

Source Protection Program Overview

Niagara Region Planning Committee

Niagara Peninsula Source Protection Authority
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Source Protection Program Context

- After the Walkerton tragedy in May 2000, Justice Dennis O'Connor was commissioned to lead an inquiry into the contamination of the Walkerton water supply and more broadly, the safety of Ontario's drinking water.
- *Clean Water Act, 2006 (CWA)* came into force July 3rd, 2007.
 - **Fulfills 12 of Justice O'Connor's recommendations.**
- First Principle - concept of prevention in the safeguarding of our drinking water for our communities and our health.

Source Protection Program

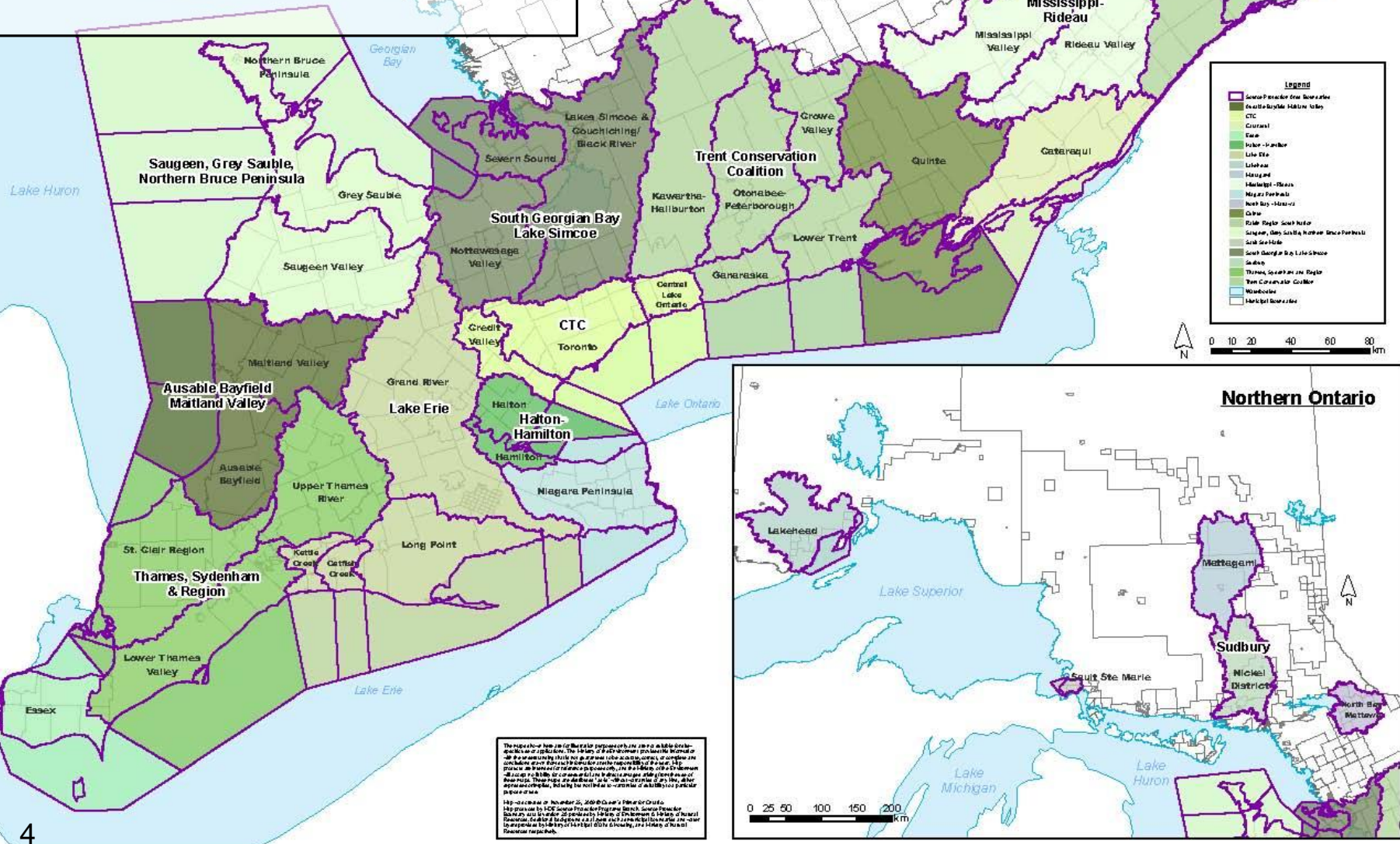
- The CWA established 38 source protection areas within the Province generally based on Conservation Authority boundaries under the *Conservation Authorities Act*, 1990.
- Source protection plans are now in place for municipal residential drinking water systems within the 38 source protection areas, representing approximately **90% of the population** within those source protection areas.

Source Protection Areas & Regions

Regulation 284/07

Source Protection: Scope

19 Source Protection Regions and Committees
38 Source Protection Areas



Source Protection Process

Assessment Report (November 2013)

- Vulnerable zones and vulnerability scores delineated
- Significant threats identified

Source Protection Plan (legal effect October 2014)

- Policies to address significant threats
- Implementer timelines and responsibilities

Implementation of Source Protection Plan

- By municipalities, provincial ministries, etc.
- Annual monitoring reporting by SPA

Update of Source Protection Plan (2018-2023)

- Minister's Section 36 Order to NPCA December 3rd, 2018

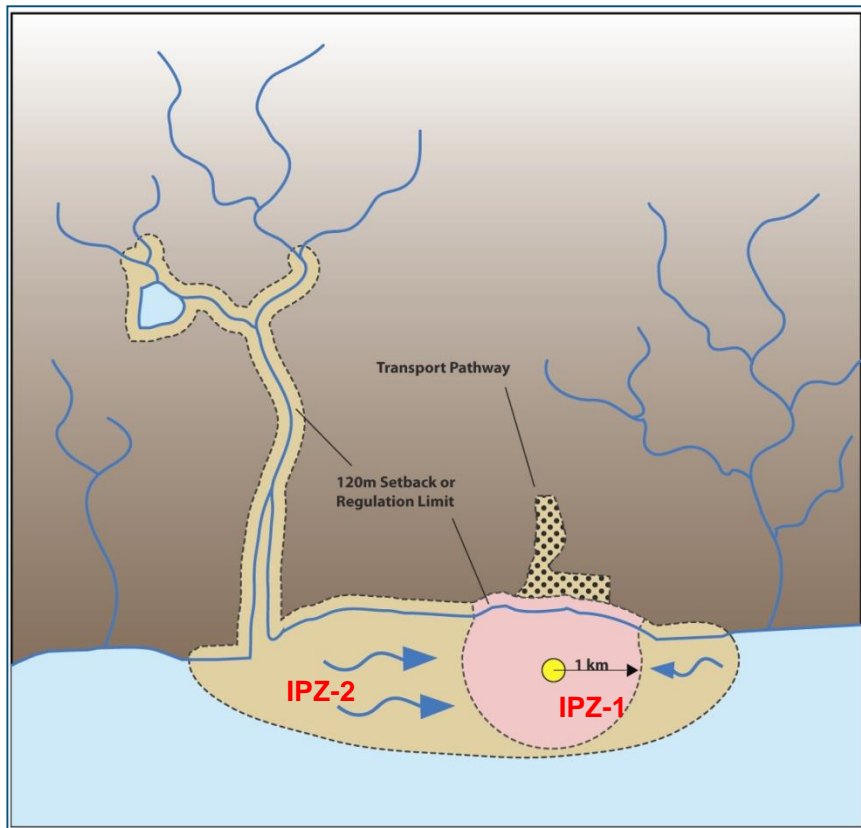
Vulnerability Analysis

- Water quality vulnerability analysis assesses how vulnerable **groundwater** and **surface water** sources are to contamination.
- Water quantity vulnerability analysis uses **water budgets** to assess the sustainability of the drinking water sources.
- Through these analyses four types of vulnerable areas are delineated:
 - Intake Protection Zone (IPZ) (Quality and Quantity)*
 - ~~Well Head Protection Area (WHPA) (Quality and Quantity)*~~
 - Significant Groundwater Recharge Areas (SGRAs)(Quantity)
 - Highly Vulnerable Aquifers (HVAs) (Quality)

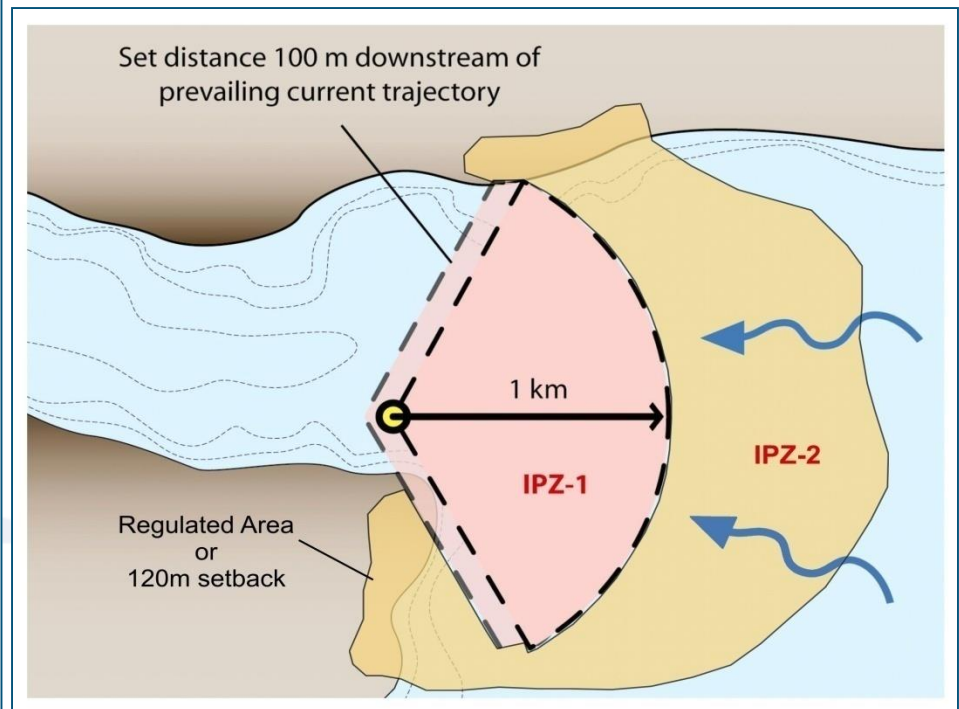
*areas where significant risk can occur

Delineation of Surface Water IPZs

Type A (Grimsby, Fort Erie)



Type B (Port Colborne, Welland, DeCew Falls, Niagara Falls)





DRINKING WATER
SOURCE PROTECTION
ACT FOR CLEAN WATER

NPSPA Assessment Report

Figure 5-5: Intake Protection Zones



Thursday, July 14, 2011



Assignment of Vulnerability Score

$$\text{Vulnerability Score} = \text{Area Vulnerability Factor} \times \text{Source Vulnerability Factor}$$

■ Area Vulnerability Factor

- Land cover, soil type, permeability, slope of setbacks
- Hydrological and hydrogeological conditions
- Percentage of area composed of land

■ Source Vulnerability Factor

- Distance of intake from land
- Depth of intake from top of water surface
- Number of recorded drinking water issues related to intake

Type of Intake	Source Vulnerability Factor	Area Vulnerability Factor		Overall Vulnerability Score	
		IPZ-1	IPZ-2	IPZ-1	IPZ-2
A	0.5 – 0.7	10	7 – 9	5 - 7	3.5 – 6.3
B	0.7 – 0.9	10	7 – 9	7 – 9	4.9 – 8.1

Niagara's Vulnerability Scores

Intake	Type	IPZ-1 Vulnerability Score	IPZ-2 Vulnerability Score
Niagara Falls	B	8.0	6.4
Port Colborne	B	9.0	8.1
Welland	B	7.0	N/A
Decew Main Intake and 406	B	8.0	4.9
Decew Lake Gibson	B	8.0	5.6
Rosehill	A	7.0	5.6
Grimsby	A	5.0	4.0

22 Prescribed Drinking Water Threat Activities

1 – **waste** disposal

2 – **sewage**

Agriculture

3 – application of Agricultural Source Materials
4 – storage of Agricultural Source Materials
5 – management of Agricultural Source Materials

6 – application of Non Agricultural Source Materials
7 – handling and storage of Non Agricultural Source Materials

8 – application of commercial fertilizer
9 – handling and storage of commercial fertilizer

10 – application of pesticide
11 – handling and storage of pesticide

21 – livestock grazing and pasturing

12 – application of **road salt**
13 – handling and storage of **road salt**

14 – storage of **snow**

Industrial

15 – handling and storage of **fuel**

16 – handling and storage of dense non-aqueous phase liquid (**DNAPL**)

17 – handling and storage of an **organic solvent**

18 – chemicals used in the de-icing of aircraft

22 – operation of liquid hydrocarbon pipeline

Water Quantity

19 – consumptive water taking

20 – activity that reduces the recharge of an aquifer

Clean Water Act (General Reg. 287/07)

Summary of Significant Prescribed Drinking Water Threats in Niagara IPZs

Threat Category	DeCew Falls IPZ-1s	Port Colborne IPZ-1	Port Colborne IPZ-2	Niagara Falls IPZ-1
1. Waste Disposal Sites	X	X	X	X
2. Sanitary, storm, & industrial discharges.	X	X	X	X
3, 4, & 21. Agricultural source material – application, storage	X	X	X	X
6 & 7. Non-agricultural source material	X	X	X	X
10. Pesticide application		X		
11. Pesticide storage/handling		X		
13 & 14. Road salt & snow storage		X		
18. Aircraft de-icing runoff		X		

Objectives of the Source Protection Plan

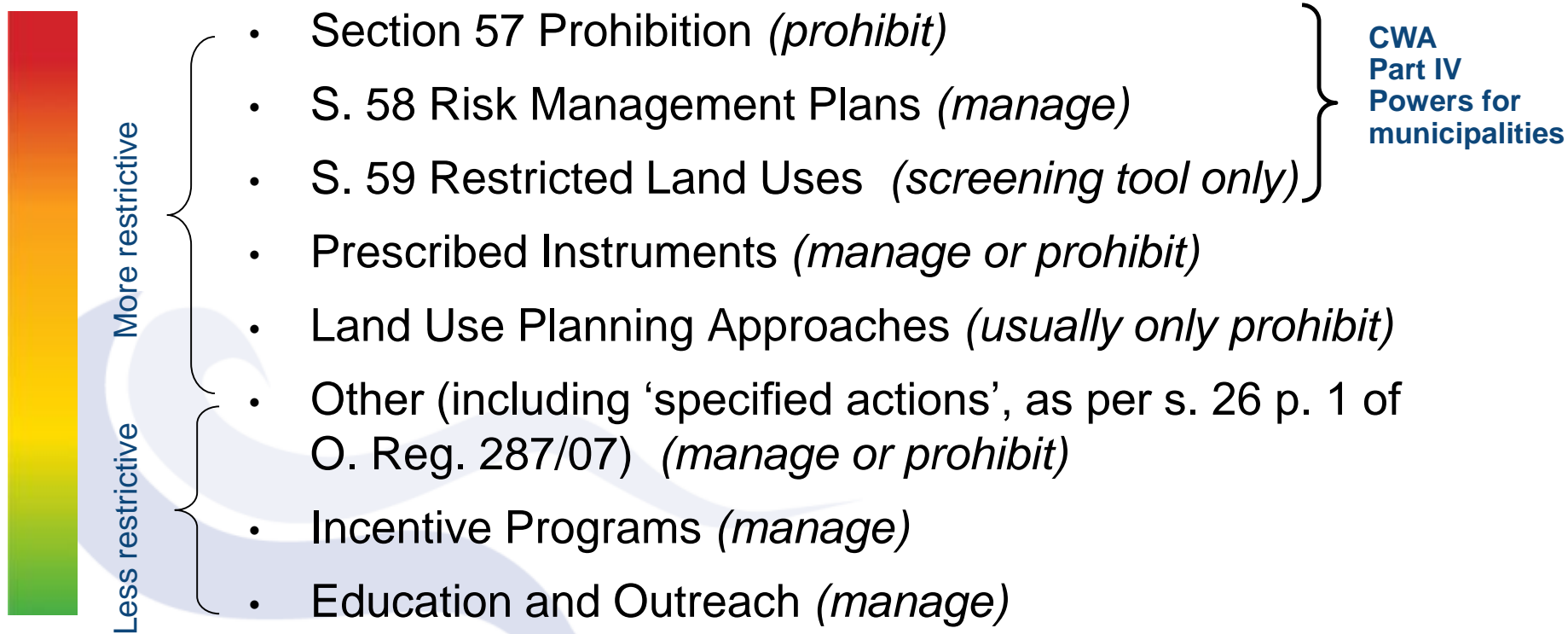
1. *Protecting existing and future drinking water sources in the Niagara Peninsula Source Protection Area; and*
2. *Ensuring through management or prohibition, that activities identified as threats to drinking water either never become a significant threat or, if the activity is already taking place, the activity ceases to be a significant threat.*

(Section 2.1, Niagara Peninsula Source Protection Plan)

The current plan only speaks to municipal supply protection.

Source Protection Plan Tools

Committees first decided desired outcome: manage or prohibit, then chose the specific tool(s) to achieve this

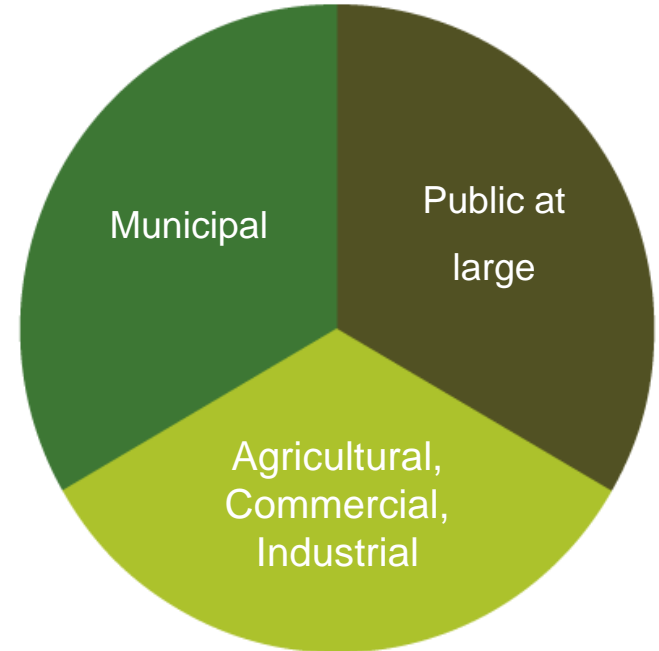


Objective of significant threat policies: Ceases to be / does not become significant (i.e., sufficiently managed)

Key Players

Source Protection Committee (SPC)

- Multi-stakeholder committee comprised of 9 members,
 - 3 municipal representatives from each of Haldimand, Hamilton and Niagara
- Makes recommendations to the Source Protection Authority on annual reporting and revisions to the Source Protection Plan.



Source Protection Authority (Niagara Peninsula Conservation Authority)

- SPA Board appoints the SPC, while SPA staff provide administrative and technical support to the Source Protection Committee
- Ultimately responsible for Source Protection Plan monitoring implementation, reporting, and revisions.

Other Key Players

Municipalities

- Partners in development of the Source Protection Program in Niagara since Day 1.
- Implementers/enforcers of local measures, actions and policies addressing drinking water threats.

Province

- Develop, update and provide guidance to Source Protection Regions on regulations and technical rules
- Provide funding for Source Protection Authority staffing.
- Approvals (ToR, AR, SPP and revisions to plans).
- Implementers/enforcers of provincial measures, actions and policies addressing drinking water threats.

Thank You

For more information, please visit:

<http://www.sourceprotection-niagara.ca/>

Or contact:

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