

Protecting Sources of Drinking Water in the Halton-Hamilton Source Protection Region

February 17, 2021

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Halton-Hamilton Source Protection Committee

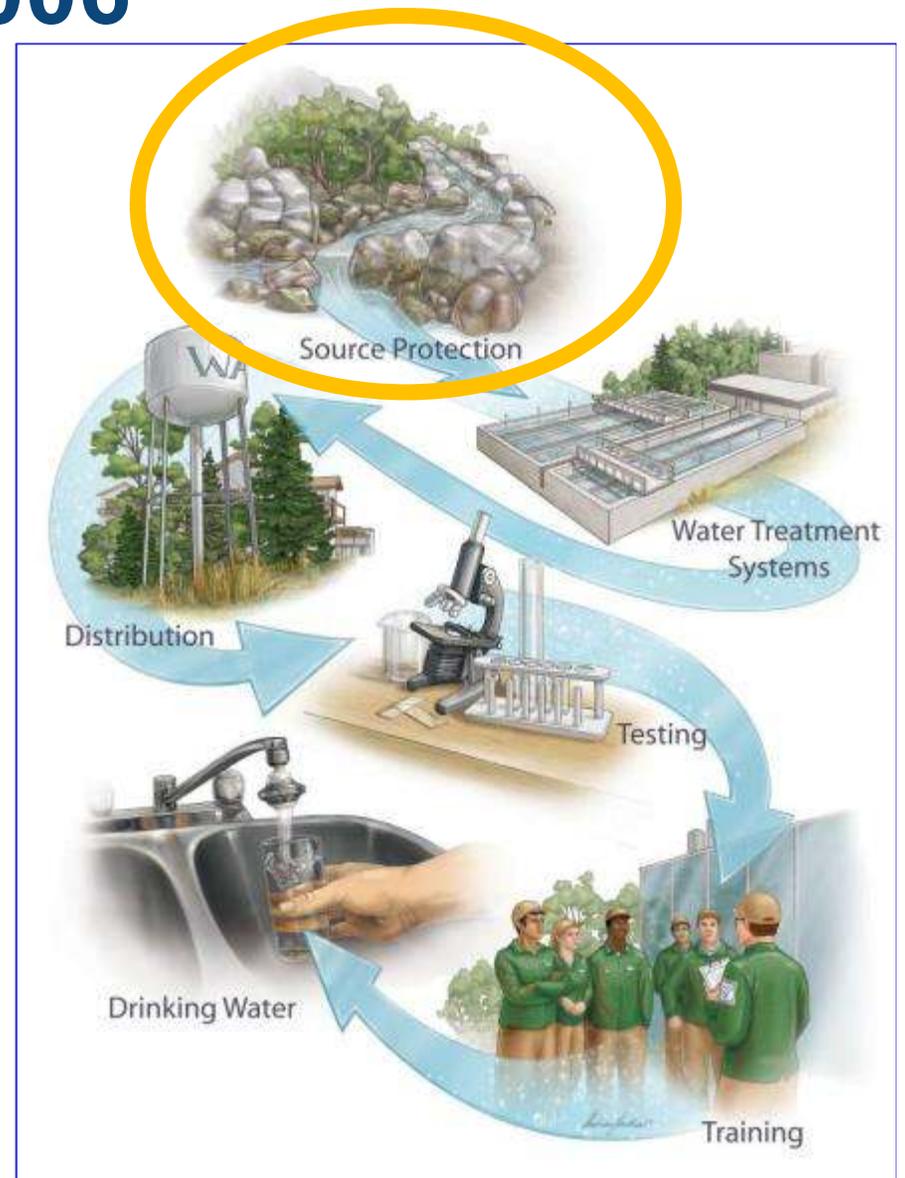


Overview

- Welcome
- Ontario's Clean Water Act
- Halton-Hamilton Source Water Protection Program
 - Source Protection Committee
 - Source Protection Region
- The Source Protection Planning
 - Relevance to the Industrial-Commercial Sector
 - The Science and the Policies
 - Policy Applicability Examples
 - Second round of source water protection planning
- Discussions

Clean Water Act, 2006

- The **Walkerton, Ontario** drinking water tragedy happened in May 2000
- The **Clean Water Act** is part of Ontario's multi-barrier approach to ensure safe, abundant drinking water
- The purpose is to **protect** existing and future **sources** of municipal drinking water from contamination and overuse
- Communities develop a **plan** that is locally driven and science-based
- **First Nations** and other drinking water systems may be included as described under the Act.



Multi-barrier approach³

Halton-Hamilton Source Protection Committee

Established in 2007 under the Clean Water Act, and one of 19 committees across Ontario.

Mission Statement

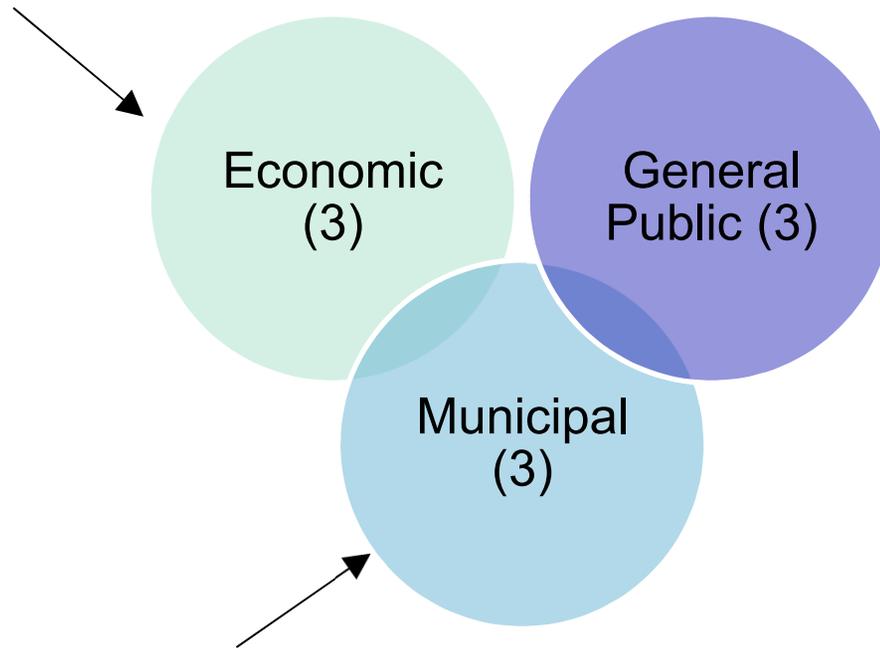
To collaboratively develop and maintain a local watershed-based plan, for the sustainable protection of municipal drinking water sources in the Halton-Hamilton Source Protection Region, that is science-based and prevents, reduces or eliminates risks to Lake Ontario and groundwater sources of municipal drinking water.



Halton-Hamilton Source Protection Committee

- 2 Agricultural representatives
- 1 Industrial-commercial rep

**Minister-
appointed Chair**



Non-voting
liaisons:

- 1 Health Unit
- 2 Conservation Authorities
- 1 Ministry of Environment, Conservation and Parks

- 1 rep for City of Hamilton, Niagara Region, Grimsby
- 1 rep for Halton and Peel Regions, Cities of Burlington and Mississauga, Towns of Oakville, Milton, Halton Hills
- 1 rep for Puslinch/Wellington County

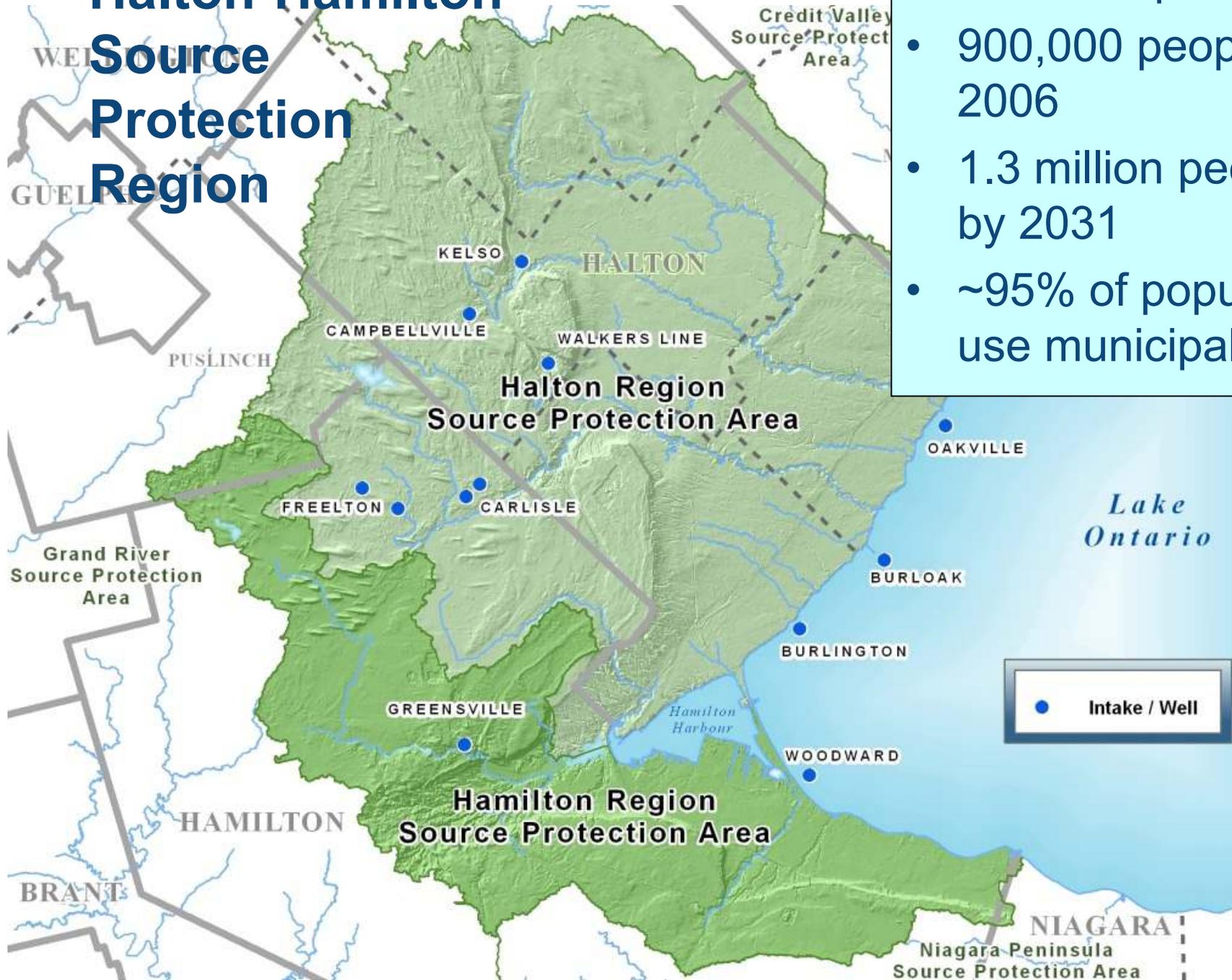
Halton-Hamilton Source Protection Region

- Based on the **Conservation Halton and Hamilton Conservation Authority watersheds**
- Comprised of the Halton Region and Hamilton Region Source Protection Authorities, per the Clean Water Act
- Halton-Hamilton program is led by the senior manager assisted by technical, administrative and other staff at the conservation authorities
- The Source Protection Authorities have several responsibilities including the update of science and policy documents, and recruitment of committee members.
- Local program is funded by the Province of Ontario.

www.protectingwater.ca

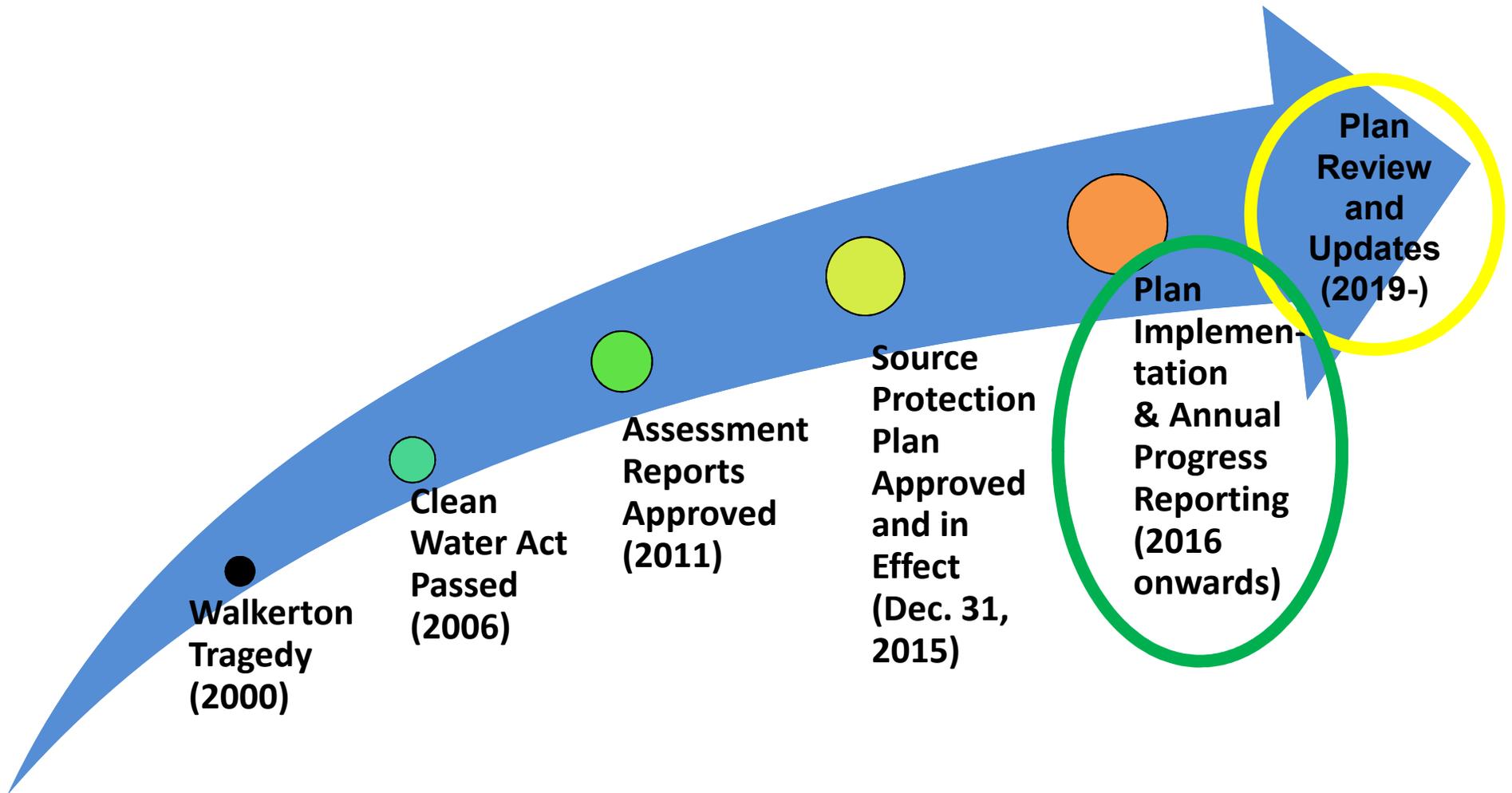


Halton-Hamilton Source Protection Region



- 12 municipalities
- 900,000 people in 2006
- 1.3 million people by 2031
- ~95% of population use municipal water

Halton-Hamilton Source Protection Planning: Where We Are



Source Protection Planning and the Industrial-Commercial Sector

- Industrial and commercial businesses may undertake certain activities that may pose a risk to drinking water sources.
- For example, the use of hazardous chemicals may pose a risk if they are not properly stored, used, and disposed. Other examples include the application of road salt on parking lots, and water takings in water-quantity stressed areas, etc.
- Certain activities are regulated under the Ontario Clean Water Act, in order to protect sources of municipal drinking water from potential contamination and overuse.
- Before we look at how policies of Source Protection Plans apply, it is necessary to understand **the science** behind them.

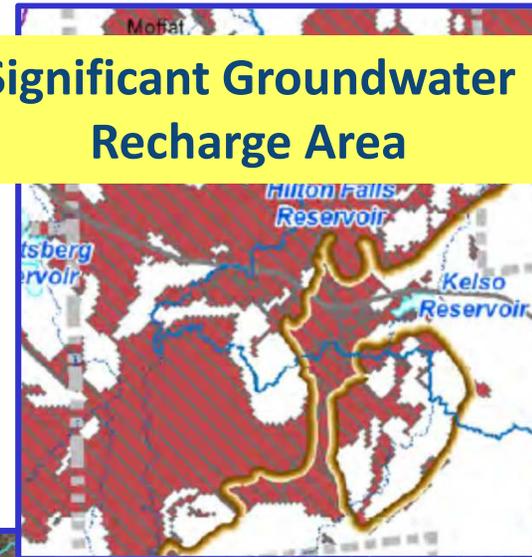


The Science: Drinking Water Vulnerable Areas

Intake Protection Zone



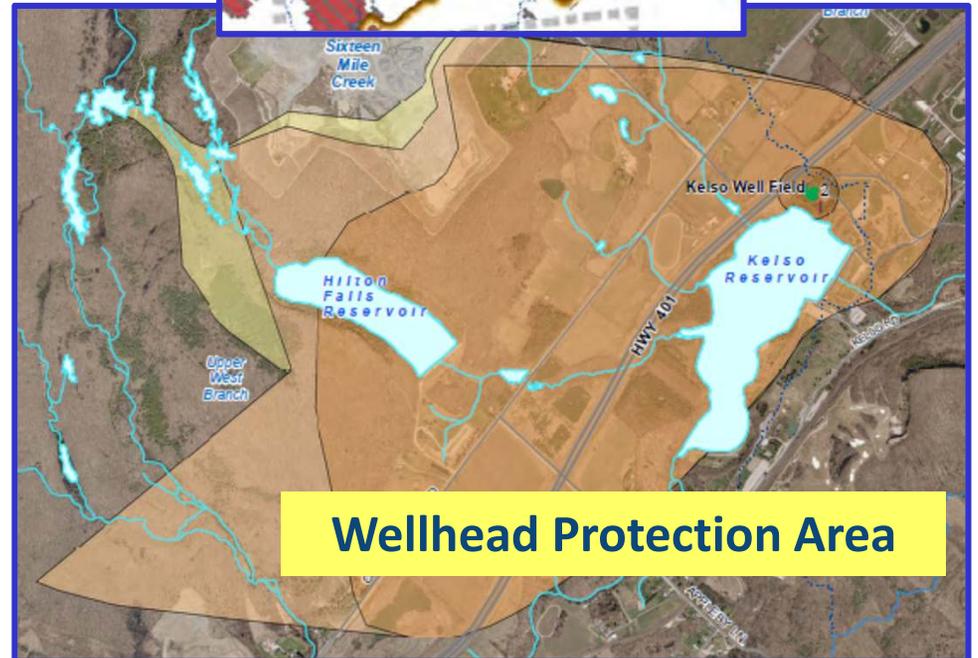
Significant Groundwater Recharge Area



Highly Vulnerable Aquifer



Wellhead Protection Area



The Science: Threat Activities under the Clean Water Act

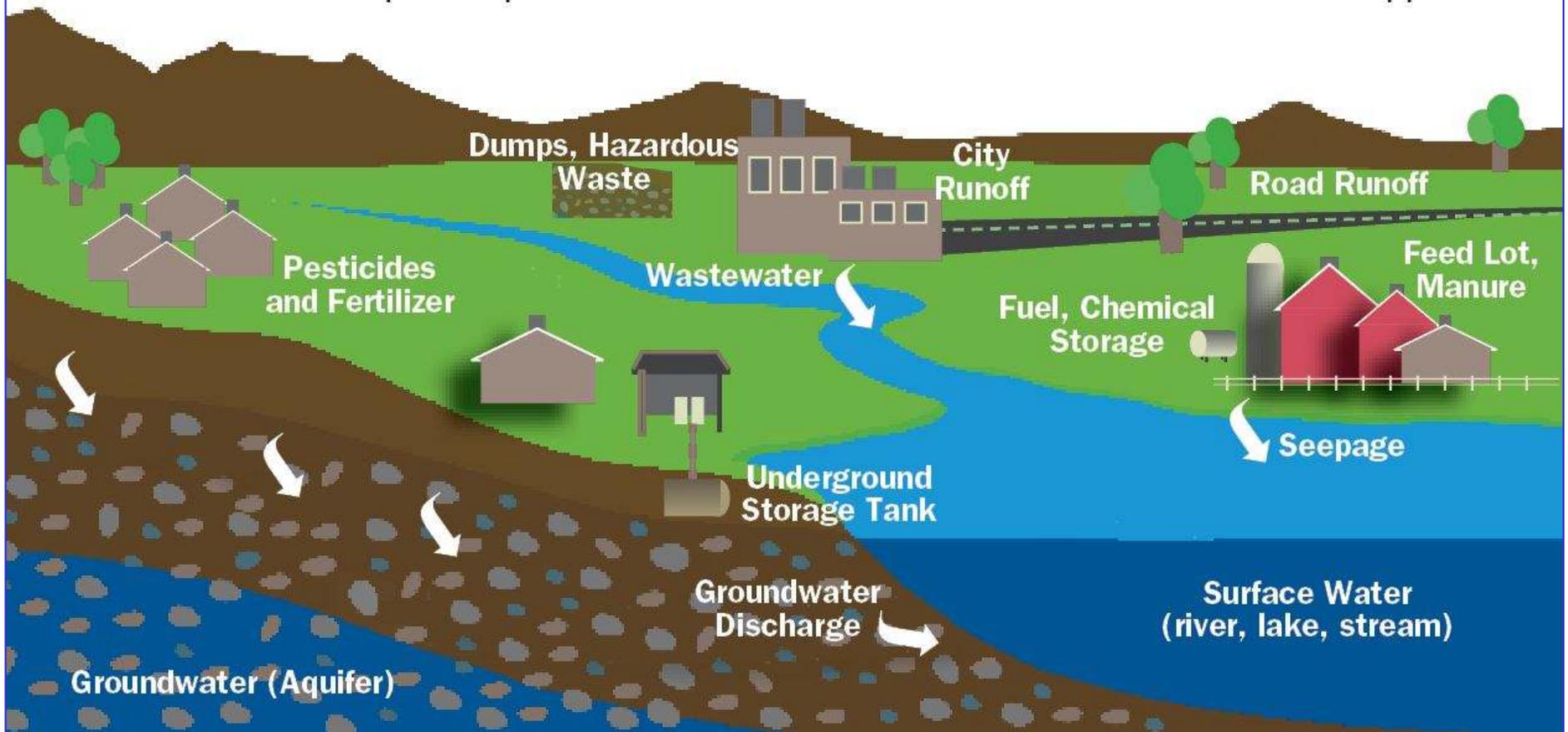
1. Establishment, operation or maintenance of a waste disposal site.
2. Establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.
3. Application of agricultural source material (ASM) to land.
4. Storage of ASM.
5. Management of ASM.
6. Application of non-agricultural source material (NASM) to land.
7. Handling and storage of NASM.
8. Application of commercial fertilizer to land.
9. Handling and storage of commercial fertilizer.
10. Application of pesticide to land.
11. Handling and storage of pesticide
12. Application of road salt.
13. Handling and storage of road salt.
14. Storage of snow.
15. Handling and storage of fuel.
16. Handling and storage of a dense non-aqueous phase liquid.
17. Handling and storage of an organic solvent.
18. Management of runoff that contains chemicals used in the de-icing of aircraft.
19. Consumptive water takings (takes water returning the same body).
20. An activity that reduces the recharge of an aquifer.
21. Use of land as livestock grazing or pasturing land, an outdoor confinement area or a farm-animal yard.
22. Conveyance of a Liquid Hydrocarbon by a Pipeline

Committees may add **other “local threats”**, subject to the approval of the Ministry of the Environment, Conservation and Parks

The Science: Threat Activities and their Circumstances of Occurrence

Examples of Source Water Contamination

Below are examples of potential sources of contamination for surface water supplies.



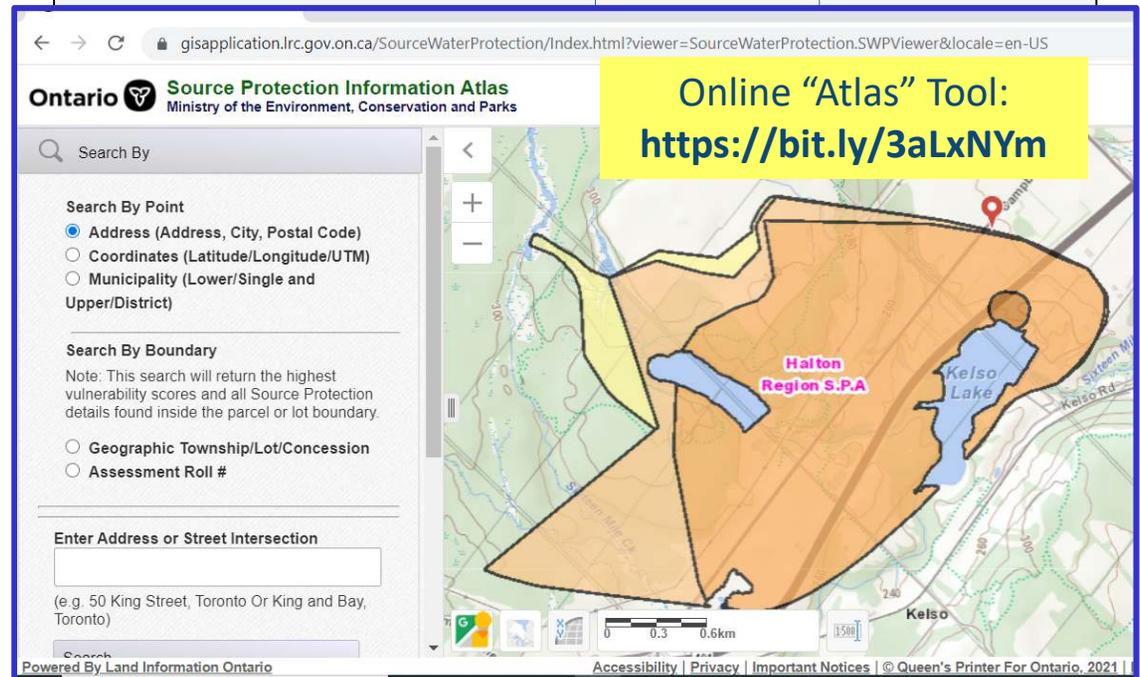
The Science - Threat Activities and their Circumstances of Occurrence

Methods:

- “Threats Tables”
- Modelling Studies
- Water Quality “Issues”

They help determine:

- **What are the activities?**
- **Where** would they pose **risks** to municipal drinking water sources?
- **Which circumstances** make the activities a significant, moderate or low level risk?

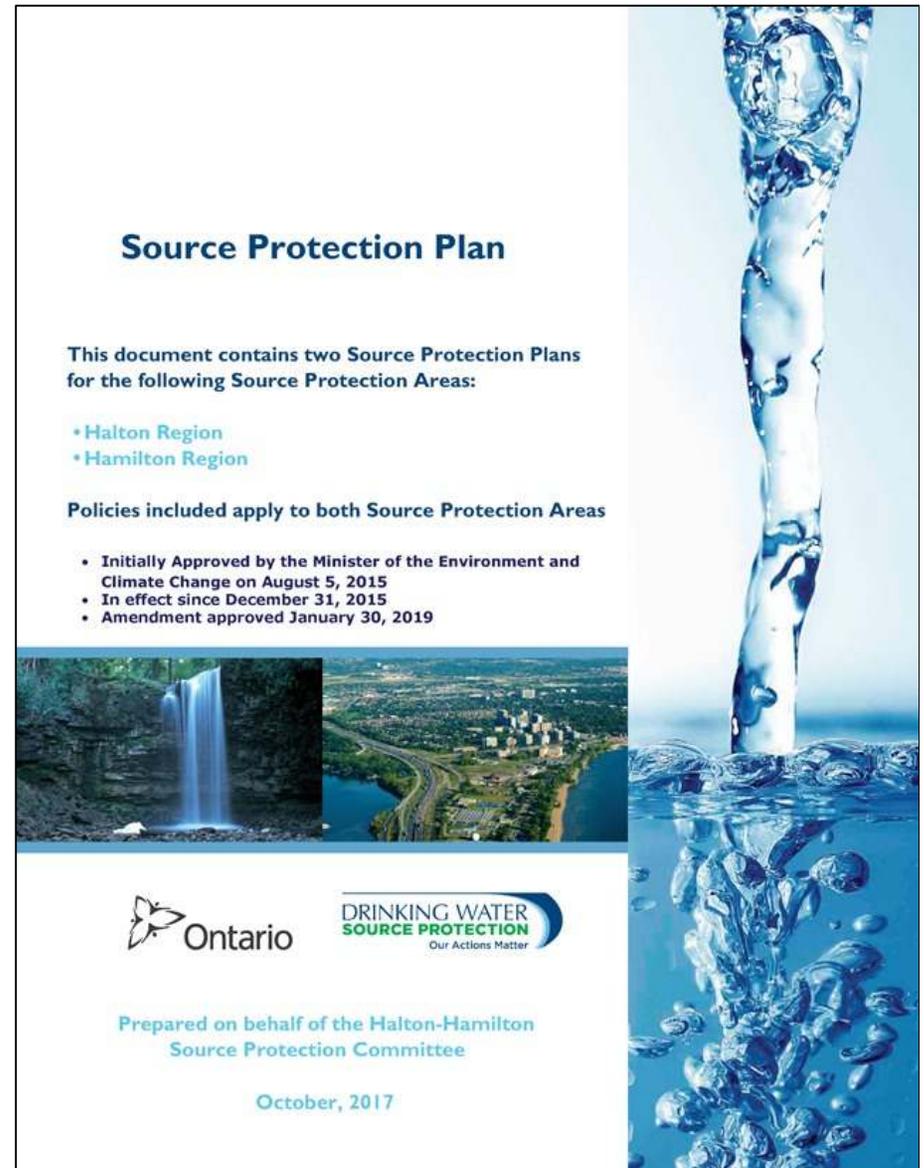


The Policies: Halton-Hamilton Source Protection Plan

- Developed through a **multi-stakeholder** process on a **watershed** basis
- Contains **policies** to protect municipal drinking water sources
- Been **in effect** since Dec. 2015
- Contains maps of where the policies apply in drinking water **vulnerable areas**
- Manages activities assessed to be **significant threats** to drinking water sources
- Source Protection Region undertaking draft **amendments**

Download the Plan from:

<https://bit.ly/36Q813L>



The Policies: Halton-Hamilton Source Protection Plan

- Uses different **policy tools**
- **Policy implementers:**
 - Two-thirds by municipalities,
 - Nearly one-third by provincial ministries
 - Rest by others including conservation authorities.



Source Protection Plans and the Industrial-Commercial Sector

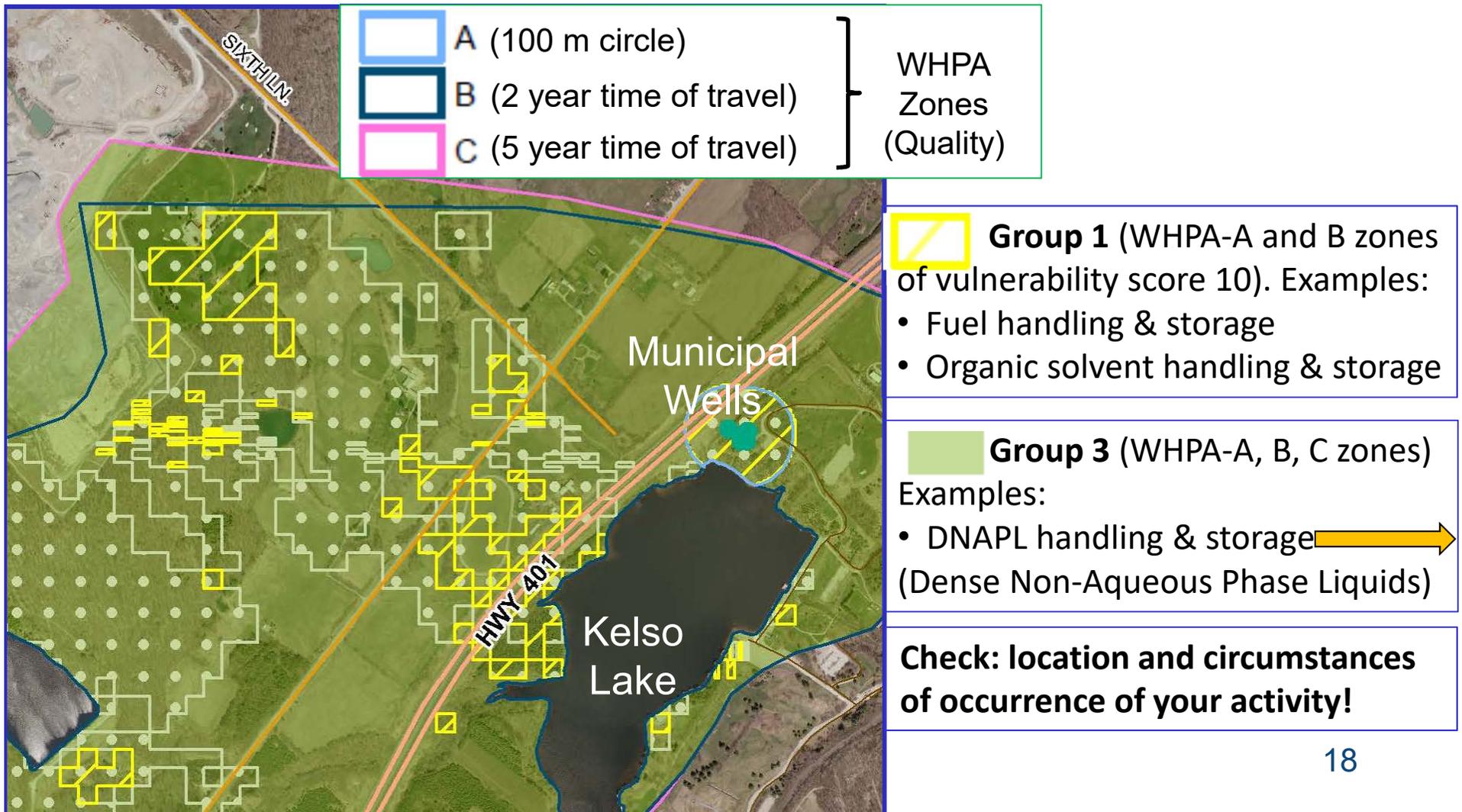
Source Protection Plan policies manage certain activities, considering the circumstances of occurrence, in several ways including:

- **Land use planning:** a preventative and proactive approach that involves screening Planning Act applications, to check for proposed activities that may be subject to measures through source protection plan policies.
- **Prescribed Instruments:** a legal document that can set out site-specific terms and conditions. Prescribed instruments are typically approved and issued by regulatory agencies and include conditions to reduce or control environmental risks.
- **Risk Management Plan:** a legally-binding negotiated agreement between the Risk Management Official and the person (landowner/tenant/contractor) engaged in the activity. It is based on best practices to manage the risks associated with activities such as the handling and storage of hazardous chemicals and waste.

Information from the Municipality of Halton Region: <https://www.halton.ca/For-Residents/Water-and-Environment/Water-Quality-Protection/Source-Water-Protection>

Policy Applicability Example 1

Kelso Wellhead Protection Area (WHPA) - for Water Quality



Policy Applicability Example 1 Cont'd

Policy T-44-C: a summary

“Where the existing or potential future handling and storage of dense non-aqueous phase liquids is or would be significant drinking water threats,

Period

Threat activity

Risk level

...the risk management official shall establish

Policy implementor

risk management plans with the persons

Tool

undertaking or proposing to undertake the

handling and storage of a dense non-aqueous

phase liquid. The implementation of these risk

management plans shall be overseen by a risk

management inspector..”.

Risk Management Measures to help protect drinking water sources

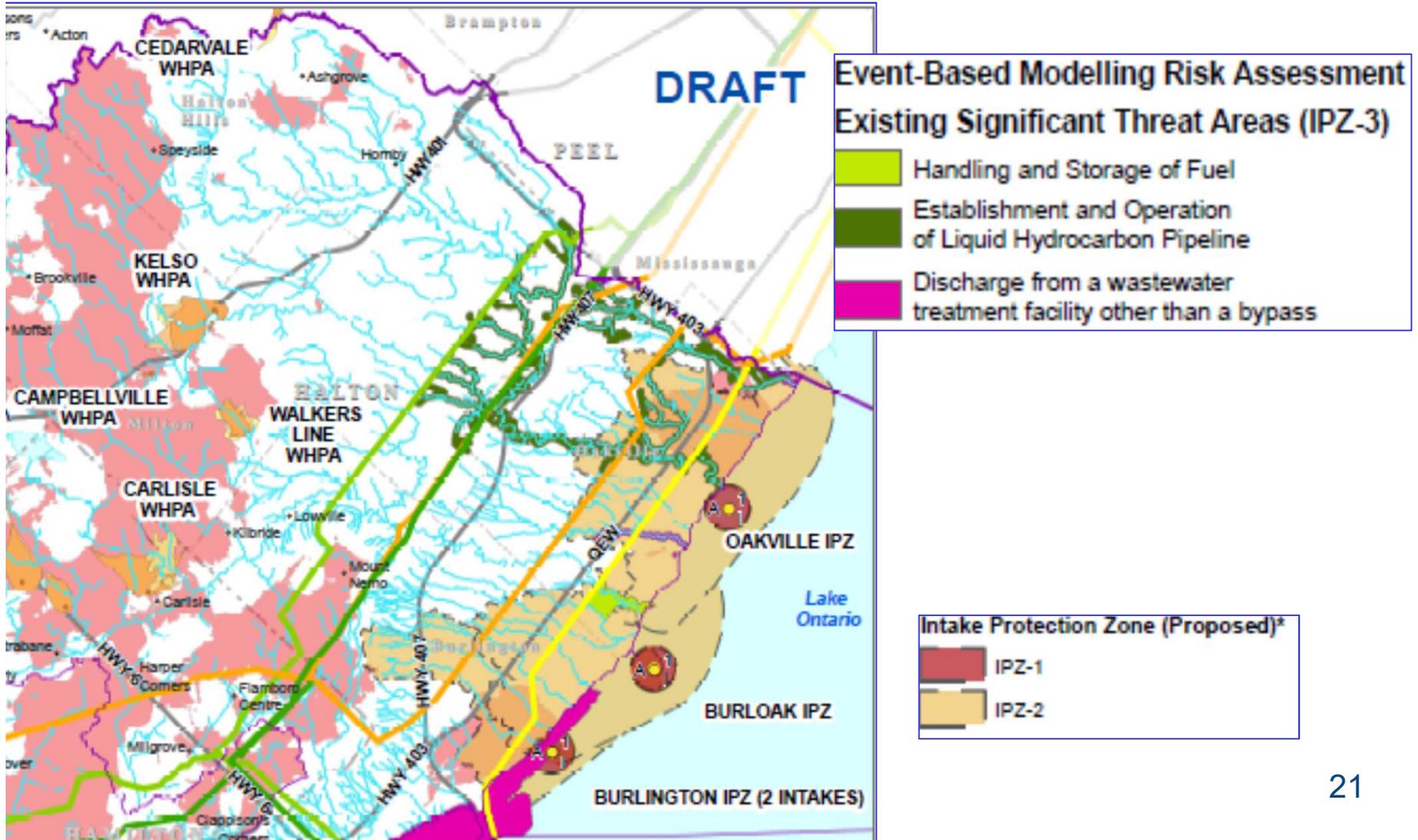
Risk management measures include:

- Develop and update emergency spill response plans.
- Train and certify staff handling hazardous chemicals.
- Perform regular inspections of containers, tanks, and piping for signs of damage and wear (e.g. cracks, dents, rust, staining).
- Maintain good housekeeping, keeping chemical storage and transfer areas clear of obstacles and debris.
- Use secondary containment in chemical storage areas, and always locate tanks and containers on impervious surfaces away from floor drains and catch basins.
- Use certified contractors to transport and dispose-of hazardous waste and keep detailed shipment and disposal records.
- Consider phasing-out or replacing hazardous chemicals with eco-friendly alternatives.

Information from the Municipality of Halton Region: <https://www.halton.ca/For-Residents/Water-and-Environment/Water-Quality-Protection/Source-Water-Protection>

Policy Applicability Example 2

Lake Ontario Intake Protection Zone-3 (IPZ-3) Modelled for Spill Scenarios



Policy Applicability Example 2 Cont'd

Policy T-52-C/S: a summary

“Where.. the conveyance of oil in pipelines across open water bodies is an existing significant threat to lake-based drinking water sources,

Period

Threat activity

Risk level

Part c: ...the owners of facilities where these significant drinking water threats have been identified are requested to update

Policy implementor

emergency preparedness/contingency plans to include the location of municipal intakes,....”

Tool

Second Round of Source Protection Planning

- As mentioned earlier, **Conservation Halton and Hamilton Conservation Authority** are Source Protection Authorities under Ontario's Clean Water Act.
- They are undertaking **detailed updates** to the scientific assessment reports and the policies in the Halton-Hamilton Source Protection Plan.
- This helps ensure that the protection of municipal sources of drinking water continue. Through their work, they **engage the Source Protection Committee**.
- The Source Protection Authorities will undertake a **formal public consultation process** later in 2021 to consult on the proposed updates.

Stay tuned: www.protectingwater.ca



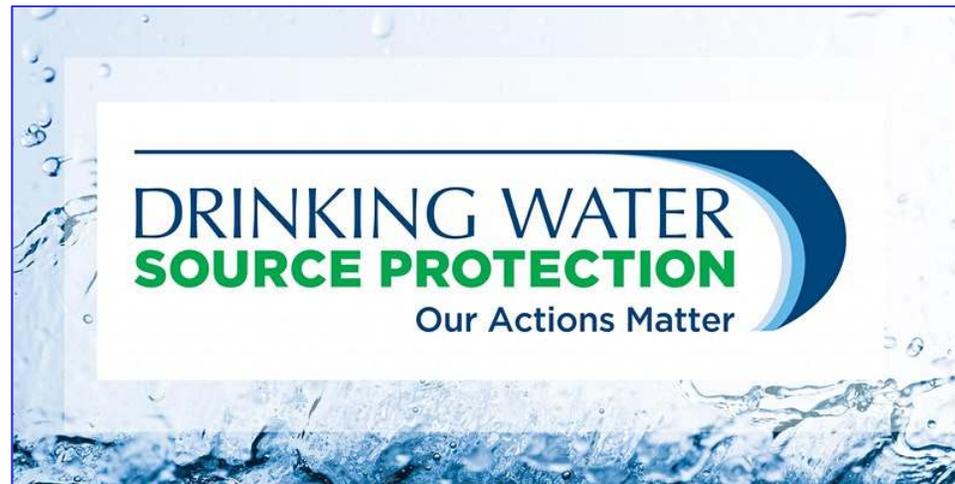
Discussions



Thank You!

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