

# **Halton-Hamilton Source Protection Committee Meeting December 8, 2020**

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Watershed Planning and Source Protection



# SPC Meeting December 2020

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## Agenda Item 12 Business/Reports: supporting presentation

- a) **SPC-20-12-01** Source Protection Committee Guiding Principles Update
- b) **SPC-20-12-02** S. 36 Updates: Policy and Assessment Report Draft Updates for Liquid Hydrocarbon Pipelines
- c) **SPC-20-12-03** S. 36 Updates: Proposed Update to Restricted Land Use Policy G-2
- d) **SPC-20-12-04** S. 36 Updates: Vulnerability Reassessment of Great Lakes Drinking Water Sources
- e) **SPC-20-12-05** S. 36 Updates: Assessment Report Impervious Surface Area Maps
- f) **SPC-20-12-06** Source Water Protection Program Update
- g) **SPC-20-12-07** Comments on the Proposed Changes to the Technical Rules

These reports are available at:

<http://www.protectingwater.ca/governance.cfm?smocid=1463&parentcatid=830>

## SPC-20-12-01 Source Protection Committee Guiding Principles Update

Updated Mission Statement (September 2020):

“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, Region staff and municipal staff,  
September 8, 2020

## SPC-20-12-01 Source Protection Committee Guiding Principles Update

**Draft wording - format 1 (concise):** “We value:

- Fair and reasonable solutions
- Consensus within our diverse group
- Clarity of information
- Open communication
- Respecting diversity of opinion”.

**Draft wording - format 2 (detailed):**

- Making decisions that are fair, reasonable and equitable through an open and transparent process
- Considering the best available watershed science including cumulative impacts and voluntarily-contributed local and traditional knowledge
- Enhancing awareness around the protection of drinking water sources through effective communication and outreach
- Ensuring that public concerns are heard and taken into consideration
- Consulting with all stakeholders including impacted landowners/businesses.



### **Recommendation**

THAT the Halton-Hamilton Source Protection Committee endorses the Staff report “Source Protection Committee Guiding Principles Update”

## SPC-20-12-02 S. 36 Updates: Policy and Assessment Report Draft Updates for Liquid Hydrocarbon Pipelines

### THEN - first round of source protection planning:

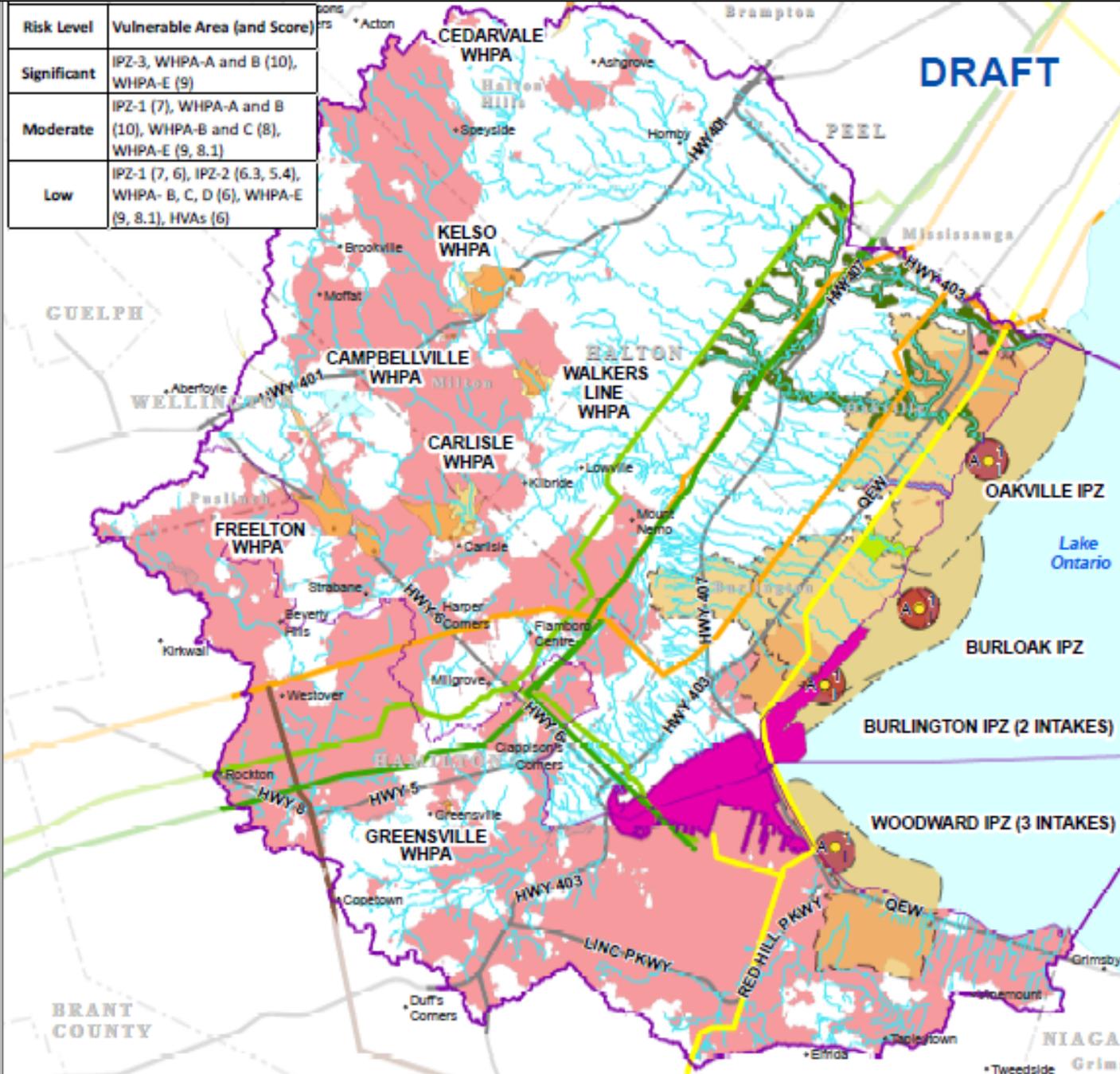
- The HHSPC identified oil pipelines as local threats using the **event-based** area (modelling) approach. Circumstance: conveyance of oil by way of a pipeline that crosses a body of open water.
- Four oil companies transport liquid hydrocarbon products in pipelines across creeks, the Hamilton Harbour and Lake Ontario in the HHSPR. Two existing **significant drinking water threats** are identified.

### NOW - S. 36 comprehensive updates to source protection plans:

- Since July 2018, the “establishment and operation of a liquid hydrocarbon pipeline” is a prescribed drinking water threat. Staff applied the **threats risk** assessment approach with prescribed circumstances of:
  - pipelines above ground or above a water
  - pipelines below ground and not crossing underneath a water body
  - pipelines within or under a water body.



<b>Risk Level</b>	<b>Vulnerable Area (and Score)</b>
<b>Significant</b>	IPZ-3, WHPA-A and B (10), WHPA-E (9)
<b>Moderate</b>	IPZ-1 (7), WHPA-A and B (10), WHPA-B and C (8), WHPA-E (9, 8.1)
<b>Low</b>	IPZ-1 (7, 6), IPZ-2 (6.3, 5.4), WHPA- B, C, D (6), WHPA-E (9, 8.1), HVAs (6)



**DRAFT**



**Figure 1:  
Halton-Hamilton Region  
Liquid Hydrocarbon Pipelines**

**Legend**

**Municipal Intake**

- Type A Intake - Great Lakes

**Oil Pipelines**

- Enbridge
- Imperial Oil
- Sun Canadian
- Trans Northern Pipeline Inc
- Westover Express and Enbridge (2 parallel pipelines)

**Event-Based Modelling Risk Assessment**

**Existing Significant Threat Areas**

- Handling and Storage of Fuel
- Establishment and Operation of Liquid Hydrocarbon Pipeline
- Discharge from a wastewater treatment facility other than a bypass

**Prescribed Threat Risk Assessment**

- Highly Vulnerable Aquifer

**Wellhead Protection Area**

- WHPA-A
- WHPA-B
- WHPA-C
- WHPA-D
- WHPA-E

**Intake Protection Zone (Proposed)**

- IPZ-1
- IPZ-2

\*Note : This figure shows the proposed IPZ-2s for Burlington, Burloak, Oakville, and the current IPZ-2 for Woodward  
Projection : UTM NAD 83 Zone 17  
Date : November 2020  
Map not to scale



This mapping is produced by Conservation Halton and should be used for information purposes only. The data displayed are derived from sources with varying accuracies and all boundaries should therefore be considered approximate. Data on this map is used under license with the Hamilton Conservation Authority, Ontario Ministry of Natural Resources, Halton Region, City of Hamilton, Ministry of Environment, Ontario Geological Survey, Natural Resources Canada, Teranet Enterprises Inc. and other agencies. Copyright 2020.

## SPC-20-12-02 S. 36 Updates: Policy and Assessment Report Draft Updates for Liquid Hydrocarbon Pipelines

**Table:** Summary - Risk Assessments of Liquid Hydrocarbon Pipelines in the  
Halton-Hamilton Source Protection Region

Threats Assessment	Risk Level	Vulnerable Area, Vulnerability Score	Existing Pipelines
Event-based modeling	Significant	<ul style="list-style-type: none"> <li>IPZ-3, no score</li> </ul>	There are <b>two existing</b> locations in IPZ-3s confirmed in the first round of planning.
Threats tables <i>(ongoing s. 36 source protection plan updates, yet to be approved)</i>	Significant	<ul style="list-style-type: none"> <li>WHPA-A &amp; B, score 10</li> <li>WHPA-E (Carlisle), score 9</li> </ul>	<ul style="list-style-type: none"> <li>There are <b>no</b> known pipelines crossing WHPAs.</li> <li>There are <b>multiple existing</b> liquid hydrocarbon pipelines that cross IPZs and HVAs.</li> <li>SGRAs are not considered in the threats assessment.</li> </ul>
	Moderate	<ul style="list-style-type: none"> <li>IPZ-1, score 7</li> <li>WHPA-A &amp; B, score 10</li> <li>WHPA-B &amp; C, score 8</li> <li>WHPA-E (Carlisle), score 9 &amp; 8.1</li> </ul>	
	Low	<ul style="list-style-type: none"> <li>IPZ-1, score 7 &amp; 6</li> <li>IPZ-2, score 6.3 &amp; 5.4</li> <li>WHPA-B, C &amp; D, score 6</li> <li>WHPA-E (Carlisle), score 9 &amp; 8.1</li> <li>HVAs, all score 6</li> </ul>	

## SPC-20-12-02 S. 36 Updates: Policy and Assessment Report Draft Updates for Liquid Hydrocarbon Pipelines

### Legislation and Guidelines

- Pipelines that cross a provincial or international border fall under the **Canada Energy Regulator**.
- Pipeline systems located entirely within the province are regulated by the **Ontario Energy Board**.
- Pipeline companies deal with various laws, agencies, codes such as:
  - **Federal:** Canadian Energy Regulator Act, 2019; Impact Assessment Agency of Canada; CSA - Oil & gas pipeline systems code.
  - **Provincial:** Technical Standards and Safety Act, Ontario Water Resources Act, etc.
  - **Regional/municipal:** Municipalities, Conservation Authorities

### SPP Policy considerations

- Prescribed threats are pipelines regulated under the TSSA O. Reg 210/01 (Oil and Gas Pipeline Systems) or subject to Canadian Energy Regulator Act. **Not** prescribed instruments under the Clean Water Act.
- The legal effect of HHSPP policies would remain **non-legally binding**.
- Policy tools and compliance lists:
  - Significant threats: “specify actions” (e.g.: best practice); List K
  - Moderate or low threats: “strategic actions” (e.g.: education and outreach); List J.



## SPC-20-12-02 S. 36 Updates: Policy and Assessment Report Draft Updates for Liquid Hydrocarbon Pipelines

### Current Policy L-1-S (*paraphrased*)

Where the conveyance of oil in pipelines across open water bodies is an existing significant threat:

- a) Pipeline owners are recommended to conduct integrity testing and visual inspections every 3 years
- b) CA to consult with owners to determine if testing and inspections occurred, and request a report on findings and actions taken.

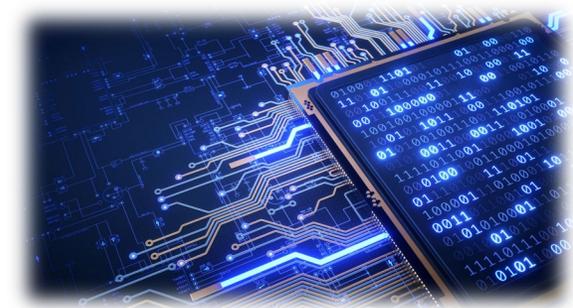
### Draft Revised Policy T-60-S (*paraphrased*)

Where the establishment and operation of a liquid hydrocarbon pipeline is an existing significant threat:

- a) Pipeline owners are recommended to consider age, condition and other factors to determine the frequency of integrity testing and visual inspections
- b) Owners are recommended to a report on findings of testing and inspections, actions taken, and response to incidents impacting drinking water sources.

**Rationale:** The HHSPC has previously discussed that the 3-year frequency may not be appropriate, given information from Canada Energy Regulator (CER): pipeline companies have integrity programs. The **frequency of inspections** depends on factors such as the technology used, the history of releases, the age of the pipeline. Where inline testing is not possible, **other tests** are done. **Integrity digs** are required to confirm the corrosion impacts. **Incidents** are reported on the CER website and include those that harm people or the environment.

**Discussion:** Should the policy apply to significant (S), moderate (M), and low (L) threat areas (and their circumstances) rather than just significant threats crossing open water bodies? The policy will remain non-legally binding. Cataraqui SPC proposes to apply to S, M and L threat areas.



## SPC-20-12-02 S. 36 Updates: Policy and Assessment Report Draft Updates for Liquid Hydrocarbon Pipelines

### Current Policy L-2-S (*paraphrased*)

To reduce the risk from construction of oil pipelines across open water bodies,

- a) NEB and OEB are requested to ensure that the applicant has complied with/included design, monitoring, maintenance practices to prevent pipeline from becoming a significant threat.
- b) CA is to consult with NEB and OEB that design standards, monitoring, maintenance consider source water protection.

### Draft Revised Policy T-61-S (*paraphrased*)

To reduce the risk of the establishment or operation of a liquid hydrocarbon pipeline,

- a) OEB is requested to ensure that the applicant has complied with/included design, monitoring, maintenance practices to prevent pipeline from becoming a significant threat
- b) Pipeline owners are recommended to use Clean Water Act assessment reports while creating designated geographical areas (DGAs) and high consequence areas (HCAs)
- c) OEB is requested to confirm that design, monitoring, maintenance practices prevent a pipeline from becoming a significant threat
- d) Pipeline owners are recommended to report to CA on how assessment report science is incorporated in DGAs and HCAs

**Rationale** Canada Energy Regulator (CER) requires that drinking water sources be considered during the full life cycle of a pipeline. OEB is yet to confirm the same. Designated geographical area (DGA) is a surface water body such as a major drinking water source where heightened protection from spills may be required.

**Discussion:** Should the policy apply to significant (S), moderate (M), and low (L) threat areas (and their circumstances) rather than just significant threats crossing open water bodies? The policy will remain non-legally binding. SGBLS SPC proposes to apply to S threat areas only.



## SPC-20-12-02 S. 36 Updates: Policy and Assessment Report Draft Updates for Liquid Hydrocarbon Pipelines

### Current Policy T-52-S (*paraphrased*)

Where modelled sewage spill, bulk fuel storage, conveyance of oil in pipelines across open water bodies are existing significant threats:

- a) MOE shall provide IPZ-3 and known significant threat locations maps to Spills Action Centre and ensure that water treatment plant operators are notified of spills
- b) Owners of significant threat facilities are requested to update emergency preparedness and response plans to include map of intakes and actions to protect sources.

### Draft Revised Policy T-52-S (*paraphrased*)

Where modelled sewage spill, bulk fuel storage, the establishment and operation of a liquid hydrocarbon pipeline is L, M, or S threat:

- a) MOE shall provide IPZs, WHPAs and HVAs maps to Spills Action Centre and ensure that water treatment plant operators are notified of spills
- b) Owners of facilities where these S, M, L drinking water threats are identified are requested to update emergency preparedness and response plans to include map of intakes and wells and actions to protect sources.

**Discussion:** Should the policy apply to significant (S), moderate (M), and low (L) threat areas (and their circumstances) The policy will remain non-legally binding. TCC and Cataraqui SPCs propose to apply to S, M and L threat areas.



## SPC-20-12-02 S. 36 Updates: Policy and Assessment Report Draft Updates for Liquid Hydrocarbon Pipelines

### **Draft NEW Policy T-62-S** *(paraphrased)*

Where the establishment and operation of a liquid hydrocarbon pipeline is an existing or future low, moderate or significant threat:

- a) Pipeline owners are recommended to consider the location of drinking water vulnerable areas and other watercourses and the areas around them while determining the location of safety valves
- b) Owners are recommended to provide a report to the CA, within sixty days of installing/replacing a valve, describing how source water protection was considered while determining the location of valves.

**Rationale:** The HHSPC has previously discussed that the pipeline companies should give due consideration to watercourses and the areas around them and drinking water vulnerable areas, while locating safety valves.

**Discussion:** Should the policy apply to significant (S), moderate (M), and low (L) threat areas (and their circumstances). Municipal staff suggest that the policy specify locations e.g.: locate new safety valves outside of drinking water vulnerable areas. HHSPR staff suggest that wording for a “setback” for new safety valves from water bodies and WHPA-A be included.



## SPC-20-12-02 S. 36 Updates: Policy and Assessment Report Draft Updates for Liquid Hydrocarbon Pipelines

### Draft NEW Policy T-63-S (*paraphrased*)

Where the establishment and operation of a liquid hydrocarbon pipeline is an existing or future significant threat:

- a) Pipeline owners are recommended to post pipeline identification signage that is visibly noticeable. Also, 'do not anchor' signs are recommended to be posted when a navigable waterway has a pipeline submerged in the area
- b) Pipeline owners are recommended to include the CA in the consultation process and give them the opportunity to provide feedback for new pipelines, changes to a pipeline/material, and advise them of abandonment/change of use of a pipeline.
- c) CAs are to provide to pipeline owners with watershed characteristics (flow rate, flood and erosion hazards, etc.), flood warnings and statements and other local data if available and requested

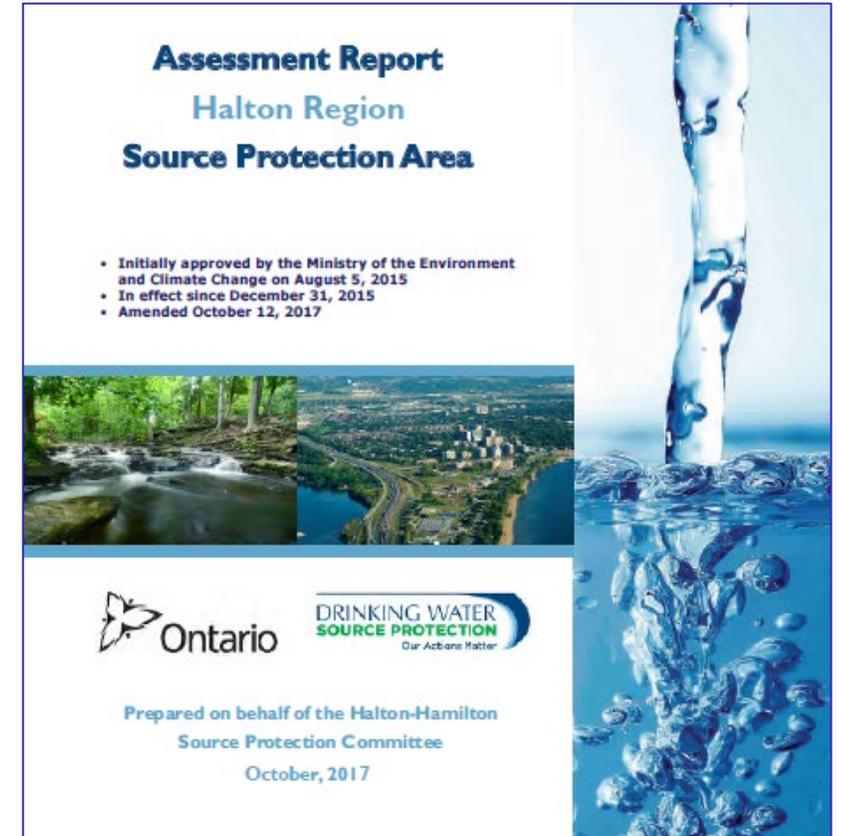
**Discussion:** Should the policy apply to S, M, L threats rather than just S threats? TCC SPC is discussing it for significant risk levels only. Should part b have a timeline? TCC: provide an annual report on actions taken to satisfy the SPP; Cataraqui (for other policies): notify CA within 60 days.



# SPC-20-12-02 S. 36 Updates: Policy and Assessment Report Draft Updates for Liquid Hydrocarbon Pipelines

## Halton Region Assessment Report Updates

- The description and results of the event-based modelling for IPZ-3 delineation and risk assessment of pipelines remains unchanged.
- Oil pipelines were defined as liquid hydrocarbon pipelines in the Minister's approval letter in 2011. Terminology update is therefore not an issue.
- The term "local threat" is replaced with "prescribed drinking water threat" where used in conjunction with liquid hydrocarbon pipelines in the assessment report. There are a few exceptions: brief mention of the history, and archived materials.
- SPC Report 20-12-02 Attachment 5: **Halton Region Assessment Report draft updates**. The updates are shown in tracked changes, on pages: 193, 199-200, 243-245, 261-263, 268-272, 283, and 289.

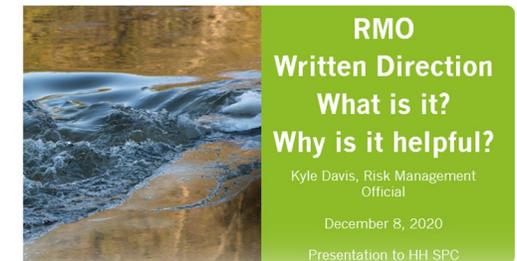


### **Recommendation**

THAT the Halton-Hamilton Source Protection Committee endorses the Staff report "S. 36 Updates: Policy and Assessment Report Draft Updates for Liquid Hydrocarbon Pipelines"

## SPC-20-12-03 S. 36 Updates: Proposed Update to Restricted Land Use Policy G-2

- The **Minister's amended Order** received March 2019, pursuant to the *Clean Water Act* S. 36, directs the HHSPR to revise policies to support improved implementation, such as **Policy G-2**. This task is in the **S. 36 Workplan** for Halton-Hamilton Source Protection Plan updates.
- Policy G-2 manages existing and future significant threats designated under *Clean Water Act* **S. 59**, by requiring Risk Management Officials (RMOs) to screen development applications, excluding solely residential uses.
- As Policy G-2 excludes residential land use, it helps streamline the review of applications. However, Section 59 notices would still be issued in **industrial, commercial, institutional land uses** where some proposals would have no impact on source water (for example, a bar and restaurant renovation).
- Therefore, **written direction by an RMO** would support **further streamlining**. Also, **screening for contaminant transport pathways** can be incorporated into the RMO written direction. This supports the **legislative requirement** for municipalities to screen applications for transport pathways.



### **Recommendation**

THAT the Halton-Hamilton Source Protection Committee endorses the Staff report "S. 36 Updates: Proposed Update to Restricted Land Use Policy G-2"

## SPC-20-12-04 S. 36 Updates: Vulnerability Reassessment of Great Lakes Drinking Water Sources

### Vulnerability assessment decision criteria

- The *Clean Water Act* Technical Rules list several factors to be considered in surface water quality vulnerability assessments.
- The Rules do not specify decision criteria to assess the factors.

### **Vulnerability score = source vulnerability factor X area vulnerability factor**

#### Source vulnerability factor determination must consider:

1. The depth of the intake from the top of the water surface.
2. The distance of the intake from land.
3. The history of water quality concerns at the surface water intake.

#### Area vulnerability factor determination must consider:

1. The percentage of the area of the IPZ-2 or IPZ-3, that is composed of land.
2. The land cover, soil type, permeability of the land and the slope of any setbacks.
3. The hydrological and hydrogeological conditions of the area where the transport pathway is located.
4. In respect of an IPZ-3, the proximity of the area of the IPZ-3 to the intake.



## SPC-20-12-04 S. 36 Updates: Vulnerability Reassessment of Great Lakes Drinking Water Sources

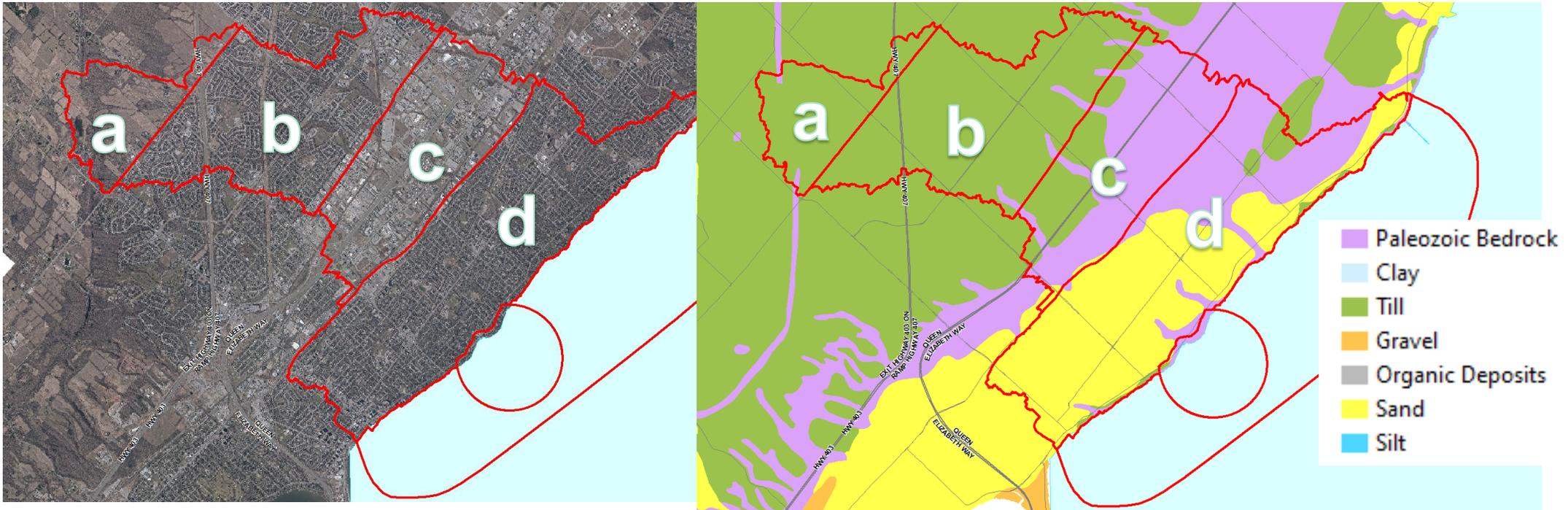
### Vulnerability assessment decision criteria

- HHSPR staff reviewed the vulnerability assessment decision criteria used in other assessment reports.
- The decision criteria were adapted/modified from resources that are **more than a decade old**. There is **variability**.
- It is unknown if the decision criteria used is applicable to **current environmental conditions**. Water quality is impacted by **climate change** and a **changing landscape**. The impacts of climate change on HHSPR drinking water sources are yet to be assessed.
- **Further research** by subject matter experts (e.g.: nearshore mixing, thermoclines, climate change) is needed. This research is beyond the currently available resources and timeframe.
- Staff plan to organize a **longer-term** multi-disciplinary working group to begin to address this matter.



# SPC-20-12-04 S. 36 Updates: Vulnerability Reassessment of Great Lakes Drinking Water Sources

## Assessing Sub-Areas within the Burlington IPZ-2



Burlington Intake	General description, area	Revised IPZ-2 Area Vulnerability Factor
Sub-area (a)	North of Dundas, 3.84 sq. km	8
Sub-area (b)	Dundas to Mainway (mainly residential), 11.46 sq. km	9
Sub-area (c)	Mainway to Fairview (mainly commercial), 9.15 sq. km	9
Sub-area (d)	Fairview to shoreline, 17.22 sq. km	9
Overall	<b>Total: 59.42 sq. km; Land portion: 41.67</b>	<b>9</b>

## SPC-20-12-04 S. 36 Updates: Vulnerability Reassessment of Great Lakes Drinking Water Sources

- The 2017 changes to the Technical Rules allow for a greater range in vulnerability scores for Great Lakes intake. Several SPR/As reassessed source vulnerability accordingly.
- HHSPR Lake Ontario source re-assessments were presented to the HHSPC in Sept. 2020. Although the vulnerability scores increased, no significant threats occur through the threats risk approach.
- Halton Region Assessment Report Figures 6-1 to 6-8 are updated accordingly.

**Table: Reassessed Vulnerability Scores for IPZ-1 and IPZ-2 in HHSPR**

Source Protection Authority	Lake Ontario Intake	REVISED Vulnerability Score of IPZ-1	REVISED Vulnerability Score of IPZ-2
Halton Region	Burlington	7	6.3
Halton Region	Burloak	6	5.4
Halton Region	Oakville	7	6.3
Hamilton Region	Woodward	6	Technical work in progress.

### **Recommendation**

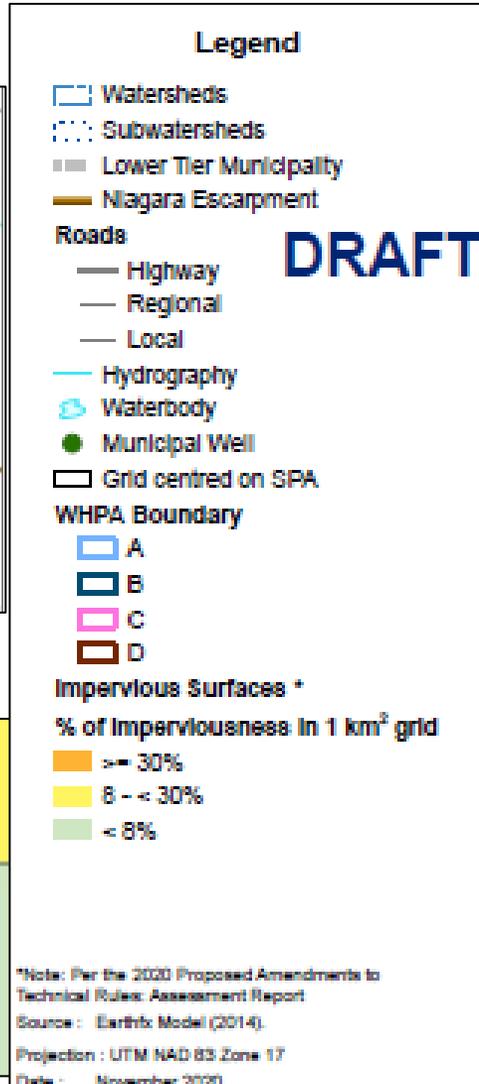
THAT the Halton-Hamilton Source Protection Committee endorses the Staff report “S. 36 Updates: Vulnerability Reassessment of Great Lakes Drinking Water Sources”

# SPC-20-12-05 S. 36 Updates: Assessment Report Impervious Surface Area Maps

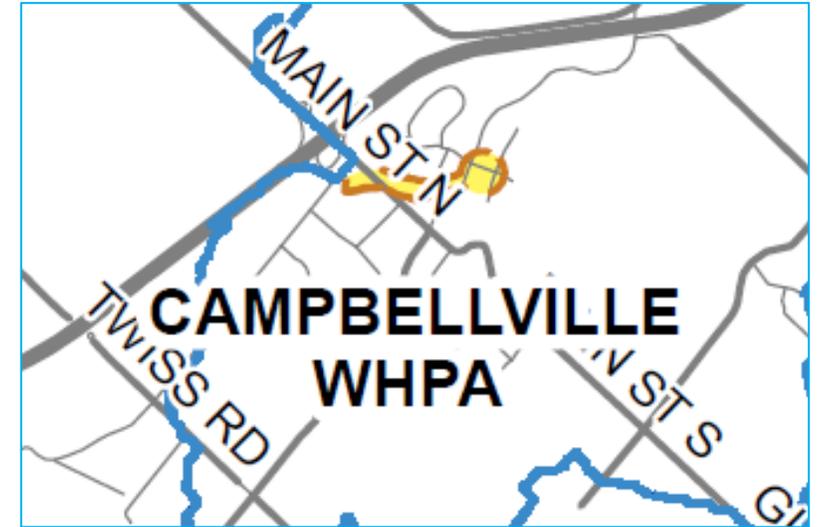
**(1) 1 x 1 km grid centered on SPA**



**(2) 1 x 1 km grid centered on WHPA**



**(3) No grid. Based on WHPA sub-areas**



- Map of surfaces where road salt can be applied: highways, roads, parking lots, sidewalks.
- Staff reviewed 2012 GIS layers, latest SOLRIS data, and 2019 digital ortho photo imagery.
- Staff digitized for landscape changes which are minimal. No significant threat areas in WHPAs.

## **Recommendation**

THAT the Halton-Hamilton Source Protection Committee receive for information the Staff report “S. 36 Updates: Assessment Report Impervious Surface Area Maps”

## SPC-20-12-06 Source Water Protection Program Update

**Environmental Registry of Ontario:** source water protection comments included in comments on:

- #019-2219: Proposed amendments to the Director's Technical Rules
- #019-2377: Proposed project list for comprehensive environmental assessments
- #019-2525: Proposal to streamline permissions for certain low risk short-term water taking activities

### **Halton Region Official Plan Review**

- Commenced in 2014, and phase 2 is currently underway with five discussion papers
- Staff reviewed and provided comments on topics including source water protection.

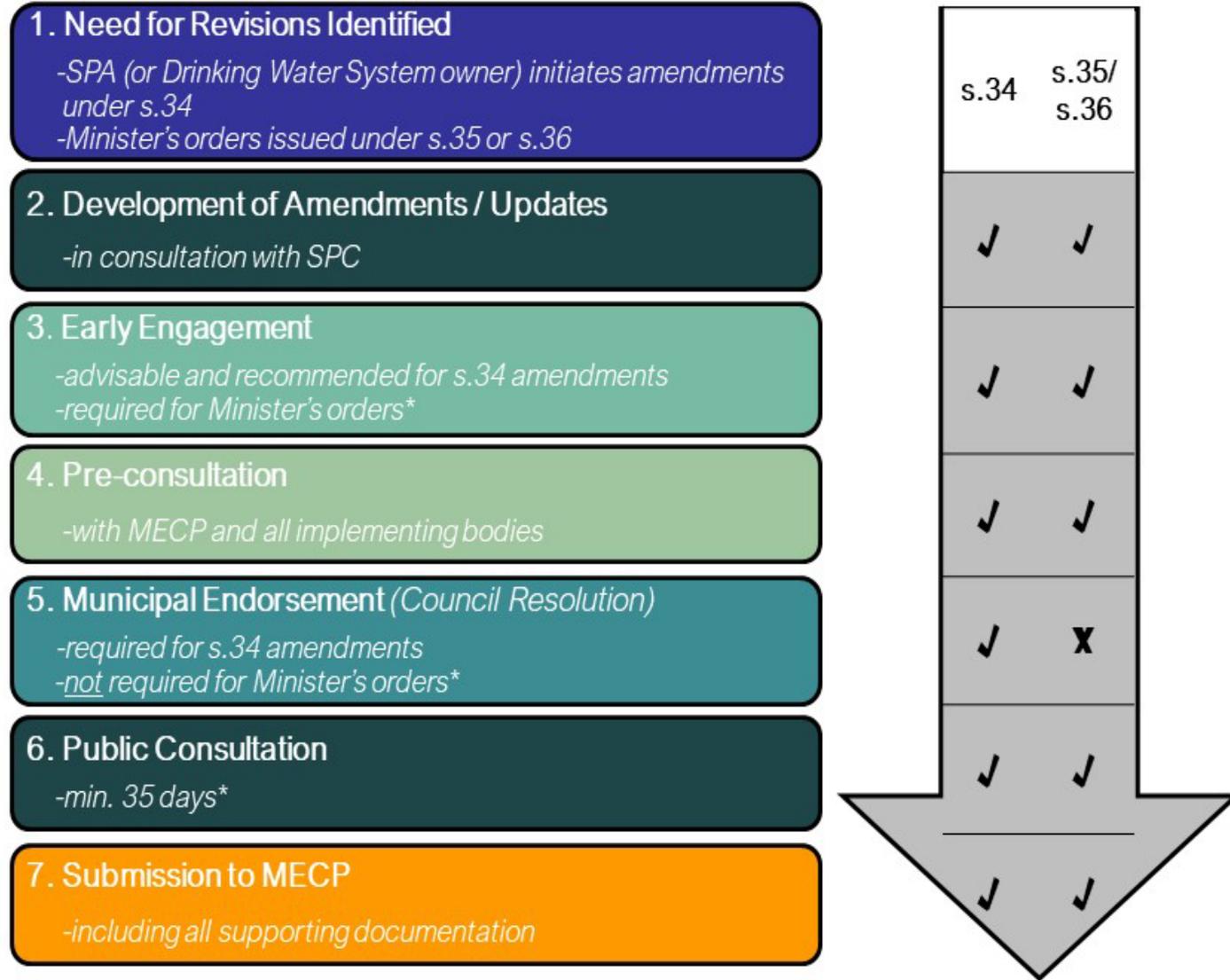
**Proposed changes to the Conservation Authorities Act:** Bill 229 Schedule 6

**SPC membership maintenance:** industrial commercial rep, health liaison

**Working groups:** Halton-Hamilton (meets once a month), Lake Erie, CO Program Managers and communications



## SPC-20-12-06 Source Water Protection Program Update



\*Note: unless otherwise specified in Minister's order

Figure: Assessment Report and Source Protection Plan Revision Process (MECP, October 2019)

## SPC-20-12-06 Source Water Protection Program Update

### Annual progress reporting changes by MECP

- **New Reportable#33:** for SPAs to indicate progress made in establishing RMPs to address existing significant threats, in relation to the total number of RMPs needed.
- **Modified Reportable#60:** for SPAs to provide a general overview of inspections that are conducted for prohibition and RMP activities & a summary of inspection results.
- **Removed Reportable #230:** methods used to implement education and outreach policies by the SPAs are not likely to change year after year. New methods in #300.

### Presentation to AMO on road salt management

- Road salt impacts drinking water sources, aquatic life, infrastructure, etc. At the same time, it is recognised that road salt is necessary for public safety during winter.
- Chitra Gowda and Martin Keller (Lake Erie program manager) presented to the AMO Board in Sept. 2020 to speak about the need for a review of Ontario’s liability framework, training for third party contractors, etc.
- AMO will seek cooperation from Ontario ministries to make sure that road salt can be used in a manner that balances public safety, source water protection and municipal liability.

#### **Recommendation**

THAT the Halton-Hamilton Source Protection Committee receives for information the Staff report “Source Water Protection Program Update”



**Thank you.**

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Conservation Halton and Halton-Hamilton Source Protection Region

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