IPZ-1	√	√-prohibit CAT 2 & 3where significant				
7	NASM-H&S	√- Cat 1prohibit WHPA-A/IPZ-1	√- Cat 1outside WHPA-A/IPZ-1	√	√-prohibit where significant	√			
6/7 ICA	Nitrate NASM	√- Cat 1prohibit WHPA-A/IPZ-1	√- Cat 1outside WHPA-A/IPZ-1	√	√-prohibit CAT 2 & 3where significant	√			

**Summary of Policies Used (Future Threats)**

Pol #	Threat	Pro	RMP	RLU	PI	LUP	E&O	In	Oth
8	Fertilizer-A		√	√	√- manage				
9	Fertilizer- H&S	√-prohibit where significant		√		√			
8/9 ICA	Nitrate Fertilizer	√ - vulnerability score 10	√- where vulnerability score is less than 10	√	√-prohibit vulnerability score 10, manage elsewhere	√			
10	Pesticide-A		√	√					
11	Pesticide-H&S	√-prohibit where significant		√		√			
12	Salt-A		√	√		√			√-MTO research salt alternatives
13	Salt-H&S	√-prohibit where significant		√		√			
12/13 ICA	Salt (Barrie)		√ - WHPA-A/ excluding personal domestic use	√		√			√- Prioritize street sweeping on primary arterial/collect or roads; optimize use and management of salt
14	Snow-S	√-prohibit where significant (except in emergencies outside WHPA-A allowed)		√		√			
14 ICA	Snow-S(Barrie)		√ - WHPA-A/excluding personal domestic use	√		√			
15	Fuel- H&S	√-prohibit where significant		√		√			√-SPA collect info from TSSA
16	DNAPLs-H&S	√		√		√			

**Summary of Policies Used (Future Threats)**

Pol #	Threat	Pro	RMP	RLU	PI	LUP	E&O	In	Oth
16 ICA	TCE (Orillia, Coldwater & Cannington)	√		√		√			
17	Organic Solvents- H&S	√		√		√			
18	Deicing								√- Airport Authorities or Operators include provisions to prevent Significant Threats √-SPA ask Canadian Environmental Assessment Agency for EA initiated each year.
19	Take Water				√	√			√-municipality to amend or develop new water cons plans √- province to consider water constraints when developing employment/p opulation forecasts
20	Reduce Recharge					√-hydroG study; water balance maintenance and decreases impacts (major) √- municipalities to protect SGRAS			√- Province to examine servicing constraints when expansions being considered. √-BMP for non-major
21	Livestock Grazing	√- grazing/pasturing >0.5 NU/acre √-FAY/OC	√-- manage FAY/OC outside WHPA-	√	√-manage grazing/pasturing <0.5NU/A V-manage	√	√- focus for grazing and	√	

**Summary of Policies Used (Future Threats)**

Pol #	Threat	Pro	RMP	RLU	PI	LUP	E&O	In	Oth
		WHPA-A/IPZ-1	A/IPZ-1		FAY/OC outside WHPA-A/IPZ-1		pasturing <0.5 NU/acre		
21 ICA	Nitrate Livestock Grazing	√- grazing/pasturing >0.5 NU/acre√- FAY/OC WHPA-A	√- manage FAY/OC outside WHPA-A		√-manage grazing/pasturing <0.5NU/AV-manage FAY/OC outside WHPA-A	√	√- focus for grazing and pasturing <0.5 NU/acre		
Black=MC      Blue=HR      Green=NLB									

## 19 LIST OF ACRONYMS

<b>AMO</b>	Association of Municipalities of Ontario
<b>AR</b>	assessment report
<b>ASM</b>	agricultural source material
<b>AVI</b>	aquifer vulnerability index
<b>BMP</b>	best management practices
<b>CA</b>	conservation authority
<b>C of A</b>	Certificate of Approval
<b>CWA</b>	Clean Water Act, 2006
<b>DNAPL</b>	dense non-aqueous phase liquid
<b>DWSP</b>	drinking water source protection
<b>ECA</b>	Environmental Compliance Approval
<b>EFP</b>	Environmental Farm Plan
<b>EO</b>	education and outreach
<b>ET</b>	existing threats
<b>FT</b>	future threats
<b>GUDI</b>	groundwater under the direct influence of surface water
<b>HR</b>	have regard for
<b>H&amp;S</b>	handling and storage
<b>HVA</b>	highly vulnerable aquifer
<b>IB</b>	implementing body
<b>ICA</b>	issues contributing area
<b>In</b>	incentives
<b>IPZ</b>	intake protection zone
<b>LID</b>	low impact development
<b>LE</b>	legal effect
<b>LSRCA</b>	Lake Simcoe Region Conservation Authority
<b>LUP</b>	land use planning
<b>MC</b>	must conform with
<b>MNR</b>	Ministry of Natural Resources
<b>MOE</b>	Ministry of the Environment
<b>Mon</b>	monitoring policy
<b>MOE LUT</b>	Ministry of the Environment look-up table
<b>MPAC</b>	Municipal Property Assessment Corporation
<b>MUN</b>	municipality
<b>MW</b>	municipal well
<b>NEC</b>	Niagara Escarpment Commission
<b>NASM</b>	non-agricultural source material
<b>NLB</b>	not legally binding
<b>NMA</b>	nutrient management act
<b>NMP</b>	nutrient management plan
<b>NMS</b>	nutrient management strategy
<b>NVCA</b>	Nottawasaga Valley Conservation Authority
<b>ODWS</b>	Ontario drinking water standards
<b>ODWSP</b>	Ontario Drinking Water Stewardship Program
<b>OGRA</b>	Ontario Good Roads Association

<b>OSCIA</b>	Ontario Soil and Crop Improvement Association
<b>Oth</b>	Other
<b>PCB</b>	polychlorinated biphenyls
<b>NU</b>	Nutrient unit
<b>PI</b>	prescribed instruments
<b>PCPP</b>	pharmaceuticals and personal care products
<b>Pro</b>	prohibition
<b>PTTW</b>	permit to take water
<b>Re</b>	research
<b>RMI</b>	risk management inspector
<b>RMO</b>	risk management official
<b>RMP</b>	risk management plan
<b>SGBLS</b>	South Georgian Bay Lake Simcoe
<b>SGRA</b>	significant groundwater recharge area
<b>SSEA</b>	Severn Sound Environmental Association
<b>SPA</b>	source protection area
<b>SPC</b>	source protection committee
<b>SPR</b>	source protection region
<b>SA</b>	strategic action(s)
<b>STP</b>	sewage treatment plant
<b>SWM</b>	stormwater management
<b>SWP</b>	source water protection
<b>TCE</b>	trichloroethylene
<b>TR</b>	technical rules
<b>ToR</b>	terms of reference
<b>TOT</b>	time of travel
<b>TSSA</b>	Technical Standards and Safety Authority
<b>WHPA</b>	wellhead protection area
<b>WWTP</b>	waste water treatment plant
<b>WTP</b>	water treatment plant

## **20 GLOSSARY OF TERMS**

### **Activity**

One or a series of related processes, natural or anthropogenic that occurs within a geographical area and may be related to a particular land use.

### **Aggregate Risks**

Multiple risks in a municipal water supply protection area that are considered together relative to the overall risk to drinking water sources

### **Agricultural Source Material (ASM)**

Means any of the following treated or untreated materials, other than compost that meets the Compost Guidelines in the Nutrient Management Act, or a commercial fertilizer, if they are capable of being applied to land as nutrients:

1. Manure produced by farm animals, including associated bedding materials.
2. Run-off from farm-animal yards and manure storages.
3. Wash waters from agricultural operations that have not been mixed with human body waste.
4. Organic materials produced by intermediate operations that process materials described in paragraph 1, 2 or 3.
5. Anaerobic digestion output, if,
  - i. the anaerobic digestion materials were treated in a mixed anaerobic digestion facility,
  - ii. at least 50 per cent, by volume, of the total amount of anaerobic digestion materials were on-farm anaerobic digestion materials, and
  - iii. the anaerobic digestion materials did not contain sewage biosolids or human body waste.

### **Anthropogenic**

Caused or influenced by humans.

### **Aquifer**

An underground saturated permeable geological formation that is capable of transmitting water in sufficient quantities under ordinary hydraulic gradients to serve as a source of groundwater supply.

### **Aquifer Vulnerability Index (AVI)**

A numerical indicator of an aquifer's intrinsic or inherent vulnerability susceptibility, to contamination expressed as a function of the thickness and permeability of overlying layers.

### **Best Management Practices (BMPs)**

Means methods, facilities and structures which are designed to protect or improve the environment and natural features and functions from the effects of development or interference.

### **Bollard**

A short vertical post or series of posts, arranged in a way to prevent vehicle impact.

### **Broader Landscape**

The watershed or source water protection study area. Applies to regional rather than local aquifer vulnerability assessments usually using an indices method of vulnerability assessment.

### **Brownfield**

A brownfield site (or simply a brownfield) is land previously used for industrial purposes or certain commercial uses that is often environmentally contaminated.

### **Chemical**

A substance used in conjunction with, or associated with, a land use activity or a particular entity, and with the potential to adversely affect water quality.

### **Condition**

A drinking water condition refers to contamination that exists already and is associated with past activities.

### **Confined Aquifers**

An aquifer that is bounded above and perhaps below by layers of geological material that do not transmit water readily.

### **Contaminant**

Chemicals and pathogens.

### **Contaminant of Concern**

A chemical or pathogen that is or may be discharged from a drinking water threat.

### **Contemporary Standard**

Means a current standard that incorporates the most recent technological advancements and sound science.



### **Cumulative (water quality) Effects**

The consequence of multiple threats sources, in space and time, which affect the quality of drinking water sources.

### **Cumulative (water quantity) Effects**

The consequence of multiple threats sources, in space and time, which affect the quantity of drinking water sources.

### **Dense Non Aqueous Phase Liquid (DNAPL)**

Chemicals that are both denser than water and do not dissolve readily in water. Because of these traits, DNAPLs tend to sink below the water table and only stop when they reach impenetrable bedrock. This makes them difficult to locate and clean up. Examples of DNAPLs include: 1,4-Dioxane, Tetrachloroethylene (Perchloroethylene{PCE}), Trichloroethylene (TCE), Vinyl Chloride (VC) and Polycyclic Aromatic Hydrocarbons (PAHs).

### **Designated System**

A drinking water system that is included in a terms of reference, pursuant to resolution passed by a municipal council under subsection 8(3) of the Clean Water Act, 2005.

### **Developed / Developable**

Reference to the useable portion of a parcel of land that meets the regulatory zoning provisions, particularly those pertaining to defining the area of occupation for buildings, structures, facilities and infrastructure.

### **Development (as defined by the Provincial Policy Statement):**

Means the creation of a new lot, a change in land use, or the construction of buildings or structures, requiring approval under the Planning Act, but does not include:

- activities that create or maintain infrastructure authorized under an environmental assessment process;
- works subject to the Drainage Act; or
- underground or surface mining or minerals or advanced exploration on mining lands in the significant areas of mineral potential in Ecoregion 5E, where advance exploration has the same meaning as under the Mining Act.

### **Drinking Water Concern**

A purported drinking water issue that has not been substantiated by monitoring, or other verification methods; will be identified through consultations with the public, stakeholder groups, and technical experts (e.g. water treatment plant operators).

### **Drinking Water Issue**

A substantiated (through scientific means) condition relating to the quality of water that interferes or is anticipated to soon interfere with the use of a drinking water source by a municipal residential system or designated system.

### **Drinking Water Threat**

An existing activity, possible future activity or existing condition that results from a past activity, (a) 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, or (b) that results in or has the potential to result in the raw water supply of an existing or planned drinking-water system failing to meet any standards prescribed by the regulations respecting the quality or quantity of water, and includes an activity or condition that is prescribed by the regulations as a drinking water threat.

### **Entity**

One or a series of related objects, natural or anthropogenic that may be related to a specific process. Examples: Storage Tank, Bird Colony, Abandoned Well, Mine Tailing, Natural Radiation Source.

### **Environmental Assessment (EA)**

An Environmental Assessment, or EA, is a decision-making process used to promote good environmental planning by assessing the potential effects of certain activities on the environment. In Ontario, this process is defined and finds its authority in the Ontario Environmental Assessment Act (OEAA), RSO 1990. The purpose of the OEAA is to provide for the protection, conservation and wise management on Ontario's environment. To achieve this, the OEAA ensures that environmental problems or opportunities are considered and their effects are planned for, before development or building takes place.

### **Environmental Compliance Approval (ECA)**

Is a new approval that has replaced the Certificate of Approval (C of A) and the section 53 Ontario Resources Act (OWRA) approvals. This change came into effect October 31, 2011.

### **Event**

Occurrence of an incident (isolated or frequent) with the potential to promote the introduction of a threat into the environment. An event can be intentional as in the case of licensed discharge or accidental as in the case of a spill.

### **Existing Drinking Water Source**

The aquifer or surface water body from which municipal residential systems or other designated systems currently obtain their drinking water. This includes the aquifer or surface water body from which back-up wells or intakes for municipal residential systems or other designated systems obtain their drinking water when their current source is unavailable or in the event of an emergency.

### **Existing Threat, Activity & Uses**

An existing threat, activity and/or use are defined as:

- (a) a use, a building or structure that is used and continues to be used for the purpose for which it was erected.
- (b) a minor alteration or replacement building or structure that has the same capacity as an existing lawful building or structure and provides greater protection to sources of drinking water and where there is no change in use and where the replacement structure will bring the building or structure into closer conformity with the Source Protection Plan.
- (c) an activity that is presently occurring or has occurred within the last ten years from the date of approval of the source protection plan (MOE's definition).
- (d) where an existing activity is permitted an expansion, alteration or replacement of a use, activity, building or structure that reduces the risk of contaminating drinking water shall be permitted.

### **Future Threat, Activity & Uses**

A future threat, activity and/or use are defined as:

- (a) a new building or structure at a location in a vulnerable area that commences after the Source Protection Plan takes effect.
- (b) new structures or buildings for a new land use that did not exist on the day before the Source Protection Plan comes into effect.
- (c) an activity that is not presently occurring or has not occurred within the last ten years from the date of approval of the source protection plan.
- (d) new agricultural activities on lands that had not been previously used or zoned for any agricultural purposes in the past ten years within vulnerable areas.
- (e) an expansion, alteration or replacement of a use, activity, building or structure that does not reduce the risk of contaminating drinking water is considered a future activity and subject to the future policy.

For clarity, a future threat, activity or use does not include a change in land ownership, the rotation of agricultural lands among crop or fallow conditions provided the lands are zoned for agricultural uses and remain zoned for agricultural uses.

### **Goals**

High level achievements to aim for with respect to source protection (e.g. to protect drinking water sources). Provides an opportunity to add value statements. Not measurable through numeric means.

### **Great Lakes**

The five (large) lakes located in Canada and United States: Lake Ontario, Lake Superior, Lake Huron, Lake Erie, and Lake Michigan.

### **Great Lakes Connecting Channels**

The large rivers that connect the Great Lakes (e.g. St. Clair River, St. Lawrence River, Ottawa River)

### **Groundwater**

Subsurface water that occurs beneath the water table in soils and geological formations that are fully saturated.

### **Groundwater Recharge Area**

The area where an aquifer is replenished from (a) natural processes, such as the infiltration of rainfall and snowmelt and the seepage of surface water from lakes, streams and wetlands, (b) from human interventions, such as the use of storm water management systems, and (c) whose recharge rate exceeds a threshold specified in the regulations. The Director's rules will specify the acceptable methodologies to determine groundwater recharge rates i.e. what qualifies as significant.

### **Hazard**

In the context of this guidance, a hazard is equivalent to a contaminant and pathogen threat.

### **Hazard Rating**

The numeric value which represents the relative potential for a contaminant of concern to impact drinking water sources at concentrations significant enough to cause human illness. This numeric value is determined for each contaminant of concern in the Threats Inventory and Issues Evaluation of the Assessment Report.

### **Highly Vulnerable Aquifer (HVA)**

An aquifer that can be easily changed or affected by contamination from both human activities and natural processes as a result of (a) its intrinsic susceptibility, as a function of the thickness and permeability of overlaying layers, or (b) by preferential pathways to the aquifer. The Director's rules will permit the use of various methods, such as the Intrinsic Susceptibility Index (ISI), to determine those aquifers that are highly vulnerable. Ontario's ISI defines a highly vulnerable aquifer as having a value of less than 30. An ISI is a numerical indicator that helps to indicate where contamination of groundwater is more or less likely to occur as a result of surface contamination due to natural hydrogeological features. The ISI is the most commonly used method of index mapping and was the prescribed method set out in the provincial 2001/2002 Groundwater Studies.

### **Hydrogeology**

Hydrogeology is the study of the movement and interactions of groundwater in geological materials.

### **Hydrogeological Study**

A study that characterizes the hydrogeology of the site which demonstrates through an evaluation of anticipated changes in the water balance between pre-development and post-development, and how such changes shall be mitigated.

### **Imminent Threat to Health**

A contaminant of concern that can affect human health in a short period of time.

### **Impact**

Often considered the consequence or effect, the impact should be measurable and based on an agreed set of parameters. In the case of source water protection, the parameters may be an acceptable list of standards which identify maximum raw water levels of contaminants and pathogens of concern. In the case of water quantity, the levels may relate to a minimum annual flow, piezometric head or lake level.

### **Impervious**

Not allowing something to pass through or penetrate. Impervious surfaces are mainly artificial structures such as paved roads, sidewalks, driveways and parking lots.

The contiguous area of land and water immediately surrounding a surface water intake, which includes:

- the distance from the intake;
- a minimum travel time of the water associated with the intake of a municipal residential system or other designated system, based on the minimum response time for the water treatment plant operator to respond to adverse conditions or an emergency;
- the remaining watershed area upstream of the minimum travel time area (also referred to as the Total Water Contributing Area) – applicable to inland water courses and inland lakes only. (See also “Surface Water Intake Protection Zone”)

### **Incidental Volumes for Personal/Domestic Use**

Means standard size containers that are used for personal or domestic activities. This will exclude larger volumes used in activities, such as hobbies, businesses/home businesses.

### **Intrinsic Vulnerability**

The potential for the movement of a contaminant(s) through the subsurface based on the properties of natural geological materials.

### **Issues Contributing Area (ICA)**

The area of land where drinking water threats may contribute to a known drinking water issue. For example, if Trichloroethylene (TCE) is determined to be an issue, the area from which the source of TCE is determined is called the issues contributing area.

### **Land Use**

A particular use of space at or near the earth's surface with associated activities, substances and events related to a particular land use designation.

### **Local Area**

A water quantity vulnerable area identified in a Tier 3 Water Budget and Water Quantity Risk Assessment as having a significant water quantity risk level. Eg. Local Area A identified in the Orangeville Tier 3 study.

### **Major Development**

Major development means the construction of a building or building on a lot with the ground floor area cumulatively equal to 500 m<sup>2</sup> (5382 sq ft), and any other impervious surface. Note single detached residential properties are exempt from the definition.

### **Managed Lands**

Managed land means land to which agricultural source material, commercial fertilizer or non-agricultural source material is applied.

### **Municipal Residential System**

All municipal drinking-water systems that serve or are planned to serve a major residential development (i.e. six or more private residences).

### **Non-Agricultural Source Material (NASM)**

Are materials from non-agricultural sources that can be applied to agricultural lands. The Nutrient Management Act (Table 1, 2 and 3 of Schedule 4) stipulates land application standards

based on the quality and category of NASM being applied. The act identifies three categories of NASMs:

Category 1: unprocessed plant material (e.g. vegetable culls).

Category 2: processed plant material (e.g. organic waste materials from a bakery)

Category 3: pulp and paper biosolids and animal-based materials (e.g. organic residual material from meat processing plant) and municipal sewage biosolids.

### **Non-Major Development**

Non-major development is considered to be anything not captured in the definition of major development.

### **Nutrient Unit**

Nutrient units are calculated based on the number of livestock housed on a farm unit. A nutrient unit is defined as the number of animals that will give the fertilizer replacement value of the lower of; 43 kilograms of nitrogen or 55 kilograms of phosphate per year as nutrients.

### **Organic Solvent**

A substance, usually a liquid, capable of dissolving another liquid. Organic solvents include carbon tetrachloride, chloroform, methylene chloride (dichloromethane) and pentachlorophenol.

### **Parcel Level**

A parcel is a conveyable property, in accordance with the provisions of the Land Titles Act. The parcel is the smallest geographic scale at which risk assessment and risk management are conducted.

### **Pathogen**

A disease causing organism.

### **Peak Demand Tolerance**

A measure of ability for a water supply system to reduce short-term water demands.

### **Planned Drinking Water Source**

The drinking water source (i.e. aquifer or surface water body) from which planned municipal residential systems or other planned designated systems are projected to obtain their drinking water from in the future and for which specific wellhead protection areas and surface water



intake protection zones have been identified. The planned drinking water sources are described in the Municipal Long Term Water Supply Strategy component of the Assessment Report.

### **Plume**

A space in air, water, or soil containing pollutants released from a point source.

### **Provincial Tables of Circumstances**

Were developed by the province to determine if an activity is or would be a significant, moderate or low drinking water threat in a specific area and to ensure consistency across the province. The tables list the various scores for which there are provincially prescribed threats and circumstances within the *Tables of Drinking Water Threats*. (Note: Not all combination of vulnerable areas and vulnerability scores have threats and circumstances associated with them).

### **Raw Water**

Water that is in a drinking-water system or in plumbing that has not been treated in accordance with, (a) the prescribed standards and requirements that apply to the system, or (b) such additional treatment requirements that are imposed by the license or approval for the system.

### **Raw Water Supply**

Water outside a drinking-water system that is a source of water for the system.

### **Recharge**

Recharge is the process by which water moves from the ground surface, through the unsaturated zone, to arrive at the water table.

### **Reserve Amounts**

Minimum flows in streams that are required for the maintenance of the ecology of the ecosystem.

### **Restricted Land Use (Policies)**

A policy that requires municipalities to have in place a process for flagging proposals that are within a vulnerable area where a threat could be significant and where Part IV authorities are being used. This 'flag' would alert the building official or planning department that the proposal needs to be reviewed by the RMO and a notice issued in order to proceed with the application.

## **Risk**

The likelihood of a drinking water threat (a) rendering an existing or planned drinking water source impaired, unusable or unsustainable, or (b) compromising the effectiveness of a drinking water treatment process, resulting in the potential for adverse human health effects.

### **Risk Management Inspector**

The risk management inspector is responsible for enforcing Part IV powers, similar to the way in which building inspectors enforce the provisions of the Building Code Act. An individual cannot be appointed as a risk management inspector unless they have the qualifications prescribed by the regulations, which state that the individual completes a ministry-approved training course.

### **Risk Management Official**

The risk management official is responsible for preparing, negotiating and establishing risk management plans and evaluating risk assessments under Part IV of the *Clean Water Act, 2006*, similar to the way in which building officials make decisions on building permits. An individual cannot be appointed as a risk management official unless they have the qualifications prescribed by the regulations, which state that the individual completes a ministry-approved training course.

### **Risk Management Plan (RMP)**

A site-specific document, approved by a risk management official or person with qualifications as defined under Part IV of the Clean Water Act, that outline actions required to address identified significant drinking water threats, and should include and account for risk management measures that are already in place. A RMP can be thought of as a means of applying regulatory controls to an activity or activities; it is a plan that regulates how significant drinking water threats are managed – one which offers the opportunity for local agreement and negotiation.

### **Sensitivity Area**

That portion of a defined vulnerable area that has been assigned a vulnerability score.

### **Severity**

The degree to which an impact is measured compared to an idealized value of some parameter of concern. In the case of water quality, the severity may relate to degree of measurable

exceedance of some contaminant or pathogen. In the case of water quantity deviation from some measurable parameter (e.g. minimum annual flow, piezometric head or lake level) must also be established.

### **Significant Hydrologic Features**

(a) A permanent and intermittent stream, (b) wetlands, (c) kettle lakes and their surface catchment areas, (d) seepage areas and springs, and (e) aquifers and recharge areas that have been identified as significant.

### **Site Alteration**

Activities such as filling, grading and excavation that would change the landform and natural vegetative characteristics of land but does not include,

- d) the construction of facilities for transportation, infrastructure, utilities and uses by a public body as defined in Section 2 of the Clean Water Act, or
- e) activities for works under the Drainage Act; or
- f) the carrying out of agricultural practices on land that has been used for agricultural purposes on the date the source protection plan came into effect.

### **Site-level**

The most refined scale at which technical assessment of hydrological and hydrogeological conditions can be conducted. These assessments may contribute to water budgets, vulnerability assessments, and issues evaluation.

### **Sub-Watershed**

An area that is drained by an individual tributary into the main watercourse of a watershed.

### **Surface Water**

Water that is present on the earth's surface and may occur as rivers, lakes, wetlands, ponds, etc.

### **Surface Water Intake Protection Zone (IPZ)**

The contiguous area of land and water immediately surrounding a surface water intake, which includes:

- the distance from the intake;

- a minimum travel time of the water associated with the intake of a municipal residential system or other designated system, based on the minimum response time for the water treatment plant operator to respond to adverse conditions or an emergency;
- the remaining watershed area upstream of the minimum travel time area (also referred to as the total water contributing area) – applicable to inland water courses and inland lakes only

### **Tables of Drinking Water Threats**

Were developed by the province and list (a) prescribed activities that can be identified as significant threats; (b) the vulnerable areas where they can be identified as a threat; (c) the circumstances under which they are listed as a drinking water threats and the significance (significant, moderate or low) of the threat based on the possible vulnerability scores.

### **Targets**

In this context, detailed goals that are often expressed as numeric goals (e.g. to reduce contaminant X in this aquifer by 10% by 2009).

### **Tier 1, 2, and 3 Water Budgets**

Numerical analysis at the watershed/subwatershed (Tier1 and 2) or local area (Tier 3) level considering existing and anticipated amounts or water use within the watershed, as well as quantitative flow between the groundwater and surface water systems.

### **Time of Travel (TOT)**

An estimate of the time required for a particle of water to move in the saturated zone from a specific point in an aquifer into the well or intake.

### **Transport Pathway**

Transport pathways are features or activities occurring at the surface that disturb the surface above the aquifer, or which artificially enhances flow to an aquifer. The presence of a transport pathway can increase the vulnerability rate of an area.

### **Unconfined Aquifer**

An aquifer whose upper boundary is the water table.

### **Vulnerable Area**

An area referring to a groundwater recharge area, a highly vulnerable aquifer, a surface water intake protection zone or a wellhead protection area.

### **Water Intake Reliability**

The probability that a wellhead or surface water intake can meet demand.

### **Water Reserve**

A proportion of surface water flow that must be sustained to support anthropogenic or ecological requirements.

### **Water Source**

An aquifer or surface water body being used to supply drinking water.

### **Water Source Supply**

The total amount of water flowing through a surface water or groundwater system.

### **Water Supply System**

The group of surface water intakes and/or groundwater wells that pump water to supply a municipal water distribution system.

### **Water Quantity Receptor**

A competing water demand or requirement in danger of incurring a potential impact. This includes other anthropogenic or ecological water uses within the watershed, particularly those that are required to be maintained by provincial or federal law (e.g. permitted wastewater assimilation flows, other Permits to Take Water, or fish habitat protected by Department of Fisheries and Oceans legislation).

### **Water Quantity Risk**

The likelihood that the threats to water quantity may render an existing or planned drinking water source impaired, unusable or unsustainable.

### **Watershed**

A watershed is the area of land where all of the water that is under it or drains off of it goes into the same place. Its boundaries are defined by ridges of high land.

### **Wellhead Protection Area (WHPA)**

The surface and subsurface area surrounding a water well or well field that supplies a municipal residential system or other designated system through which contaminants are reasonably likely to move so as to eventually reach the water well or well.

#### **WHPA-Q1**

An area delineated through a Tier 3 Water Budget and Water Quantity Risk Assessment as being the combined area that is the cone of influence of the well and the whole of the cones of influence of all other wells that intersect that area.

#### **WHPA-Q2**

An area delineated through a Tier 3 Water Budget and Water Quantity Risk Assessment as being the area that includes the WHPA-Q1 and any area where a future reduction in recharge would significantly impact that area.

## 21 APPENDIX A: POLICY LISTS AS REQUIRED UNDER SECTION 34 OF THE CLEAN WATER ACT

List A			
<b>Title:</b>	Significant threat policies that affect decisions under the Planning Act and Condominium Act, 1998		
<b>Preamble:</b>	<ul style="list-style-type: none"> <li>By including a significant threat policy in this list, decisions under the Planning Act and Condominium Act, 1998 will be required to conform with the listed policy (Clause 39 (1)(a) of the CWA)</li> <li>Official plans and zoning by-laws will be required to be amended and brought into conformity with the listed significant threat policy by the dates specified in the source protection plan (Section 40 and 42 of the CWA)</li> <li>In cases of conflict between a listed significant threat policy and an official plan or zoning by-law, the significant threat policy prevails (subsection 39 (2) of the CWA)</li> <li>By including a significant threat policy in List A, if there is a conflict between this significant threat policy and a policy in another provincial plan (e.g. the Green belt Plan), the policy that provides the greatest protection to drinking water prevails (subsection 39 (4) of the CWA)</li> <li>A municipality or municipal planning authority must not undertake any public work, improvement of a structural nature or other undertaking or pass a by-law for any purpose that conflicts with a significant threat policy in List A (subsection 39 (6) of the CWA)</li> </ul>		
<b>Opening Statement:</b>	"Clause 39 (1)(a), subsections 39 (2), (4) and (6), and sections 40 and 42 of the Clean Water Act, 2006 apply to the following policies:"		
<b>Policy Reference #:</b>	LUP-1	LUP-2	LUP-3
	LUP-4	LUP-5	LUP-6
	LUP-7	LUP-8	LUP-9
	LUP-10	RLU-1	LUP-12
	LUP-13	LUP-14	LUP-15
	LUP-11	SEWG(c)-3	TRANS-1
	TIME-7		

List B			
<b>Title:</b>	Moderate and low threat policies that affect decisions under the Planning Act and Condominium Act, 1998		
<b>Preamble:</b>	<ul style="list-style-type: none"> <li>By including a moderate or low threat policy in this list, decisions under the Planning Act and Condominium Act, 1998 will be required have regard to the policy (Clause 39 (1)(b) of the CWA)</li> </ul>		
<b>Opening Statement:</b>	"Subsection 39 (1)(b) of the Clean Water Act, 2006 applies to the following policies:"		
<b>Policy Reference #:</b>	LUP-11	LUP-5	

List C			
<b>Title:</b>	Significant threat policies that affect prescribed instrument decisions		
<b>Preamble:</b>	<ul style="list-style-type: none"> <li>By including a significant threat policy in this list, a decision to issue, otherwise create or amend a prescribed instrument must conform to the listed policy (clause 39 (7)(a) of the CWA)</li> <li>A person or body that has issued or otherwise created a prescribed instrument before the source protection plan took effect will be required to amend the instrument to conform with the listed significant threat policies before the date specified in the source protection plan (section 43 of the CWA)</li> <li>A municipality or municipal planning authority must not undertake any public work, improvement of a structural nature or other undertaking or pass a by-law for any purpose that conflicts with a significant threat policy in List C (subsection 39 (6) of the CWA)</li> </ul>		
<b>Opening Statement:</b>	"Subsection 39 (6), clause 39 (7) (a), section 43 and subsection 44 (1) of the Clean Water Act, 2006 apply to the following policies:"		
<b>Policy Reference #:</b>	WAST(a)-1	WAST(b)-3	WAST(c)-1
	WAST(c)-2	SEWG(a)-1	SEWG(b)-2
	SEWG(b)-3	SEWG(b)-4	SEWG(c)-1
	SEWG(c)-2	SEWG(d)-1	SEWG(d)-2
	ASM(App)-3	ASM(App)-4	ASM(Store)-3
	ASM(Store)-4	ASM(ICA)-3	ASM(ICA)-4
	NASM(H&S)-3	NASM(H&S)-4	FERT(App)-2
	FERT(ICA)-3	FERT(ICA)-4	DEMD-1
	LSTOCK-5	LSTOCK-4	TRANS-1
	TIME-5	TIME-6	NASM(App)-3



List C			
	NASM(App)-4	WAST(b)-4	

List D	
<b>Title:</b>	Moderate and low threat policies that affect prescribed instrument decisions
<b>Preamble:</b>	<ul style="list-style-type: none"> <li>By including a moderate or low threat policy in List D, a decision to issue, otherwise create or amend a prescribed instrument must have regard to the listed policy (clause 39 (7)(b) of the CWA)</li> </ul>
<b>Opening Statement:</b>	"Clause 39 (7)(b) of the Clean Water Act, 2006 applies to the following policies:"
<b><u>Policy Reference #:</u></b>	WAST(a)-2

List E	
<b>Title:</b>	Significant threat policies that impose obligations on municipalities, source protection authorities and local boards <sup>4</sup>
<b>Preamble:</b>	<ul style="list-style-type: none"> <li>Requires a municipality, a source protection authority or a local board to comply with any obligation that is imposed on it by significant threat policy (section 38 of the CWA)</li> <li>If the policy relates to education, outreach and incentive programs, stewardship programs, the promotion of best management practices, pilot programs, research, and other specified actions to be taken to implement the source protection plan or achieve the plan's objectives, section 30 of the regulation requires that the policy designate (identify) the person or body responsible for implementing the policy.</li> <li>By including a significant threat policy in List E, the person or body identified for implementing the policy will be required to comply with the obligations specified in the policy</li> <li>A municipality or municipal planning authority must not undertake any public work, improvement of a structural nature or other undertaking or</li> </ul>

<sup>4</sup> Under the CWA, "Local board" has the same meaning as in the Municipal Affairs Act. Local board means a school board, municipal service board, transportation commission, public library board, board of health, police services board, planning board, or any other board, commission, committee, body or local authority established or exercising any power or authority under any general or special Act with respect to any of the affairs or purposes, including school purposes, of a municipality or of two or more municipalities or parts thereof.

List E			
	pass a by-law for any purpose that conflicts with a significant threat policy in List E (subsection 39 (6) of the CWA)		
<b>Opening Statement:</b>	“Section 38 and subsection 39 (6) of the Clean Water Act, 2006 applies to the following policies:”		
<b>Policy Reference #:</b>	SEWG(c)-3	SEWG(c)-4	SALT(ICA)-3
	DelCE-2	DEMD-2	DEMD-3
	DEMD-7	EDU-1	EDU-2
	EDU-3	EDU-5	EDU-6
	EDU-7	INCENT-2	INCENT-3
	INCENT-4	SEWG(b)-5	FUEL-3
	TIME-8	TRANS-1	LUP-9
	LUP-10	EDU-8	EDU-12
	FUEL-4	WAST(b)-5	

List F			
<b>Title:</b>	Monitoring policies referred to in subsection 22 (2) of the Clean Water Act, 2006		
<b>Preamble:</b>	<ul style="list-style-type: none"> <li>By including monitoring policies in List F, the public body<sup>5</sup> that is designated in the monitoring policy will be required to implement a monitoring program in accordance with the policy</li> </ul>		
<b>Opening Statement:</b>	“Subsection 45 of the Clean Water Act, 2006 applies to the following policies:”		
<b>Policy Reference #:</b>	COND-1	COND-2	MON-1
	MON-2	MON-3	MON-4
	MON-5	MON-6	

List G			
<b>Title:</b>	Policies related to section 57 of the Clean Water Act, 2006		
<b>Preamble:</b>	<ul style="list-style-type: none"> <li>The reader would refer to the actual policy text for information pertaining to the designated prohibited activity(ies), their respective designated areas,</li> </ul>		

<sup>5</sup> Under the CWA, “public body” means, (a) a municipality, local board or conservation authority, (b) a ministry, board, commission, agency or official of the Government of Ontario, or (c) a body prescribed by the regulations or an official of a body prescribed by the regulations.

List G			
	and other details related to the sec section 57 prohibition – for instance the date by which existing activities must be phased out in accordance with subsection 57(2) of the CWA		
<b>Opening Statement:</b>	“The following policies relate to section 57 (prohibition) of the Clean Water Act.”		
<b><u>Policy Reference #:</u></b>	WAST(b)-2	ASM(App)-2	ASM(Store)-2
	ASM(ICA)-2	NASM(App)-2	NASM(H&S)-2
	FERT(H&S)-2	FERT(ICA)-2	PEST(H&S)-2
	SALT(H&S)-2	SNOW-2	FUEL-2
	DNAPL-2	SOLV-2	LSTOCK-1
	LSTOCK-3	TIME-3	TRANS-1

List H			
<b>Title:</b>	Policies related to section 58 of the Clean Water Act, 2006		
<b>Preamble:</b>	<ul style="list-style-type: none"> <li>The reader would refer to the actual policy text for information pertaining to the designated regulated activity(ies), their respective designated areas, and any other details related to the regulation of the activity under section 58 – for instance – the policies governing the content of risk management plans</li> </ul>		
<b>Opening Statement:</b>	“The following policies relate to section 58 (risk management plans) of the Clean Water Act.”		
<b><u>Policy Reference #:</u></b>	SEWG(b)-1	ASM(App)-1	ASM(Store)-1
	ASM(ICA)-1	NASM(App)-1	NASM(H&S)-1
	FERT(App)-1	FERT(H&S)-1	FERT(ICA)-1
	PEST(App)-1	PEST(H&S)-1	SALT(App)-1
	SALT(H&S)-1	SALT(ICA)-1	SALT(ICA)-2
	SNOW-1	SNOW(ICA)-1	FUEL-1
	DNAPL-1	SOLV-1	LSTOCK-2
	TIME-1	TIME-2	WAST(b)-1
	TRANS-1		

List I	
<b>Title:</b>	Policies related to section 59 of the Clean Water Act, 2006

<b>Preamble:</b>	<ul style="list-style-type: none"><li>• Purpose of which is to ensure that a development proposal complies with section 57 or 58 of the CWA before it is given approvals</li><li>• The reader would refer to the actual policy text for details related to each policy, including the designated land uses and their respective designated areas.</li></ul>		
<b>Opening Statement:</b>	“The following policies relate to section 59 (restricted land use) of the Clean Water Act.”		
<b>List I</b>			
<b><u>Policy Reference</u> #:</b>	RLU-1		

<b>List J</b>			
<b>Title:</b>	Strategic Action policies		
<b>Preamble:</b>			
<b>Opening Statement:</b>	For the purposes of section 33 of Ontario regulation 287/07, the following policies are identified as strategic action policies:		
<b>Policy Reference #:</b>	WAST(a)-3	PEST(App)-2	SALT(App)-2
	DEMD-6	SEWG(a)-2	SEWG(b)-5
	EDU-9	EDU-10	EDU-11
	EDU-12	TP-1	TP-2
	FUEL-3	DEMD-2	DEMD-3
	DEMD-4	DEMD-5	DEMD-7
	DEMD-8		

<b>List K</b>			
<b>Title:</b>	Significant Threat Policies with non-legally binding commitments		
<b>Preamble:</b>			
<b>Opening Statement:</b>	Significant threat policies that identify a body other than a municipality, local board or source protection authority as responsible for implementing the policy, which represents a non-legally binding commitment.		
<b>Policy Reference #:</b>	SEWG(a)-2	DNAPL-3	NASM(App)-5
	DeICE-1	DEMD-4	DEMD-5
	DEMD-6	DEMD-8	SOLV-3

List K			
	WAST(a)-3	PEST(App)-2	FUEL-3
	EDU-4	EDU-9	EDU-10
	EDU-11	EDU-12	SALT(App)-2
	INCENT-1	INCENT-5	INCENT-6
	TP-2		

## 22 DESIGNATIONS IN ACCORDANCE WITH DIRECTOR INSTRUCTIONS UNDER ONTARIO REGULATION 287/07

**Prescribed Instruments which apply to source protection plan policies in Lists C and D above (ss 34(4) of Ontario Regulation 287/07)**

Legal Effect (conform with, have regard to)	Aggregate Resources Act-licenses, wayside permits, aggregate permits, and site plans	Environmental Protection Act- waste sites and systems	Environmental Protection Act-renewable energy approvals	Nutrient Management Act- Nutrient Management Plans/Strategy	NASM Plans	Ontario Water Resources Act-permits to take water	Ontario Water Resources Act-sewage works	Pesticide Act-permits	Safe Drinking Water Act-permits, licences
Must Conform		WAST(a)-1 WAST(b)-2 WAST(b)-3 WAST(c )-1 WAST(c )-2 NASM(App)-3 NASM(App)-4 NASM(App)-3 NASM(App)-4	WAST(b)-2 WAST(b)-3 SEWG(a)-1 SEWG(b)-2 SEWG(b)-3 SEWG(b)-4 SEWG( c)-1 SEWG(c )-2 SEWG(d)-1 SEWG(d)-2	ASM(App)-3 ASM(App)-4 ASM(Store)-3 ASM(Store)-4 ASM(ICA)-3 ASM(ICA)-4 NASM(App)-3 NASM(App)-4 NASM(Store)-3 NASM(Store)-4 FERT(App)-2 FERT(ICA)-3 FERT(ICA)-4 LSTOCK-4 LSTOCK-5	NASM(App)-3 NASM(App)-4 NASM(Store)-3 NASM(Store)-4	DEMD-1	WAST(c )-1 WAST(c )-2 SEWG(a)-1 SEWG(b)-2 SEWG(b)-3 SEWG(b)-4 SEWG(c )-1 SEWG(c )-2 SEWG(d)-1 SEWG(d)-2		
Have Regard		WAST(a)-2							

Policy Summary Matrix												
Legal Effect	Policy affects decisions under the Planning Act and Condominium Act, 1998 (Lists A & B)	Policy affects Prescribed Instrument decisions (Lists C & D)		Significant threat policies that impose obligations on municipalities, source protection authorities and local boards (List E)		Monitoring policies referred to in ss (22(2) of the CWA (List F)	Part IV Policies - Significant threat policies that are designated in the plan as require a risk management plan, are prohibited under s. 57, or to which s. 59 of the CWA applies (Lists G, H, and I)			Strategic Action Policies (List J)	Significant threat policies which designate a body other than a municipality, source protection authority or local board as responsible for implementing the policy (List k)	
Must Conform with	LUP-1	WAST(a)-1	NASM(H&S)-3	SEWG(c)-3, WAST(b)-5		COND-1	WAST(b)-1	SEWG(b)-1	DNAPL-1			
	LUP-2	WAST(b)-3	NASM(H&S)-4	SEWG(c)-4, FUEL-4		COND-2	ASM(App)-2	ASM(App)-1	SOLV-1			
	LUP-3	WAST(c)-1	FERT(App)-2	SALT(ICA)-3, EDU-12		MON-1	ASM(Store)-2	ASM(Store)-1	LSTOCK-1			
	LUP-4	WAST(c)-2	FERT(ICA)-3	DeICE-2, EDU-8		MON-2	ASM(ICA)-2	ASM(ICA)-1	LSTOCK-2			
	LUP-5	SEWG(a)-1	FERT(ICA)-4	DEMD-2, LUP-10		MON-3	NASM(App)-2	NASM(App)-1	LSTOCK-3			
	LUP-6	SEWG(b)-2	DEMD-1	DEMD-3, LUP-9		MON-4	NASM(H&S)-2	NASM(H&S)-1	SALT(ICA)-1			
	LUP-7	SEWG(b)-3	LSTOCK-4	DEMD-7, TRANS-1		MON-5	FERT(H&S)-2	FERT(App)-1	TIME-1			
	LUP-8	SEWG(b)-4	LSTOCK-5	EDU-1		MON-6	FERT(ICA)-2	FERT(H&S)-1	TIME-2			
	LUP-9	SEWG(c)-1	TRANS-1	EDU-2			PEST(H&S)-2	FERT(ICA)-1	WAST(b)-1			
	LUP-10	SEWG(c)-2	TIME-5	EDU-3			SALT(H&S)-2	PEST(App)-1	TRANS-1			
	LUP-12	SEWG(d)-1	TIME-6	EDU-5			SNOW-2	PEST(H&S)-1				
	LUP-13	SEWG(d)-2	NASM(App)-3	EDU-6			FUEL-2	SALT(App)-1				
	LUP-14	ASM(App)-3		EDU-7			DNAPL-2	SALT(H&S)-1	RLU-1			
	LUP-15	ASM(App)-4		INCENT-2			SOLV-2	SALT(ICA)-1				
	RLU-1	ASM(Store)-3		INCENT-3			WAST(b)-2	SALT(ICA)-2 SNOW-1				
	SEWG(c)-3	ASM(Store)-4		INCENT-4			LSTOCK-1	SNOW(ICA)-1 FUEL-1				
	TRANS-1	ASM(ICA)-3		SEWG(b)-5			LSTOCK-3	DNAPL-1				
	TIME-7	ASM(ICA)-4		FUEL-3			TIME-3					
		NASM(App)-4		TIME-8			TRANS-1					
Have Regard to		WAST(a)-2										
Non Legally Binding										WAST(a)-3 SEWG(a)-2 SEWG(b)-5 FUEL-3 PEST(App)-2 SALT(App)-2 DEMD-2 DEMD-3 DEMD-4 DEMD-5 DEMD-6 DEMD-7 DEMD-8 EDU-9	SEWG(a)-2 DNAPL-3 NASM(App)-5 DeICE-1 DEMD-5 DEMD-8 SOLV-3 SALT(App)-2	EDU-4 EDU-9 EDU-10 EDU-11 EDU-12 DEMD-4 WAST(a)-3 INCENT-1 INCENT-5 INCENT-6 DEMD-6 PEST(App)-2 TP-2

**Notes:**