

## CTC Source Protection Committee Meeting (#1/24)

### Meeting Details

**Date:** Wednesday, February 21, 2024 1:00 – 4:00 p.m.

**Chair:** Nathan Hyde

**Location:** Hybrid meeting<sup>1</sup> (Microsoft TEAMS and in-person); Credit Valley Conservation Administration Office, Boardroom; 1255 Old Derry Road, Mississauga, ON

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## Agenda

<u>Agenda Item</u>	<u>Page Number</u>
1. Call to Order and Roll Call	#
2. Review of Agenda	
3. Disclosure of Conflict of Interest	
4. Minutes of Previous Meetings	
5. Chair's Remarks	
6. Updates	
6.1. Update from the Ministry of Environment, Conservation and Parks (Nigel Holgate)	
6.2. Update from Conservation Ontario Source Water Protection Manager (Leslie Rich)	
6.3. Update from Source Protection Authority Liaison (Quentin Hanchard, CAO of Credit Valley Conservation)	

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<sup>1</sup> CTC Source Protection Committee meetings are video recorded for the purpose of minute taking.

<u>Agenda Item</u>	<u>Page Number</u>
<b>7. Committee Business</b>	
7.1. Reports to Committee	
a. CTC Program Update	3
b. Review of the CTC Source Protection Plan FUEL Policies	23
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d. Consideration of Transportation of Dangerous Goods	72
e. Review of the Existing Local Liquid Hydrocarbon Pipeline Policies	110
f. Review of the CTC Source Protection Plan Nutrient Policies	157
7.2. Other Business	
a. Landscape Ontario/Ontario Salt Pollution Coalition	
<b>8. Correspondence</b>	
8.1. Report from Town of Orangeville Council re: Update on Status of Establishing Risk Management Plans for Source Water Protection. Received December 19, 2023. To CTC Source Protection Committee Chair from Assistant Clerk, Town of Orangeville.	293
8.2. Report from Town of Erin Council re: Update on Status of Risk Management Plans for Source Water Protection. Received February 14, 2024. To CTC Source Protection Committee from Legislative & Licensing Coordinator, Town of Erin.	299
<b>9. Next Meeting</b>	
March 20, 2024 1–4 p.m. (hybrid: @ CVC head office & TEAMS)	
<b>10. Adjourn</b>	



**TO: Chair and Members of the Source Protection Committee  
Meeting #1/24, February 21, 2024**

**FROM: Behnam Doulatyari, Program Manager, CTC Source  
Protection Region**

**RE: CTC Program Update**

### **KEY ISSUES**

A CTC Source Protection Region program update.

### **RECOMMENDATION**

**THAT** the CTC Source Protection Committee receive the staff report CTC Program Update for information;

### **EXECUTIVE SUMMARY**

This report includes updates on Committee (SPC) membership, the Peel Region Transition Board, progress on outstanding Risk Management Plans, Implementation Working Group discussions, Source Protection Plan amendments and consultations, CTC website updates, and upcoming Committee meeting schedule.

### **BACKGROUND**

#### **Membership update**

##### **Member replacement**

As reported at Meeting #3/23, the terms of six Committee (SPC) members will be expiring on June 20, 2024 (see Attachment A). Under the *Clean Water Act, 2006* (CWA), and Ontario Regulation 288/07, there are no limitations on Committee members serving for consecutive terms or to the total number of terms.

Committee members representing the economic and public sectors whose terms are expiring in June will receive a letter from Credit Valley Source Protection Authority (SPA) by March 1<sup>st</sup>, 2024. The SPA will request that members identify whether they are interested in serving another term. For economic sector representatives, if members are interested in serving another term, a current letter from a sector organization endorsing their representation will be additionally

required. Responses will be requested by March 15, 2024. All economic and public interest openings will be advertised for at least a minimum of one month in compliance with Ontario Regulation 288/07. The seat from the chemical sector remains open and continues to be advertised.

Municipalities (York Region and Durham Region groups) whose member representatives have their term expiring in June 2024 will also receive letters by March 1, 2024. These municipal groupings will have at least two months to jointly submit nominations for a Committee representative.

Applicants and nominations will be reviewed by staff, and where appropriate, candidate interviews will be conducted. Following endorsement of candidates by the CTC Management Committee, recommended appointments are expected to be brought to the lead SPA in summer/early fall 2024, prior to a proposed fall SPC meeting.

### **Membership terms**

In September 2016, the Toronto and Region Source Protection Authority (then lead SPA) decided that all Committee Members shall serve five-year terms, based upon advice provided by the CTC Source Protection Committee at Meeting 02/15. These initial five-year term appointments were originally staggered in 2017-2019 as a succession planning strategy.

Since that time, municipalities have raised changing the duration of municipal SPC representative terms to align with municipal election cycles. This would be conducive to municipal appointments to the Committee being aligned with other municipal council appointments. Should this change be made, the two municipal group representatives expiring this year would see their replacements have approximately 2.5-year terms that would expire in the spring following municipal elections in October 2026.

The advice of the SPC is sought regarding the length of appointment terms for SPC representatives, specifically the following:

1. Does the SPC support a change of municipal SPC representative terms to align with municipal election cycles, where desired by the municipality?
2. Does the SPC continue to support the five-year terms for all other new or returning economic sector and public interest SPC member appointees?

## **Provincial updates**

### **Peel Region Transition Board**

At SPC Meeting #3/23, the CTC Committee endorsed sharing a Committee Report (see Attachment B) on the implications of Bill 112 on the CTC Source Protection Region, with the Peel Region Transition Board. The Report was provided to the Transition Board following the meeting. On December 13, 2023 the Minister of Housing and Municipal Affairs indicated that the provincial government would introduce new legislation in 2024 to "recalibrate the mandate of

the Peel Region Transition Board" to instead focus on improving regional services, instead of dissolving Peel Region.

On January 24, 2024, the Minister of Housing and Municipal Affairs advised the Transition Board to focus on making recommendations regarding the transfer of specific services provided by the Region of Peel relating to land use planning, water and wastewater (including stormwater), regional roads, and waste management to the lower-tier municipalities. All other services delivered by the Region of Peel were identified as out of scope for the Transition Board at this time. The Transition Board has been asked to deliver proposed recommendations to the Minister by Spring 2024.

### Risk Management Plan extension updates

On December 11, 2023 Town of Orangeville Council received an update on the status of Risk Management Plan establishment (see Agenda Item 8.1) for the Town. Town of Erin Council also received a Risk Management Plan implementation progress update on December 14, 2023 (see Agenda Item 8.2). A progress update on the establishment of outstanding Risk Management Plans across the CTC will be brought to the March 2024 SPC meeting.

Source Protection Plan implementing bodies were required to provide their 2023 annual progress updates to the CTC by February 1, 2024. CTC staff are currently reviewing the information provided. The draft Annual Progress Report will be brought to the March 2024 SPC meeting for the Committee's consideration.

### Working Group updates

The CTC Implementation Working Group (IWG) met virtually on February 6, 2024. Discussion included the 2024-2027 workplan proposal submitted to the province, and s.36 Source Protection Plan timelines. Discussion papers on policy considerations for the transportation of dangerous goods (see Agenda Item 7.1d) and liquid hydrocarbon pipelines (see Agenda Item 7.1e) were considered by the group. Draft salt and snow policies were also discussed and will be brought to the Committee in March 2024.

S. Lister has recently moved to a new role at York Region, and has resigned as IWG Chair, necessitating the appointment of new working group Chair. Although the IWG is a staff-level working group reporting to the CTC Source Protection Region Program Manager; the current IWG Terms of Reference (TOR) stipulates that a member of the CTC Source Protection Committee shall Chair the working group and act as a communication link between it and the CTC Source Protection Committee. Further, any substantive amendments to the Terms of Reference (see Attachment C) requires support from the Source Protection Committee. After discussion with the IWG, program staff plan to amend the IWG's Terms of Reference to remove the requirement for the IWG Chair to be a Committee Member; however, a SPC Member who is also a municipal staff may still Chair the Working Group.

### Update on Source Protection Plan amendments and consultations

The proposed amendments to York’s new Nobleton well; Peel Region’s Palgrave, Caledon East, and Caledon Village systems; the City of Toronto’s new Enwave intake and Ashbridges Bay WWTP outfall, and policy updates (as endorsed by Resolution #37/22 at SPC Meeting #4/22) were formally submitted to the Ministry of Environment, Conservation and Parks on December 15, 2023. In response to MECP review comments on the submission, CTC program staff provided further clarification on February 9, 2024 to the Ministry.

The timeline of anticipated upcoming amendments to the CTC Source Protection Plan can be found in Table 1.

**Table 1. Anticipated CTC Drinking Water System Amendment/Update Timelines**

Drinking Water System	Pre-Consultation	Public Consultation	Submission Date
York Region (Nobleton replacement PW3); Peel Region (Palgrave, Caledon East, Caledon Village); New Toronto Island intakes (s. 34)	Spring 2023	June/July 2023	December 15, 2023
Town of Erin (Well E9) (s.34 or s.36)	2024	2024/2025	2024/2025
York Region/Nobleton well 6 (s.34 or s.36)	2024/2025	2024/2025	2025/2026
Durham Region GW model update (Uxville/CLOCA) (s. 36)	2024/2025	2025	2025/2026
York Region/Stouffville well 3 ICA (s.34 or s.36)	2024/2025	2025	2025/2026
Orangeville Tier 3 update/new Pullen well (s. 34 or 36)	2024/2025	2025/2026	2025/2026
Mono (Island Lake new supplies) (s.34)	2025/2026	TBC	TBC
Halton Region GW model (Georgetown/Acton) (s.34)	2025/2026	TBC	TBC
Town of Erin (Hillsburgh new well) (s.34)	2025/2026	TBC	TBC
York Region/Stouffville well 3 replacement (s.34)	2025/2026	TBC	TBC
Peel Region/potential Inglewood new supply (s.34)	2025/2026	TBC	TBC
Town of Erin (WHPA updates) (s.34)	2026/2027	TBC	TBC

### CTC website update

The CTC Source Protection Region website (<https://www.ctcswp.ca/>) was re-launched on January 9, 2024. The updated site is mobile-friendly and *Accessibility for Ontarians with Disabilities Act* (AODA) compliant. Further updates will continue to be made to add content, including additional information about Source Protection Committee members.

Program staff have also been working to update the Assessment Reports and Source Protection Plan to be AODA compliant. These updated documents are expected to be posted to the website in the coming months.

## Upcoming Meeting Schedule

In accordance with SPC direction provided at meeting #3/22, upcoming SPC meetings are scheduled as “hybrid” meetings, hosted at the Credit Valley Conservation head office. Staff are proposing that a May 2024 meeting be in-person.

Currently scheduled:

- March 20, 2024 1–4 p.m. (hybrid: @ CVC head office & TEAMS)
- April 17, 2024 1–4 p.m. (hybrid: @ CVC head office & TEAMS)

Proposed:

- May 30, 2024 1-4 p.m. (in-person only @ CVC head office)
- October 9, 2024 1-4 p.m. (hybrid: @ CVC head office & TEAMS)
- December 4, 2024 1-4 p.m. (hybrid: @ CVC head office & TEAMS)

### Report prepared by:

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Date: February 14, 2024

Attachments (3):

Attachment A: CTC Source Protection Committee Notice of Appointments

Attachment B: Bill 112 and CTC Source Protection Region

Attachment C: IWG Terms of Reference

**Attachment A:** CTC Source Protection Committee Notice of Appointments

**CTC SOURCE PROTECTION COMMITTEE**

Per Section 10 of [Ontario Regulation 288/07](#), this summary serves as the Notice of CTC SPC Member Appointments.

Chair: Nathan Hyde, Appointed by Minister of the Environment, Conservation and Parks (Term: Feb. 27, 2023- Feb. 26, 2026)

<b>Municipal Representatives</b>	<b>Municipalities Represented</b>	<b>Date of Appointment</b>	<b>Appointment Expiry</b>
Liza Ballantyne	City of Toronto	January 21, 2022	January 21, 2027
William Fernandes	City of Toronto	September 8, 2023	September 7, 2028
Chris Gerrits	Dufferin & Simcoe municipalities	September 23, 2021	September 23, 2026
Alex Hilson	Halton & Wellington municipalities	September 8, 2023	September 7, 2028
Scott Lister	York municipalities	June 21, 2019	June 20, 2024
Elvis Oliveira	Peel municipalities	September 10, 2021	September 10, 2026
John Presta	Durham municipalities	June 21, 2019	June 20, 2024
<b>Economic Representatives</b>	<b>Sector</b>	<b>Date of Appointment</b>	<b>Appointment Expiry</b>
Vacant	Chemical Sector	-	-
Colin Evans	Aggregate Sector	June 10, 2022	June 10, 2027
Louise Foster	Land Development Sector	June 21, 2019	June 20, 2024
Lee Gould	Road Salt Sector	September 23, 2021	September 23, 2026
Geoff Maltby	Agriculture Sector	September 23, 2021	September 23, 2026
Gary Mountain	Agriculture Sector	June 21, 2019	June 20, 2024
Ryan Wheeler	Petrochemical/Petroleum Sector	June 10, 2022	June 10, 2027
<b>Public Interest Representatives</b>	<b>Sector</b>	<b>Date of Appointment</b>	<b>Appointment Expiry</b>
Julie Abouchar	Citizen-At-Large	June 21, 2019	June 20, 2024
Cody Brown	Citizen-At-Large	March 10, 2023	March 10, 2028
Ken Dion	Citizen-At-Large	September 10, 2021	September 10, 2026
Mark Heaton	ENGO	March 10, 2023	March 10, 2028
Rosemary Keenan	ENGO	September 23, 2021	September 23, 2026
Jeff Light	Citizen-At-Large	September 10, 2021	September 10, 2026
Peter Miasek	Citizen-At-Large	June 21, 2019	June 20, 2024



**TO: Chair and Members of the Source Protection Committee  
Meeting #3/23, December 6, 2023**

**FROM: Behnam Doulatyari, Program Manager, CTC Source  
Protection Region**

**RE: Bill 112 and CTC Source Protection Region**

### **KEY ISSUES**

To inform the CTC Source Protection Authority of the impact from Bill 112 on CTC Source Protection Region.

### **RECOMMENDATION**

**THAT** the CTC Source Protection Committee receive the staff report Bill 112 and CTC Source Protection Region for information.

**AND FURTHER THAT** the CTC Source Protection Committee endorse the recommendation of the Bill 112 on CTC Source Protection Region report and share this report with the transition board.

### **Background**

On June 8, Bill 112, the Hazel McCallion Act, passed which establishes a transition board to assist the Region and the three municipalities in devolving responsibilities for delivery of municipal services to each respective municipality and winding down the Region of Peel by January 1, 2025.

The Region of Peel includes three Fast Growing Municipalities of Mississauga, Brampton, and Caledon, as designated under the new Provincial Policy Statement (PPS), and spans an area located in both Credit Valley, and Toronto and Region Conservation Authorities (CAs). Accordingly, Peel Region funds many watershed-based programs and services critical to the health of our watersheds at both CAs.

Although the CTC Drinking Water Source Protection Program is funded by the Ministry of Environment, Conservation and Parks (MECP), as the owner and operator of the Drinking Water Systems, Region of Peel funds Risk Management Officials and Inspectors (RMO/RMI), staff responsible for monitoring and reporting, and capital projects for maintaining and expanding these systems, including technical work required under the Clean Water Act, 2006. This report is



focused on potential impacts of Bill 112 on the Drinking Water Source Water Protection and associated programs.

## Analysis

The Clean Water Act defines 22 activities as drinking water threats, listed in section 1.1. of O. Reg. 287/07. Source Protection Plans address these threats activities where they pose a risk to quality and quantity of drinking water sources. Source Protection Plans further identify where threats to sources of drinking water could be Significant, moderate, or low. There are four types of designated vulnerable areas under the Clean Water Act: Well Head Protection Areas (WHPA), Intake Protection Zones (IPZ), Significant Recharge Areas (SGRA), Highly Vulnerable Aquifers (HVA). In some areas, WHPA and IPZ may also have associated Issue Contributing Area (ICA), which is delineated where there have been documented water quality problems at the intake or well. Significant drinking water threats can occur in WHPA and IPZ, and ICAs.

In the Region of Peel, municipal drinking water is supplied to most residents either from surface water, in the cities of Brampton and Mississauga and the southern parts of Caledon, including the community of Bolton, or from groundwater in rural communities in the Town of Caledon. The vulnerability scores at our intake protection zones are such that only moderate and low drinking water threats policies are applicable in the areas serviced by lake-based system. The wellhead protection areas for our groundwater-based systems are subject to significant drinking water threat policies.

## Municipal Planning Documents

Part III of the Clean Water Act requires Municipal Planning Documents, including Official Plans and Zoning By-laws, to be in conformity with applicable source protection policies. In cases of conflict, the significant drinking water threat policies in the approved source protection plan prevail.

The Region of Peel Official Plan was approved with modifications by the Minister of Municipal Affairs and Housing, through the decision issued on November 4, 2022. Source protection policies are included in section 2.7 of the official plan, and schedule A-4 through A-6 show the relevant designated areas.

Bill 23, the More Homes Built Faster Act, 2022 received royal assent on November 29th, 2022 and includes changes to the Planning Act which remove planning authority from the Region of Peel, making it an “upper-tier municipality without planning responsibilities”. As a result, amongst other changes, the Regional Official Plan, is now the responsibility of local municipalities in conjunction with their own Official Plans. The intent is that local municipal Official Plans will incorporate Regional Official Plan policies within their jurisdiction.



Town of Caledon is currently undertaking a municipal comprehensive review process. Their draft Official Plan includes a Source Protection section which identifies Peel Region as the body managing provision of municipal drinking water and implementing source protection plan policies. Accordingly, their draft policies are structured to conform with those of Peel Region Official Plan. Staff from Credit Valley and Toronto and Region Source protection Authorities along with Region of Peel Provided consolidated comments on the source protection section of the draft Official Plan earlier this fall.

The Cities of Brampton and Mississauga do not include source protection policies in their Official Plans. However, the final draft of the City of Brampton's new Official Plan includes a section on surface water and groundwater resources which indicates that the hydrologic function of highly vulnerable aquifers and significant groundwater recharge areas are to be protected during the planning process.

### **Planning Approval Process**

The Clean Water Act relies on variety tools to address threats to drinking water supplies. This includes, but not limited to, instruments under existing legislation, such as land use controls under the Planning Act, and powers under Part IV of the Clean Water Act, 2006, that provide a process for reviewing development and building permit applications for potential Significant Drinking Water Threats (section 59), and the ability to prohibit existing/future activities (section 57), and the ability to manage activities on a site-by-site basis through Risk Management Plans (section 58). The Part IV authorities only apply in areas of where drinking threats have been identified as significant and designated by the Source Protection Plan policies. Policy GEN-1 in the approved CTC Source Protection Plan designates land uses where development or building permit applications must be reviewed by the RMO, as per section 59.

Through a one window approach Building Code, Niagara Escarpment Commission and Planning Act applications are pre-screened by either the Town of Caledon's Building Department or Peel's Planning and Development Services based on the latest available mapping. Applications within Wellhead Protection Areas are circulated to the RMO Office at Region of Peel, accompanied by a completed Source Protection Plan Policy Applicability Screening Form to aid with the S.59 review process.

### **Master Planning**

The Region of Peel completed Water and Wastewater Master Plan for its lake-based systems in 2020, updating the previous Master Plan from 2013. The study, among other things, identified the preferred lake-based water and wastewater servicing strategies to support existing servicing needs and projected growth mandated by the province and provide the need, timing and cost of servicing and infrastructure. The Master Plan study area includes the City of Mississauga, the City of Brampton and parts of the Town of Caledon. The study also considered the Region's capital

plan to meet the current and ongoing servicing agreements with York Region and the City of Toronto.

Furthermore, a Water and Wastewater Master Plan study has been initiated by Peel region for its groundwater-based systems, located in the Town of Caledon. The Master Plan study is a proactive approach to accommodate growth in the delivery of water and wastewater services. The objectives of the study are to identify long-term drinking water servicing strategies and infrastructure needs to support the security of supply, ensure there is sufficient water supply and reliability in our systems, tie it to the comprehensive study, and with adjustments, reflect the latest 2051 Official Plan in the areas. An evaluation of the existing groundwater-based water system including groundwater supply wells, water distribution, treatment, and storage systems will be conducted. These objectives align with drinking water source protection policies that aim to protect existing and future municipal source water from overuse and contamination.

This study will allow Region of Peel to develop a comprehensive water servicing strategy to ensure that level of service to existing residents and businesses in Peel is not impacted and, where possible, it is improved. Having a comprehensive knowledge of current and future system needs and planning strategies to meet these requirements is an important step to ensure a safe and reliable municipal drinking water source. Any changes, additions or updates to North Peel’s drinking water systems identified from the deliverables of this study, will result in the need to update designated vulnerable areas, preliminary threats assessments, and other technical work required under the Clean Water Act.

**Capital Projects**

The table below provides a list of most relevant capital projects from Region of Peel 2023 budget.

Project Title	Description	Total Budget (\$'000)
Caledon East - New Groundwater Well - Class Environmental Assessment	Class Environmental Assessment (EA) for a new groundwater well to service future development in Caledon East.	250
Palgrave - New Groundwater Well - Class Environmental Assessment	Class Environmental Assessment for a new groundwater well to service future development in Palgrave	100
Caledon Village and Palgrave Feasibility Analysis	Additional studies to investigate the declining efficiency of municipal groundwater wells in Caledon.	150
Source Water Protection	Funding for various activities related to source water protection, including wellhead protection area delineation, risk management, modelling, threats verification and climate change assessments.	300
Palgrave - New Groundwater Well	Construction of a new municipal groundwater well in Palgrave to service future development in Palgrave Village and Palgrave Estates.	500

Groundwater Well Monitoring Program	Implementation of an automated system to collect real-time groundwater data for our well-based systems.	100
Groundwater Well Structural Casing Analysis	Structural assessment and integrity analysis of municipal groundwater well casings to meet the enhanced requirements of the Ministry of the Environment, Conservation and Parks.	200
Caledon Village and Palgrave Feasibility Analysis	Additional studies to investigate the declining efficiency of municipal groundwater wells in Caledon.	150
Caledon East – New Groundwater Well	Construction of a new municipal groundwater well in Caledon East to service future development.	1,375
<b>Total</b>		<b>3,125</b>

### **Watershed Planning**

The watershed provides the meaningful scale for managing water resources. A source water protection plan is a watershed-based strategy containing policies which direct how the quality and quantity of municipal drinking water supplies will be protected. In Peel Region, the Credit Valley Conservation –Toronto and Region Conservation – Central Lake Ontario, and South Georgian Bay – Lake Simcoe Source Protection Committees have led the preparation of source water protection plans, both of which apply to various portions of the Region. These Plans are informed by watershed scale Assessment Reports.

The new Watershed Plan for Credit Valley is informed by the technical work and data from Drinking Water Source Protection. The watershed characterization chapter of the Watershed Plan are in turn informing the update of Credit Valley Source Protection Assessment Report. The same applies to the recent Etobicoke Creek Watershed Plan in Toronto and Region Conservation Authority. Other watershed planning tools that have benefited from source protection technical studies include Ecologically Significant Groundwater Recharge Areas, and Water Resource System mapping.

As stresses to our natural environment from development and climate change accelerate, their impact to the quality and quantity of drinking water sources must be understood at the watershed scale.

### **Supporting Programs**

The protection of drinking water sources is a highly collaborative initiative that requires the involvement of several stakeholders. The Region of Peel funds and actively participates in these programs which are important avenues for knowledge transfer between municipalities, agencies, and other stakeholders, such as landowners.

#### The Oak Ridges Moraine Groundwater Program (ORMGP)

The mandate of the ORMGP partnership is to provide a multi-agency, collaborative approach to collecting, analyzing, and disseminating water resource data as a basis for effective stewardship of water resources. The ORMGP builds, maintains, and provides to partnered agencies the regional geological and hydrogeological context for ongoing groundwater studies and management initiatives within the partnership area. There are currently 15 government agencies participating; as related to CTC, Halton Region, Peel Region, York Region, City of Toronto, Durham Region are all funding partners. The municipalities, as well as Credit Valley, Toronto and Region, Central Lake Ontario Conservation authorities all provide data and technical input and support to the program.

All groundwater models across CTC SPR, developed through the Drinking Water Source Protection Program by our municipal partners, are hosted and maintained by the ORMGP team. This ensures continuity in modeling groundwater resources and provides a valuable advantage for all new technical work undertaken in response to changes to drinking water systems. Through the ORMGP's numerical model custodianship program, all numerical models have been archived and are held in a ready to deploy condition, thus ensuring participating municipalities of long-term cost savings by not having to rebuild the models when needed in the future. This achieves knowledge retention, ensuring that the Intellectual Property from the models is retained for the participating municipalities. Rigorous quality control under the ORMGP umbrella, also ensures that municipal projects on water resources are always informed by consistent high-quality data that is accessible in a variety of formats.

The analytical tools developed by ORMGP are part of the workflow for development application approval process. For example, the water budget assessment tool used in to address requirements in our water quantity Well Head Protection Areas was developed by ORMGP based on existing models. A recent project by ORMGP, funded through CTC Drinking Water Source Protection program, involved reconciling geological layers across existing models based on their data base, which has improved our understanding of regional hydrostratigraphy. Also, through this project a new tool was developed that allows website users to download various data and related files from the platform, to make use of these products within their own GIS environments. This upgrade has improved data transfer to consultants working on municipal projects.

ORMGP staff continue to review RFPs and serve on technical steering committee for new source protection projects to provide modeling expertise not available through source protection authority or municipal staff. Furthermore, we are now well underway to have all relevant data from municipal production wells from across CTC SPR in the database. Coupled with all other data sources this has enhanced our ability to assess regional trends in water quality. Details about the program, including their annual reports, can be found here:

<https://www.oakridgeswater.ca/>

[Lake Ontario Collaborative Group](#)

The approved CTC Source Protection Plan includes two Specify Action Policies for lake-based drinking water intakes. The Specify Action Policy LO-G-2 requires several stakeholders to work collaboratively through the creation of the Lake Ontario Collaborative Group (LOCG) to undertake activities in support of managing Lake Ontario-based drinking water intakes. The LO-G-2 policy specifies that Ontario Ministry of the Environment, Conservation and Parks will work with Environment Canada and the municipalities responsible for managing lake-based drinking water treatment systems along Lake Ontario to:

- Install permanent instrumentation that will provide continuous real-time monitoring of current speed, direction, and temperature throughout the water column.
- Maintain and further develop a 3D hydrometric circulation model, or more advanced models as appropriate, with a particular focus on the nearshore of Lake Ontario.
- Undertake threat scenario and spills modelling as required to update future source protection plans.
- Assess the threat of new municipal sewage outfalls, industrial outfalls, or pipelines.
- Assess the impacts of climate change, such as lake fluctuation levels, on Lake Ontario drinking water.
- Development of a pathogen risk assessment for lake-based intakes.

Policy LO-G-3 identifies that the municipalities of Peel, Durham and Toronto play the central role in undertaking these tasks, including funding portions of the monitoring and modelling activities. The Regional municipalities have established a Memorandum of Understanding, as well as a ten-year work plan and budget forecast, to undertake this work. The municipalities continue to proactively advance the work required to manage lake-based intakes.

The Phase I of the project is now completed which included water monitoring (currents, temperature) instrumentation at select intakes, development of a 3-D dynamic model that can predict lake currents in the nearshore of Peel, Durham and Toronto, and communication protocols to ensure the timely response to spills. During the recent industrial accident in Etobicoke, this model was used to assess the potential risk to Toronto and Peel intakes from the ensuing spill in the Mimico Creek. Staff from Toronto and Peel were able to communicate effectively and in a timely manner and provide results to the Spill Action Center.

During the second phase of the program, the model will be updated to include all event base areas, which correspond to Intake Protection Zone 3 in the CTC source Protection Plan. This will allow for a more accurate representation of spills occurring inland. Halton Region will be onboarded to the program to expand the coverage area. Further alignment with Spills Action Center and MECP will also be explored.

### Rural water quality program

The Peel Rural Water Quality Program (PRWQP) was created in 2004 by Credit Valley Conservation (CVC) and the Toronto and Region Conservation Authority (TRCA). It provides funding and technical assistance to Peel's agricultural landowners for best management practices

(BMPs). The comprehensive program is voluntary, confidential and agriculturally base. It promotes and supports the implementation of BMP projects that address:

- Rural water quality,
- Environmental enhancement and sustainability, and
- Climate change mitigation and adaptation.

Since 2004 the Region of Peel has funded the program, which has been delivered by TRCA and CVC with help from program partners which include The Region of Peel, The Peel Federation of Agriculture and the Peel Soil and Crop Improvement Association. In 2022, ALUS Canada became a program partner and now provides additional help and financial support.

Projects that fall within an identified Source Water Protection threat area are reviewed by the Region of Peel’s Source Water Protection Risk Management Office to ensure that the project adheres to the Clean Water Act and Risk Management Plan for that property, if required. Several BMPs that are funded through the program can be used by landowners to address drinking water threats on their farm property. For example, PRWQP funding can be accessed to manage manure, fuel, and agricultural chemical storage.

## Discussion

The protection of sources of drinking water is a crucial component that supports the government’s goal of building 1.5 million homes to address the housing crisis. We would like to ensure the proposed changes to municipal structure in Region of Peel account for the range of interconnected programs and policies that support the implementation of approved source protection plans.

Although the Drinking Water Source Protection program is funded by the MECP, technical work for mapping designated vulnerable areas is now funded by the municipalities. These are complex projects which depend on multi-agency collaboration, and their timely planning and implementation are essential for updating the drinking water systems to meet housing demand and growth targets.

We strongly recommend the transition board to consider keeping Water and Wastewater, Drinking Water Source Protection Program, and support programs, as a regional service, to ensure the protection of source of municipal water. A source water protection plan is a watershed-based strategy containing policies which direct how the quality and quantity of municipal drinking water supplies will be protected. As watersheds cross municipal boundaries, it is important for there to be a regional approach to watershed management and for all municipalities to collaborate in source water protection.

### **Report prepared by:**

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Date: Dec 06, 2023

Credit Valley – Toronto and Region – Central Lake Ontario Source  
Protection Region

# Implementation Working Group

Terms of Reference

May 2, 2022 (Final)

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## Background

- The Credit Valley – Toronto and Region – Central Lake Ontario (CTC) Source Protection Committee (SPC) prepared the CTC Source Protection Plan and Assessment Reports for all three Source Protection Areas in the CTC Source Protection Region, based on the Ministry of the Environment, Conservation and Parks-approved Terms of Reference.
- The Source Protection Plan (SPP) and Assessment Reports (AR) are approved and have been in effect since December 31, 2015. Since that time, the SPP and ARs have been periodically updated.
- An Implementation Working Group (IWG) of municipal and conservation authority staff has met at least annually since 2016 to support ongoing implementation of the CTC Source Protection Plan.

## Mandate

The mandate of the Implementation Working Group is to act as a forum for municipal and conservation authority staff to share information and discuss topics related to the Source Protection Plan and its implementation.

## Objectives

The objectives of the Implementation Working Group are to:

- Work in a collaborative and cooperative manner to further implementation of the CTC Source Protection Plan
- Facilitate the sharing of information and updates from the CTC Source Protection Committee, MECP, Conservation Ontario, and other working groups
- Engage in all topics relevant to plan implementation brought forward by participating members, including but not limited to annual reporting, case studies, policy interpretation, technical rules changes, and plan updates or amendments



## Membership

The Implementation Working Group is a distinct group with representation from municipalities and conservation authorities within the CTC Source Protection Region. It is recommended that each agency identify 2 lead staff members to participate in the working group. Additional staff from participating agencies may attend working group meetings as guests. The list of working group members is included in Appendix A.

From time to time, representatives from other Source Protection Regions, municipalities, provincial agencies, or external organizations (e.g., the Oak Ridges Moraine Groundwater Program) may participate in meetings of the IWG upon invitation.

## Chair

The IWG is chaired by a member of the CTC Source Protection Committee. The purpose of the chair is to act as a liaison and communication link between the working group and the SPC. The chair position and term will be reviewed together with the IWG Terms of Reference every three years, or as needed to reflect changing SPC membership.

The CTC Source Protection Chair is an ex-officio member of all Working Groups.

## Reporting

The IWG is a staff-level working group and reports to the CTC Source Protection Region Program Manager.

The Program Manager may include reports with information developed and/or discussed by the Implementation Working Group in the agendas of the CTC Amendments Working Group or the CTC Source Protection Committee. These summaries may include assessment of implementation challenges and solutions, the results of technical work or case studies, and information on plan updates or amendments.

## Working Group Meetings

- The IWG will meet on a regular basis until it is determined that the mandate has been completed. The need to continue the group will be evaluated on an annual basis.
- Frequency of meetings – 4-8 meetings annually, or at the call of the Program Manager. Depending on the agenda, meetings may be cancelled or postponed.
- Meetings will be up to 3 hours in duration and held during business hours (Monday-Friday, 9 am – 4:30 pm)
- Location and format of meetings – virtual meetings preferred with some face-to-face meetings at the CVC Head Office, 1255 Old Derry Road Mississauga, when appropriate.

- Agenda packages will be circulated to working group members a minimum of three (3) business days prior to a meeting, i.e. Friday, prior to the next Wednesday meeting
- Meeting notes will be written up and circulated to working group members with the agenda package of the next meeting

### Conflict Resolution

- Decisions will be made by consensus among the members present
- If no decision can be made by consensus, the minority opinions will be documented

### Review of Terms of Reference

The Implementation Working Group should review the Terms of Reference every three years. The IWG should seek support from the Source Protection Committee for any substantive amendments to the Terms of Reference.

## Appendix A: CTC Implementation Working Group Membership

<b>Member</b>	<b>Affiliation</b>
<b>Municipal Representatives</b>	
Jon Clark, Acting Chair, Implementation Working Group (Feb. 2024)	Halton Region
Maureen Bianchet	Region of Durham
Shelly Cuddy	Region of Durham
Colin Hall	Region of Durham
Tavis Nimmo	Region of Durham
Tom Bradley	York Region
Joanna Miron	York Region
Colleen Barfoot	York Region
Angelika Masotti	York Region
Bill Snodgrass	City of Toronto
Therese Estephan	Region of Peel
Stefan Herceg	Region of Peel
Erin Ihnat	Region of Peel
Daniel Banks	Halton Region
Hayley Pankhurst	Halton Region
Kyle Davis	County of Wellington municipalities
Kim Funk	County of Wellington municipalities
Emily Vandermeulen	County of Wellington municipalities
Danielle Walker	County of Wellington municipalities
Sarah Thompson	NVCA (on behalf of the Town of Mono)
Stephanie Charity	RJ Burnside (on behalf of Township of East Garafraxa, Township of Amaranth)
Melinda Morris	RJ Burnside (on behalf of Township of East Garafraxa, Township of Amaranth)
Dwight Smikle	RJ Burnside (on behalf of Township of East Garafraxa, Township of Amaranth)
Muriel Kim-Brisson	Blumetric (on behalf of Town of Orangeville)
Tiffany Svensson	Blumetric (on behalf of Town of Orangeville)
Irena Kontrec	Town of Orangeville
Brandon Ward	Town of Orangeville
<b>Conservation Authority Representatives</b>	
Behnam Doulatyari, CTC Program Manager	Credit Valley Conservation
Craig Jacques, CTC Program Coordinator	Credit Valley Conservation
Kerry Mulchansingh	Credit Valley Conservation
Hailey Ashworth	Credit Valley Conservation
Elizabeth Paudel	Credit Valley Conservation
Parastoo Hosseini	Credit Valley Conservation
Daniela MacLeod	Toronto and Region Conservation Authority
Don Ford	Toronto and Region Conservation Authority
Kristina Anderson	Toronto and Region Conservation Authority
Heather Rodriguez	Toronto and Region Conservation Authority
Sheila McKinley	Toronto and Region Conservation Authority
Rod Wilmot	Central Lake Ontario Conservation Authority

Membership Updated: February 14, 2024

<b>Member</b>	<b>Affiliation</b>
Chris Jones	Central Lake Ontario Conservation Authority
Fred Carpio	Central Lake Ontario Conservation Authority
<b>Source Protection Committee</b>	
Nathan Hyde	CTC SPC Chair (ex-officio member of Working Group)

**TO: Chair and Members of the Source Protection Committee  
Meeting #1/24, Feb 21, 2024**

**FROM: Behnam Doulatyari, Senior Manager, Watershed Plans and  
Source Water Protection**

**RE: Review of the CTC Source Protection Plan FUEL Policies**

### **KEY ISSUES**

Proposed new FUEL policies for the CTC Source Protection Plan, in compliance with 2021 Director Technical Rules.

### **RECOMMENDATION**

**THAT** the CTC Source Protection Committee receive the staff report Review of the CTC Source Protection Plan FUEL Policies for information.

**AND FURTHER THAT** the CTC Source Protection Committee endorse amendment to FUEL policies consistent with the direction outlined in this staff report.

**AND FURTHER THAT** staff be directed to incorporate the new policy text as part of a forthcoming amendment to the CTC Source Protection Plan, under Section 36 of the Clean Water Act.

### **Background**

The CTC Source Protection Plan (SPP) currently includes four policies addressing existing and future significant drinking water threats from handling and storage of fuel variously directed to provincial agencies, the Technical Standards and Safety Authority (TSSA), municipalities, Risk Management Officials, and Source Protection Authorities. The Explanatory Document describes the rationale for the policy approach.

Task 28 of the CTC s.36 workplan asks that the revised circumstances associated with the storage and handling of above grade fuel will be applied within the CTC SPR. In the 2021 amendments to the Directors Technical Rules (DTR), the sub-categories of handling and storage of fuel were merged into a combined set of circumstances and the volume threshold for Significant Drinking Water Threat (SDWT) was reduced to 250L (previously 2,500 L) for above grade storage in Well Head Protection Areas (WHPA) with vulnerability score of 10. This update will require:

- Prohibiting the future handling and storage of fuel (250+ litres), in any WHPA Zone with a score of 10 and any WHPA E with a score of 9.

- Requiring risk management plans for existing storage and handling of fuel (250+ litres), in areas where it would be a SDWT.

### Analysis

The areas of applicability for these policies across CTC source protection region are attached in **Attachment A**. The municipalities with largest areas in WHPA-B (10) and WHPA-E (9) are Halton Hills, Town of Erin, and Whitchurch-Stouffville. There are also relatively small areas in Caledon and Orangeville. There are no IPZs with a vulnerability score more than 6 in CTC, therefore, throughout this report the focus is limited to groundwater-based drinking water systems and Intake Protection Zones are not discussed. MECP provides an interactive web viewer, The Source Protection information Atlas, where these areas can be explored further by members of the committee.

Based on the 2022 annual report there are 3 outstanding significant drinking water threats in Halton Region. However, these numbers do not reflect new threats that will be added once the current amendment under s.34 of the act, concerning changes to drinking water systems in Peel, York and Toronto, is approved by MECP.

Activity	Original threat count (a)	Field verified new threats (b)	Threats discounted through field verification (c)	Threats addressed through policy tools (d)	Remaining significant drinking water threats (a+b-c-d=e)
handling and storage of fuel	366	12	349	26	3

The FUEL policies of three neighboring source protection regions were reviewed. These include:

- South Georgian Bay Lake Simcoe (SGBLSR) approved policies based on 2013/2017 DTRs.
- Lake Erie (LESPR) Wellington chapter, based on 2013 DTRs.
- Halton-Hamilton (HHSPR) proposed policies based on 2021 DTRs.

The policies are summarized in the table below and should be read to apply where the activity would be a SDWT, unless specified. Please keep in mind that the volume threshold and applicable area requirements change depending on the version of the DTRs used.

Tool	SGBLSR	LESPR	HHSPR
<b>Prohibition (s.57)</b>	Future activity where it would be a SDWT.	Future activity, in volume more than 2,500 Litres WHAP-A, except for emergency back-up generators	Future activity, where it would be SDWT, excluding un-serviced residential or farming operations with fuel storage less than 2500 litres.

<b>Risk Management Plan (s.58)</b>	Existing activity where it would be a SDWT, except for personal domestic use (i.e., residential use).	Existing activity in volume more than 2,500 Litres; Or Future activity in volume more than 2,500 Litres within WHPA-B (10).	Existing activity where it would be a SDWT, except if used for heating a single-family dwelling. And future activities that are exempt from prohibition.
<b>Education and Outreach</b>	Existing, where it would be a SDWT, directed at SPA (lead) and municipalities to develop an E&O program.  Directed at MECP to develop E&O material.	Existing and future activity, where it would be a SDWT, in volume more than 250 Litres. but not more than 2500 Liters, directed at the municipalities.	Existing and future activity, where it would be a SDWT, directed at upper tier municipalities to continue their E&O programs in collaboration with Conservation Authorities.
<b>Specific Action</b>	Existing and future activity, directed at SPA to get data from TSSA.  Existing, directed at Municipalities to develop a by-law to require the removal of fuel tanks from abandoned properties, where it would be SDWT.		Future activity, directed at the Niagara Escarpment Commission to prohibit storage.
<b>Land Use Planning</b>	-	-	-
<b>Prescribed Instrument</b>		Directed at NDMNRF to manage existing and future activity at an aggregate extraction site through ensuring the Prescribed Instrument.	

**Municipal feedback**

During previous consultations with the Implementation working group, Amendment working Group and the Source Protection Committee several concerns were raised:

- Member of the SPC highlighted the potential impact of prohibiting future storage of liquid fuels on residential developments in rural areas where alternative may not be available. However, Risk Management Officials (RMOs) have reported no new development applications relying of fuel oil for heating in the past two years.
- Despite the above, implementation challenges for future prohibition were discussed. Currently there are no tools other than in person inspection to identify new liquid fuel storage tanks should one be installed in area where it is a significant drinking water threat and therefore prohibited. If/when identified it would require an order for removal, which

may cause undue burden on a landowner/tenant who may not have been aware of the prohibition. An example can be a commercial land use where introduction of a liquid fuel storage tank would not have triggered a planning application. One recommendation was for the explanatory document, or the preamble be updated to direct such cases to be treated as an existing activity, requiring an RMP, while the Source Protection Authority should deliver education and outreach material to the fuel supplier to prevent new significant threats.

- The potential need for exempting back-up generators at utilities, not including municipal well heads addressed by FUEL-1, was also raised. The policy language was updated to reflect an exemption for requirements under other provincial regulation.
- RMOs pointed out the prohibition policy combined with the newly prescribed reduction in volume threshold has an unintended consequence on potential need for replacing existing fuel oil tanks. In other words, replacement of an existing fuel oil tank with volume greater than 250L would be prohibited. Such cases are rare but to ensure the existing users are not disproportionately affected, the Explanatory Document will be updated to provide discretion to the RMO to exclude such circumstances. Upsizing will be prohibited.
- RMOs and members of the SPC raised questions about the effectiveness of RMPs in addressing SDWT from fuel for residential uses in rural setting. The already high level of effort for the RMOs to negotiate and inspect RMPs for residential fuel tanks stored in basements has increased since the COVID 19 pandemic, particularly if is the only SDWT. RMOs have reported education and outreach to be more effective at managing the risk in such cases. To address these concerns, an exemption has been introduced to RMP requirements for existing handling and storage of liquid fuels in volumes below 1000L for un-serviced residential uses. The term un-serviced is defined as any property classified as residential land use, that is not serviced by municipal gas, and an alternative means of heating is necessary (including fuel oil for home heating). This term is being introduced to avoid any confusion on the definition of “urban” or “rural”, and to emphasize access to alternative sources of energy as a determinant.
- RMO’s highlighted potential challenges for municipalities developing a by-law for removal of field tanks from abandoned properties, suggested in the FUEL-5 (3). The policy is brought forward as to provide municipalities the option to develop such by-law where they think it would be beneficial.

The draft policies were again shared with the Implementation Working Group and discussed at the meeting on Sept 26 and November 8, 2023. The comment matrix can be found in **Attachment 2**.

### Proposed Policy Alternatives and Discussion

The following consideration guided the proposed amendment:

- The intent of these policies is to eliminate/minimise the future storage and handling of fuel where it would be a SDWT and to mitigate/manage existing handling and storage of fuel where it is a SDWT.



- The vulnerability scores are a science-based method for delineating risk. WHPA-B (VS = 10) and WHPA-E (VS=9), areas outside WHPA-A where these policies apply, are part of the most vulnerable areas designated under the *Clean Water Act*.
- To the extent possible, policy consistency with neighboring source protection regions is prioritized.
- The relative impact of Prohibition and risk management policies on rural landowners compared to urban was especially considered to ensure they are not disproportionately impacted.
- As part of our effort to improve the resiliency of the SPP with regards to changes in DTRs and threat circumstances, the bulleted list of areas where/when a significant drinking water threat is possible and volume thresholds will be removed where possible. This means no amendments will be required to the policy in the future should there be changes to the DTR.

**Attachment 3** presents the proposed policies with updates highlighted in yellow. The sections highlighted green were supported by the SPC at Meeting #4/22 as part of s.34 amendment (Peel/Toronto/York) to indicate where fuel circumstances can be significant under the different versions of the DTRs.

**FUEL-1:** SDWTs from standby generators at municipal well heads are addressed through this policy, by requiring the relevant Prescribed Instrument to be updated to manage the threat. The Explanatory Document for the policy specifically highlights this case. The policy language has been updated to explicitly require reference to the applicable vulnerable areas, and protocols for emergency responses.

ID	Tool	Current Policy	Proposed Policy
FUEL-1	Prescribed Instrument	Manage existing/future handling and storage of fuel at a municipal wellhead is addressed through ensuring the Prescribed Instrument includes appropriate terms and conditions so that the activity ceases to be, or does not become, a SDWT.	Existing/future handling and storage of fuel at a municipal wellhead is addressed through ensuring the Prescribed Instrument includes reference to the applicable vulnerable area, protocols for emergency responses related to protecting the drinking water source, and appropriate terms and conditions so that the activity ceases to be, or does not become, a SDWT.

**FUEL-2:** SDWT from liquid fuels at aggregate sites are addressed by this policy through prohibiting future handling and storage where it would be a SDWT. Existing SDWT are addressed through the relevant Prescribed Instrument. The policy language has been updated to explicitly require reference to the applicable vulnerable areas, and protocols for emergency responses.

ID	Tool	Current Policy	Proposed Policy
FUEL-2 (1)	Prescribed Instrument	Prohibit future handling and storage of fuel at an aggregate extraction site.	Same with editorial changes.
FUEL-2 (2)	Prescribed Instrument	Manage existing handling and storage of fuel at an aggregate extraction site through ensuring the Prescribed Instrument includes appropriate terms and conditions so that the activity ceases to be, or does not become, a SDWT.	Manage existing handling and storage of fuel at an aggregate extraction site through ensuring the Prescribed Instrument includes reference to the applicable vulnerable area, protocols for emergency responses related to protecting the drinking water source, and appropriate terms and conditions so that the activity ceases to be, or does not become, a SDWT.

**FUEL-3:**

1. Prohibition (s.57): There are sufficient tools and alternatives available to prevent creation of new SDWT from storage and handling of fuel. Therefore, future activity within a vulnerable area where it would be a SDWT poses an unnecessary risk to drinking water and will be prohibited.
2. RMP (s.58): RMPs remain the most effective tool for addressing existing SDWT from storage and handling of fuel. The RMP requirement can also be a helpful nudge to landowners’ decision for switching to an alternative. Though this is more relevant in the urban setting with access to municipal services. Exemptions for existing residential uses in un-serviced areas have been included.
3. Updated and moved.

ID	Tool	Current Policy	Proposed Policy
FUEL-3 (1)	Prohibition (s.57)	Prohibits the future handling and storage of fuel in quantities $\geq 2500$ where it would be a SDWT, at non-residential properties, multi-unit residential properties or small businesses.	Prohibits the future handling and storage of fuel in quantities $\geq 250$ where it would be a SDWT, with exemption for backup generators required under other provincial regulations where no alternative is feasible.
FUEL-3 (2)	RMP (s.58)	Manage the existing handling and storage of fuel in quantities $\geq 2500$ where it would be a SDWT, at non-residential properties, multi-unit residential properties or small businesses.	Manage the existing handling and storage of fuel in quantities $\geq 250$ where it would be a SDWT, excluding existing un-serviced residential uses outside WHPA-A, with fuel storage less than 1000 litres.
FUEL-3 (3)		SPA to request data from TSSA on Private Fuel outlets, provide data to RMOs, and report leaks/concerns to TSSA.	Proposed to be updated and moved to FUEL-5 as a specific action policy.

**FUEL-4:**

1. Municipality are directed to prepare and deliver education and outreach materials and programs to landowners/tenants where the handling and storage of liquid fuel and fuel oil is or would be a SDWT, using material from MECP and TSAA where relevant. The policy language has been updated for education and outreach material to include information about alternatives to liquid fuels.
2. TSSA does not licence Private Fuel Outlets (PFOs), but they do licence fuel supplier’s tanker trucks delivering the fuel. Therefore, this policy has been updated to be focus on the suppliers and elaborate on the type of education material should be provided through colleges provided training.
3. Because of the above, the Source Protection Authority is directed to deliver education and outreach material to fuel suppliers. CTC staff have met with Ontario Petroleum Transporters & Technicians Association (OPTTA), requested list of known suppliers active in the region from MECP (to be complimented by OPTTA), and will try to conduct a round of in person engagement in the summer of 2024. During the public engagement phase of the upcoming s.36 amendment, through which these updated policies will be incorporated into the CTC Source Protection Plan, CTC will contact landowner/tenants in areas where handling and storage of fuel are or may be significant drinking water threat, as well as all relevant fuel suppliers. The engagement with fuel suppliers will be done every two years to mitigate changes in ownership and consolidation trend currently underway in the industry.

ID	Tool	Current Policy	Proposed Policy
FUEL-4 (1)	Education and Outreach	Municipality shall prepare and deliver education and outreach materials and programs to residences and small businesses where the handling and storage of liquid fuel and fuel oil is or would be a SDWT.	Municipality shall prepare and deliver education and outreach materials and programs to <i>landowners/tenants</i> where the handling and storage of liquid fuel and fuel oil is, or would be, a SDWT. This should include informing them about alternatives to the use of liquid fuels.
FUEL-4 (2)	Education and Outreach	The Ministry of the Environment, Conservation and Parks shall collaborate with the Technical Standards and Safety Authority (TSSA) and the Ministry of Government and Consumer Services to provide education and outreach material to municipalities which include information about spill prevention and management.	The Ministry of the Environment, Conservation and Parks shall collaborate with the Technical Standards and Safety Authority, Ministry of Public and Business Service Delivery and the Ministry of Government and Consumer Services to collaborate with industry associations to require source protection training for relevant certificates, provide education and outreach material to fuel supplier, and colleges, including the most up to date

			mapping of designated vulnerable areas and where the storage and handling of fuel has been prohibited through the relevant source protection plan.
<b>FUEL-4 (3)</b>	Education and Outreach	N/A	The Source Protection Authority to work with fuel industry associations and deliver education and outreach material to fuel suppliers.

**FUEL-5:** The 2018 the Auditor General of Ontario annual report, included 19 recommendations for TSSA; To reduce the risk of contamination of source water from Private Fuel Storage Sites, recommendation 11 directs TSSA to together with pertinent implementing bodies for source water protection plans and the Ministry of Environment, Conservation and Parks on developing a plan to identify the location of private fuel storage sites that pose a significant threat to source water; and Where further action is needed, establish a risk- based periodic inspection program for private fuel storage sites that pose a significant threat to source water. Implementation on these recommendations is reported to be ongoing.

Earlier this year MECP and TSSA contacted SPAs to request mapping for designated vulnerable areas where handling and storage of fuel is or may a significant drinking water threat, so that it can be shared with fuel suppliers, facilitated by OPTTA. In response the three conservation authorities in CTC are moving towards providing this mapping through their open data portal. TSSA conducted a first round of public consultation on the above recommendation in 2024. FUEL-5 was updated to build on this progress and facilitate data sharing. FUEL-5 (4) was adapted from SGBLSR and is meant to complement our Education and outreach approach for residential properties.

ID	Tool	Current Policy	Proposed Policy
<b>FUEL-5 (1)</b>	Specific Action	N/A	The Ministry of the Environment, Conservation and Parks shall collaborate with the Technical Standards and Safety Authority, Ministry of Public and Business Service Delivery and the Ministry of Government and Consumer Services to collaborate in engaging fuel suppliers identifying PFOs and delivering educational material on drinking water source protection, provide updated data on liquid fuel storage tanks, and to keep the SPA informed.

<b>FUEL-5 (2)</b>	Specific Action	N/A	Former FUEL-3 (C) directing the SPA to share any data relevant to TSSA’s mandate to enforce O. Reg. 213/217
<b>FUEL-5 (3)</b>	Specific Action	N/A	The Ministry of the Environment, Conservation and Parks is requested to collaborate with municipalities, and Source Protection Authorities on whether liquid fuel can be replaced by alternatives for backup generators at municipal well heads.
<b>FUEL-5 (4)</b>	Specific Action	N/A	Municipalities are encouraged to develop a by-law to require the removal of fuel tanks from abandoned properties, where it is or would be SDWT.

**GEN-4:** handling and storage of fuel will be added to the list of activities that should be included in the Ontario Drinking Water Stewardship Program, under section 97 of the Clean Water Act, 2006. Although the explanatory document mentions this as an eligible activity, it is not currently included in the text of the policy.

**MECP Comments**

MECP staff, as part of their review of our recently submitted s.34 amendments for Peel, York and Toronto drinking water systems, identified a potential gap.

Policies updated to 2021 Technical Rules cannot be implemented until the Source Protection Plan and threat counts in the Assessment Reports have been updated. However, for those drinking water systems with technical material recently updated based on 2021 Technical Rules (Peel and York relevant here), the new thresholds for handling and storage of liquid fuel do apply. This would only impact future SDWTs potentially created for volumes between 250L and 2500L.

A review of historic material confirmed that the intent of current policies is to apply Part IV measures (s.57 prohibition, s.58 RMP) to handling and storage of fuel in excess of 2500L and apply Education and Outreach to all other cases. Therefore, during the transition period where technical material has been updated according to 2021 Technical Rules, but the policy has not, any SDWT because of handing and storage of liquid fuels exceeding 250L but less that 2500L would be managed through Education and Outreach. This approach was discussed at the Implementation Working Group meeting on Feb 6<sup>th</sup>, 2024 and with MECP staff on Feb 7<sup>th</sup>, 2024. The Explanatory Document will be updated to further clarify the intent of current policies.

**Next Steps**

Pending endorsement of the policy amendments by the SPC, source protection authority staff will prepare edits to the CTC Source Protection Plan and Explanatory Document. This amendment is expected to be made at the time of the next amendment to the SPP under section 36 of the Clean Water Act.

**Report prepared by:**

Behnam Doulatyari, Senior Manager, Watershed Plans and Source Water Protection, Credit Valley Conservation

Email: [behnam.doulatyari@cvc.ca](mailto:behnam.doulatyari@cvc.ca)

Date: Feb 14, 2024

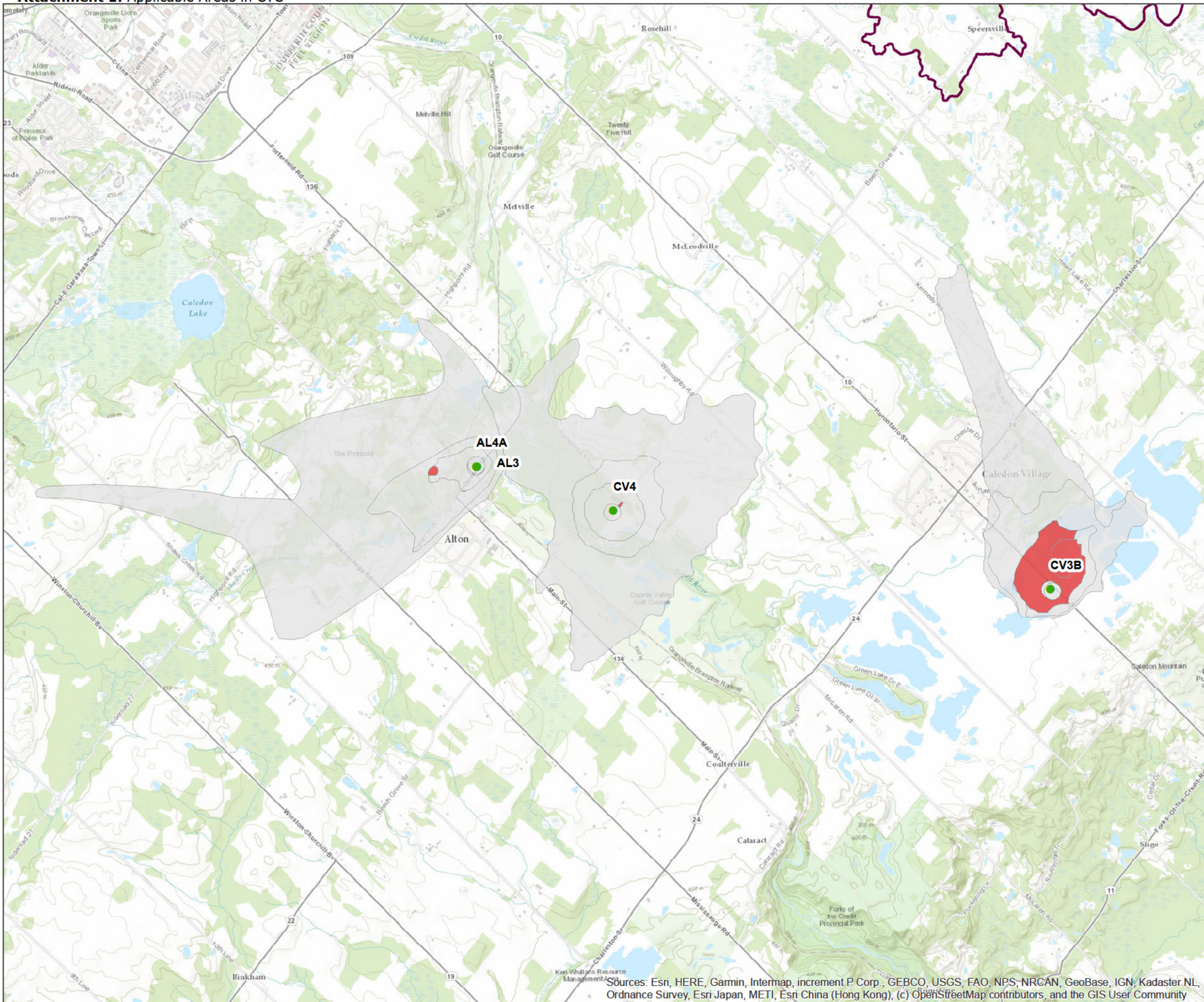
**Attachments (4)**

**Attachment 1: Applicable Areas in CTC**

**Attachment 2: Comment matrix and municipal analysis**

**Attachment 3: CTC Source Protection Plan FUEL Policies – Highlighted changes**





### WHPA-Bs with a Vulnerability Score of 10 in Alton-Caledon Village

- WHPA-B (Vul = 10)**
- Wellhead Protection Areas**
- CVC Boundary**



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# WHPA-Bs with a Vulnerability Score of 10 in Cheltenham & Inglewood

**WHPA-B (Vul = 10)**  
 **Wellhead Protection Areas**  
 **CVC Boundary**



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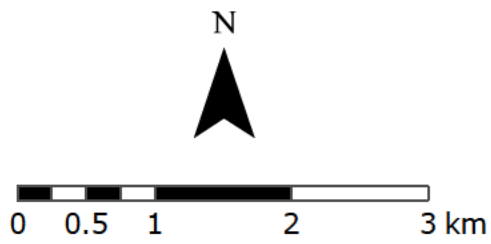
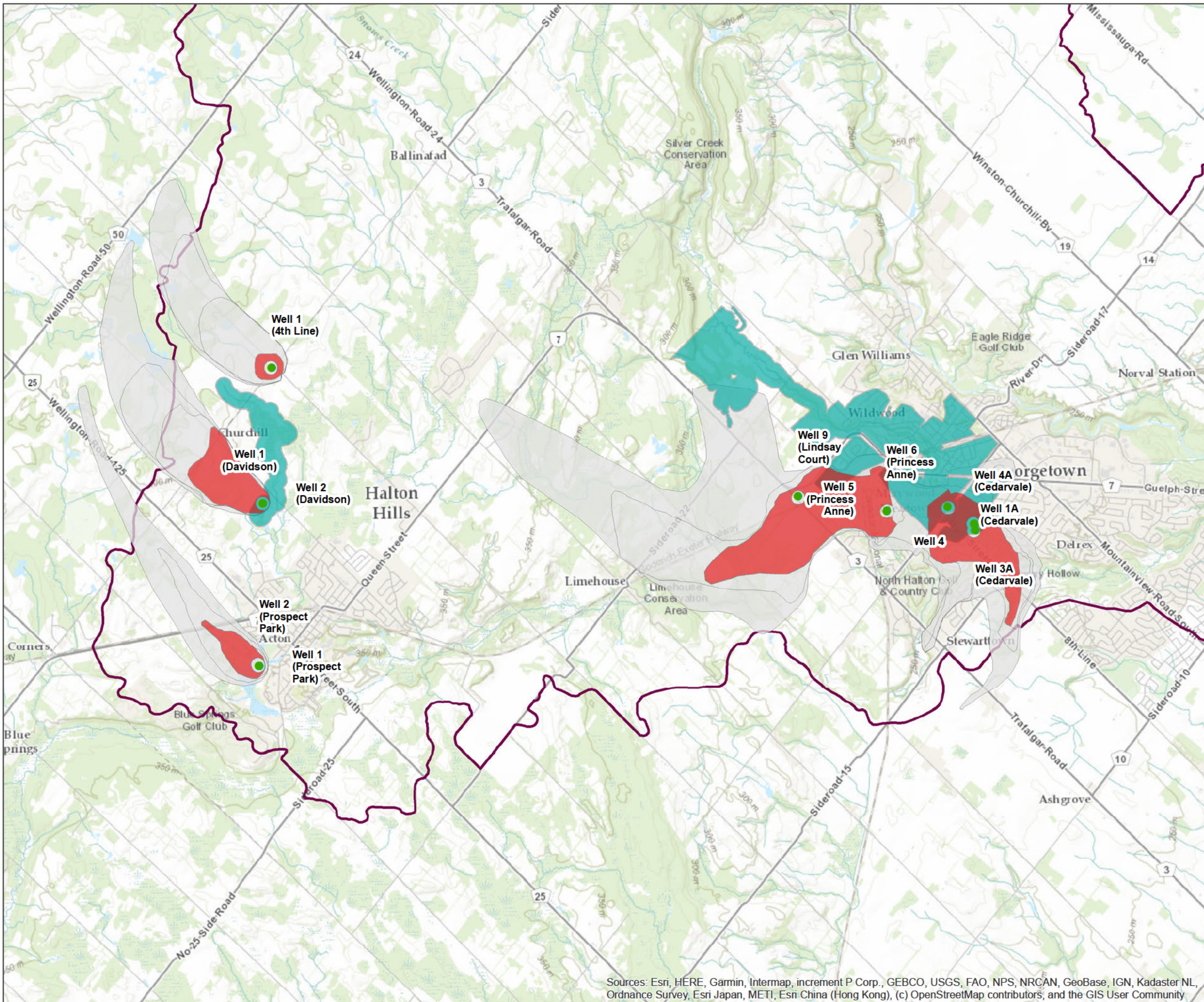


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# WHPA-B (Vul10) & WHPA-E (Vul 9) in Halton Hills

- WHPA-B (Vul = 10)
- WHPA-E (Vul = 9)
- Wellhead Protection Areas
- CVC Boundary



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# WHPA-Bs with a Vulnerability Score of 10 in Erin

- WHPA-B (Vul = 10)
- Wellhead Protection Areas
- CVC Boundary



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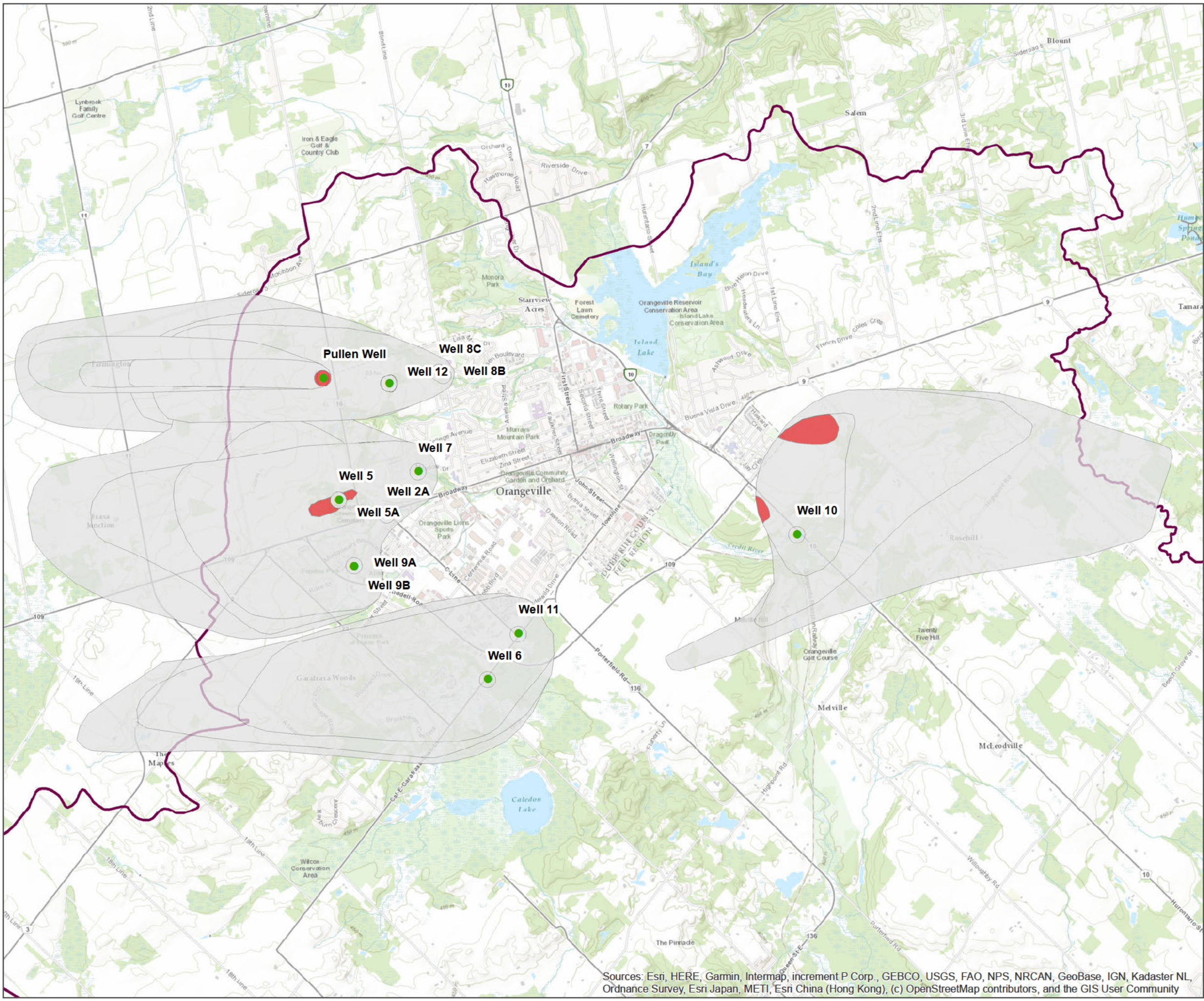


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# WHPA-Bs with a Vulnerability Score of 10 in Orangeville

- WHPA-B (Vul = 10)
- Wellhead Protection Areas
- CVC Boundary



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## WHPA-Bs with a Vulnerability Score of 10 in Caledon East & Palgrave

■ WHPA-B (Vul = 10)  
 Wellhead Protection Areas  
 CVC Boundary  
 TRCA Boundary



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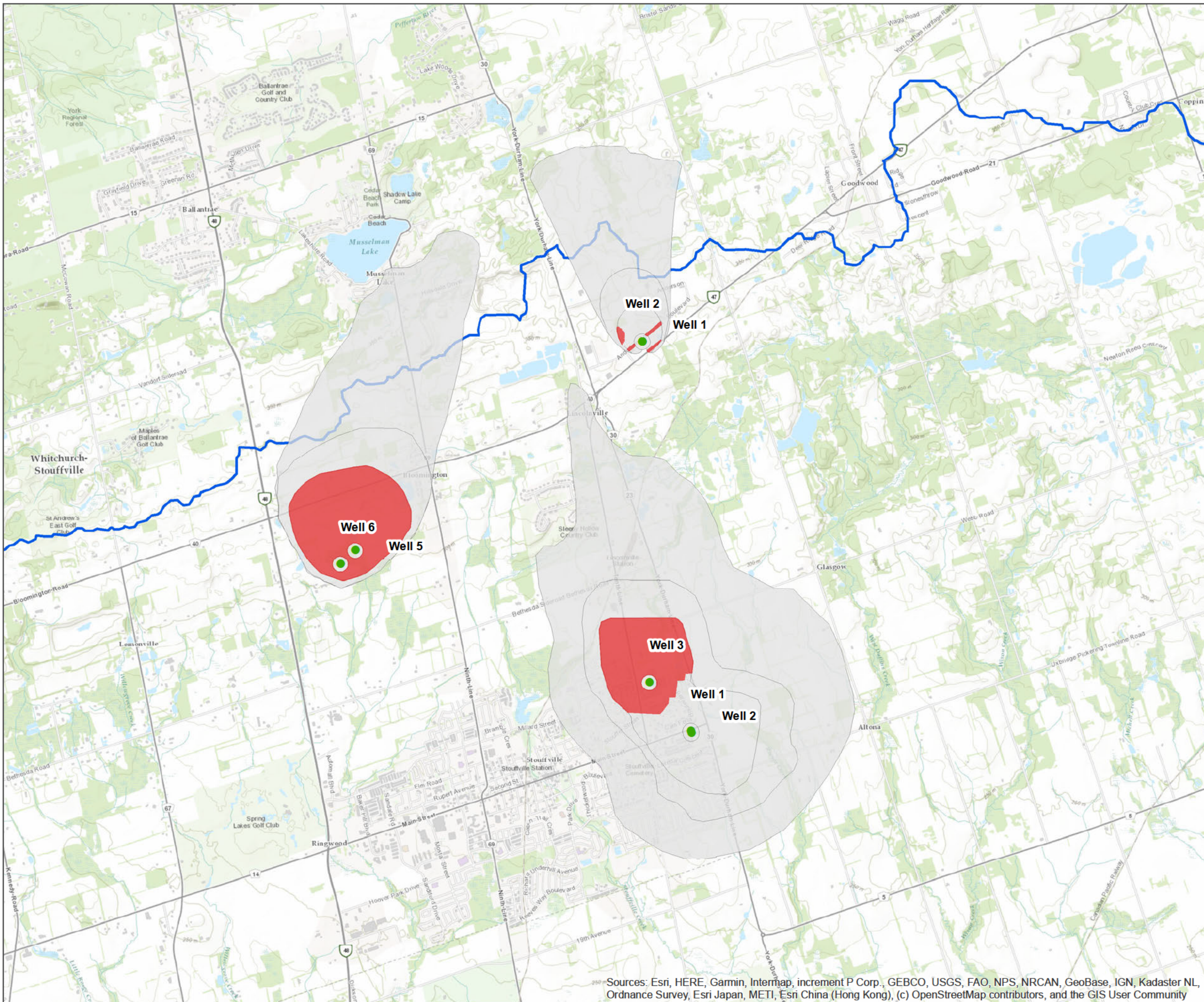


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# WHPA-Bs with a Vulnerability Score of 10 in Whitchurch-Stouffville

- WHPA-B (Vul = 10)**
- Wellhead Protection Areas**
- TRCA Boundary**



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## 1.1 FUEL

### Definition

The handling and storage of fuels is a prescribed drinking water threat under O. Reg. 287/07 under the *Clean Water Act, 2006*. The main activities that pose a threat to drinking water sources includes the handling and storage of liquid fuels. For this policy this is defined as liquid hydrocarbon-based fuels including but not limited to Diesel, Gasoline, Fuel oil, Kerosene, Jet Fuel, etc. The types of fuel storage facilities include:

- bulk plants or facilities where fuels are manufactured or refined
- permanent or mobile retail outlets
- marinas
- cardlocks/keylocks
- private outlets (e.g., public works yard, contractor yard)
- farms
- furnace oil tanks for home and business heating purposes

Most of these storage facilities are defined in O. Reg. 213/01 (Fuel Oil) or O. Reg. 217/01 (Liquid Fuels) which are made under the *Technical Standards and Safety Act, 2000* as regulated by the Technical Standards and Safety Authority (TSSA). Facilities where fuel is manufactured or refined are not included in the TSSA Regulations as they are regulated under the *Environmental Protection Act, 1990* and *Ontario Water Resources Act, 1990*.

### Why is Fuel a Threat to Drinking Water Sources?

A number of compounds from the handling and storage of fuel could make their way into drinking water sources. The Ministry of the Environment, Conservation and Parks' *Tables of Drinking Water Threats (2009, 2013, 2017)* identifies the following sub-threat activities:

- The handling of fuel (see circumstances #112-191)
- The storage of fuel (see circumstances #1289-1408)

In the 2021 Director's Technical Rules, the storage and handling sub-threats have been combined, and the Tables of drinking water quality threats have been embedded as Part XII of the Rules, with the following sub-threat identified:

- 15.1 Handling and storage of fuel (see circumstances #C15.1.1-C15.1.12)

The version of the Tables of Drinking Water Threats that should be used is based on what version was used for the approved technical work for each vulnerable area associated with approved Director’s Technical Rules.

The following compounds can typically be found in fuels and may be potential concerns to drinking water:

- Benzene, Toluene, Ethylbenzene and Xylene (referred to as BTEX)
- Petroleum hydrocarbons F1 to F4 (referred to as PHC)

BTEX compounds have strong odours and tastes, which generally discourages any accidental consumption of drinking water. However, benzene is a known carcinogen, and some research has suggested that ethylbenzene may be carcinogenic and produce birth defects. BTEX is a non-aqueous phase liquid that does not easily dissolve into water and persists in the environment. It can lead to contamination of groundwater over a long period of time and the BTEX contaminated water can travel over long distances. Petroleum hydrocarbons (PHCs) can cause an array of negative health effects to the reproductive, respiratory, immune, and nervous systems and can also harm the kidneys, liver, skin, eyes, and blood. PHCs may also affect the odour, taste, and appearance of water. The assessment of potential threats to drinking water sources from handling and storage of fuel is dependent on the location; whether it is stored at or above, below, or partially below grade; the type of facility where it is stored; and the quantity stored. Assessment using the 2009/2013/2017 Tables of Drinking Water Threats also considers the chemicals of concern in the fuel.

See **Table 1011** for when and where the handling and/or storage of fuel may be a significant drinking water threat. Note: to determine if a specific activity is a significant drinking water threat consult the relevant version of the *Tables of Drinking Water Threats* for the specific circumstances that must be met for the activity to be a threat.

**Table 10--1: When/where fuel may be a significant drinking water threat within CTC (2009/2013/2017/2021 Table of Drinking Water Threats)**

Prescribed Drinking Water Threat	Threat Sub-Category	Area and Vulnerability Score (VS)	Threat Classification Level	
			Significant	
			2009/2013 DTR's	2017/2021 DTR's

The handling and storage of fuel	Handling/Storage/Handling and Storage of Fuel	WHPA-A/B (VS=10)	✓	✓
		WHPA-E (VS=9)	N/A	✓

DTR's refers to Director's Technical Rules

In policies below, the term **un-serviced** is defined as any property classified as residential land use, that is not serviced by municipal gas, and an alternative means of heating is necessary (including fuel oil for home heating).



Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policy
FUEL-1	Handling and Storage of Fuel (Municipal Wellheads)	MECP	C	<p><b>Prescribed Instrument</b></p> <p>Where the handling and storage of liquid fuels at a municipal wellhead is in an area where the activity is, or would be, a significant drinking water threat, drinking water licences under the <i>Safe Drinking Water Act</i> shall be updated to include reference to the applicable vulnerable area, protocols for emergency responses related to protecting the drinking water source, and appropriate terms and conditions so that the activity ceases to be, or does not become, a significant drinking water threat.</p>	See Maps 1.1 - 1.21	Future: Immediately (T-3)  Existing: 3 years (T-1)	GEN-3	MON-4
FUEL-2	Handling and Storage of Fuel (Aggregate Extraction Sites)	MNRF	C	<p><b>Prescribed Instrument</b></p> <p>1) The future handling and storage of liquid fuels at an aggregate extraction site shall be prohibited where the activity would be a significant drinking water threat.</p>	See Maps 1.1 - 1.21	Future: Immediately (T-3)	N/A	MON-4
				<p>2) Where the handling and storage of liquid fuels at an aggregate extraction site is in an area where the activity is a significant drinking water threat, the prescribed instrument that governs the activity shall include reference to the applicable vulnerable area, protocols for emergency responses related to protecting the drinking water source, and appropriate terms and conditions so that handling and storage of liquid fuels ceases to be a significant drinking water threat.</p>		Existing: 3 years (T-1)	GEN-3	MON-4

Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policy
FUEL-3	Handling and Storage of Fuel	RMO	G	<p><b>Part IV, s.57, s.58</b></p> <p>1) The future handling and storage of liquid fuels is designated for the purpose of s.57 under the <i>Clean Water Act</i>, and is therefore prohibited, in an area where the activity would be a significant drinking water threat.</p> <p>Notwithstanding this prohibition, handling and storage of fuel for emergency back-up generators required under other provincial regulation within these vulnerable areas may be permitted subject to a Risk Management Plan in accordance with section below, only if Risk Management Official is satisfied no alternatives are feasible.</p>	See Maps 1.1 - 1.21	Future: Immediately (T-5)	GEN-1	MON-2
			H	<p>2) The existing handling and storage of liquid fuels, excluding un-serviced residential uses with total fuel storage less than 1000 litres outside WHPA-A, is designated for the purpose of s.58 under the <i>Clean Water Act</i> and requires risk management plans, in an area where the activity is a significant drinking water threat.</p> <p>Without limiting other requirements, risk management plans shall, at a minimum, include conditions for all storage tanks to comply with the requirements of the <i>Technical Standards and Safety Act</i> and its regulations, for all landowners/tenants to have an emergency response plan with emergency contact information of the municipality responsible for water services and the Spills Action Centre, and best management practices and standards as amended from time to time to ensure the activity ceases to be a significant drinking water threat.</p>		Existing: 1 year/ 5 years (T-6)	GEN-1 GEN-2	MON-2

Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policy
FUEL-4	Handling and Storage of Fuel	Municipality  MECP TSSA	E  K	<p><b>Education and Outreach</b></p> <p>1) The municipality shall prepare and deliver education and outreach materials and programs to landowners/tenants where the handling and storage of liquid fuels is in an area where the activity is, or would be, a significant drinking water threat, and to advise the landowner/tenant about the actions to take to ensure that the activity ceases to be, or does not become, a significant drinking water threat. This material should include information about alternatives to the use of liquid fuels, and general information about insurance requirements and restrictions related to fuel oil tanks.</p> <p>Where appropriate education and outreach materials prepared by the Ministry of the Environment, Conservation and Parks, the Technical Standards and Safety Authority or other parties are available, the municipality shall deliver those materials.</p>	See Maps 1.1 - 1.21	Existing & Future: Implement within 2 years (T-10)	GEN-8	MON-1
		MECP TSSA MGCS MPBSD	K	<p>2) The Ministry of the Environment, Conservation and Parks shall collaborate with the Technical Standards and Safety Authority, Ministry of Public and Business Service Delivery and the Ministry of Government and Consumer Services to:</p> <p>(a) work with fuel industry associations to facilitate distribution of educational materials to fuel suppliers, which among other things include the most up to date mapping of designated vulnerable areas and those areas where future storage and handling of fuel is prohibited.</p> <p>(b) require source water protection training as part of licensing for Oil and Gas Burner Technician and Petroleum Mechanic certificates.</p> <p>(c) provide colleges with source water awareness information that can be integrated into all training programs relevant to handling and storage of liquid fuels, including the most up to date mapping of designated vulnerable areas and those areas where future storage and handling of fuel is prohibited.</p> <p>(d) include source water safety information into current public education vehicles, such as TSSA’s website and seasonal brochures.</p>				MON-4
		SPA	E	<p>3) The Source Protection Authority should work with fuel industry associations and deliver education and outreach material to fuel suppliers that may be engaged in handling and storage of liquid fuel in an area where it is, or would be, a significant drinking water threat, at least every 2 years.</p>	See Maps 1.1 - 1.21	Existing & Future: Implement within 2 years (T-10)	GEN-8	MON

Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policy
FUEL-5	Handling and Storage of Fuel	MECP TSSA MGCS MPBSD	K	<p><b>Specific Action</b></p> <p>1) The Ministry of the Environment, Conservation and Parks is requested to collaborate with the Technical Standards and Safety Authority, Ministry of Public and Business Service Delivery and the Ministry of Government and Consumer Services to engage fuel suppliers to:</p> <ul style="list-style-type: none"> <li>(a) make the latest data/mapping on liquid fuel storage tanks (both above and below ground) available to implementing municipalities of the CTC Source Protection Plan.</li> <li>(b) identify private fuel outlets located in areas where handling and storage of liquid fuel is, or would be, a significant drinking water threat; and provide education and outreach material on Drinking Water Source Protection, including the most up to date mapping of designated vulnerable areas and those areas where future storage and handling of fuel is prohibited.</li> <li>(c) to provide the Source Protection Authority update on any identified PFOs, and proposed risk-based plan for select inspections of PFOs that pose a significant threat to drinking water sources.</li> </ul>		Future: Implement within 2 years (T-17)	FUEL-4	MON-3
		SPA	E	2) The Source Protection Authority shall provide to TSSA any data about leaks and other concerns observed, as they relate to TSSA's mandate to enforce O. Reg. 213/217 (as amended) and their corresponding codes, at PFOs from risk management officials or through SPA staff work that would support TSSA's enforcement of regulatory requirements for PFOs.	See Maps 1.1 - 1.21	Future: Implement within 2 years (T-17)		
		MECP Municipality SPA	K	3) The Ministry of the Environment, Conservation and Parks is requested to collaborate with municipalities, and Source Protection Authorities on whether liquid fuel can be replaced by alternatives for backup generators at municipal well heads.	See Maps 1.1 - 1.21	Future: Implement within 2 years (T-17)	FUEL-1	

Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policy
		Municipality	K	4) Municipalities are encouraged to 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, where the handling and storage of liquid fuels is or would be a significant drinking water threat.	See Maps 1.1 - 1.21	Future: Implement within 2 years (T-17)	N/A	N/A

**TO: Chair and Members of the Source Protection Committee  
Meeting #1/24, February 21, 2024**

**FROM: Behnam Doulatyari, Senior Manager, Watershed Plans and  
Source Water Protection**

**RE: Proposed CTC Source Protection Plan Transport Pathway  
Policies**

### **KEY ISSUES**

Proposed new Transport Pathway policies for the CTC Source Protection Plan.

### **RECOMMENDATION**

**THAT** the CTC Source Protection Committee receive the staff report Proposed CTC Source Protection Plan Transport Pathway Policies for information.

**AND FURTHER THAT** the CTC Source Protection Committee endorse the proposed Transport Pathway policies consistent with the direction outlined in this report.

**AND FURTHER THAT** staff be directed to incorporate the new policy text as part of a forthcoming amendment to the CTC Source Protection Plan, under Section 36 of the Clean Water Act 2006.

### **Background**

Transport Pathways are a land condition resulting from human activity that may increase the vulnerability of a municipal drinking water system's raw water supply (Ontario Regulation 287/07 Clean Water Act 2006).

Transport Pathways can circumvent the natural protection offered by soils and overlying soil and rock confining layers, resulting in a greater risk of contamination of the aquifer complexes that provide municipal drinking water supplies. Transport Pathways may facilitate the movement of contaminants vertically or laterally below the ground and result in faster or a more widespread distribution of contaminants.

The Director's Technical Rules, 2021 (DTR) and Conservation Ontario's Guidance document released in December 2022, list the following features as examples of potential Transport Pathways:

- drainage ditches
- storm and sanitary sewer lines
- aggregate pits and quarries
- improperly constructed or abandoned wells
- subsurface construction (deep excavations and pile foundations)
- Earth Energy Systems (Geothermal wells)

Transport Pathways are not identified as a prescribed threat under the Clean Water Act 2006, however any land-use and/or activity that has the potential to create a transport pathway in proximity to a municipal water system, could increase the susceptibility of the system and become a threat to the quality of drinking water supplies.

The DTR allow for an increase in vulnerability scoring for a municipal aquifer due to the presence of Transport Pathways upon consideration of hydrogeological conditions, the type and design of any transport pathway, the cumulative impact of any transport pathways and the extent of any assumptions used in the assessment of the vulnerability of the groundwater.

The presence of a Transport Pathway may result in the creation of threat activities that require management through source protection plan policies. Under S.27(3)(4) of O Reg 287/07, municipalities are required to notify the Source Protection Authority (SPA) and the Source Protection Committee (SPC) if they receive applications to undertake activities within a Wellhead Protection Area (WHPA) or a surface water Intake Protection Zone (IPZ) that may result in the creation of a new pathway or the modification of an existing one.

The CTC Source Protection Plan currently does not contain any policy for Transport Pathways. Task 9 of the s.36 CTC Workplan requires staff to consider the creation of a policy or policies to address transport pathways.

## Analysis

Existing Transport Pathway policies from eight Source Protection Regions (SPRs) across Southern Ontario were reviewed. Many of these were Specific Action policies directed at municipalities, such as:

- Prohibit the construction of new wells and septic systems within the urban area where municipal water and wastewater services are available.
- Incorporate conditions of approval for Planning Act and Condominium Act applications to ensure private wells that are no longer in use are abandoned in accordance with O. Reg. 903.
- implement education and outreach programs regarding the decommissioning of wells.
- ensure BMPs are utilized to protect the quantity and quality of groundwater sources during the installation of new municipal infrastructure.
- to develop a program to facilitate, where possible and appropriate, the connection to municipal water services of current private well users within the urban area.

- to require the assessment and mitigation of impacts of the establishment of transport pathways associated with Planning Act applications in WHPA- A and B where the vulnerability equals ten (10).
- As a condition of approval for development application under the planning act within WHPA-A and IPZ 1 require a statement from a qualified person stating that the proposal will not significantly increase the risk of the municipal water source to being contaminated by land-based activities, to the satisfaction of the municipality. The statement from the qualified person and any background information may be subject to review by a third-party peer review.

This review focused on the policy work offered in the three neighbouring SPRs, with shared boundaries /municipalities with the CTC SPR:

- South Georgian Bay Lake Simcoe Source Protection Region (SGBLSR) proposed policies
- Lake Erie Source Protection Region (LESPP) Grand River SPA approved policies
- Halton-Hamilton Source Protection Region (HHSPR) approved policies

Tool	SGBLSR	LESPP	HHSPR
<b>Land Use Approach</b>	N/A	N/A	directed at municipalities: to prohibit the construction of new wells and septic systems within the urban area where municipal water and wastewater services are available;  to incorporate conditions of approval for Planning Act and Condominium Act applications to ensure private wells that are no longer in use are abandoned in accordance with O. Reg. 903;
<b>Incentives</b>	N/A	N/A	directed at CAs where funds made available by MECP, to implement the incentive program to decommission unused wells and for education and outreach programs regarding the



			decommissioning of wells.
<p><b>Specific Action</b></p>	<p>directed at municipalities re: construction within WHPA-A and IPZ 1 - the municipality is encouraged to not approve any proposals unless the application includes a statement from a qualified person stating that the proposal will not significantly increase the risk of the municipal water source to being contaminated by land-based activities, to the satisfaction of the municipality. The statement from the qualified person and any background information may be subject to review by a third-party peer review.</p> <p>Prior to approving applications for the construction of Transport Pathways within WHPA- B and C, E (E VS 8 or greater) and IPZ- 2 (VS 8 or higher), and Issue Contributing Areas the municipality is encouraged to require the proponent of development applications to demonstrate that the municipal water supply is not endangered including what BMPs would be used to mitigate any adverse effects of the proposed transport pathway.</p>	<p>directed at municipalities to incorporate conditions of approval for Planning Act and Condominium Act applications to ensure private wells that are no longer in use are abandoned in accordance with O. Reg. 903;</p> <p>to ensure BMPs are utilized to protect the quantity and quality of groundwater sources during the installation of new municipal infrastructure;</p> <p>to require the assessment and mitigation of impacts of the establishment of transport pathways associated with Planning Act applications in Wellhead Protection Areas A and B where the vulnerability equals ten (10).</p>	<p>directed at municipalities to ensure BMPs are utilized to protect the quantity and quality of groundwater sources during the installation of new municipal infrastructure;</p> <p>to develop a program to facilitate, where possible and appropriate, the connection to municipal water services of current private well users within the urban area. The users should be required to decommission the unused wells.</p>

**Municipal feedback**

During consultation with the Implementation Working Group, CTC municipalities indicated that:

- The majority have previously received development application where construction of Transport Pathways within WHPAs was a consideration.
- Most municipalities screen for the construction of Transport Pathway through Section s.59 process.
- There is an interest in the implementation of policies that would increase the regulation of construction in WHPA-A and in WHPA-B with a vulnerability score of 10, but there is also a concern about the potential impacts on the approval timelines.
- There is an interest in engaging the services of a qualified professional (QP), for review of development applications where Transport Pathways may be suspected, with similar concern about the potential impacts on the approval timelines.

The draft policies were shared with the Implementation Working Group and discussed at the meeting on November 8, 2023. The comment matrix can be found in **Attachment 1**.

### Proposed Policy Alternatives and Discussion

The draft policies presented in **Attachment 2** are aimed at addressing the risk from proposed activities that can potentially create a Transport Pathway or modify an existing one in a WHPA, such that it would result in new significant drinking water threat. The proposed policies, in line with S.27(3)(4) of O Reg 287/07, are Specific Action policies directed at the Planning Approval Authority.

The following considerations guided the development of these policies:

- Availability of measures / policy options that could be applied to reduce or mitigate the risk from potential Transport Pathways that may be introduced through development.
- Consistency with neighboring SPRs has been prioritized. This is seen as a benefit, particularly for member municipalities that straddle multiple SPRs.
- Provision of a relatively broad framework for municipalities to access, while avoiding redundancies with other policy tools that may currently apply to specific activities (stormwater pods, septic systems etc.);
- Protection of zones closest to municipal well - where the vulnerability in a WHPA is already scored at the maximum permitted under the DTR, the score cannot be raised, but the risk of contamination to the supply may nevertheless increase.
- To provide a new tool for municipalities request additional scrutiny where they believe to be appropriate, without impacting the approval timelines.

## Next Steps

Pending endorsement of the policy amendments by the SPC, source protection authority staff will prepare edits to the CTC Source Protection Plan and Explanatory Document. This amendment is expected to be made at the time of the next amendment to the SPP under section 36 of the Clean Water Act.

### **Report prepared by:**

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Date: October 13, 2023

### **Attachments (1)**

**Attachment 1: Comment Matrix**

**Attachment 2: CTC Source Protection Plan - Proposed Transport Pathway Policies**

**Attachment 1: Comment Matrix**

Municipality	Comments	Date	CTC Staff Response	Date
<p><b>In addition to any comments, you may have on each policy, please answer the following questions:</b>                      Q1: How often do you receive proposals for transport pathways construction within WHPAs and IPZs?                      Q2: Do you screen for the construction of transport pathways in Section s.59?                      Q3: When treating with the construction of transport pathways in WHPA with Vs=10, is there a desire to introduce policies to increase protection?                      Q4: What are the consequences of restricting the construction of transport pathways in WHPA A and B?                      Q5: If conditions of approval are incorporated for the construction of Transport Pathways, how would it affect the approval process and timing?                      Q6: Per proposed policy that relevant proposals in a Wellhead Protection Area or Intake Protection Zone per Section 27(3) of O. Reg. 287/07 to CTC, should a proposal be reviewed by a Qualified Professional (QP) / P.Geo. How would it affect the timing? Should a QP confirm if the vulnerability score increases due to the construction of new TPs or not? Should a time limit be placed on these reviews?                      Q7: Geothermal Systems - in addition to current responsibilities under the Building Code Act, are you amenable to the inclusion of additional requirements/measures aimed at the protection of drinking water against the risks posed by future GS's?</p>				
York	TP-2 (1) Would like to suggest at the Region's discretion or as appropriate for instances where we either have time restrictions or do not feel it is necessary		Policy wording amended accordingly.	06/10/23
York	Q1 - not sure about this one		Policy wording amended accordingly.	05/10/23

Municipality	Comments	Date	CTC Staff Response	Date
York	Q2 - Yes in the Change in Zoning section we ask if there are any active or inactive wells on the property. We ask about Septics, we ask if there will be an BH drilled and we ask if there will be any excavation (road cuts, pits, quarries, ponds. We also ask if any geothermal systems will be installed		Acknowledged.	05/10/23
York	Q3-We don't understand the question		Grammatical error amended.	05/10/23
York	Q4- Will just slow down review time and make more work for us		Acknowledged, language has been updated.	05/10/23
York	Q5- This could slow down the timing on applications for review time and approvals		Acknowledged, language has been updated.	05/10/23
York	Q6 - This would be a good option, but with Bill 23 the time limits are already set in place. So any time limits would have to meet those requirements		Acknowledged, language has been updated.	05/10/23
York	Q7 - Yes		Acknowledged.	05/10/23
Orangeville (Muriel Kim-Brisson - RMO/RMI)	Q1 - none that I am aware of	25-Sep-23	Acknowledged.	05/10/23

Municipality	Comments	Date	CTC Staff Response	Date
Orangeville (Muriel Kim-Brisson - RMO/RMI)	Q2 - Yes. When applying for a s.59 Notice to Proceed, applicants are asked if the subject property has any active or inactive wells, present or planned boreholes, planned excavation activities, and installation or alteration of stormwater, sewer or water distribution infrastructure.	25-Sep-23	Acknowledged.	05/10/23
Orangeville (Muriel Kim-Brisson - RMO/RMI)	Q3 - I think there would be interest in discussing this further	25-Sep-23	Acknowledged.	05/10/23
Orangeville (Muriel Kim-Brisson - RMO/RMI)	Q4 - Likely a longer planning approval process.	25-Sep-23	Acknowledged, language has been updated.	05/10/23
Orangeville (Muriel Kim-Brisson - RMO/RMI)	Q5 - I anticipate it would lengthen the approval process	25-Sep-23	Acknowledged, language has been updated.	05/10/23

Municipality	Comments	Date	CTC Staff Response	Date
<p>Orangeville (Muriel Kim-Brisson - RMO/RMI)</p>	<p>Q6 - In principle, it would be a good idea to have proposals reviewed by a QP/P.Geo. Admittedly, it may create a bit of burden for municipalities who don't have a QP/P.Geo. on staff and who would need to retain an external consultant. However, the cost of the review could be included in the application fee to be paid by the proponent.</p> <p>Having a QP/P.Geo. review proposals may potentially prolong the application review process if a municipality doesn't have access to a QP/P.Geo. in-house and doesn't have a standing offer agreement with an external consultant who could otherwise initiate the review immediately.</p> <p>I think the proponent should retain their own QP/P.Geo. to confirm if the construction of new TPs results in an increase to the vulnerability score. Their findings should then be reviewed by the municipality's QP/P.Geo.</p> <p>While it would be fairer to the</p>	<p>25-Sep-23</p>	<p>The policy is intended to make the TP screening and condition of approval to be communicated to the proponent at the pre-con stage. Language has been updated to reflect this The scope of the policy has been changed to only apply to planning applications as was discussed at the meeting. Since such applications are very likely to be accompanied by a Hydrogeological assessment, and proponent is made aware of this requirement for a complete application, it should not impact the approval time line. If the increase in vulnerability leads to new SDWT, then the relevant policies for future activities apply. This would be clarified in the Explanatory document.</p>	<p>05/10/23</p>

Municipality	Comments	Date	CTC Staff Response	Date
	<p>applicant if there is a time limit placed on reviews, I anticipate it may sometimes be very difficult for a municipality to meet such timelines.</p>			
<p>Orangeville (Muriel Kim-Brisson - RMO/RMI)</p>	<p>Q7 - In principle, yes, though I am not familiar with geothermal systems or the associated requirements under the Building Code Act.</p>	<p>25-Sep-23</p>	<p>Acknowledged.</p>	<p>05/10/23</p>



Municipality	Comments	Date	CTC Staff Response	Date
Peel Region	CTC should lead the development of a standardized response template to ensure clarity on any potential implications to developers and the timing of proposals, potential delays, constraints, etc.	26-Sep-23	Request for standardization was not shared by all municipalities in the IWG. Should there be a consensus for SPA staff to create a standardized template, then all municipalities would be required to abide by this. However, several municipalities had expressed a preference for tailored response template based on their own needs.	05/10/23
Peel Region	What is the turnaround time for the CTC to review a transport pathway notification and level of service? There needs to be a clear legal defensible response	26-Sep-23	Will not impact CA review time, if the onus is placed on the developer to have the necessary checks completed prior to submission of the package.	05/10/23
Wellington County	Q1 - occasionally. Since SPP approval, there has been 1 or 2 total in Erin in CTC. In other parts of the County (outside of the CTC) with more development we receive more. County wide we have received less than 10 County wide since 2015 / 2016 so it is not even one a year.	05-Oct-23	Acknowledged.	05/10/23
Wellington County	Q2 - Yes - applicants are asked about decommissioned wells, geo thermal, excavations/foundations on a	28-Sep-23	Acknowledged.	05/10/23

Municipality	Comments	Date	CTC Staff Response	Date
	screening form for all projects in the County			
Wellington County	Q3 - Yes - further discussion regarding cost/benefit would be helpful. A policy directing what measures should be considered in a score 10 would be useful as right now, we report the transport pathway but no other action is required or suggested and the notification seems redundant since the VS cannot increase past 10.	05-Oct-23	Acknowledged, language has been updated.	05/10/23
Wellington County	Q4 - Agree with York/Orangeville - longer review time and push back from Planning authorities and applicants. Will need flexibility to avoid OLT.	05-Oct-23	Acknowledged, language has been updated.	05/10/23
Wellington County	Q5 - longer approval process, increased cost for approvals	28-Sep-23	Incorporation would put the onus on the developer to have the necessary checks completed prior to submission of the package. As such, there would not be delay in the review time once received by the municipality.	05/10/23

Municipality	Comments	Date	CTC Staff Response	Date
Wellington County	<p>Q6 - Review by a QP/P.Geo makes sense, however it should be noted that this would slow down the review time and increase the cost. If the review proposed a change to the vulnerability score, what would be the next step/outcome of this? Would transport pathways that increase vulnerability be prohibited? Are there mitigation measures that would be proposed as a result? If a time limit for the review was introduced it is likely that the municipality would require the review to be done at the pre-con stage before an application is deemed complete.</p>	28-Sep-23	<p>As you suggested this policy is intended to make the TP screening a condition of approval to be communicated to the proponent at the pre-con stage. The scope of the policy has been changed to only apply to planning applications as was discussed at the meeting. Since such applications are very likely to be accompanied by a Hydrogeological assessment, and proponent is made aware of this requirement for a complete application, it should not impact the approval time line. If the increase in vulnerability leads to new SDWT, then the relevant policies for future activities apply. This would be clarified in the Explanatory document.</p>	05/10/23
Wellington County	<p>Q7 - Yes. We already screen it for geothermals</p>	05-Oct-23	Acknowledged.	05/10/23

Municipality	Comments	Date	CTC Staff Response	Date
Wellington County	<p>TP- 1 - no concerns as written. TP- 2 - no concerns as written. TP-3 - fine with concept and that is it is non-legally binding. Applications should only be scoped to Planning Act applications and should exclude Building applications. We have no ability to apply conditions to Building permit applications and this is not applicable law. For Planning Act applications, consideration and agreement should be reached on which Planning Act applications this policy applies to. It should only apply to major applications likely condo, site plan, subdivision, OPA and exclude zoning, severances, minor variances, lot line adjustments. Severances and zoning could be a topic of discussion as there are pros and cons to including or excluding. The reason we advocate to exclude is to simplify the implementation of this and most (but not all) zoning or severances will often end up in site plan, condo, subdivision or OPA approvals as well.</p>	05-Oct-23	Policy wording amended accordingly.	06/10/23
Durham Region	Q1 - WHPAs - none, IPZs - unsure but likely not many	07-Nov-23	Acknowledged	07-12-23

Municipality	Comments	Date	CTC Staff Response	Date
Durham Region	Q2 - Some. Applicants indicate type of construction, wells, geothermal, and servicing.	07-Nov-23	Acknowledged	07-12-23
Durham Region	Q3 - Likely not a concern for Uxville with construction being shallow (slab on grade).	07-Nov-23	Acknowledged	07-12-23
Durham Region	Q4 - Would increase the review time but may also involve a different reviewer to assess if it is a transport pathway.	07-Nov-23	Acknowledged	07-12-23
Durham Region	Q5 - longer approval process	07-Nov-23	Incorporation would put the onus on the developer to have the necessary checks completed prior to submission of the package. As such, there would not be delay in the review time once received by the municipality.	07-12-23
Durham Region	Q6 - It may prove difficult to implement since many smaller planning applications do not typically retain P.Geos. and may increase cost of doing so.	07-Nov-23	This policy is intended to make the TP screening a condition of approval to be communicated to the proponent at the pre-con stage. The scope of the policy has been changed to only apply to planning applications as discussed at the meeting in November. Since such applications are very likely to be accompanied by a Hydrogeological assessment, and proponent is	07-12-23

Municipality	Comments	Date	CTC Staff Response	Date
			made aware of this requirement for a complete application, it should not impact the approval time line. If the increase in vulnerability leads to new SDWT, then the relevant policies for future activities apply. This will be clarified in the Explanatory document.	
Durham Region	Q7 - geothermal is already screened for in precon	07-Nov-23	Acknowledged	07-12-23
Durham Region	TP-1 - No concerns TP-2 - no concerns but would like clarity on when notice would be given TP-3 - Please note that this policy could only apply to 3-4 properties in Uxville. It is our understanding the policy is recommending TP be dealt with at the pre-consultation stage (before the application is deemed complete), therefore, please consider providing some text in the explanatory document to be clear on the intention of how the policy will be implemented.	07-Nov-23	Acknowledged. Language to be included in the Explanatory Document.	07-12-23



Municipality	Comments	Date	CTC Staff Response	Date
Orangeville	<p>TP-1 : Is there a plain language factsheet that summarizes the requirements of Ontario Regulation 903 and the decommissioning of private wells that are no longer in use or are deemed substandard? This would be a very useful E&amp; O resource that we can provide proponents with at the preconsultation stage.</p> <p>TP-3 : Concur with the softened language re: not deeming the application complete, rather than not granting approval.</p>	07-Dec-23	<p>Thank you for your comment. We are not aware of any fact sheets but we will inquire further and come back to the IWG with an update.</p>	12-Feb-24
Orangeville	<p>Concur that policy should be scoped to only apply to major development (subdivision,ZBA,OPA, and major site plan applications)</p> <p>Is there guidance that speaks to the best management practices available for the various types of transport pathways? Similar to the Risk Management Measures catalogue, could we develop a resource specifically for proponents that outlines BMPs for TPs (i.e. a checklist of BMPs for each type of TP?) . I think we need to clearly</p>	07-Dec-23	<p>Thank you for your comment. The need for direction was discussed at the previous meeting but consensus was not achieved. Some municipalities indicated their preference on establishing requirements while a few asked for further input. Broadly speaking, the proponent must demonstrate the proposed development will not create a preferential pathway to the municipal aquifer, but the burden of proof required can be determined on a case by case basis. The SPA hydrogeology staff are available to support</p>	12-Feb-24

Municipality	Comments	Date	CTC Staff Response	Date
	<p>define what we want proponents to do when we ask them to " demonstrate that the municipal water supply is not endangered ", otherwise we will get a lot of sub-par submissions from development proponents.</p> <p>The second part of this policy will apply to ICAs, this will encompass a large area in Orangeville and surrounding municipalities.</p> <p>For WHPA-E's located in an ICA , will we need to screen for surface water TPs? If yes, we will need additional guidance on how to identify and define a surface water TP . In general, more guidance on defining TPs in a WHPA-E would be helpful.</p> <p>Is the first part of the policy intended to say " For each Planning Act application for the construction of a <b>transport pathway</b> within Wellhead Protection Area A and B with a vs=10, the municipality is encouraged to not deem the application complete ?</p>		<p>implementing municipalities in reviewing such applications. Yes, surface water TP should also be considered. We will follow up with affected municipalities on the topic.</p>	

## 1.1 TRANSPORT PATHWAYS

### Definition

O. Reg. 287/07 under the *Clean Water Act, 2006*, defines Transport pathways are a land condition resulting from human activity that may increase the vulnerability of a municipal drinking water system's raw water supply.

Transport Pathways can circumvent the natural protection offered by soils and overlying soil and rock confining layers, resulting in a greater risk of contamination of the aquifer complexes that provide municipal drinking water supplies. Transport pathways may facilitate the movement of contaminants vertically (a well or a quarry) or laterally (pipes such as water or sewer lines) below the ground and result in faster or a more widespread distribution of contaminants. Examples include:

- drainage ditches
- storm and sanitary sewer lines
- aggregate pits and quarries
- improperly constructed or abandoned wells
- subsurface construction (deep excavations and pile foundations)
- Earth Energy Systems (Geothermal wells)

### Why are Transport Pathways a Threat to Drinking Water Sources?

Although transport pathways are not identified as a prescribed threat under the *Clean Water Act, 2006*, any land-uses or activities located that has the potential to create a transport pathway in proximity to a municipal water system may increase the vulnerability of the municipal aquifer. The presence of a Transport Pathway may result in the creation of threat activities that require management through source protection plan policies.

The Director's Technical Rules allow for an increase in vulnerability scoring for a municipal aquifer in the presence of transport pathways upon consideration of hydrogeological conditions, the type and design of any transport pathway, the cumulative impact of any transport pathways and the extent of any assumptions used in the assessment of the vulnerability of the groundwater. These changes may result

in the identification of additional threat activities that require management through source protection plan policies.

In 2022, CVSPA completed a technical study aimed at identifying potential transport pathways in Wellhead Protection Areas of municipal drinking water systems in its jurisdiction. This work assessed several of the features / land usages cited above and applied a methodology that was similar and comparable with work undertaken in other source protection areas and regions of the Province.

In 2023, Conservation Ontario released their guidance document which identifies the various features/land usage that could potentially constitute transport pathways. This report describes a recommended technical framework for the assessment and review of such features, referencing various technical work completed in the Province, including CVSPA's report which is presented as an appendix to the document.

Under S.27(3)(4), municipalities are required to notify the Source Protection Authority and the Source Protection Committee if they receive applications to undertake activities within a wellhead protection area or a surface water intake protection zone that may result in the creation of a new pathway or the modification of an existing transport pathway. The notification requirement provides an opportunity for municipalities to screen for future, potentially impactful transport pathways.

The screening, in combination with a transport pathway policy, gives a municipality the opportunity to either prohibit the transport pathway in question or require the proponent to implement best management practices to reduce its impact or eliminate it altogether. This is an important step in avoiding additional threats to a municipal drinking water supply.



Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policy
TP-1	An activity that has the potential to introduce or create a Transport Pathway on to the landscape surrounding municipal water systems.	Municipality	J	<p><b>Specify Action</b></p> <p>Municipalities are encouraged to engage with proponents and developers to ensure that they are versed with responsibilities pertaining to the requirements of Ontario Regulation 903 and the decommissioning of private wells that are no longer in use or are deemed substandard.</p>	See Maps 1.1 – 1.21	Future: Immediately (T-18)	N/A	N/A
TP-2	An activity that has the potential to introduce or create a Transport Pathway on to the landscape surrounding municipal water systems.	Municipality	J	<p><b>Specify Action</b></p> <p>Municipalities shall give the source protection authority and the source protection committee notice of the transport pathway proposals in a wellhead protection area or intake protection zone as per Section 27(3) of O. Reg. 287/07.</p>	See Maps 1.1 – 1.21	Future: Immediately (T-18)	N/A	N/A
TP-3	An activity that has the potential to introduce or create a Transport Pathway on	Municipality	J	<p><b>Specify Action</b></p> <p>This policy applies to the following applications made under the Planning Act: Site Plan, Official Plan Amendment, Zoning By-Law Amendment, Draft Plan of Subdivision. In such applications, where construction within Wellhead Protection Area A and B with a vs=10 is proposed, the municipality is encouraged to not deem the application complete unless it includes a statement from a Qualified Person (QP) corroborating that the</p>	See Maps 1.1 – 1.21	Future: Immediately (T-18)	N/A	Mon-2



Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policy
	to the landscape surrounding municipal water systems.			<p>proposal will not significantly increase the risk of the municipal water source to being contaminated by land-based activities to the satisfaction of the municipality. The statement from the qualified person and any background information may be subject to review by a third-party peer review.</p> <p>For each Planning Act application for construction of Transport Pathways within Wellhead Protection Areas B (vs&lt;10), C, E (E with a score of 8 or 9) and Issue Contributing Areas the municipality is encouraged to require the proponent of development applications to demonstrate that the municipal water supply is not endangered including what best management practices would be used to mitigate any adverse effects of the proposed transport pathway.</p>				

**TO: Chair and Members of the Source Protection Committee  
Meeting #1/24, February 21, 2024**

**FROM: Behnam Doulatyari, Senior Manager, Watershed Plans and  
Source Water Protection**

**RE: Consideration of Transportation of Dangerous Goods**

### **KEY ISSUES**

Consideration of transportation of dangerous goods as a local threat per item 6 of the Section 36 (s.36) workplan and proposed policy amendments to improve source protection awareness for spill response planning.

### **RECOMMENDATION**

**THAT** the CTC Source Protection Committee receive the staff report *Consideration of Transportation of Dangerous Goods* for information.

**AND FURTHER THAT** the CTC Source Protection Committee endorse amendment to LO-G and GEN policies consistent with the direction outlined in this staff report.

**AND FURTHER THAT** staff be directed to incorporate the new policy text as part of a forthcoming amendment to the CTC Source Protection Plan, under Section 36 of the *Clean Water Act*.

### **Background**

The discussion paper, *Consideration of Transportation of Dangerous Goods*, is a deliverable under Task 6 of the s.36 workplan:

**Task 6:** *Consider the transportation of substances as a local threat. If deemed a local threat, create a specify action policy to address the threat.*

“Dangerous goods” are products identified by the federal government in Schedule 1 and Schedule 3 of the Transportation of Dangerous Goods Regulations (SOR/2001-286), which is administered by Transport Canada.

The Ministry of the Environment, Conservation and Parks (MECP) has listed a total of 22 prescribed activities that could pose a threat to drinking water in the 2021 Director Technical

Rules. However, the transportation of dangerous goods is *not* listed as a prescribed activity under the *Clean Water Act* as it has significant oversight and regulation at the provincial and federal level.

Although the transportation of dangerous goods is not a prescribed activity, it could be identified as a local threat and added to the list of prescribed activities in a Source Protection Region (SPR).

## Analysis

A large volume of dangerous goods are transported through the Greater Toronto Area (GTA) daily. Of these products, the CTC Source Protection Committee is primarily concerned with petroleum products and potential spills that could pose a threat to drinking water sources.

The CTC SPC previously discussed adding the transportation of dangerous goods as a local threat; however, the SPC did not pursue this based on the Province's direction. The Province encourages SPCs to avoid the development of duplicative policies, where other agencies already have extensive controls, and instead use prescribed instruments and existing legislation to protect drinking water sources. Refer to **Attachment 1** for a summary of prescribed legislative instruments.

If the CTC SPC would like to add the transportation of dangerous goods as a local threat, the CTC would need to complete modelling studies to determine if the threat is significant. If found to be significant, the CTC may request that the Province add this as a local threat. If approved, the CTC SPC could then develop policies to eliminate the threat.

## Proposed Policy Alternatives and Discussion

There are already several instruments that currently address the fundamental concerns of source water protection through their provisions and emergency response plans. It is therefore not recommended at this time to perform event-based modelling for the potential addition of a local threat for the transportation of dangerous goods.

However, to further protect drinking water sources from spills, the CTC could develop policies to update provincial spill prevention, contingency, and response plans per Section 26 (6) of Ontario Regulation 287/07. The proposed policy updates are intended to improve awareness of sensitive drinking water areas and Source Water Protection policies for spill response planning.

See a summary of the proposed policy alternatives below. Refer to the discussion paper (**Attachment 3**) for the full policy text. Please note that a few policies (LO-G-1, LO-G-4, LO-G-5, and GEN-9) are also attached and discussed in section 7.1.e of the agenda.

ID	Tool	Current Policy	Proposed Policy
LO-G-1	Specify Action	To protect drinking water sources from potential spills along highways, shipping lanes and railways, the Ministry of the Environment, Conservation and Parks shall:	No change
		a) update notification protocols for spills	No change
		b) review the notification protocol for significant threat activities and adjust the protocols as required.	No change.
		c) ensure that information is communicated to all responsible parties who are responding to the spill.	Expansion of clause (c) for MECP to “ensure that source water protection drinking water area maps and data are included in pipeline route planning exercises, all existing and future emergency response plans and protocols.”
		d) require that a Contingency Plan is developed, reviewed and/or updated under the Drinking Water Quality Standard to ensure that significant drinking water threats identified in the Assessment Report are included and amend the municipal drinking water licence as required.	No change.
		e) ensure that testing of the Contingency Plan is carried out within 3 years from the date the Source Protection Plan takes effect, followed by regular emergency response preparedness exercises to address the significant threats identified.	Expansion of clause (e) to include that “the determined frequency and priority is reported to the relevant source protection authority.”
		f) promote spill prevention and share information about source protection with the public.	Current policy moved to a new clause (g).  Addition of a new clause (f): MECP shall promote the use of Source Water Protection mapping and data in planning, operation, and emergency response protocols.
g) n/a	Current clause (f) moved to a new clause (g). No change to policy text.		
LO-G-4	Education and Outreach	The Ministry of the Environment, Conservation and Parks is requested to establish an outreach program to discuss the findings and policies arising from the source water protection program with the National Energy Board, Ontario Energy Board, Environment Canada, Health Canada, New York State and US government agencies in order to:	Removal of the Natural Energy Board from the outreach program.  Addition of the Canadian Energy Regulator to the outreach program.

ID	Tool	Current Policy	Proposed Policy
		a) encourage collaboration on protecting our shared drinking water sources; and	No change
		b) raise profile of the importance of Lake Ontario as a source of drinking water for Ontario.	No change
		c) n/a - new	Addition of clause (c): to "develop and deliver Lake Ontario focused Source Water Protection awareness campaigns every 8 years regarding the status and trends in Lake Ontario as a Drinking Water Source as well as existing Source Protection policies."
<b>LO-G-5</b>	Specify Action	n/a- new	<p>New policy to require MECP, SAC, and Canada Energy Regulator (CER) to:</p> <p>a) Provide all sampling data associated with a spill in the CTC SPR that could result in a significant threat to Lake Ontario’s drinking water intakes to the lead Source Protection Authority and relevant Municipality for use in local analysis and model development.</p> <p>b) Consider using watershed and ‘sewershed and outfall location’ data for flow analyses, and</p> <p>c) Consider using data from Lake Ontario monitoring stations.</p>
<b>GEN-9</b>	Specify Action	n/a – new	A new Specify Action policy GEN-9 similar to LO-G-5; however, it requires the MECP, SAC, and CER to provide spill data that could also result in a threat to Wellhead Protection Areas.

## **Municipal feedback**

The proposed policy amendments were discussed at the September 26, 2023, Implementation Working Group meeting. Municipalities did not have objections to expanding the policies if it does not add onerous requirements. It was also noted that the Education and Outreach policies could be duplicated for groundwater policies, as the initial policies only applied to Lake Ontario. This was addressed through the addition of GEN-9. Detailed comments from municipalities and CTC staff response can be found in **Attachment 2**. Revised policies were discussed at the IWG meeting on February 6, 2024.

## **Next Steps**

This document is presented as support for the CTC SPC discussions and deliberations regarding the consideration of the Transportation of Dangerous goods as a local threat in the CTC SPR. Staff will take feedback and direction from the SPC and, with approval, consult broader as part of the CTC S.36 workplan Item 6.

### **Report prepared by:**

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Date: February 2, 2024

### **Attachments (3):**

**Attachment 1: Summary of Prescribed Legislative Instruments for Spills on Transportation Corridors**

**Attachment 2: Comment Matrix and Municipal Analysis**

**Attachment 3: Discussion Paper: Consideration of Transportation of Dangerous Goods**



## Attachment 1: Summary of Prescribed Legislative Instruments for Spills on Transportation Corridors

Legislation	Administrative Body	Purpose	Source Protection Provisions
Transportation of Dangerous Goods Act 1992 – Federal/ Provincial regulations	Transport Canada	To promote public safety when dangerous goods are being handled, offered for transport or transported by road, rail, air, or water and establishes safety requirements.	Unknown
Canadian Environmental Protection Act (CEPA) Federal – Spills	Environment and Climate Change Canada	To help prevent or reduce the risk of spills of pollutants and prevent, eliminate or ameliorate any adverse effects that result or may result from spills.	Unknown.  The Province has shared the information and maps with all relevant agencies and promotes use of said information in operational as well as for response planning.
Environmental Protection Act, 1990 – Provincial	Ministry of Environment, Conservation and Parks	To provide protection and conservation of the natural environment in Ontario, which includes provisions for spills of contaminants.	The Province, municipalities, the Spills Action Centre (SAC) and pipeline companies all have been provided with Source Water Protection data and mapping.
The Spills Action Centre (SAC) - Ontario	Ministry of Environment, Conservation and Parks	Handles reports of spills, adverse drinking water results and environmental concerns from the public.	The SAC has access to the Source Protection Program data and maps. The SAC is aware of highly vulnerable drinking water areas.
Emergency Management and Civil Protection Act (EMCPA) Provincial – O. Regulation 380/04	Emergency Management Ontario	Requires municipalities to have a Municipal Emergency Control Group (MECG) that is responsible for directing a municipal response to an emergency, such as spills.	Municipalities have been provided with Source Water Protection data and mapping.

## Attachment 2: Comment Matrix and Municipal Analysis

Municipality	Comments	Date	CTC Staff Response
Orangeville	No comments or concerns to share	22-Sep-23	Thank you
Peel Region	Has there been any implementation challenges for other areas who have implemented this and what are the KPIs to measure success (i.e. Essex)?	26-Sep-23	Unknown. Was not able to contact ESRSPR. No response on two occasions. CTC staff to follow up.
Peel Region	Consider including requirement or suggestion that the SDS and other relevant details on the products being transported are disclosed to the SPA or implementing body; this would help aid with existing municipal spills response procedures that are currently in place	26-Sep-23	Newly proposed LO-G-5 Clarified that this is after the spill vs on all transported products. This plus monitoring data is needed. Will revise the policy to say "Provide all available sampling data associated with a spill that could result in a significant threat to Drinking Water intakes located in the CTC SPR to the lead SPA and relevant Municipality for use in local analysis and model development."
Peel Region	If the CTC were to adopt a similar approach as Essex, we feel that the implementing body should be the SPA or applicable CA. They already house all the mapping and data on behalf of all the municipalities in their respective area, therefore they could distribute this information to all relevant stakeholder agencies at one time as opposed to each municipality/RMO office sending individually. To further support this, some municipalities may not have staff resources or funding to implement this effectively	24-Nov-23	Paper stated <b>not recommend</b> to adopt ESRSPR policies. They have different risks. The MECP is the Provincial holder of up to date information. The recommendation was to expand LO-G-1 (clauses c and f) to direct the MECP to ensure that all agencies with jurisdiction over the transportation of dangerous goods have access to and utilize SWP data AND that these agencies are directed to use these data for Dangerous Goods transportation routing, Spill prevention and Emergency Response Plans and include additional specialized provisions for spill prevention and response. The Municipalities were not listed as implementers.
Wellington County	In regards to recommendation 1 and LO-G-1 clause e - consider revision to the clause that requests MECP to report on the determined frequency and priority of Contingency Plan testing that have been established. This would allow the SPA to assess if the frequency is sufficient for mitigating the threat	24-Nov-23	Clause e) expanded as suggested e) in consultation with the Office of the Fire Marshal and Emergency Management and other appropriate bodies, ensure that testing of the Contingency Plan is carried out within 3 years from the date the Source Protection Plan takes effect, followed by regular (frequency and priority to be determined in consultation) emergency response preparedness exercises to address the significant threats identified, <i>that the determined frequency and priority is reported to the SPA</i> ; and
Wellington County	Would like to review the new WHPA policy once available and prior to it going to the SPC	24-Nov-23	GEN-9 (similar to LO-G-5 which is identical except refers specifically to LO DW intakes and directs use of the LOWQFS) Specify Action (Spill Prevention, Contingency Plans and Emergency Response) directed to the MECP and CER  <i>To protect drinking water sources from potential spills along highways,</i>

Municipality	Comments	Date	CTC Staff Response
			<p><i>and railways, that could impact the CTC Well Head Protection Areas, the Ministry of the Environment, Conservation and Parks and its Spills Action Centre shall:</i></p> <p><i>Provide all available sampling data (including that from third parties) associated with a spill that could result in a significant threat to Well Head Protection Areas located in the CTC SPR to the lead SPA and relevant Municipality for use in local analysis and model development.</i></p> <p><i>Consider the use of data for watersheds and 'sewersheds' for flow analyses maintained by the Conservation Authorities;</i></p>

## **Discussion Paper: Consideration of Transportation of Dangerous Goods**

### **Section 36. CTC Workplan 2018 Item 6**



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## Executive Summary

The CTC (Central Lake Ontario-Toronto and Region-Credit Valley) Source Protection Plan, along with the supporting Assessment Reports, was approved by the Province of Ontario (Ministry of Environment, Conservation and Parks - MECP) and came into effect on December 31, 2015. An order was issued under section 36 (S.36) of the *Clean Water Act*, 2006 by the Minister of the Environment and Climate Change in July 2015 to prepare and submit a workplan for a S.36 Source Protection Plan (SPP) update, to the Ministry by December 21, 2018 (submitted). A S.36 update is a broad scale review, and an activity is focused on keeping the Assessment Report and Source Protection Plan up to date with general amendments and policy efficacy changes. The CTC 2018 Section 36 workplan sets out a number of tasks, each with their own completion date, ranging from April 2019 to June 2024. The Province later allowed for flexible and open workplan deadlines. Additionally, the Province subsequently eliminated this S.36 requirement with the understanding that updates to the Assessment Reports are ongoing under Section 34 amendments. No future S.36 comprehensive update orders are anticipated.

Table 1 in the workplan lists numerous tasks. Task 6 is the *consideration of a new local threat* with policies to address the *transportation of dangerous substances*. If it is determined by the Source Protection Implementation Working Group that there is a need for the addition of a local threat and or updated existing policies, the team will proceed with the preparation of draft new or updated policies, consultation with stakeholders and the Province, as required, prior to implementation.

This paper discusses the process of policy development and of adding a non-prescribed activity under the *Clean Water Act*, 2006. It presents summaries of policies in other jurisdictions and reviews a range of other legislative instruments, regulations, and best practices to determine the level of oversight that currently exists in Ontario and gaps that may be present. It should be noted that, to develop policies to address a potential threat, the threat must first be identified and followed by approval by the Province. Per Director's Rules 68 and 69, scientific study *must* support the request to the Province for the addition of a local threat.

This paper concludes that while consideration of additional policies to protect against spills and impacts to sensitive drinking water source areas is appropriate and prudent, there are already several instruments that currently address the fundamental concerns of source water protection through their provisions and emergency response plans. The spill response side appears to be well thought out and robust, and procedures include a level of redundancy that serves to provide increased protection. Municipalities are very well aware of Source Water Protection sensitive areas and are the same agencies charged with emergency response on-the-ground action. Additional prescriptive CTC Source Protection policies can be duplicative and introduce another level of administration that is unlikely to be helpful to the intent of the CTC Source Protection Plans. It is important that the program scope be understood while considering additional policies. However, there appears to be a gap with respect to awareness of the Source Water Protection Program and use of its data for planning purposes.

Recommendations for four policy updates are presented:

- 1) A revision and expansion of Specify Action LO-G-1 to expand clause (c) and add a clause (f) to require appropriate bodies to utilize and show source protection maps and data on an ongoing basis in their planning and emergency response processes.
- 2) A revision of Education and Outreach policy LO-G-4 (c) to require the MECP to develop and implement Source Water Protection awareness campaigns on a 5- or 10-year (suggest 8) basis to ensure all agencies are kept up-to-date and aware of sensitive drinking water areas and Source Water Protection policies.
- 3) A new Specify Action policy LO-G-5 to require the MECP, Spill Action Centre (SAC), and Canada Energy Regulator (CER) to provide all sampling data associated with a spill in the CTC SPR that could result in a significant threat to Lake Ontario's drinking water intakes to the lead Source Protection Authority and relevant Municipality for use in local analysis and model development. The policy also encourages MECP and SAC to use watershed and 'sewershed and outfall location' data for flow analyses, as well as data from Lake Ontario monitoring stations.
- 4) A new Specify Action policy GEN-9 similar to LO-G-5; however, it requires the MECP, SAC and CER to provide spill data that could also result in a threat to Wellhead Protection Areas.

Please note that proposed amendments to the LO-G policies are also from the *Review of the existing local liquid hydrocarbon pipeline policies* discussion paper. Both discussion papers should be considered together to understand proposed policy changes.

## Preamble

The CTC SPP, along with the supporting Assessment Reports, was approved by the Province of Ontario (MECP) and came into effect on December 31, 2015. Section 36 under the *Clean Water Act, 2006* contains the provision to comprehensively review and update source protection plans, including assessment reports at established intervals (approximately every 5 years as directed by the Province). The Province recently eliminated this S.36 requirement with the understanding that updates to the Assessment Reports are ongoing under S.34 amendments. No future S.36 comprehensive update orders are anticipated. Periodically updating these documents ensures that all municipal drinking water systems are protected, and that changing biophysical and social conditions are captured in future planning for source protection. More urgent updates, such as Drinking Water System updates, may occur under Section 34.

The CTC Source Protection Region was issued an order under section 36 of the *Clean Water Act, 2006* by the Minister of the Environment and Climate Change in July 2015. The order including extensions, directed staff to consult with program partners to prepare and submit a workplan for a Section 36 Source Protection Plan update to the Ministry by December 21, 2018. This workplan sets out a number of tasks, each with their own completion date, ranging from April 2019 to June 2024. The Province, understanding challenges presented by the CoVid pandemic, staff turnover, multiple S.34 updates in the CTC and other emerging pressing issues which affect municipal budgets, has since allowed for flexible and open workplan deadlines. The CTC, nevertheless, continues to strive to complete all tasks outlined in the 2018 workplan as expeditiously as possible. Current timelines estimate all tasks completed by the end of the 2024 fiscal year.

### CTC S.36 Consideration/Review Items

The 2018 CTC Section 36 workplan (Table 1) includes numerous tasks. Three of those tasks, listed two “consideration of new policy tasks” and a policy review task:

- **Item 6:** The consideration of a new local threat with policies to address the transportation of dangerous substances.
- **Item 9:** The consideration of additional policies to address drinking water “issues” identified in 2015.
- **Item 11:** The work plan also documented a task to review the existing local liquid hydrocarbon pipeline policies to determine if they are adequate, given that this local threat was added as a Provincial threat under the Director’s Technical Rules (DTR) December 2021 amendments. The circumstances related to pipelines may differ from those considered in 2015 in the CTC.

It is expected that *new* policies, where developed, will go through research and consultative processes as did original SPP policies. Such work may also include technical studies, numerical modelling exercises and industry consultation, to determine the level of risk prior to the



drafting of any new policies. All work will be brought to the Committee's Implementation Working Group and the Source Protection Committee for approval/endorsement.

CTC staff will examine these CTC Section 36 2018 workplan items to:

- Review where available updated statistics/ background information regarding incidents and water quality trends,
- Prepare technical analysis including numerical modelling as needed,
- Determine new/updated risks to the CTC with metrics as needed,
- Review action/legislation/legal instruments in other jurisdictions,
- Prepare a rationale document for consideration by the SPC,
- Update documentation with SPC input,
- Prepare new/updated draft policies as necessary.

If it is determined that there is a need for the addition of a local threat and/or updated "issues" and/or pipeline policies, the team will proceed with the preparation of draft policies, consultation with stakeholders and the Province, as required prior to implementation.

This work began in 2023 and will continue in 2024. It is anticipated that staff will complete the policy recommendations for these items, supported by a discussion paper, by Spring of 2024. Interim reports will be brought forward by staff periodically, to the SPC Implementation Working Group and then to the SPC. This report pertains to *Item 6: the consideration of a new local threat with policies to address transportation of dangerous substances.*

## 1 Background

In 2015, the CTC Source Protection Region submitted its first Source Water Protection Plan (SPP) under the *Clean Water Act (2006)*. The SPP is supported by an Assessment Report which describes the jurisdiction where the SPP applies including delineated Source Protection areas; namely Well Head Protection Areas (WHPAs), Intake Protection Zones (IPZs), Highly Vulnerable Areas (HVAs) and Significant Groundwater Recharge Areas (SGRAs). Within WHPAs, IPZs and HVAs, vulnerability analyses and scoring determine which anthropogenic activities constitute significant, moderate or low threats to the drinking water source in question. Additional to these zones, the Directors Rules under the *Clean Water Act (2006)* direct the delineation of zones known as Issue Contributing Areas (ICAs) when monitoring data demonstrates an increasing contaminant trend.

In 2006, the Province listed 21 prescribed activities that could pose a threat to drinking water complemented by a table listing the circumstances under which these activities could be a threat. Circumstances supporting the determination of threat level are outlined in the Provincial Table of threats. Both the list of activities and the circumstances are subject to revision under the principle of continuous improvement. These revisions are supported by new information, data and scientific advancement. In 2017 and again in 2021, the Province revised the Rules and the circumstances for Drinking Water Threats. In the last iteration, the Province added 1 prescribed activity (liquid hydrocarbon pipeline) for a current total of 22.

A local threat may be added to the list of activities in a Source Protection Region (SPR). Such an addition must be submitted to the Province supported by specific technical studies for approval. Where the Province provides approval, the SPR's SPC must develop policies to address said local threat.

The transportation of dangerous goods is *not* listed as a prescribed activity under the *Clean Water Act*. The Directors Technical Rules and the Table of Drinking Water Threats do not address this activity and although discussed, the SPC did not identify this activity as a local threat to drinking water in the CTC SPR because the activity was believed to be adequately managed by other legislative instruments that are administered by other agencies.

### 1.1 Prescribed drinking water threats

The following activities are prescribed as drinking water threats for the purpose of the definition of "drinking water threat" in subsection 2 (1) of the Act:

1. The establishment, operation or maintenance of a waste disposal site within the meaning of Part V of the Environmental Protection Act.
2. The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.
3. The application of agricultural source material to land.

4. The storage of agricultural source material.
5. The management of agricultural source material.
6. The application of non-agricultural source material to land.
7. The handling and storage of non-agricultural source material.
8. The application of commercial fertilizer to land.
9. The handling and storage of commercial fertilizer.
10. The application of pesticide to land.
11. The handling and storage of pesticide.
12. The application of road salt.
13. The handling and storage of road salt.
14. The storage of snow.
15. The handling and storage of fuel.
16. The handling and storage of a dense non-aqueous phase liquid.
17. The handling and storage of an organic solvent.
18. The management of runoff that contains chemicals used in the de-icing of aircraft.
19. An activity that takes water from an aquifer or a surface water body without returning the water taken to the same aquifer or surface water body.
20. An activity that reduces the recharge of an aquifer.
21. The use of land as livestock grazing or pasturing land, an outdoor confinement area or a farm-animal yard.
22. The establishment and operation of a liquid hydrocarbon pipeline. O. Reg. 385/08, s. 3; O. Reg. 206/18, s. 1.

## 1.2 Early Source Water Protection Focus

Initially, circa 2004 when the Source Water Protection program was being designed, the focus was on groundwater sources. This was as the attention was on the Walkerton tragedy (2000) and the multiple barriers that had failed during the incident. The technical rules primarily focused on groundwater science (as associated with the prescribed activities) and the vulnerability scoring technical direction for surface water sources resulted in no drinking water threats for Great Lake sources.

## 1.3 Event-based Modelling

During the CTC SPC deliberations, the Committee urged the Province to consider additional threats that could impact the GTA's largest source of drinking water, Lake Ontario.

The Province subsequently developed technical rules to allow for event-based modelling to determine threats to drinking water from surface water sources including the Great Lakes. The CTC together with the Province and other SPRs situated along Lake Ontario initiated the Lake Ontario Collaborative (LOC).

The LOC developed a 3-D model of the Lake, listed and simulated with quantities, spill scenarios based on actual North American examples, calculated time-of-travel data from the spill site to the water treatment plant and concentrations of contaminants at the intake, all to determine the threats to these sources and to prepare policies to prevent such scenarios. The scenarios were linked to contaminants associated with the Provincial prescribed activities.

The simulations that resulted in concentrations above treatment capacities (requiring plant shut-downs or alternate source needs), were listed as Intake Protection Zone-3 threats and these zones were delineated for policy implementation. Policies include contingency plans, emergency response and notification upgrades to several activities such as fuel pipelines, waste treatment plants and nuclear plant waste-water processes. In the CTC, two local threats were approved in 2015, hydrocarbon pipelines and nuclear plants. In 2017, hydrocarbon pipelines were added as a Provincial threat. Nuclear plant activities remain a local threat in the CTC SPR.

As mentioned, a spill occurring during the transportation of dangerous goods was discussed but not pursued based on the Province's direction regarding oversight by other agencies, namely Transport Canada.



## 2 Discussion

### 2.1 What are Dangerous Goods?

A product is considered a dangerous good when it is listed in Schedule 1 or Schedule 3 of the Transportation of Dangerous Goods regulations. Schedule 1 includes products such as incendiary ammunition, nitro urea, explosives, gasoline and diesel and various other volatile chemicals. Schedule 3 includes dangerous goods that are forbidden for transport (on passenger carrying modes of transportation) but that do not have a UN number (four-digit number that identifies dangerous goods) and include products such as compressed oxygen and other gases, flammable liquids, infectious substances and radioactive materials. The Schedule is related to the packing group, group one being goods of highest dangerous risk.

Consolidated Transportation of Dangerous Goods Regulations including Amendment SOR/2008-34					Codification du règlement sur le transport des marchandises dangereuses incluant la modification DORS/2008-34				
Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8	Col. 9	Col. 10
UN Number	Shipping Name and Description	Class	Packing Group/ Category <i>SOR/2008-34</i>	Special Provisions	Explosive Limit and Limited Quantity Index	ERAP Index	Passenger Carrying Ship Index	Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index	Marine Pollutant
UN1089	ACETALDEHYDE	3	I		0	3 000	Forbidden	Forbidden	
UN1090	ACETONE	3	II		1		Forbidden	5	
UN1091	ACETONE OILS	3	II		1			5	

Figure 1. Example of Schedule table – Consolidated Transportation of Dangerous Goods Regulations including Amendment SOR/2008-34 (Transport Canada)

Of these products, the CTC SPC was primarily concerned with the potential for spilled petroleum products on a transportation corridor that could contaminate raw water supplies that are used for drinking water in the CTC.

### 2.2 LOC Simulation scenarios

In 2009, the LOC initiated the event-based approach for the purpose of identifying significant drinking water threats to the LOC municipal partners’ Lake Ontario sourced WTPs. A list of proposed spill scenario simulations for existing facilities was developed in concurrence with municipal partners, Source Protection Committees, and the MECP. The following criteria were used to develop the list of preliminary spill scenarios for Industrial, Commercial and Municipal facilities:

- Identifying the location and possible materials released under normal operation and spill scenarios.
- Using established lake and time of travel tributary models, predict under what conditions contaminants could reach drinking water intakes.
- Predict the concentration of key parameters and assess risks using MOE *Technical Rules (2009)*.
- Evaluate historical raw water analyses at drinking water plants to assess whether there are observed elevations of parameters that may be linked to storm events or past spill or weather conditions.

Based on the above criteria and discussions with municipal and SPC partners, the following represent the generalized locations of the spills considered by the Lake Ontario Collaborative. This list was initially extensive but was then reduced based on probability considerations that included existing infrastructure layout and age, topography, existing controlling laws and regulations. Management contingency and emergency response processes, even where impressive were not considered factors for elimination of the threat as these processes are subject to human error and have the possibility of failure.

The final list of event-based threats is reported in the Assessment Reports for LOC SPRs as IPZ-3s. The scenarios considered are as follows:

- A disinfection system failure at each Lake Ontario WWTP;
- Sanitary trunk sewer break caused by Stream Erosion in river valleys between Rouge River and Etobicoke Creek;
- A combined sewer overflow (CSO) release in the City of Toronto;
- Release of contaminants (a spill of *E. Coli*) from the lagoon of a Rural industry (an industrial animal food processing facility) located adjacent to a tributary of the Credit River in Brampton, ON;
- A release of gasoline from a bulk petroleum fuel storage facility; facilities on the lakeshore within Oakville ON and in the mid watershed area of Humber River and Don River in North York were evaluated;
- A spill of gasoline/refined product from large pipelines co-located with the Ontario Power transmission corridor across the North part of the GTA where the pipeline crosses under the watercourses and which would discharge to the major tributaries flowing south to the north shore of Lake Ontario;
- a discharge of tritium from the electrical generating stations located at the Pickering site and the Darlington site.

Other spill scenarios considered by the LOC (Dewey, 2011), but not pursued or documented:

- A petroleum/chemical spill from a shipping vessel / tanker travelling across the "Skyway Bridge" over the Burlington ship canal.

This scenario was ultimately abandoned, and no results were documented as a threat. As indicated, the Province at the time urged that this activity was adequately regulated and addressed by the Canadian Federal government, the Province and Municipalities through spill protocols and response provisions. These agencies have adopted extensive safety provisions. With limited resources, the CTC SPC chose to focus on a scoped list of scenarios for event-based modelling, scenarios most relevant to the CTC jurisdiction.

### 2.3 Other Jurisdictions

The Essex Region Source Protection Area (ERSPA) has an approved local threat and policies to address above grade storage, handling, or transportation of large volumes of liquid fuel. Supported by modeling studies of simulated spills, the transportation of large volumes of liquid fuels is shown to be a significant drinking water threat in all of the delineated Event Based Areas in the Essex Region SPA. Volume thresholds resulting in significant threats associated with the transportation of liquid fuels in various IPZs are the same as for the handling and storage of fuel. Specifically, this significant threat applies to extensive IPZ-3 areas, including all tributaries of Lake St. Clair and Detroit River, which extend into all Essex Region municipalities except Pelee Island and Chatham-Kent. ERSPA has concerns related to the large navigable water bodies that border the Region. There exists a heightened risk of spillage with several documented historical incidents. A local threat was approved by the Province in their May 2019 Source Protection Plan. Policies 18 and 19 apply to these IPZ areas. There are also some additional policies which apply to moderate or low threats in all IPZs and all Highly Vulnerable Aquifers (HVAs).

### 2.4 The CTC Concern

The GTA witnesses the transportation of large volumes of dangerous goods through its area daily, by road, rail and near-shore shipping. Spills occur from time to time and contaminants may find their way into the drinking water ground and surface water sources. The SPC is charged with the development of policies to protect drinking water sources within its jurisdiction. This work includes the ongoing examination of existing instruments to ensure that potential threats are covered and addressed by said instruments to safeguard drinking water resources and to complement such instruments where gaps are found. With several recent rail incidents in and around developed areas, CTC and other SPR staff have reopened the discussion regarding whether existing oversight by other instruments is adequate to protect drinking water supplies in the CTC SPR. There are questions that warrant discussion. Are the current provisions administered by other agencies strong or effective enough to protect drinking water supplies? Are vulnerable areas considered as part of the route planning and emergency response associated with the transportation of dangerous goods? And should the CTC SPC pursue the addition of this activity as a local threat and following, develop policy to reduce/eliminate the threat?

## 2.5 Legislative Instruments and Jurisdictional Oversight

The Province encourages the SPCs to avoid the development of policy where other agencies already have extensive controls and to use existing prescribed instruments and existing legislation to protect supplies where possible. This is to avoid confusion and duplication of effort. *The Clean Water Act, 2006*, is focused on the 22 prescribed activities outlined in the *Clean Water Act, 2006* and the Table of Drinking Water Threats and only on municipal supplies. Nonetheless, where SPCs believe that a non-prescribed threat could be significant, or they consider that the existing controls have significant gaps, they may request the addition of a local threat and support said request with scientific studies (modelling). Once approved by the Province, they may develop local policies to further address the threat with respect to the goals of the *Clean Water Act, 2006*. Alternatively, they may 'upgrade' existing or add new general outreach policies to promote the use of SWP materials by other agencies.

The following are prescribed legislative instruments that govern the transportation of dangerous goods in Ontario and/or Canada.

### 2.5.1 Transportation of Dangerous Goods Act 1992 – Federal/ Provincial regulations

The *Transportation of Dangerous Goods Act, 1992* (TDG) is administered by Transport Canada. The purpose of the TDG Act and Regulations is to promote public safety when dangerous goods are being handled, offered for transport or transported by road, rail, air, or water (marine). TDG also establishes safety requirements.

When transporting dangerous goods with an aircraft, comply with Section 12.14 of the TDG Regulations for domestic flights or the International Civil Aviation Organization (ICAO) Technical Instructions for international flights.

Generally Canada regulates marine transportation of packaged dangerous goods under two different Acts and related safety regulations:

- The *Transportation of Dangerous Goods Act, 1992* (TDG Act) and the Transportation of Dangerous Goods Regulations are administered by Transport Canada's Transport Dangerous Goods Directorate.
- The *Canada Shipping Act, 2001* (CSA 2001) and the Cargo, Fumigation and Tackle Regulations are administered by Transport Canada's Marine Safety and Security Directorate.

The Act is accompanied by Appendices (Schedules) outlining limits on state (liquid, solid, etc.), volumes and quantities, containment, handling and safety marking requirements. There are also restrictions on the type of carrier/vessel that may transport dangerous goods.



Information regarding the geographic location is to be contained in a 30-Day follow-up report (8.5) subsequent to any road, rail or marine incident. No mention is made of the sensitivity of the route.

The TDG Program develops safety standards and regulations, provides risk-based oversight and gives expert advice on dangerous goods to promote public safety in the transportation of dangerous goods by all modes of transport regulated by Transport Canada. There are both federal and provincial TDG Regulations. Provincial and territorial requirements typically parallel the federal regulations. Generally, the provincial TDG Regulations apply to the handling and transportation of dangerous goods within the Province on highways, as defined in the *Motor Vehicle Act* and on rail vehicles that are within the provincial jurisdiction.

There are several provisions associated with the movement of dangerous goods to prevent accidental discharge to the environment, but it is unknown whether Transport Canada has any special provisions or mapping associated with transportation through source protection areas.

Along with the Province, municipalities, the MECP's Spills Action Centre (SAC) and pipeline companies all have been provided with the Source Water Protection data and mapping. Municipalities have included these data in their planning and Emergency response processes. Additionally, the Province has reported in its annual report regarding Source Water Protection that it distributes source water protection data to all relevant agencies for their use in spill response planning.

## 2.5.2 Canadian Environmental Protection Act (CEPA) Federal – Spills

A spill, as defined in Part X of the *Canadian Environmental Protection Act* (CEPA), is a discharge a) into the natural environment, b) from or out of a structure, vehicle or other container; or c) that is abnormal in quality or quantity when considering all of the circumstances of the discharge.

The primary objective for plans developed as a requirement of CEPA is to help prevent or reduce the risk of spills of pollutants and prevent, eliminate or ameliorate any adverse effects that result or may result from spills. This may include notifying appropriate levels of government as well as the affected members of the public and development of response plans. The impacts as well as the outcomes of most spills are directly related to the level of preparedness.

*CEPA, 1999* is administered by Environment and Climate Change Canada. Environment and Climate Change Canada informs Canadians about protecting and conserving natural heritage, and ensuring a clean, safe and sustainable environment for present and future generations. Under the *Canadian Environmental Protection Act*, the powers, duties and functions of the Minister of Environment and Climate Change extend to matters such as:

- the preservation and enhancement of the quality of the natural environment, including water, air and soil quality, and the coordination of the relevant policies and programs of the Government of Canada
- renewable resources, including migratory birds and other non-domestic flora and fauna
- meteorology; and
- the enforcement of rules and regulations

Environment and Climate Change Canada delivers its mandate through a series of acts and regulations beyond *CEPA, 1999*, such as under the pollution prevention provisions of the *Fisheries Act, 1985*, the *Federal Sustainable Development Act, 2008*, the *Species at Risk Act, 2002*, the *Migratory Birds Convention Act, 1994*, the *Canada Wildlife Act, 1985*, and the *Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act, 1992*.

While the detailed internal procedures are unknown regarding how Environment and Climate Change Canada handles a spill that may trigger provisions under the *Clean Water Act*, or whether these data are included in their planning processes, the Province has reported that it has shared the information and maps with all relevant agencies and promotes use of said information in operational as well as for response planning. The CTC has shared all maps and data with the Province, municipalities, the SAC and Pipeline companies and promotes use of these data for prevention and planning purposes. It may be prudent to engage Transport Canada and Environment Canada directly to ensure more widespread awareness and use.

### **2.5.3 Environmental Protection Act, 1990 – Provincial**

The purpose of the *Environmental Protection Act* (EPA) is to provide protection and conservation of the natural environment in Ontario. It is administered by the Ministry of Environment, Conservation and Parks granting it broad powers to address the discharge of contaminants that have deleterious impacts on the environment. The MECP may issue administrative control, stop, clean-up and preventative measure orders with respect to the discharge of contaminants which includes solid, liquid, gas, odour, heat, sound, vibration and any combination of these resulting from human activity and that causes adverse effects. The EPA sets out broad requirements, but the details are outlined in the supporting regulations.

Ontario Regulation 347 is a key instrument that provides detailed rules regarding the categorization and handling of waste. The main prohibition in this regulation is regarding the discharge of a contaminant into the environment in specified amounts, concentrations or excess levels as articulated in the Regulation. Allowable concentrations are linked to the type of land-use. For example, the allowable concentrations will vary between commercial/industrial zoning and residential.

The EPA, like its federal counterpart CEPA, contains provisions for spills of contaminants. There are specific requirements for those that spill a contaminant to report the spill to the MECP and the affected Municipality as well as requirements for the elimination of the spills and

restoration of the natural environment. In addition to its power to issue administrative orders, the EPA also creates a form of licensing system. A Certificate of Approval (“C of A”) is required to construct, alter, extend or replace a new plant, structure, equipment, apparatus, mechanism or thing that may discharge a contaminant into the natural environment. The EPA grants a broad array of powers of inspection and investigation to provincial MECP officers.

The Province, municipalities, the SAC and pipeline companies all have been provided with Source Water Protection data and mapping. These agencies have Emergency Response Plans and protocols including those that apply to transportation corridors. The Province has noted in its annual reporting that these maps and data have been distributed to all the appropriate bodies.

#### **2.5.4 The Spills Action Centre - Ontario**

Under the *Environmental Protection Act (EPA), 1990* it is the duty of the owner or controller of a spilled pollutant to clean up a spill. They must do everything possible to prevent and eliminate the negative effects from a spill, including restore the natural environment to its original state. The Spills Action Centre (SAC) handles reports of spills, adverse drinking water results and environmental concerns from the public. The SAC operates a 24-hour, province-wide, toll-free telephone reporting service. The SAC tracks and follows up on required cleanup activities, provides advice and information related to spills or environmental incidents, coordinates a response with other agencies if needed, and initiates government response when required. Spills that cause an adverse effect, spills that are likely to enter or enter any waters, as defined in the *Ontario Water Resources Act*, directly or through drainage structures, or spills of greater than 100 litres on land accessible by the public shall be immediately reported to the SAC and the offending perpetrator shall take appropriate remedial action to limit the impact.

The Spills Action Centre falls under the Ontario Ministry of Environment, Conservation and Parks (MECP) and has access to the Source Protection Program data and maps (also under the governance of the MECP). The SAC is aware of highly vulnerable drinking water areas. When a spill is reported that could impact a source protection area, the SAC should consider policies under the Clean Water Act, 2006 for compliance given that the MECP is listed as an implementer in the policies. Along with the Province, municipalities, the SAC and Pipeline companies all have been provided with the Source Water Protection data and mapping.

#### **2.5.5 Emergency Management and Civil Protection Act (EMCPA) Provincial – O. Regulation 380/04**

The *Emergency Management and Civil Protection Act (EMCPA)* and its supporting regulation outline several requirements for both the Ministries and Municipalities. Every municipality is required to have a Municipal Emergency Control Group (MECG) that is responsible for directing a municipal response to an emergency. Each municipality in Ontario has an Office of the Fire Marshal Emergency Management (OFMEM) field officer who is responsible for the support,

development, or delivery of any of the components of the required emergency management program. These Field Officers are very well-versed in the requirements of the EMCPA and O Reg 380/04, as well as very well experienced in areas such as the development of municipal emergency response plans; the delivery of emergency management training; and the development and conduct of emergency management exercises, among other things.

The CTC Municipalities all have Emergency Spill Response programs and plans. Generally, under these plans, the municipalities will respond to a spill if safe to do so to ensure the protection of public health and safety as well as the environment. For clean-up activities, the municipality's role is one of monitoring and, where necessary, enforcement, to ensure appropriate steps are taken by the responsible party to clean up spills. Those responsible for causing the spill are responsible for cleaning it up. Most municipalities in the GTA have Dangerous Goods Spill Response plans or similar bylaws or policies (pollution prevention and cleanup, fire protection and life safety, flood plain designation and protection, public works aid agreements). These plans take effect after a spill occurs. The plans do not have any special provisions for vulnerable areas under the *Clean Water Act, 2006* but the municipalities are equipped with the data and may take appropriate and specialized action as necessary in the event of a spill in those areas.<sup>1</sup>

Along with the Province, municipalities, the SAC and pipeline companies all have been provided with the Source Water Protection data and mapping. The Province ensures that the Federal agencies with jurisdiction are provided with the data as needed. Specifically, in the event of a spill in a transportation corridor, SAC will contact Canutec (Transport Canada's spill expert centre), the OPP's Hazardous Material Unit as well as the municipality to notify and provide all relevant sensitive area information. These data will be used to engage in special efforts as needed. The MECP also notifies ECCC under its Canadian Ontario Notification Agreement.

As these agencies (ECCC, Transport Canada, MECP, SAC, Municipalities) have Emergency Response Plans and protocols including those that apply to transportation corridors, without becoming too prescriptive, it may be prudent to introduce a policy to *require* these agencies to include more prominently, up to date vulnerable zone maps and emergency protocols related to drinking water sources in their operations planning and in their emergency response plans.

### 2.5.6 Clean Water Act, 2006

Per the 2021 Director Technical Rules (MECP, 2021):

"Rule 119: In addition to activities prescribed to be drinking water threats in paragraphs 1 through 18 and paragraphs 21 and 22 of subsection 1.1(1) of O. Reg. 287/07 (General), an activity shall be listed as a drinking water threat for a vulnerable area if,

1. the activity has been identified by the source protection committee as an activity that may be a drinking water threat; and

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<sup>1</sup> See the spill response webpage for the [City of Toronto](#) and the [City of Mississauga](#).



2. an approval is not required to engage in the activity pursuant to any Act (Provincial or Federal);
3. the Director has confirmed in writing that the activity is an activity that can be assessed and addressed as a drinking water threat under the *Clean Water Act*.”

### 3 Conclusion

Rule 119, Items 2 and 3 above restricts listing the transportation of dangerous goods as a provincial or local drinking water threat as these activities fall under the jurisdiction of the Federal and Provincial governments. Nevertheless, a SPC may still pursue the addition of a local threat under Rule 1. Historical discussions with the Province, however, have indicated that approval to list would be unlikely given the extensive list of regulations under the authority of other agencies. The CTC also did not pursue advanced scientific studies to add the transportation of dangerous goods as a local threat.

*Clean Water Act, 2006* authority does exist under Section 26 (6) of Ontario Regulation 287/07, which indicates that a Source Protection Plan may set out policies “to update spill prevention and spill contingency plans or emergency response plans for the protection of existing drinking water sources with respect to spills that occur within a wellhead protection area or a surface water intake protection zone” along highways, railway lines and shipping lanes (*Clean Water Act*, O. Reg. 287/07).

As noted, the CTC has the option, if the Committee has renewed concerns, to model the threat to determine if the threat is significant. If found to be significant, the CTC may apply to the Province to add this as a local threat. If approved, the SPC will be required to develop policies to eliminate the threat. This would likely be in the form of RMPs to be developed with input from the governing agencies (Federal, Provincial and Municipal agencies).

## 4 Recommendations

While consideration of additional policies to protect against spills and impacts to sensitive drinking water source areas is appropriate and prudent, there are already several instruments that currently address the fundamental concerns of source water protection through their provisions and emergency response plans. After a review of the instruments and of general agency procedures, it appears that the 'spill response' side has been well thought out and is robust. Municipalities are very well aware of SWP sensitive areas and are the same agencies charged with emergency response on-the-ground action. It is believed that additional prescriptive CTC Source Protection policies can be duplicative and may introduce another level of administration that is unlikely to be helpful to the intent of the CTC Source Protection Plans. It is important that the program scope be understood while considering additional policies. Having said this there appears to be a gap with respect to awareness of the Source Water Protection Program and use of its data for planning purposes. The following recommendations are offered:

- 1) There may be an opportunity to add a policy clause to ensure that spill prevention and emergency response plans (Municipal, Provincial and Federal) include consideration of current information pertaining to sensitive drinking source water areas. These data and maps may also support the selection of future transportation of dangerous goods routes and development of updated Emergency Response Plans. The policy may direct the agencies with jurisdiction over these matters to consult the Provincial site where these data and maps are kept current. Policy could require that all Dangerous Goods transportation routing, Spill prevention and Emergency Response Plans consider the location of these areas and include additional specialized provisions for spill prevention and response. This may be achieved by revision and expansion of Specify Action LO-G-1 to expand clause (c) and add a clause (f).
- 2) A revision of Education and Outreach policy LO-G-4 to require the MECP to develop and implement Source Water Protection awareness campaigns on a 5- or 10-year (suggest 8 years) basis to ensure all agencies are kept up-to-date and aware of sensitive drinking water areas.
- 3) A new Specify Action policy LO-G-5 to require the MECP, Spill Action Centre (SAC), and Canada Energy Regulator (CER) to provide all sampling data associated with a spill in the CTC SPR that could result in a significant threat to Lake Ontario's drinking water intakes to the lead Source Protection Authority and relevant Municipality for use in local analysis and model development. The policy also encourages MECP and SAC to use watershed and 'sewershed and outfall location' data for flow analyses, as well as data from Lake Ontario monitoring stations.
- 4) A new Specify Action policy GEN-9 similar to LO-G-5; however, it requires the MECP, SAC, and CER to provide spill data that could also result in a threat to Wellhead Protection Areas.

Finally, in the event that the SPC decides to pursue the addition of a local threat, the threat must first be identified and approved by the Province. Per Director's Rules 68 and 69, scientific study *must* support the request to the Province for the addition of a local threat. For IPZ-3s, this would entail event-based modelling. LO-G-2 clause (3) *Using the model as a consistent approach to assess potential drinking water threats from: a) other existing activities which might be a drinking water threat to one or more municipal drinking water system; b) assessing newly proposed activities which may pose a threat to one or more municipal drinking water systems at the proposal stage* allows for such modelling. The LOC model used to identify the current IPZ-3 CTC drinking water threats is currently maintained by the City of Toronto under the oversight of the Ontario Clean Water Agency. For modelling work associated with Wellhead Protection Areas, use of the local models would have to be used to perform scenario modelling to determine the potential level of threat to the intake zones in the well(s). The CTC SPC needs to determine whether this work is necessary and approve a budget to perform the work.

It should be noted that without the modelling work and the identification of a local threat, the CTC LOC general policies do contain language that could be strengthened to include broader distribution and a wider range of uses of the CTC drinking water maps and data for the purposes of planning and emergency protocol updates. The CTC LO-G policies are presented here for ease of reference.

It is *not* recommended at this time to perform event-based modelling for the potential addition of a local threat for the transportation of dangerous goods.

Policy updates (LO-G-1) to ensure that the agencies with the responsibilities consider Source Water Protection data in their planning and Emergency protocols and response would be appropriate.

Refer to **Appendix A** for the full policy text of the new draft policies and proposed policy amendments to existing policies (highlighted in yellow). Please note that proposed amendments to the LO-G policies are also from the *Review of the existing local liquid hydrocarbon pipeline policies* discussion paper. Both discussion papers should be considered together to understand proposed policy changes.

This document is presented as support for the CTC Implementation group and SPC discussions and deliberations regarding the consideration of the Transportation of Dangerous goods as a Local Threat in the CTC SPR. Staff will take feedback and direction from both groups and following consult broader with approval from the SPC as part of the CTC S.36 workplan Item 6.



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## Appendices

### Appendix A: CTC LOC Policies

#### Proposed Source Protection Plan Policy text edits

Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policy
LO-G-1	All Lake Ontario Threats	MECP	K	<p><b>Specify Action</b> (Spill Prevention, Contingency Plans and Emergency Response)</p> <p>To protect drinking water sources from potential spills along highways, shipping lanes and railways, the Ministry of the Environment, Conservation and Parks shall:</p> <ul style="list-style-type: none"> <li>a) in consultation with the Spills Action Centre and other appropriate bodies, update notification protocols for spills to ensure direct notification of all potentially affected water treatment plant operators and appropriate communication to the public and media;</li> <li>b) in consultation with the Spills Action Centre and the affected municipalities, review the notification protocol for significant threat activities and adjust the protocols as required to ensure that water plant operators are notified appropriately for a given magnitude of spill;</li> <li>c) ensure that information is communicated to all responsible parties (e.g., the originators of the spill, emergency response/clean-up personnel, medical officer of health, municipal water system owner and water system operating authority) who are responding to the spill <b>and to ensure that source water protection drinking water area maps and data are included in pipeline route planning exercises, all existing and future emergency response plans and protocols;</b></li> <li>d) in consultation with the owners and operators of municipal drinking water systems, require that a Contingency Plan is developed, reviewed and/or updated under the Drinking Water Quality Management Standard to ensure that significant drinking water threats identified in the Assessment Report are included and amend the municipal drinking water license, as required;</li> <li>e) in consultation with the Office of the Fire Marshal and Emergency Management and other appropriate bodies, ensure that testing of the Contingency Plan is carried out within 3 years from the date the Source Protection Plan takes effect, followed by regular (frequency and</li> </ul>	EBA See Map 4.1	Existing & Future: Consider within 2 years (T-15)  unless otherwise specified in the policy	LO-NGS-1  LO-SEW-1  LO-SEW-2  LO-PIPE-1  LO-FUEL-1	MON-4

Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policy
				priority to be determined in consultation) emergency response preparedness exercises to address the significant threats identified, that the determined frequency and priority is reported to the relevant source protection authority;  f) in consultation with appropriate bodies (regulators associated with prescribed threats), promote the use of Source Water Protection mapping and data in planning, operation and emergency response protocols, and  g) in consultation with appropriate bodies, promote spill prevention and share information about source protection with the public.				

Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policy
LO-G-4	Significant/ Moderate/ Low Threats  All Lake Ontario Threats	MECP	J K	<b>Education and Outreach</b>  The Ministry of the Environment, Conservation and Parks is requested to establish an outreach program to discuss the findings and policies arising from the source water protection program with the National Energy Board Canada Energy Regulator, Ontario Energy Board, Environment Canada, Health Canada, New York State and US government agencies in order to:  a) encourage collaboration on protecting our shared drinking water sources; and b) raise profile of the importance of Lake Ontario as a source of drinking water for Ontario. c) develop and deliver Lake Ontario focused Source Water Protection awareness campaigns every 8 years regarding the status and trends in Lake Ontario as a Drinking Water Source as well as existing Source Protection policies.	See Maps 4.1 and 4.2	Existing & Future: Consider within 2 years (T-15)	N/A	MON-4

All Spills new proposed (see also Pipeline paper)

Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policy
LO-G-5	All Spills	MECP CER	K	<p><b>Specify Action (Spill Prevention, Contingency Plans and Emergency Response)</b></p> <p>To protect drinking water sources from potential spills along highways, shipping lanes and railways, that could impact Lake Ontario’s drinking water intakes, the Ministry of the Environment, Conservation and Parks and its Spills Action Centre, and the Canada Energy Regulator (CER) shall:</p> <p>Provide all available sampling data associated with a spill that could result in a significant threat to Drinking Water intakes located in the CTC SPR to the lead SPA and relevant Municipality for use in local analysis and model development.</p> <p>Consider the use of data for watersheds and ‘sewersheds’ and outfall locations for flow analyses maintained by the Conservation Authorities and;</p> <p>Consider the use of data for newly established Lake Ontario monitoring stations as well as enhanced tools such as the Lake Ontario Water Quality Forecasting System developed by the Lake Ontario Working group.</p>	IPZs	Existing & Future: Consider within 2 years	LO-G-2	MON-4 PIPE-G-6
GEN-9	All Spills	MECP CER	K	<p><b>Specify Action (Spill Prevention, Contingency Plans and Emergency Response)</b></p> <p>To protect drinking water sources from potential spills along highways and railways, that could impact the CTC Well Head Protection Areas, the Ministry of the Environment, Conservation and Parks and its Spills Action Centre, and the Canada Energy Regulator (CER) shall:</p> <p>Provide all available sampling data (including that from third parties) associated with a spill that could result in a significant threat to Wellhead Protection Areas located in the CTC SPR to the lead SPA and relevant Municipality for use in local analysis and model development.</p> <p>Consider the use of data for watersheds and ‘sewersheds’ for flow analyses maintained by the Conservation Authorities.</p>	WHPAs	Existing & Future: Consider within 2 years	LO-G-5 (new)	MON-4

See the following resources:

- [The Clean Water Act: A Plain Language Guide](#)
- [O. Reg. 287/07](#)
- [Essex Region Source Protection Plan](#)



## Appendix B: Essex Region Source Protection Region – Transportation of Dangerous Goods Policies

In the ERSPA, IPZ-3s for the Lake St. Clair, Detroit River and Lake Erie intakes are delineated based on model simulations of tanker truck fuel spills in the headwaters of selected tributaries, and fuel storage facilities in various locations. In the threats analysis, tanker truck fuel spills were also considered representative of the activity of the transportation of fuels (see p. 13 of the [Essex Region Source Protection Plan](#)).

As per the letter dated August 9, 2011 from Ian Smith (Director, Source Protection Programs Branch, MOE) in Assessment Report Appendix XIII, the transportation of organic solvents, dense non-aqueous phase liquids (DNAPLs), fuels, pesticides/herbicides and fertilizers could be moderate and low threats in various intake protection zones (IPZs) in the Essex Region based on the vulnerability scoring.

Also, *Essex Region Source Protection Plan - Approved May 2019 20* through modeling studies of simulated spills, the transportation of large volumes of liquid fuels is shown to be a significant drinking water threat in all of the delineated Event Based Areas in the Essex Region SPA. Volume thresholds resulting in significant threats associated with the transportation of liquid fuels in various IPZs are the same as for the handling and storage of fuel, as shown above.

Fuels Working Group in the spring of 2011, the technical studies for the Updated Assessment Report identified the above grade storage and handling of large volumes of liquid fuel as a significant threat. This applies to existing and future facilities, as well as transportation. In June 2011, a Fuels Working Group (FWG) was established, and met several times during the summer and fall, to assist the SPC in addressing this threat. This significant threat applies to extensive IPZ-3 areas, including all tributaries of Lake St. Clair and Detroit River, which extend into all Essex Region municipalities except Pelee Island and Chatham-Kent. The FWG included SPC Members, staff members of most municipalities, the Facility Manager of Sterling Fuels (a major fuel storage and distribution facility), and the Emergency Management Coordinator for the County of Essex. The FWG gained an understanding of the requirements of the Technical Standards and Safety Act, the associated Regulations which apply to the storage, handling, and transportation of fuel, and the standards and practices of the fuel industry. The Group provided valuable input and recommendations to the SPC regarding policy approaches and several draft policies for this significant threat.

Several policies also apply to all EBAs within IPZs of the intakes in Lake St. Clair, Detroit River and Lake Erie, where the above grade storage, handling, or transportation of large volumes of liquid fuel has been identified as a significant threat. There are also some additional policies which apply to moderate or low threats in all IPZs and all Highly Vulnerable Aquifers (HVAs). The policies are mainly organized based on the policy tool used.

**ERSPR Policy Text**

18 O. Reg 287/07 Section 26 (Specify Action): The transportation of organic solvents, dense non-aqueous phase liquids (DNAPLs), fuels, pesticides/herbicides, fertilizers All IPZ-1s, IPZ-2s and IPZ-3s

**18All123- transportcorridor1 (Specify Action)**

The Essex Region Conservation Authority (ERCA) will provide information on drinking water threats (the transportation of various quantities of organic solvents, dense non-aqueous phase liquids, fuels, pesticides/herbicides and fertilizers) and vulnerable areas (through maps) to various parties and organizations and encourage them to include this information in their spills response, prevention and/or emergency plans. The various parties and organizations include municipalities (various departments), Ministry of Transportation Ontario (MTO), Ministry of Environment (MOE), Hazmat, Environment Canada, railways, Transport Canada, Chemistry Industry Association of Canada, Regional Environmental Emergencies Team (REET), Canadian Coast Guard, Port Authorities, harbours/marinas, ferry operators, Ambassador Bridge authority, local distributors and dispatchers, Ontario Provincial Police (OPP) and other emergency responders. Information on the drinking water threats and vulnerable areas may also be sent to other relevant parties and organizations that the ERCA may become aware of.

The information will assist in responding to spills (such as reporting and containment) and preventing spills on transportation corridors within the Intake Protection Zones in the Essex Region watershed. The information will be sent by the ERCA to the various parties and organizations within 1(one) year of the date of the approval of the Source Protection Plan. Further, the ERCA will encourage marinas within or near the Intake Protection Zones to refer to best management practices in the Clean Marine Program related to fuel and other relevant substances and will encourage marinas to participate in the Clean Marine Program.

These specified actions apply to the existing and future, moderate and low threats of the transportation of organic solvents, dense non-aqueous phase liquids (DNAPLs), fuels, pesticides/herbicides and fertilizers in the vulnerable areas of: All IPZ-1s, IPZ-2s and IPZ-3s. The date of compliance is within 1 (one) year of the Source Protection Plan taking effect.

**18M All123- transportcorridor-2 (Monitoring Policy)**

The Essex Region Conservation Authority will prepare and submit a report to the Source Protection Authority which summarizes the actions taken to comply with policy All123-transportcorridor-1 (Specify Action). The above applies to the existing and future, moderate and low threats of the transportation of organic solvents, dense non-aqueous phase liquids (DNAPLs), fuels, pesticides/herbicides and fertilizers in the vulnerable areas of: All IPZ-1s, IPZ-2s and IPZ-3s. The date of compliance is by February 1 of each year.

19 O. Reg 287/07 Section 26 (Specify Action): The transportation of organic solvents, dense non-aqueous phase liquids (DNAPLs), fuels, pesticides/herbicides, fertilizers i) All Events Based Areas (EBAs) for the transportation of fuel within the IPZs in the Essex Region Source Protection Area. ii) IPZ-1s and IPZ-2s for the transportation of organic solvents, dense non-aqueous phase liquids (DNAPLs), pesticides/herbicides, fertilizers All123- transportcorridor3(Specify Action)

### **19 All123- transportcorridor3 (Specify Action)**

The Ministry of Transportation (MTO), in collaboration with the Ministry of the Environment and Climate Change (MOECC) as well as in consultation with Source Protection Authorities (SPAs), should design a sign to the appropriate Provincial standard, 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 Zones or Wellhead Protection Area E with a vulnerability score of 8 or higher. 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. The above policy will be implemented as part of an overall education and outreach plan within each Source Protection Area. This policy, in conjunction with additional education and outreach policies, should be implemented within 2 years after the effective date of the plan. The implementing bodies are MTO, MOE and the municipalities.

### **19M All 123- transport corridor4 (Monitoring Policy)**

The Ministry of Transportation Ontario will prepare and submit a report to the Source Protection Authority which summarizes the actions taken to comply with policy All3- transportcorridor-1(Specify Action).

The above applies to the existing and future significant threats of the transportation of fuels in the EBAs within IPZs and moderate and low threats of the transportation of organic solvents, dense non-aqueous phase liquids (DNAPLs), pesticides/ herbicides and fertilizers, in IPZ-1s and IPZ-2s in the Essex Region Source Protection Area. The date of compliance is by February 1 of each year.

There is one transportation corridor threat policy to be implemented by the Ministry of Transportation. This is a 'non-legally binding' policy which is targeted for implementation within two years of the Plan taking effect. ERCA is also an implementing body (to assist in an advisory capacity) on a 'transportation' corridor threat policy which involves providing information on threats and vulnerable areas to a wide variety of parties such as transportation authorities, emergency responders, haulers/distributors, etc., and encouraging the updating of spills response plans.

There are also policies for the transportation of large volumes of liquid fuel or other substances, through which information will be directed to parties such as emergency responders, highway/road authorities, railways, shipping authorities, and haulers/distributors, etc., encouraging the updating of spills response plans in recognition of potential 'transportation corridor' threats in various IPZ areas.

**TO: Chair and Members of the Source Protection Committee  
Meeting #1/24, February 21, 2024**

**FROM: Behnam Doulatyari, Senior Manager, Watershed Plans and  
Source Water Protection**

**RE: Review of the Existing Local Liquid Hydrocarbon Pipeline  
Policies**

## **KEY ISSUES**

Proposed policy amendments to address the new provincially prescribed liquid hydrocarbons where they could become a significant threat per item 11 of the Section 36 (s.36) workplan.

## **RECOMMENDATION**

**THAT** the CTC Source Protection Committee receive the staff report *Review of the Existing Local Liquid Hydrocarbon Pipeline Policies* for information.

**AND FURTHER THAT** the CTC Source Protection Committee endorse amendments to pipeline related policies consistent with the direction outlined in this staff report.

**AND FURTHER THAT** staff be directed to incorporate the new policy text as part of a forthcoming amendment to the CTC Source Protection Plan, under Section 36 of the *Clean Water Act*.

## **Background**

The discussion paper, *Review of the Existing Local Liquid Hydrocarbon Pipeline Policies*, is a deliverable under Task 11 of the s.36 workplan:

**Task 11:** Review need for new policies as a result of adding liquid hydrocarbon pipelines as a prescribed threat

Hydrocarbon pipelines are used to provide and transport fuel to major cities across the province and there are several that traverse the CTC Source Protection Region (CTC SPR). The CTC Source Protection Committee (SPC) is concerned with potential pipeline incidents (spills and leaks) that could impact drinking water sources.



To address this, CTC SPC pursued and established liquid hydrocarbon pipelines as a local threat in 2015 as it was not included in the list of provincial prescribed activities. The current CTC pipeline policies (LO-PIPE-1, LO-G-1, and LO-G-2) were developed to address specific event-based modelled threats using rupture scenarios of existing pipelines across tributaries leading into Lake Ontario.

However, in 2018, the Ontario Regulation 287/07 was amended to add the “establishment and operation of a liquid hydrocarbon pipeline” to the list of prescribed drinking water threat activities for a current total of 22 threats (O. Reg. 385/08, s. 3; O. Reg. 206/18, s. 1).

This amendment now requires the CTC SPR to review the new circumstances identified by the Province, determine whether pipelines are located within these vulnerable areas, and develop policies where pipelines could result in a significant threat. Refer to Table 1 in the discussion paper for the circumstances for significant threats. References to the local threat approach in the CTC Source Protection Plan (CTC SPP) and Assessment Reports are to also be removed.

## Analysis

It was determined that there are currently no liquid hydrocarbon pipelines that cross wellhead protection areas (WHPAs) or Intake Protection Zones-3 (IPZ-3) where they could pose significant risks. The pipelines in CTC SPR cross highly vulnerable aquifers (HVAs), however, they currently only pose a low threat. Based on this analysis, existing liquid hydrocarbon pipelines do not pose significant threats to drinking water sources in the CTC SPR based on the vulnerability score-based circumstances.

Although it has been determined that there is not an existing significant threat, future threats must also be considered based on the vulnerability score-based circumstances in the updated 2018 Technical Rules. Considering that the CTC SPR is an area of growth with a demand for liquid hydrocarbon products, it is reasonable to assume that additional or larger pipelines may be constructed and or that changes may be made to currently existing pipelines in the future. It is recommended that, similar to neighbouring SPRs, CTC develops a few additional policies to address these potential future threats.

## Proposed Policy Alternatives and Discussion

The proposed policy updates include both new and amended policies. The new policies address these potential future threats based on the vulnerability score-based circumstance and are intended to improve awareness and communication with federal and provincial agencies.<sup>1</sup> The proposed amendments to current policies address any gaps. Proposed policies are summarized in the tables below. Refer to the discussion paper (**Attachment 3**) for the full policy text. Please note that a few policies (LO-G-1, LO-G-4, LO-G-5, and GEN-9) are also attached and discussed in section 7.1.d of the agenda.

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<sup>1</sup> There are several legislative instruments that currently address the fundamental concerns of source water protection (SWP) through their provisions and emergency response plans. Refer to **Attachment 1** for a summary of legislation governing hydrocarbon pipelines.

Table 1. Summary of **NEW** draft proposed policies to address potential future threats

ID	Tool	Proposed Policy
PIPE-G-1	Specify Action	Recommends that the Canada Energy Regulator (CER) and Technical Standards and Safety Authority (TSSA) ensure that their regulatory requirements manage liquid hydrocarbon pipelines through appropriate design standards, monitoring, maintenance, and other relevant practices.
PIPE-G-2	Specify Action	Recommends that the Canada Energy Regulator (CER) and Technical Standards and Safety Authority (TSSA) ensure that hydrocarbon pipeline applicants have complied with and included appropriate design standards, monitoring, maintenance and other relevant practices.
PIPE-G-3	Specify Action	Requests liquid hydrocarbon pipeline owners to use threats risk assessment information from approved assessment reports approved and relevant watershed information while developing and updating emergency planning zones (EPZs) and designated geographical areas (DGAs).
PIPE-G-4	Specify Action	Requests facility owners to update emergency preparedness/contingency plans to include the location of municipal intakes, actions to be taken to protect drinking water sources should an incident occur and requires the protection of drinking water sources to be included in emergency preparedness exercises.
PIPE-G-5	Specify Action	Requests for MECP to ensure that the IPZ-3 and the location of Significant Drinking Water Threats data provided to the Spills Action Centre (SAC) are up to date and, if necessary, for SAC to modify notification procedures of all water treatment plants that could be affected by a spill. MECP is also to prepare and submit to the Source Protection Authority a report summarizing actions and provide spill data reported within IPZ-3.
PIPE-G-6	Education and Outreach	Directs CTC Conservation Authorities to: <ul style="list-style-type: none"> <li>• Provide educational sessions to interested liquid hydrocarbon pipeline companies and provide them with source protection information/reports</li> <li>• Requests for the CER, Ontario Energy Board (OEB) and TSSA to confirm their requirements for liquid hydrocarbon pipelines to manage existing significant drinking water threats.</li> <li>• Requests information updates including new or changes to liquid hydrocarbon pipelines</li> <li>• Request an invitation from liquid hydrocarbon pipeline owners, to observe emergency preparedness exercises relevant to the CTC Source Protection Region; request a copy of their amended emergency preparedness plans to protect municipal drinking water sources.</li> </ul>
LO-G-5	Specify Action	New policy to require MECP, SAC, and Canada Energy Regulator (CER) to: <ol style="list-style-type: none"> <li>a) Provide all sampling data associated with a spill in the CTC SPR that could result in a significant threat to Lake Ontario’s drinking water intakes to the lead Source Protection Authority and relevant Municipality for use in local analysis and model development.</li> <li>b) Consider using watershed and ‘sewershed and outfall location’ data for flow analyses, and</li> <li>c) Consider using data from Lake Ontario monitoring stations.</li> </ol>
GEN-9	Specify Action	A new Specify Action policy GEN-9 similar to LO-G-5; however, it requires the MECP, SAC, and CER to provide spill data that could also result in a threat to Wellhead Protection Areas.

Table 2. Summary of proposed policy amendments to existing policies

ID	Tool	Current Policy	Proposed Policy
LO-PIPE-1	Specify Action	Where event based modelling has shown that a spill from a petroleum pipeline system reaching a tributary would be a significant drinking water threat, the MECP should work with facility owners and provincial and federal regulators to develop, review and recommend necessary improvements to existing spill prevention, spill management, risk reduction, and Contingency Plans to ensure the following...	<p>Revised to include:</p> <p>“...threat, where the establishment and operation of a liquid hydrocarbon pipeline is or could be a significant threat to drinking water sources”.</p> <p>Included the Canada Energy Regulator (CER) and Ontario Energy Board (OEB) to work with facility owners and regulators to develop improvements to spill response plans.</p> <p>There are no changes to clauses a) – n).</p>
LO-G-1	Specify Action	To protect drinking water sources from potential spills along highways, shipping lanes and railways, the Ministry of the Environment, Conservation and Parks shall:	No change
		a) update notification protocols for spills	No change
		b) review the notification protocol for significant threat activities and adjust the protocols as required.	No change.
		c) ensure that information is communicated to all responsible parties who are responding to the spill.	Expansion of clause (c) for MECP “to ensure that source water protection drinking water area maps and data are included in pipeline route planning exercises, all existing and future emergency response plans and protocols.”
		d) require that a Contingency Plan is developed, reviewed and/or updated under the Drinking Water Quality Standard to ensure that significant drinking water threats identified in the Assessment Report are included and amend the municipal drinking water licence as required.	No change.
		e) ensure that testing of the Contingency Plan is carried out within 3 years from the date the Source Protection Plan takes effect, followed by regular emergency response preparedness exercises to address the significant threats identified.	Expansion of clause (e) to include that “the determined frequency and priority is reported to the relevant source protection authority.”
		f) promote spill prevention and share information about source protection with the public.	<p>Current policy moved to a new clause (g).</p> <p>Addition of a new clause (f): MECP shall promote the use of Source Water Protection mapping and data in planning, operation, and emergency response protocols.</p>

ID	Tool	Current Policy	Proposed Policy
		g) n/a	Current clause (f) moved to a new clause (g). No change to policy text.
LO-G-4	Education and Outreach	MECP is requested to establish an outreach program to discuss the findings and policies arising from the source water protection program with the National Energy Board, Ontario Energy Board, Environment Canada, Health Canada, New York State and US government agencies in order to: a) encourage collaboration on protecting our shared drinking water sources; and b) raise profile of the importance of Lake Ontario as a source of drinking water for Ontario c) n/a - new	Removal of the Natural Energy Board from the outreach program. Addition of the Canadian Energy Regulator to the outreach program.  There are no changes to clause (a) and (b).  Addition of clause (c): to “develop and deliver Lake Ontario focused Source Water Protection awareness campaigns every 8 years regarding the status and trends in Lake Ontario as a Drinking Water Source as well as existing Source Protection policies.”

### Municipal feedback

The proposed policy amendments were discussed at the October 5, 2023, Implementation Working Group meeting. Staff revised the policies based on the discussions. Detailed comments from municipalities and CTC staff response can be found in **Attachment 2**. Revised policies were discussed at the IWG meeting on February 6, 2024.

### Next Steps

Pending endorsement of the policy amendments by the SPC, source protection authority staff will prepare edits to the CTC Source Protection Plan and Explanatory Document. This amendment is expected to be made at the time of the next amendment to the SPP under section 36 of the *Clean Water Act*.

### Report prepared by:

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Date: February 2, 2024

### Attachments (3)

**Attachment 1: Summary of Legislation Governing Hydrocarbon Pipelines**

**Attachment 2: Comment Matrix and Municipal Analysis**

**Attachment 3: Discussion Paper: Review of Existing Local Liquid Hydrocarbon Pipeline Policies**

## Attachment 1: Summary of Legislation Governing Hydrocarbon Pipelines

Legislative Instruments	Administrative Body	Purpose
Canadian Energy Regulator Act, 2019	Canadian Energy Regulator (CER)	Review and make decisions regarding pipelines and power lines in Canada that cross provincial or international boundaries.
Ontario Energy Board Act, 1998	Ontario Energy Board (OEB)	Establishes the OEB as a regulator of Ontario's electricity and natural gas sectors.
Canadian Standards Association Z662	N/A	To achieve safety and integrity of a pipeline throughout its lifecycle. Requires pipeline companies to identify and document Designated Geographical Areas (DGAs) in the vicinity of the pipeline. The criteria for DGAs includes impacts on major drinking water sources.
Technical Standards and Safety Act, 2000	Technical Standards and Safety Authority's	To help protect the public, environment, and property from fuel-related hazards such as spills, fires, and explosions. They oversee the ongoing operation and maintenance of existing hydrocarbon pipelines.
Fisheries Act, 1985	Environment and Climate Change Canada (under contamination section of the Act)	To prevent the deposit of deleterious substances of any type in water frequented by fish.
Canadian Environmental Protection Act (CEPA) Federal – Spills	Environment and Climate Change Canada	To help prevent or reduce the risk of spills of pollutants and prevent, eliminate or ameliorate any adverse effects that result or may result from spills.
Environmental Protection Act, 1990 – Provincial	Ministry of Environment, Conservation and Parks	To provide protection and conservation of the natural environment in Ontario, which includes provisions for spills of contaminants.
The Spills Action Centre (SAC) - Ontario	Ministry of Environment, Conservation and Parks	Handles reports of spills, adverse drinking water results and environmental concerns from the public.
Municipal Dangerous Goods Spill Response Plans	Municipalities	Outlines how municipalities will respond and monitor spills as well as ensure appropriate steps are taken by the responsible party to clean the spills.



## Attachment 2: Comment Matrix and Municipal Analysis

Municipality	Comments	Date	CTC Staff Response
Peel Region	Consider implementing a recommendation that the implementing bodies (CER/OEB/MECP), should provide the type of product/category details to municipalities to inform spill response, modelling, in particular the LOCG.	25-Sep-23	LO-G-5 and GEN-9 All Spills (clause 2 of two newly proposed policies) directed at <b>MECP and CER</b> . Specify Action. <i>Provide all available sampling data associated with a spill that could result in a significant threat to Drinking Water intakes and Well Head Protection Areas located in the CTC SPR to the lead SPA and relevant Municipality for use in local analysis and model development. See pipeline paper P.27</i>
Peel Region	MECP should circulate with potentially impacted municipalities any sampling conducted in response to spills	25-Sep-23	Agree. Add to SAC request in policy number. GEN-9 and LO-G-5 above
Peel Region	LO-G-3: With the inclusion of Halton in the LOCG, how would this affect their local SPP?; If other municipalities choose to join the LOCG in the future, how would policy and funding be rolled out? would it be mandatory and would it require an amendment each time a new municipality chooses to opt in?	25-Sep-23	Other SPCs must decide to adopt/align their policies. CTC collaborates with bordering SPRs for consistency. It is however, a locally driven/delivered program. The CTC cannot make policies for another SPR. This activity/concern is addressed behind the scenes.
Peel Region	LO-G-3: Consider adding language showing the progressing of the LOCG to include additional municipalities; The current ToFR established does not currently include Halton- is there an expectation to amend the ToFR with the addition of municipalities?	25-Sep-23	<b>Premature to add Halton. Discussions are ongoing. This may occur through the terms of reference agreements. As well, the dissolution of Peel may result in additional edits. It may be best to later change LO-G-3 (as a S.51 edit) to say the "shoreline CTC municipalities"</b> LO-G-2 Specify Action (Lake Ontario Collaborative Group) <i>The Ministry of the Environment, Conservation and Parks will work in partnership with Environment Canada and municipalities responsible for providing water from systems with intakes in the western basin of Lake Ontario to establish and chair a Lake Ontario Collaborative Group (LOCG) focused on the western basin to undertake actions to support the implementation of policies to protect this source of drinking water. Within 1 year from the date the Source Protection Plan takes effect the LOCG should develop and approve Terms of Reference. The Terms of Reference should include but not be limited to defining roles, tasks, and responsibilities of the LOCG partners with respect to;</i> and LO-G-3 Specify Action (Lake Ontario Collaborative Group) <i>The municipalities of Peel, Toronto and Durham <b>and Halton</b> shall</i>

Municipality	Comments	Date	CTC Staff Response
			<p><i>participate as members of the Lake Ontario Collaborative Group (LOCG) and shall undertake tasks (including funding portions) as agreed to in the Terms of Reference established by the LOCG.</i></p> <p>These two policies allow for additional municipalities to become involved.</p>
Orangeville	No comments or concerns to share	25-Sep-23	Great
Wellington County	No comments or concerns to share	29-Sep-23	Great
City of Toronto	Suggest addition of clauses to proposed policy LO-G-5: to request MECP SAC provide spill monitoring data as quickly as possible following spill for use in models, to update proposed policy LO-G-5 clause from 'sewersheds to 'watershed and sewershed and stormwater outfall location data'	6-Nov-23	Done
City of Toronto	Propose a GEN policy for groundwater sources similar to new proposed LO-G-5, and share it with the IWG via the IWG Sharepoint.	6-Nov-23	<p>NEW PROPOSED GEN-9 Specify Action (Spill Prevention, Contingency Plans and Emergency Response) Directed at the MECP and CER (Legal K)</p> <p>To protect drinking water sources from potential spills along highways, shipping lanes and railways, that could impact the CTC Well Head Protection Areas and Intake Protection Zones, the Ministry of the Environment, Conservation and Parks and its Spills Action Centre shall:</p> <p>Provide all available sampling data (including that from third parties) associated with a spill that could result in a significant threat to Drinking Water intakes and Well Head Protection Areas located in the CTC SPR to the lead SPA and relevant Municipality for use in local analysis and model development.</p> <p>Consider the use of data for watersheds and 'sewersheds' for flow analyses maintained by the Conservation Authorities.</p>

## **Discussion Paper: Review of the existing local liquid hydrocarbon pipeline policies**

### **Section 36. CTC Workplan 2018 Item 11**

## Executive Summary

The CTC (Credit Valley -Toronto and Region- Central Lake Ontario) Source Protection Plan, along with the supporting Assessment Reports, was approved by the Province of Ontario (Ministry of Environment and Climate Change) and came into effect on December 31, 2015. An order was issued under Section 36 (S. 36) of the *Clean Water Act, 2006* by the Minister of the Environment and Climate Change in July 2015 to prepare and submit a workplan for a S. 36 Source Protection Plan (SPP) update, to the Ministry by December 21, 2018 (submitted). A S.36 update is a broad scale review, and the activity is focused on keeping the Assessment Report and Source Protection Plan up to date with general amendments and policy efficacy changes. The CTC 2018 Section 36 workplan sets out a number of tasks, each with their own completion date, ranging from April 2019 to June 2024. The Province later allowed for flexible and open workplan deadlines.

Subsequently, following amendments to the Directors Rules and Table of Drinking Water Threats in 2017-2018, the Ministry of Environment Conservation and Parks (MECP) issued an amended s.36 order on July 22, 2019, which specifically requires:

- Updating of liquid hydrocarbon pipeline references in Assessment Reports (AR)/Source Protection Plans (SPP) to a prescribed threat and ensure policies apply to all relevant protection zones,
- that AR's have been updated as part of the CTC 2022 s.51 amendment, and
- the update of SPP pipeline policies that have not yet been updated.

Optional in the order are inclusion of s.36 workplan items that are consistent with the Act, its regulations and Technical rules in effect at time of the updates (i.e., 2021 Phase 2 DTR's). The Province has also indicated that it does not intend to direct any further S.36 orders with the understanding that updates to the Assessment Reports are ongoing under Section 34 and Section 51 amendments (*Clean Water Act, 2006*).

Table 1 in the CTC S. 36 workplan (P. ii) lists numerous tasks. Task 11 is to *review the current local liquid hydrocarbon pipeline policies* to determine if they are adequate, given that this local threat was added as a Provincial threat under the Director's Technical Rules (DTR) July 2018 amendments (CTC Source Protection Region, 2018). Pipelines were established as a local threat based on event-based modelling in the CTC in 2015 and policies were developed at that time. Circumstances were not included in the Provincial Table of Drinking Water Threats, until the July 2018 amendments.<sup>1</sup>

This paper examines the current governance, oversight, operating and maintenance procedures as well as spill response regarding the threat. It additionally reviews the current policies for

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<sup>1</sup> See Environmental Registry of Ontario posting: [Amendments to Ontario Regulation 287/07 "General" under the Clean Water Act, 2006](#)

gaps as well as the circumstances of the newly established provincially prescribed threat for existing or future potential significant threats.

If it is determined by the Source Protection Implementation Working Group that there is a need for the update of current policies and or the addition of new policies, the team will proceed with the preparation of new or updated policies, consultation with stakeholders and the Province, as required, prior to implementation. Draft policies based on conclusions are presented as part of this paper.

During the development of the inaugural CTC SPP in 2015, the Source Protection Committee (SPC) considered '*Pipelines Transporting Petroleum Product (Containing Benzene) Crossing Tributaries of Lake Ontario*' as a potential threat to Lake Ontario Drinking water sources. The SPC discussed this potential threat in detail and consulted extensively with pipeline owners, and Federal and Provincial oversight agencies. The SPC, while noting that the industry was already highly regulated, instructed staff to add a pipeline rupture spill to the list of scenarios for the Lake Ontario Intake Protection Zone (IPZ)-3 event-based modelling. A significant threat was determined, and this item was added as a local threat to the CTC SPR list of threats and policies developed to ensure that Emergency Response Plans included Source Water Protection data.

In 2018 the Director's Technical Rules were amended and '*the establishment and operation of a liquid hydrocarbon pipeline*' was added as a provincially prescribed threat. Upon review, it was determined that there are no additional existing significant threats in the CTC Source Protection Region, per the listing of liquid hydrocarbon pipelines in the Provincial list of prescribed threats. This review has determined that existing hydrocarbon pipelines only pose a low threat primarily to highly vulnerable aquifers (HVAs), except where the threat is identified under IPZ-3 event-based studies.

It has also been established that there are already several Federal and Provincial instruments that currently address the fundamental concerns of source water protection (SWP) through their provisions and emergency response plans that have been recently upgraded and include consideration of drinking water sources. Municipalities are also very well aware of SWP sensitive areas and are the same agencies charged with emergency response on-the-ground action.

Nevertheless, considering that the CTC SPR is an area of growth with a growing population and with it a demand for liquid hydrocarbon products, that it is an area where pipelines currently exist and with many vulnerable source water protection areas, it is reasonable to assume that additional or larger pipelines may be constructed and or that changes may be made to currently existing pipelines in the future. The current CTC pipeline policies were developed to address the specific event-based modelled threats regarding ruptures of the pipelines across tributaries leading into Lake Ontario but the vulnerability score-based circumstances in the updated 2018 Technical Rules are currently not addressed for future threats.



It is also recommended that awareness and communication with agencies with oversight be upgraded to ensure an enhanced and transparent flow of information when there is any new or changed status of hydrocarbon pipelines within the SPR. It is recommended that similar to neighbouring SPRs, a few additional policies (6) should be developed to address these potential future threats for this now established Provincially prescribed threat. It is further recommended that these new policies be maintained along with the LO-PIPE-1 (2015) policy. New LO-G-5 and GEN-9 policies are recommended to encourage the Province and other parties to provide related spills data for support of localized technical analyses. It is also recommended that current LO-G policies are expanded to improve awareness of sensitive drinking water areas and Source Water Protection policies for spill response planning. These proposed amendments to the LO-G policies are also from the *Consideration of Transportation of Dangerous Goods* discussion paper. Both discussion papers should be considered together to understand proposed policy changes.

## Preamble

The Credit Valley, Toronto and Region, Central Lake Ontario (CTC) Source Protection Plan (SPP), along with the supporting Assessment Reports, was approved by the Province of Ontario (Ministry of Environment and Climate Change) and came into effect on December 31, 2015. Section 36 under the *Clean Water Act, 2006* contains the provision to comprehensively review and update source protection plans, including Assessment Reports at established intervals (approximately every 5 years as directed by the Province).

The CTC Source Protection Region was issued an order under section 36 of the *Clean Water Act, 2006* by the Minister of the Environment and Climate Change in July 2015. The order including extensions, directed staff to consult with program partners to prepare and submit a workplan for a Section 36 Source Protection Plan update to the Ministry by December 21, 2018. This workplan sets out a number of tasks, each with their own completion date, ranging from April 2019 to June 2024. The Province, understanding challenges presented by the CoVid pandemic, staff turnover, multiple S. 34 updates in the CTC and other emerging pressing issues which affect municipal budgets, has since allowed for flexible and open workplan deadlines. The CTC, nevertheless, continues to strive to complete all tasks outlined in the 2018 workplan as expeditiously as possible. Current timelines estimate all tasks completed by the end of the 2024 fiscal year.

The Province has indicated that future S. 36 comprehensive update orders are not currently anticipated with the understanding that updates to the Assessment Reports are ongoing amendments. Updating these documents ensures that all municipal drinking water systems are protected, and that changing biophysical and social conditions are captured in future planning for source protection. It is agreed that it is more practical to perform these updates in an ongoing fashion and it is feasible to couple this work in the future with Section 34 and 51 amendments upon completion of this 2018 order.

### CTC S. 36 Consideration/Review Items

The 2018 CTC SPR Section 36 workplan (P. ii - Table 1), includes numerous tasks. Three of those tasks, listed two “consideration of new policy tasks” and a policy review task:

- **Item 6:** The consideration of a new local threat with policies to address the transportation of dangerous substances,
- **Item 9:** The consideration of additional policies to address drinking water “issues” identified in 2015.
- **Item 11:** The work plan also documented a task to review the existing local liquid hydrocarbon pipeline policies to determine if they are adequate, given that this local threat was added as a Provincial threat under the Director’s Technical Rules (DTR) July 2018 amendments. The circumstances related to pipelines may differ from those considered in 2015 in the CTC.

It is expected that *new* policies, where developed, will go through research and consultative processes as did original SPP policies. Such work may also include technical studies, numerical modelling exercises and industry consultation, to determine the level of risk prior to the drafting of any new policies. All work will be brought to the Committee's Implementation Working Group and the Source Protection Committee for approval/endorsement.

CTC staff will examine these CTC Section 36 2018 workplan items to:

- Review where available, background information regarding incidents,
- Prepare technical analysis including numerical modelling as needed,
- Determine new/updated risks to the CTC where relevant,
- Review action/legislation/legal instruments in other jurisdictions,
- Prepare a rationale document for consideration by the SPC,
- Update documentation with SPC input,
- Prepare new/ updated draft policies as necessary.

If it is determined that there is a need for updated pipeline policies, the team will proceed with the preparation of draft policies, consultation with stakeholders and the Province, as required prior to implementation.

This work began in 2023 and will continue in 2024. It is anticipated that staff will complete the policy recommendations for these items, supported by a discussion paper, by Spring of 2024. Interim reports will be brought forward by staff periodically, to the SPC Implementation Working Group and then to the SPC. This report pertains to *Item 11: The review of the existing local liquid hydrocarbon pipeline policies*.

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## 1 Background

In 2015, the CTC Source Protection Region (CTC SPR) submitted its first Source Protection Plan (SPP) under the *Clean Water Act* (2006). The SPP is supported by an Assessment Report (AR) which describes the jurisdiction where the SPP applies including delineated Source Protection areas; namely Well Head Protection Areas (WHPAs), Intake Protection Zones (IPZs), Highly Vulnerable Areas (HVAs) and Significant Groundwater Recharge Areas (SGRAs). Within WHPAs, IPZs and HVAs, vulnerability analyses and scoring determine which anthropogenic activities constitute significant, moderate or low threats to the drinking water source in question. Additional to these zones, the Director's Rules under the CWA (2006) direct the delineation of zones known as Issue Contributing Areas (ICAs) when monitoring data demonstrates an increasing contaminant trend.

In 2006, the Province listed 21 prescribed activities that could pose a threat to drinking water complemented by a table listing the circumstances under which these activities could be a significant, moderate or low threat. These circumstances are outlined in the [Provincial Table of Drinking Water Threats](#) (SWPIP.ca). Both the list of activities and the circumstances are subject to revision under the principle of continuous improvement and are driven by new information, data, and scientific advancement. In 2018, the Ontario Regulation 287/07 was amended to add the "establishment and operation of a liquid hydrocarbon pipeline" to the list of prescribed drinking water threat activities for a current total of 22 threats (O. Reg. 385/08, s. 3; O. Reg. 206/18, s. 1).

Prior to this 2018 update, under Technical Rule 119 of the *Clean Water Act* (2006), the CTC SPR along with six other Source Protection Regions identified hydrocarbon pipelines (designated as transmitting or distributing "liquid hydrocarbons") as a local threat. This was approved by the Province and policies to address this threat were developed as part of the 2015 CTC SPP. The Ministry of the Environment and Climate Change defined oil in their 2015 approval of this local threat activity, as *liquid hydrocarbons*.

Total Petroleum Hydrocarbons (TPH) is a term used to describe a broad family of several hundred chemical compounds that originally come from crude oil. In this sense, TPH is really a mixture of chemicals. They are called hydrocarbons because almost all of them are made entirely from hydrogen and carbon (U.S. Department of Health and Human Services, 1999). The compounds also contain minor amounts of nitrogen, sulphur, and oxygen. Petroleum hydrocarbons (PHCs) are the primary constituents in crude oil, gasoline, diesel, and a variety of solvents and penetrating oils. Crude oil consists of hydrocarbon molecules extracted from the ground and transformed in petroleum (oil) refineries into petroleum products, such as gasoline, diesel fuel, asphalt base, heating oil, kerosene, and liquefied petroleum gas. The main classes of PHCs of environmental concern are aromatic hydrocarbons that have distinct aromas. (e.g., benzene, PAHs, MTBE) (Envirowiki, 2022). Hydrocarbons come from petroleum sources and are mixtures of organic compounds that occur in geological substances such as oil, bitumen, and coal.



Liquid hydrocarbons are further defined as including crude oil, condensate, and liquid petroleum products. When the Province amended the Ontario Regulation 287/07 in 2018, the definition was not changed. The now MECP, however, did provide additional clarification that the prescribed threat captures pipelines designated for transmitting or distributing liquid hydrocarbons to terminals and distribution centers. The MECP made it clear that the threat does not capture pipelines that move liquefied natural gas (predominantly methane mixed with other products and cooled for ease of transport) or liquefied petroleum gas (propane) as the risk associated with these products are more associated with explosive or cryogenic impacts versus drinking water contamination. It also does not capture pipelines operated by the Ministry of Natural Resources and Forestry (MNRF) as defined in the *Oil, Gas and Salt Resources Act*, or those that operate within a property such as a refinery (Halton-Hamilton Source Protection Region, p. 282, 2022)

## **1.1 Prescribed drinking water threats – Clean Water Act, 2006, updated 2021**

1.1 (1) The following activities are prescribed as drinking water threats for the purpose of the definition of “drinking water threat” in subsection 2 (1) of the Act:

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

18. The management of runoff that contains chemicals used in the de-icing of aircraft.
19. An activity that takes water from an aquifer or a surface water body without returning the water taken to the same aquifer or surface water body.
20. An activity that reduces the recharge of an aquifer.
21. The use of land as livestock grazing or pasturing land, an outdoor confinement area or a farm-animal yard.
22. The establishment and operation of a liquid hydrocarbon pipeline. O. Reg. 385/08, s. 3; O. Reg. 206/18, s. 1.

## 1.2 Addition of “Pipelines” as a local threat in the CTC SPP 2015 – IPZ-3

Initially, circa 2004 when the SWP program was being designed, the focus was on groundwater sources. This was as the attention was on the Walkerton tragedy (2000) and the multiple barriers that had failed during the incident. The technical rules primarily focused on groundwater science (as associated with the prescribed activities) and the vulnerability scoring technical direction for surface water sources resulted in no drinking water threats for Great Lake sources. Pipeline threats were not listed for groundwater nor surface water sources. The CTC SPC, however, expressed concern regarding threats to Lake Ontario given that it is the most important and largest source of drinking water serving a large percentage of Ontario’s population. Hydrocarbon pipelines are located within the developed areas of the CTC SPR.

## 1.3 Event-based modelling

During the CTC SPC deliberations, the Committee urged the Province to consider additional threats that could impact the GTA’s largest source of drinking water, Lake Ontario.

The Province subsequently developed technical rules to allow for event-based modelling to determine threats to drinking water from surface water sources including the Great Lakes. The CTC together with the Province and other SPRs situated along Lake Ontario initiated the Lake Ontario Collaborative (LOC).

The LOC developed a 3-D model of the Lake, listed and simulated with various spill volumes, spill scenarios based on actual North American examples. The team calculated time-of-travel data from the spill site to the water treatment plant and concentrations of contaminants at the intake, all to determine the threats to these sources and to prepare policies to prevent such scenarios from actually occurring. The scenarios were linked to contaminants associated with the Provincial prescribed activities. The following scenario was selected for hydrocarbon pipelines: *A spill of gasoline/refined product from large pipelines co-located with the Ontario Power transmission corridor across the North part of the GTA where the pipeline crosses under the watercourses and which would discharge to the major tributaries flowing south to the north shore of Lake Ontario.*

For the pipeline scenario, ruptures in the pipe at water crossings in the CTC were simulated using HEC-RAS (a River Analysis System developed by the Hydrologic Engineering Center of the US Army Corps of Engineers) to calculate the time of travel from the point of stream crossing to Lake Ontario and then a MIKE-3 Lake Ontario model to estimate the concentration at the intake. The pipelines used typically range in size between 150 and 760 millimetres and carry hydrocarbon products such as gasoline and jet fuel or crude oil. A rupture of a pipeline may occur due to corrosion of the pipes, stresses due to ground movements such as stream bed washout under the pipe, and third-party damage, such as contact during excavation.

The indicator modelled parameter of concern for the LOC scenarios was benzene and the raw water quality threshold used for assessing the threat from benzene was the ODWS at the time (0.005 mg/l). It should be noted that the Ontario Drinking Water Quality Standard for benzene was changed in 2015 to 0.001 milligrams per litre (O.Reg. 373/15 under the *Safe Drinking Water Act, 2002*).

The selected LOC spill scenarios were based on “real” events that have occurred in the past. The pipeline spill scenario events used for the LOC are based on the Enbridge pipeline rupture event that occurred near Kalamazoo, Michigan during the summer of 2010. Details regarding the spill scenario characteristics and how the model (MIKE-3) was calibrated and validated were informed by the Michigan spill. The pipeline policies are designed to mitigate and eliminate risks to the municipal drinking water systems from pipeline ruptures along the lines as they traverse major water bodies that lead into Lake Ontario where the drinking water intakes for the CTC are located.

The simulations that resulted in concentrations above treatment capacities (requiring plant shut-downs or alternate source needs) were listed as Intake Protection Zone-3 threats and these zones were delineated for policy implementation. Policies include contingency plans, emergency response and notification upgrades.

The Ontario Drinking Water Standard (ODWS) change for benzene does not dictate a revision of the IPZ-3s in the Assessment Reports. The IPZ-3s in the CTC have been maintained. Updates to the IPZ-3s are optional and at the discretion of the Lake Ontario Collaborative Group. It is believed that maintenance of a higher level of conservatism for the historical ODWSs may be prudent.

The Lake Ontario Working Group per the CTC policies specifically LO-G-2, has been working on the enhancement of the Mike-3 model used in the event-based modelling to identify significant threats and delineate the IPZ-3s in the CTC (2015). The LOC group recently launched a Lake Ontario Water Quality Forecasting System (LOWQFS) which the municipalities of Durham, Toronto, Peel and Halton are now using to assess spills and forecast impacts to the Lake Ontario intakes. The LOWQFS is currently being demonstrated to several agencies including the MECP’s Spills Action Centre (SAC). The SAC is encouraged to utilize this tool to enhance Emergency

Response Protocols for all types of spills including liquid hydrocarbon pipelines. A general policy to recommend the use of this tool is advisable (proposed policy LO-G-5).

#### 1.4 Addition of a new Prescribed Threat by the Province in 2018

With the Provincial addition of hydrocarbon pipelines as a Provincial prescribed activity that could pose a threat to drinking water sources, the Province updated the Drinking Water Threats table which outlines all of the circumstances under which this activity may represent a threat. The technical framework sets out the following circumstances for specified chemicals in any quantity transported by pipelines: pipelines above ground or above a water body, pipelines below ground and not crossing underneath a water body, and pipelines below ground within or under a water body (MECP, 2021). The *Clean Water Act, 2006* requires that all such circumstances that result or could result in the existence of a significant threat must be acted on to reduce and eventually eliminate the threat. Policies are developed to achieve this goal.

#### 1.5 What is the concern regarding Liquid Hydrocarbon Pipelines?

Petroleum Hydrocarbons (PHCs), also known as fossil fuels benefit society by providing fuel for transportation (gasoline, jet fuel), heating and the manufacture of goods but they also can cause environmental issues during extraction, production, transportation, and consumer usage. The contaminants of concern with respect to potential liquid hydrocarbon pipeline threats are benzene, toluene, ethylbenzene, and xylene (collectively known as BTEX), and petroleum hydrocarbons F1 (nC6-nC10), F2 (>nC10-nC16), F3 (>nC16-nC34), F4 (>nC34). Most petroleum hydrocarbon constituents are toxic to some degree (CCME, 2001). Those that have lighter molecular weights, such as BTEX compounds, dissolve more readily, are mobile, and can flow within groundwater or surface water for great distances. Those with heavier molecular weights are persistent in the environment, dissolving and degrading very slowly. Benzene is a known carcinogen, while toluene, ethylbenzene, and xylenes are less toxic. (HHSPA, p. 282, 2022).

Crude oil moves from petroleum wellhead to refinery using barges, tankers, over land, pipelines, trucks, and railroads. The transportation of liquid hydrocarbons via pipelines in Canada is considered as the safest and most efficient way to transport these substances and this mode is used to transport the majority of product across the province. Eighty-eight percent of crude oil is transported by pipelines in Canada, the balance transported by marine tankers and rail, (Canada Energy Regulator, 2023a). Rail transportation has increased in the last decade, due to pipeline capacity constraints out of western Canada, but pipelines by far are the mode of transportation that moves the largest volume of liquid hydrocarbon products. Canadian Energy Pipeline Association member companies transport 3 million barrels per day (HHSPR, P. 282, 2022)

There are multiple pipeline companies that operate liquid hydrocarbon pipelines in the CTC SPR. Enbridge Lines 9 and 8 crude oil pipeline which runs from Sarnia in Ontario to Montreal, and Trans-Northern that transports products such as gasoline, diesel fuel, aviation fuel and

heating fuel west from Montreal to Toronto and from Nanticoke (on Lake Erie) to Toronto. The pipeline operates bi-directionally between Toronto and Oakville, Ontario. Sun-Canadian, Imperial Sarnia Products Pipeline (Hamilton to Finch terminal), and Enbridge's Line 8 also transport products such as gasoline, diesel, heating oil and jet fuel within the CTC SPR. Trans-Canada has segments of pipeline that traverse Ontario (the Eastern triangle Parkway line and the Iroquois line) but these are natural gas pipelines that are not captured by the Clean Water Act, 2006. The CER maintains an [interactive pipeline map](#) with various attribute data including incident reports.

Pipeline design and operation is strictly regulated in Canada and Ontario. The Canada Energy Regulator (CER) and Ontario Energy Board (OEB) maintain strict controls and records to manage safe operation and transmission of petroleum products and natural gas. The CER is the main oversight body whose role is to review pipelines, energy development and trade, share energy information and enforce safety and environmental standards internationally and inter-provincially. The OEB is Ontario's independent energy regulator that oversees how energy companies operate in Ontario. Their responsibilities include the setting of delivery rates, approval of new electricity transmission lines and natural gas pipelines, and the establishment and enforcement of rules for Ontario based energy companies. The OEB is mainly concerned with natural gas and has little jurisdiction over hydrocarbon pipelines, but it does produce guidelines with respect to environmental reporting relevant to pipeline companies.

Petroleum hydrocarbon products are essential to the development and maintenance of our communities (primarily for power supplies, heating/cooling and transportation). Our cities and population continue, however, to grow and with said growth, the demand for fuel increases. The CTC SPC is concerned with potential incidents (spills and leaks) associated with the existing pipelines that could impact precious drinking water supplies as well as the potential for catastrophic accidents. Questions regarding the age, size and location of the pipelines and associated infrastructure with respect to the developed areas and the proximity to vulnerable drinking water sources have increased. In spite of strict regulations and the CTC policies, whenever there is a major incident in Ontario, there is renewed discussion regarding whether we are doing enough to safeguard our drinking water supplies.

The CER monitors and reports incidents at CER regulated pipelines and facilities<sup>2</sup>. Twelve incidents were reported between Feb. 2022 and Feb. 2023. Primarily spills (release of substance) are reported, as a result of operation beyond design limits and fire. Volumes were small.

Because hydrocarbon pipelines were already listed as a threat (local) with policies in the CTC, this paper is to review the current policies (Specify Action policies directed at the Province: LO-G-1, LO-G-2, LO-G-3, LO-G-4 and LO-PIPE-1) for efficacy, to determine whether there are gaps

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<sup>2</sup> See [CER'S Pipeline Incident dashboard](#).



or emerging issues that need to be addressed, to review pipeline governing legislation and what is being done in other jurisdictions but most importantly, to consider the circumstances now listed in the updated 2021 Provincial Drinking Water Tables to ensure that all circumstances have been addressed or whether new or revised policies are required.

## 2 Discussion

### 2.1 Hydrocarbon Pipelines

There are several hydrocarbon pipelines that traverse the CTC SPR that are used to provide and transport fuel to major cities across the Province. As noted, the major lines in the CTC are operated by Trans Northern Pipelines Inc. and Enbridge Pipelines Inc. Sun-Canadian and Imperial Oil Sarnia Products also transport products such as heating oil and jet fuel within the province. These pipelines are governed by the Federal Canada Energy Regulator (CER). The main function of the CER is to keep energy moving safely and efficiently through pipelines and power lines. Operators must adhere to strict requirements related to operations, consultation, safety, maintenance, monitoring and reporting. Hydrocarbon pipelines are regularly monitored and inspected (remotely and locally) to confirm their integrity. Integrity digs are conducted where pipelines are older and/ or are located in vulnerable locations such as stream valley crossings, environmentally sensitive areas (ESAs) and source protection vulnerable areas. Digs, for the most part, are prioritized based on pipeline integrity gauge results. Transportation of fuel via pipeline in spite of documented spills, is still regarded by experts as the safest way to transport these products.

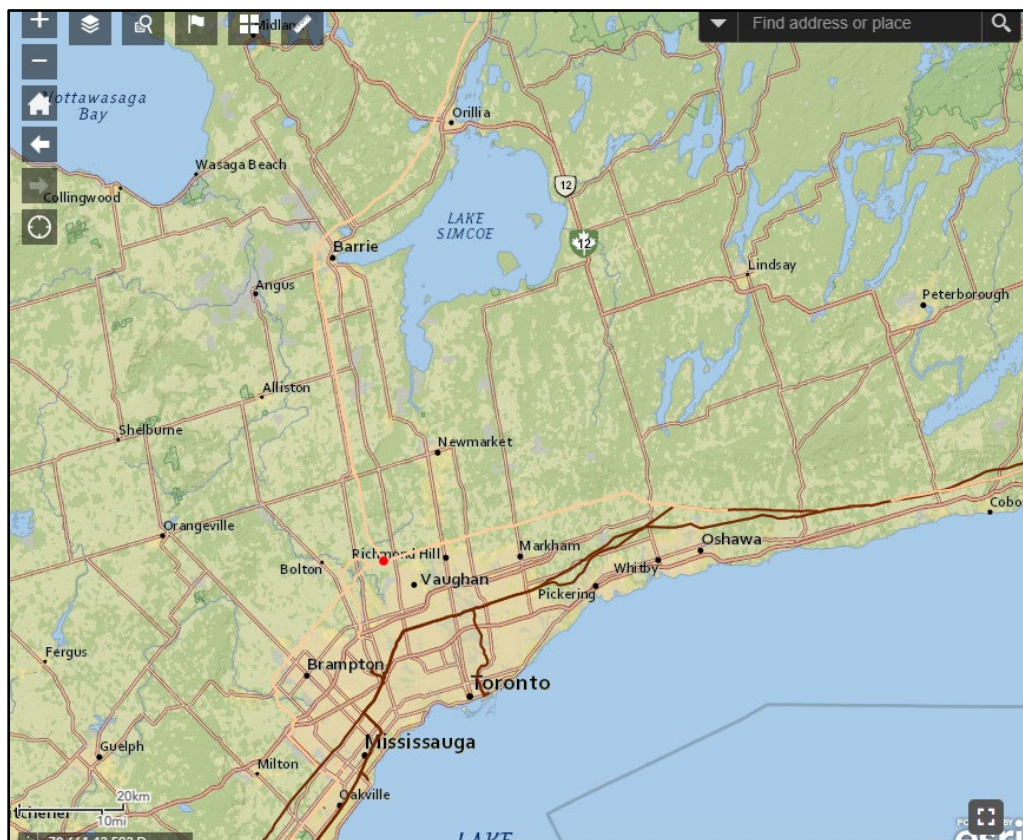


Figure 1. GTA clip of Hydrocarbon Pipeline mapping from the CER website (CER, 2023b)

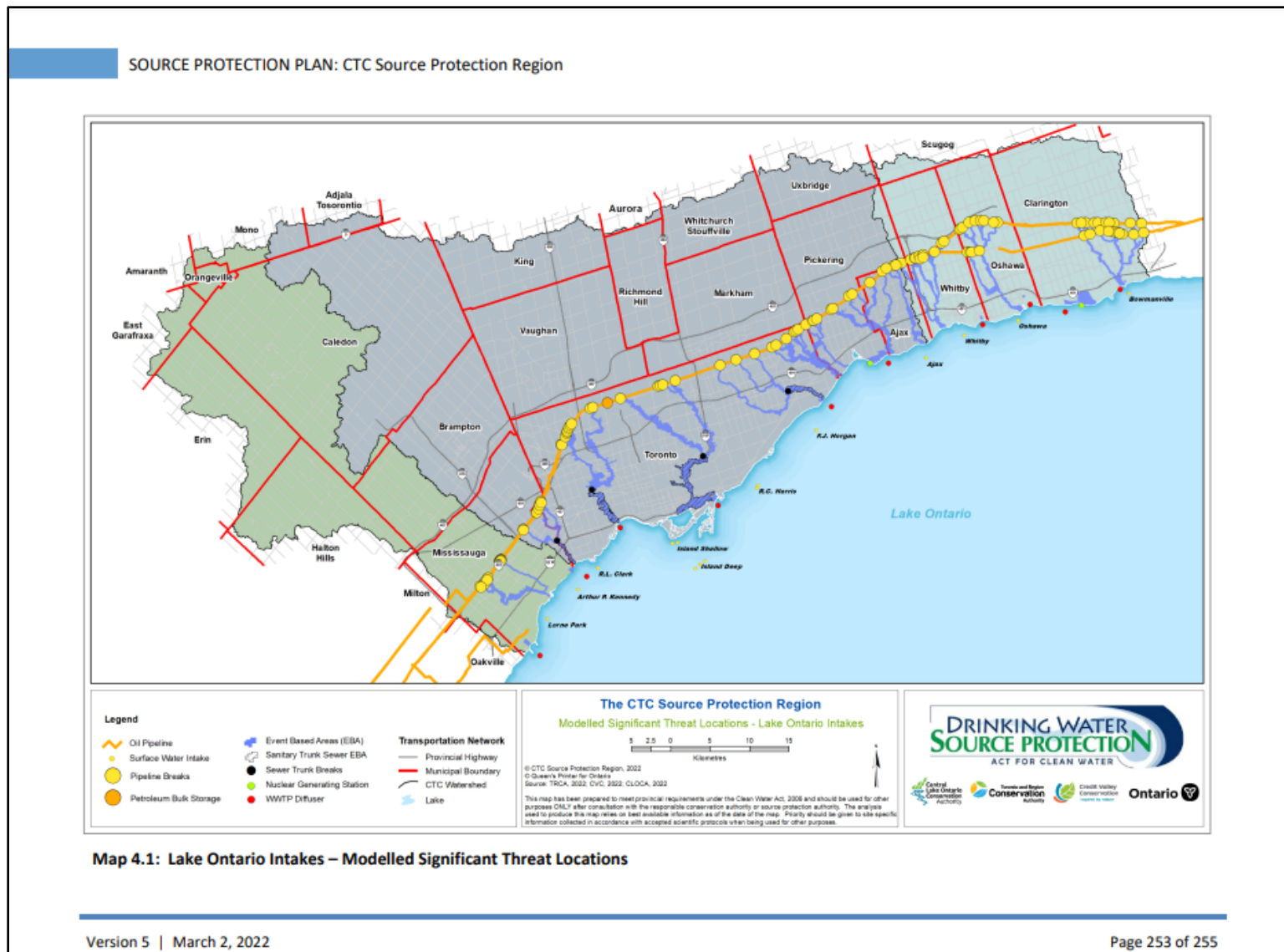


Figure 2. Map 4.1 – CTC Source Protection Plan 2015 showing the location of pipeline related IPZ-3s (CTC SPC, 2022)

The pipeline IPZ-3 simulations performed by the LOC for the CTC SPR resulted in significant pipeline rupture threats at CTC water treatment plants from potential ruptures at 16 creeks or rivers located in the CTC and neighbouring SPRs (16 Mile and Joshua Creeks (HHSPA); Credit River, Etobicoke Creek, Humber River, Don River, Highland Creek, Rouge River, Petticoat Creek, Duffins Creek, Carruthers Creek, Lynde Creek, Oshawa Creek, Bowmanville Creek (CTCSPR); and Wilmot Creek and Graham Creek (GRSPA).

## 2.2 Changes to pipeline circumstances in the Drinking Water Tables

The Province added the establishment and operation of a liquid hydrocarbon pipeline as a prescribed threat in 2018 and following updated the Drinking Water Tables to include the circumstantial details with the associated chemicals and levels of threat. The threat is associated with pipelines that were subject to the National Energy Board Act (since repealed and replaced by the *Canada Energy Act*) and O. Reg 210/01 under the *Technical Standards and Safety Act, 2001*, where a rupture and release results in the presence of certain chemicals in ground or surface waters. The chemicals of concern include various classes of petroleum hydrocarbons and BTEX compounds. Risk level (Significant, Moderate or Low) is determined by the vulnerability zone/ score. The circumstances for significant threats (which *must* be addressed at the very minimum) are captured in the following table.

Threat 22: The pipeline is designated for transmitting or distributing to terminals and distribution centres listed as Conveyance of a liquid hydrocarbon by a pipeline within the meaning of O. Reg. 210/01 or the CER Act.

**Table 1. Circumstances for significant threats**

Vulnerable Zone/ Score, Circumstance	Risk level
IPZ-1 (10) where the pipeline is above ground or above a water body	Significant
IPZ-1 (9), IPZ-2 (9), IPZ-3 (9), WHPA-E (9) where the pipeline is above ground or above a water body	Significant
WHPA-A (10), WHPA-B (10) where the pipeline is below ground and is not crossing underneath a water body	Significant
IPZ-1 (10) where the pipeline is below ground and is crossing within or underneath a water body	Significant
IPZ-1 (9), IPZ-2 (9), IPZ-3 (9), WHPA-E (9) where the pipeline is below ground and is crossing within or underneath a water body	Significant
WHPA-A (10), WHPA-B (10) where the pipeline is below ground and is crossing within or underneath a water body	Significant
WHPA-A (10), WHPA-B (10) where the pipeline is above ground or above a water body	Significant

In addition, there are 18 and 32 vulnerable area threat categories (45 and 76 circumstances respectively) where the threat is moderate (WHPA-B to D Scores 8, WHPA-E Scores 9-6.4 and IPZ scores 10-6.4) or low (WHPA-B to D Scores 6, WHPA-E Scores 8.1-4.5, IPZ scores 8.1-4.5 and HVAs score 6), associated with lower vulnerability scores in the various zones including HVAs

and where the pipeline passes (above, below or within waterbodies) similar to the circumstances for significant threats.<sup>3</sup>

The CTC SPR has had hydrocarbon pipelines as a local threat since its first SPP in 2015. Per Technical Rules 68, 69 and 70, the circumstances were associated with event-based modelling conducted by the Lake Ontario Collaborative to assess threat to the intakes located in Lake Ontario. As noted, ruptures were simulated where the pipeline traversed a major stream, and a spill was modelled to determine the potential concentration that the compounds would be at the intakes in Lake Ontario.

The Ontario Drinking Water Standard (ODWS) threshold was used and any spill that resulted in a concentration above the threshold was deemed a significant threat. There were no pipeline location specific circumstances associated with the original scenarios. The introduction of the Provincial circumstances now requires the CTC SPR to review whether any of these new circumstances that are associated with the location of pipelines within vulnerable zones exist within the jurisdiction and to develop policies if and where they do or may be located in the future and result in a significant threat. It is also worth noting that Conservation Ontario strongly encourages the CER to consider including a requirement for pipeline owners to notify SPAs when a company plans to move and/or permanently end the operation of a liquid hydrocarbon pipeline or as the CER Act refers to it as, “leave to abandon” the pipeline. The CTC may consider similar language as a trigger in one of the newly proposed policies.

## **CTC IPZs**

The CTC IPZ-1 s are all located within Lake Ontario with the exception of the Oshawa WTP, R.L. Clark and Toronto Island (shallow) intake which extends partially onto the land. All of the IPZ-1s and 2s have vulnerability scores that are less than 6 with the exception of the RC Harris and Toronto Island (shallow) intakes in Toronto that scores 6. The IPZ-3s extend from Lake Ontario north to the pipeline crossing and the pipelines do not overlap. There are no IPZ zones within the CTC SPR that have vulnerability scores where a pipeline could represent a significant or moderate threat by the 2021 circumstances and there are no hydrocarbon pipelines that traverse the IPZ 1s, 2s nor overlap the IPZ-3s.

The IPZ-3 pipeline activities are all deemed significant threats per the Director’s Rules approved methodologies. Policies have been developed to address all of the event-based modelled threats in the CTC SPR. No additional threats have been identified for the CTC IPZs for the change in the Director’s Rules.

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<sup>3</sup> These circumstances can be searched and reviewed at <https://threats.swpip.ca/>



## CTC WHPAs

A review determined that there are no hydrocarbon pipelines that traverse any of the CTC WHPAs and thus no circumstance in the 2021 Table of Drinking water threats triggers the enumeration of a pipeline threat in the CTC SPR WHPAs.

## HVAs

There are three 2021 circumstances listed for HVAs (Highly Vulnerable Aquifers – score 6) for conveyance of a liquid Petroleum Hydrocarbon by pipeline. All HVA circumstances are listed as *low* threats to Drinking Water sources. Similar to the significant threats, the circumstances relate to the location of the pipeline (above ground/water body, below ground/not crossing beneath a water body, or below ground and crossing within/beneath a water body).

In the CTC, HVAs were mapped and cover a significant amount of land. This is because of the intrinsic geology with many shallow unconfined aquifers present. A review has determined that though the existing pipelines currently traverse the CTC SPR through mostly low and medium vulnerability areas (south slope physiographic region), there are some areas that are mapped as HVAs that are traversed (Iroquois beach deposits). As these are low threat scenarios that generally do not affect the deeper municipal drinking water sources, no action is recommended for HVAs.

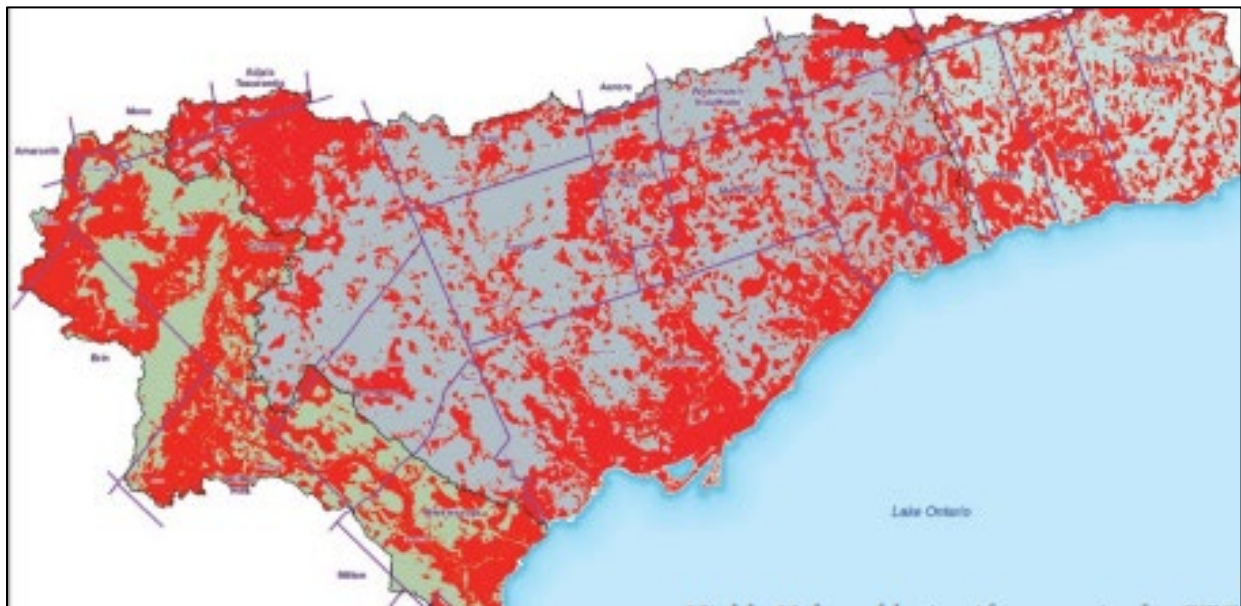


Figure 3. CTC HVA map from CTC brochure (CTC SPR, 2015)

In summary, there are currently no liquid hydrocarbon pipelines that cross wellhead protection areas (WHPAs) where they could pose significant risks. They also do not overlap the IPZ-3s. The pipelines cross highly vulnerable aquifers (HVAs). With the exception of the modelled threats shown to pose significant risks to Lake Ontario sources of municipal drinking water in IPZ-3s,

the existing pipelines do not pose a significant risk in HVAs, IPZ-1s and IPZ-2s and do not overlap the IPZ-3s.

### 2.3 Legislative Instruments and Jurisdiction

The following are a list and description of the most pertinent legislation governing hydrocarbon pipelines in Ontario:

#### **Canadian Energy Regulator Act, 2019.**

The *National Energy Board Act* (R.S.C., 1985, c. N-7) was repealed and replaced with the *Canadian Energy Regulator Act* in 2019. Regulations made under the NEB Act remain in force under the Canadian Energy Regulator Act. The Canada Energy Regulator (CER) was formed on August 28, 2019, when the *Canadian Energy Regulator Act* (CER Act) became law. Every decision or order made by the National Energy Board is considered to have been made under the *Canadian Energy Regulator Act* and may be enforced as such. Every certificate, license or permit issued by the National Energy Board is considered to have been issued under the *Canadian Energy Regulator Act*.

The Canada Energy Regulator (CER) is the agency of the Government of Canada under its Natural Resources Canada portfolio. The CER Onshore Pipeline Regulations (OPR) are made under the Canadian Energy Regulator Act. Companies are responsible for meeting the requirements of the OPR to manage safety, security and environmental protection throughout the entire lifecycle of their facilities, from design, through to construction, operation and abandonment.

The CER's role is to review and make decisions regarding pipelines and power lines in Canada that cross provincial or international boundaries. The agency must consider economic, environmental and social factors in the decision-making process. The CER regulates the pipelines during their full life cycle, from design to end of life abandonment. Currently the CER regulates over 73,000 km of pipeline.

The pipelines of interest in the CTC SPR are the large hydrocarbon fuel transmission pipelines owned and operated by Trans-Northern Pipelines Inc. (crude oil and liquid petroleum products), Enbridge Inc (crude oil - Line 8 and 9), Sun Canadian pipelines and Imperial's Sarnia Pipeline products. These are all regulated by the CER. There are also pipelines operated by Trans-Canada Pipelines Ltd., but these are not covered under the updated Technical Rules definition of hydrocarbon pipelines as they transport natural gas.

#### **Ontario Energy Board Act, 1998**

The *Ontario Energy Board (OEB) Act* is a provincial piece of legislation that establishes the OEB as a regulator of Ontario's electricity and natural gas sectors. Its function is to ensure that the energy sector is reliable and sustainable. It sets rates which include time-of-use rates and also

sets delivery charges. The OEB is mainly concerned with natural gas and has little jurisdiction over hydrocarbon pipelines. Its main role in this regard has to do with guidelines with respect to environmental reporting, for example, the *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Projects and Facilities in Ontario, 8<sup>th</sup> Edition 2023* (Environmental Guidelines) provide guidance to project proponents on how to prepare the Environmental Report that is required by the OEB as part of Hydrocarbon Project applications. Hydrocarbon Projects are defined as those that require approval of the OEB under section 90 or 91 of the *Ontario Energy Board Act, 1998* (OEB Act), and natural gas storage applications under 36.1(1), 38(1), and 40(1) of the OEB Act (Ontario Energy Board, 2023)

## Canadian Standards Association Z662 (CSA Z662)

The latest edition of the CSA Z662 – Oil and Gas Pipeline Systems standard, came into effect in June 2023. The goal of the CSA Z662 is to achieve safety and integrity of a pipeline throughout its lifecycle. The CSA Z662 is adopted into legislation upon its publication, pursuant to provisions of Section 1 of the Canada Energy Regulator Onshore Pipeline Regulations.<sup>4</sup>

Embedded in the CSA Z662 is “the concept of Designated Geographical Areas (DGAs) that is similar in concept to high consequence areas (HCAs) for hazardous liquid pipelines. These HCAs include unusually sensitive areas (USAs) which mean drinking water or ecological resource areas that are unusually sensitive to environmental damage from a hazardous liquid pipeline release.” (P.804, 2023 CSA Z662, June 2023).

According to CER (Clauses 4.3.7.2 to 4.3.7.4 in Z662:19 and Z662:23), CSA Z662 requires that liquid pipeline companies identify, and document DGAs in the vicinity of the pipeline. The criteria for DGA include areas where an incident could disrupt commercial navigational activities, *impact a major drinking water* or food source, where there is a type of sensitive fish species or there are endangered or protected species in the water body through or near which the pipeline may traverse. A DGA may be a water body (including aquifers) that is being used as a major drinking water source that could be impacted by a pipeline uncontrolled release incident and as such heightened protection measures may be required. Regulated companies are required to identify pipeline segments where a release could adversely affect a DGA and consider a number of factors such as the:

- terrain including topography and soil type,
- potential pathways such as waterways or ditches,
- flow characteristics,
- potential release volume,
- and their emergency response plan including capability and time to respond.

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<sup>4</sup> Information from [CSA Group website](#).

Additionally, a more conservative safety factor (known as location factor) must be used when designing liquid pipeline segments that can affect a DGA. This applies to new pipelines. It is not required to be retroactive, thus this will protect areas that are impacted by new pipeline construction. Existing SWP areas are protected by the SPP policies, and these policies may be updated separate to Z662 updates. DGAs have similarities to high consequence areas (HCAs) that have been discussed and considered during the preparation of the inaugural SPPs. Amongst source water protection experts, there is a familiarity with the concept of HCAs, which are heavily populated, environmentally sensitive areas that could be affected by an unintended release of liquid hydrocarbon from a pipeline.<sup>5</sup>

## **Technical Standards and Safety Act, 2000**

The Technical Standards and Safety Authority's (TSSA's) mandate is to help protect the public, environment, and property from fuel-related hazards such as spills, fires, and explosions. They oversee the ongoing operation and maintenance of existing hydrocarbon pipelines. They also ensure that the pipeline integrity programs are carried out by pipeline operators to ensure their safe operation. They have provincial jurisdiction over the safe and responsible handling of petroleum products used as motor or appliance fuels. This includes gasoline, diesel/fuel oil, natural gas, and propane handled at retail outlets, private outlets, bulk plants, and in tank vehicles. The TSSA does not have authority at refineries. The TSSA is responsible for enforcement of the *Technical Standards and Safety Act, 2000*, and its regulations. The Act governs the construction and operation of oil and gas pipelines located entirely within Ontario. Under Ontario Regulation 210/01 – Oil and Gas Pipeline Systems, a license is required from the Fuels Safety Division. The Oil and Gas Pipeline Systems Code supplements this regulation. The TSSA and the Ministry of the Environment, Conservation and Parks share the regulation and enforcement for reporting and clean-up of spills. TSSA is a delegated administrative authority and is accountable to the Province (source: HHSPA).

## **Fisheries Act, 1985**

In general, *Fisheries and Oceans Canada enforces the Fisheries Act*; however, the section that applies to contamination is under the authority of Environment Canada and Climate Change Canada. Section 36(3) of the *Fisheries Act* states that: "no person shall deposit or permit the deposit of a deleterious substance of any type in water frequented by fish or in any place under any conditions where the deleterious substance or any other deleterious substance that results from the deposit of the deleterious substance may enter any such water."

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<sup>5</sup> CSA Z662 - County of Essex\_Ex TAB6\_20200724.PDF;  
<https://www.rds.oeb.ca/CMWebDrawer/Record/682652/File/document>

## Canadian Environmental Protection Act (CEPA) 1999 – Spills – Federal

A spill, as defined in Part X of the Canadian Environmental Protection Act, is a discharge a) into the natural environment, b) from or out of a structure, vehicle or other container; or c) that is abnormal in quality or quantity in light of all of the circumstances of the discharge.

The primary objective for the Act is to help prevent or reduce the risk of spills of pollutants and prevent, eliminate or ameliorate any adverse effects that result or may result from spills. This may include notifying appropriate levels of government as well as the affected members of the public and development of plans. The impacts as well as the outcomes of most spills are directly related to the level of preparedness.

The Canadian Environmental Protection Act is governed by the Federal Environment and Climate Change Canada (ECCC). The department's program focus reflects the interdependence between environmental sustainability and economic well-being.

Under the Department of the Environment, the powers, duties and functions of the Minister of Environment and Climate Change extend to matters such as:

- *the preservation and enhancement of the quality of the natural environment, including water, air and soil quality, and the coordination of the relevant policies and programs of the Government of Canada*
- renewable resources, including migratory birds and other non-domestic flora and fauna
- meteorology; and
- the enforcement of rules and regulations

The ECCC department delivers its mandate through acts and regulations, such as the Canadian Environmental Protection Act, 1999 (CEPA 1999), the pollution prevention provisions of the Fisheries Act, the Federal Sustainable Development Act, the Species at Risk Act, the Migratory Birds Convention Act, 1994, the Canada Wildlife Act, and the Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act.

## Environmental Protection Act R.S.O. 1990, c. E. 19

The Environmental Protection Act is the primary pollution control legislation for environmental protection in Ontario and can be used together with the Ontario Water Resources Act. It grants the Ministry of the Environment, Conservation and Parks broad powers to deal with the discharge of contaminants causing negative effects. The legislation prohibits discharge of any contaminants into the environment that cause or are likely to cause adverse effects. Amounts of approved contaminants must not exceed limits prescribed by the regulations. The Act also requires that spills of pollutants are reported and cleaned up promptly. The Environmental Protection Act also has the authority to establish liability on the party at fault. One section of the Act imposes a duty on corporate officers and directors to take all reasonable care to



prevent the corporation from causing or permitting unlawful discharges of contaminants into the natural environment.

## **The Spills Action Centre - Ontario**

Under the Environmental Protection Act (EPA), it is the duty of the owner or controller of a spilled pollutant to clean up a spill. They must do everything that is practical to prevent and eliminate the negative effects from a spill, including restore the natural environment to its original state. The Spills Action Centre (SAC) handles reports of spills, adverse drinking water results and environmental concerns from the public. SAC operates a 24-hour, province-wide, toll-free telephone reporting service. SAC tracks and follows up on required cleanup activities, provides advice and information related to spills or environmental incidents, coordinates a response with other agencies, if needed and initiates government response when required. SAC operates under the EPA. Spills and upsets that cause an adverse effect, spills that are likely to enter or enter any waters, as defined in the Ontario Water Resources Act, directly or through drainage structures, or spills of greater than 100 litres on land accessible by the public shall be immediately reported to the Ministry's Spills Action Centre and the offending Company shall take appropriate remedial action to limit the impact.

The Spills Action Centre is under the Ontario Ministry of Environment Conservation and Parks and has access to the Source Protection Program data and maps (also under the governance of the MECP). The SAC is fully aware of highly vulnerable drinking water areas. Discussions with SAC personnel revealed that in the event of a pipeline spill, SAC contacts all relevant parties including the pipeline owners, ECCC, the relevant Source Protection Regions, OPP, relevant federal and provincial agencies and the municipalities. The Source Water Protection maps and data are reviewed and provided to the emergency response teams, if the spill could impact such areas, to inform any special procedures that would be deemed necessary or prudent.

Along with the Province, municipalities, the SAC and Pipeline companies all have been provided with the Source Water Protection data and mapping. As these agencies have Emergency Response Plans and protocols including those that apply to hydrocarbon pipelines, without becoming too prescriptive, it may be prudent to upgrade the LO-G-1 policy to require these agencies to include vulnerable zones and emergency protocols related to drinking water sources in their emergency response plans and this should apply to all existing and future pipelines.

## **Municipal Dangerous Goods Spill Response Plans**

Generally, under these plans, the municipalities will respond to a spill if safe to do so to ensure the protection of public health and safety as well as the environment. For clean-up activities, the municipality's role is one of monitoring and, where necessary, enforcement, to ensure appropriate steps are taken by the responsible party to clean up spills. Those responsible for causing the spill are responsible for cleaning it up. Most municipalities in the GTA have

Dangerous Goods Spill Response plans or similar bylaws or policies (pollution prevention and Cleanup, fire protection and life safety, flood plain designation and protection, public works aid agreements).<sup>6</sup>

### 3 Conclusion

Per the Technical Rules, a Source Protection Plan must develop policies for prescribed activities where such activity is or could be a significant threat. During the development of the inaugural CTC SPP in 2015, the SPC discussed this potential threat in detail and consulted extensively with pipeline owners, the NEB (now the CER) and OEB regarding drinking water source protection concerns. Staff reviewed pipeline monitoring, maintenance, and design element documents, attended emergency response drills, pipeline river crossing monitoring exercises and pipeline integrity digs. The SPC was also presented with summaries of the regulatory framework. The pipeline companies are required to inspect pipelines and regulatory agencies conduct audits. The SPC, while noting that the industry was already highly regulated, instructed staff to add a pipeline rupture spill to the list of scenarios for the IPZ-3 event-based modelling. A significant threat was determined, and this item was added as a local threat to the CTC SPR list of threats and policies developed (LO-PIPE-1, LOC-G-1, and LOC-G-2) to ensure that Emergency Response Plans consider Source Water Protection data. No additional significant threats have been determined in the CTC SPR through the vulnerability-based approach, related to the 2018 addition of liquid hydrocarbon pipelines to the Provincial list of prescribed threats. This review has determined that hydrocarbon pipelines currently only pose a low threat in the CTC in HVAs, except where the threat is identified under IPZ-3 event-based studies.

It has also been established that there are already several Federal and Provincial instruments that currently address the fundamental concerns of source water protection through their provisions and emergency response plans that have been upgraded and include consideration of drinking water sources. Municipalities are also very well aware of Source Water Protection vulnerable areas and are the same agencies charged with emergency response on-the-ground action.

Sections 31 (1) and 40 (7) of O. Reg. 287/07 indicate that if the SPC concludes that where there is no existing significant threat and no reasonable prospect that the activity will ever be engaged in (O. Reg 206/18, s.2), the SPP may exclude a policy to address the prescribed threat. Per Section 40 (7), an explanation of the decision must be included in the Explanatory Document. The MECP has further clarified these requirements indicating that for threats related to water quality, if the Assessment Report indicates that any specific activity or condition cannot be a significant drinking water threat in an area based on the vulnerability, then policies are not required as the activity cannot become a significant threat now or in the future. This does not mean that a policy is not required for a prescribed activity just because

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<sup>6</sup> See the spill response webpage for the [City of Toronto](#) and the [City of Mississauga](#).

the SPC thinks the activity will not take place in the future. If the Assessment Report identifies areas where the activity is or would be a significant drinking water threat then a policy is required, regardless of whether or not someone would engage in the activity so that it triggers a circumstance and becomes a significant threat.

Considering that the CTC SPR is an area of growth with a growing population and with it a continued demand for liquid hydrocarbon products, that it is an area where pipelines currently exist and with many vulnerable source water protection areas, it is reasonable to assume that there will be modifications to existing pipelines and additional or larger pipelines may be constructed in the future. The current CTC pipeline policies were developed to address the specific event-based modelled threats regarding ruptures of the pipelines across tributaries leading into Lake Ontario but the vulnerability score-based circumstances in the updated 2018 Technical Rules are currently not addressed for future threats. It is recommended that similar to neighbouring SPRs, a few additional policies should be developed to address these potential future threats for this now established Provincially prescribed threat. These policies should also drive awareness and ensure that Risk Assessment, Emergency protocols and plans all include drinking water source mapping and data for special considerations.

It may be noted that the HHSPA's SPC supported the principle of relying upon the extensive regulatory regime already in place, to address this threat; given that the pipeline that was modelled to assess significance of the threat is federally regulated and because there are very limited tools available for policies regarding federally regulated facilities. Other neighbouring SPRs have similar conclusions. The HHSPA, however, developed 6 new policies to address the new prescribed threat and these policies replaced the original inaugural pipeline policies. CTC staff agree with this position and recommend similar updates to the CTC SPR pipeline policies.

## 4 Recommendations

It is recommended that the CTC SPC continues to rely on the existing Federal and Provincial oversight and legislative instruments in the management of this threat. Having said this, additional policies (6) to address the new provincially prescribed liquid hydrocarbons where they could become a significant threat are advised. In adjacent Source Protection Regions (HHSPA), their original pipeline policies were replaced with new policies similar to these recommended. While it is believed that these new draft policies are more overarching to address all potential pipeline related threats, the existing LO-PIPE-1 was developed by the CTC SPR to address event-based modelling supported significant threats and should be maintained with its specific requirements. The CTC should consider adding the CER and OEB as implementors to policy LO-PIPE-1.

LO-PIPE-1 as a whole and its individual clauses may need to be reviewed by policy analysts to check for redundancies or duplication with the newly proposed policies. The newly proposed policies are broader 'higher level' policies, respecting that oversight agencies maintain responsibilities but still requiring accountability through reporting.

New LO-G-5 and GEN-9 policies are recommended to encourage the Province and other parties to provide related spills data for support of localized technical analyses.

It is also recommended that current LO-G policies are expanded to improve awareness of sensitive drinking water areas and Source Water Protection policies for spill response planning. These proposed amendments to the LO-G policies are also from the *Consideration of Transportation of Dangerous Goods* discussion paper. Both discussion papers should be considered together to understand proposed policy changes.

Refer to **Table 2** for the full policy text of the new draft policies and **Appendix A** for proposed amendments to existing policies. New policy text is highlighted in yellow.

Table 2. The Establishment of a liquid hydrocarbon pipeline (Provincially prescribed threat 22) **NEW** draft proposed policies

Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policy
PIPE-G-1 Specify Action	Establishment of a liquid hydrocarbon pipeline	CER, TSSA	K	Where the establishment and operation of a liquid hydrocarbon pipeline is an existing significant drinking water threat, the Canada Energy Regulator and Technical Standards and Safety Authority are recommended to ensure that their regulatory requirements manage liquid hydrocarbon pipelines through appropriate design standards (including the location of safety valves), monitoring, maintenance (including integrity management programs) and other relevant practices, such that drinking water sources are protected. (reference HHSPA, Nov, 22, T-62-S)	EBA See Map 4.1	Existing – The existing significant threat activity is located about 12 kms from the Lake Ontario shoreline	LO-PIPE-1 LO-G-1 LO-G-2	MON-4 PIPE-G-6
PIPE-G-2 Specify Action	Establishment of a liquid hydrocarbon pipeline	CER, OEB	K	Where the establishment and operation of a liquid hydrocarbon pipeline could become a significant drinking water threat, the Canada Energy Regulator and Ontario Energy Board in their consideration of a liquid hydrocarbon pipeline application are recommended to ensure that the applicant has complied with and included appropriate design standards (including the location of safety valves), monitoring, maintenance (including integrity management programs) and other relevant practices, that when implemented will prevent a pipeline from becoming a significant drinking water threat. (reference HHSPA Nov 22, T-63-S)	EBA (no scores) See Map 4.1, WHPA-A & B - V. score 10, WHPA-E - V. score 9	Future	LO-PIPE-1 LO-G-1 LO-G-2	MON-4 PIPE-G-6
PIPE-G-3 Specify Action	Establishment of a liquid hydrocarbon pipeline	Liquid Hydrocarbon pipeline owners	K	Where the establishment and operation of a liquid hydrocarbon pipeline is or could be a significant threat to drinking water sources, liquid hydrocarbon pipeline owners are requested to use threats risk assessment information from assessment reports approved under the Ontario Clean Water Act, 2006 and relevant watershed information while developing and updating emergency planning zones (EPZs) and designated geographical areas (DGAs). (Modified to remove moderate and low threats – reference HHSPA Nov 22, T-64-S)	EBA (no scores) See Map 4.1, WHPA-A & B - V. score 10, WHPA-E - V. score 9 <b>Note HHSPA included MODERATE threat areas/scores</b>	Existing Future	LO-PIPE-1 LO-G-1 LO-G-2	MON-4 PIPE-G-6
PIPE-G-4 Specify Action	Establishment of a liquid hydrocarbon pipeline	Liquid hydrocarbon pipeline owners and owners	K	Where the establishment and operation of a liquid hydrocarbon pipeline is or could be a significant threat to drinking water sources, to Lake Ontario municipal intakes, facility owners are requested to update emergency preparedness/contingency plans to include the location of municipal intakes, actions to be taken to protect drinking water sources should an incident occur, and the requirement for inclusion of the protection of drinking water sources in emergency preparedness exercises. (Modified to remove storage of fuel - reference HHSPA Nov 22, T-65-S)	Event-based IPZ-3 (no scores) See Map 4.1; Pipelines: WHPA-A, B - V. score 10, WHPA-E - V. score 9	Existing Future	LO-PIPE-1 LO-G-1 LO-G-2	MON-4 PIPE-G-6
PIPE-G-5 Specify Action	Establishment of a liquid hydrocarbon pipeline	Ministry of the Environment, Conservation and Parks	K	Where the establishment and operation of a liquid hydrocarbon pipeline is an existing significant threat to drinking water sources and or to Lake Ontario drinking water sources, a. the Ministry of the Environment, Conservation and Parks shall ensure that the Intake Protection Zone -3s and the location of Significant Drinking Water Threats data provided to the Spills Action Centre (SAC) are up to date and the Spills Action Centre, if necessary, shall modify procedures to ensure that the operators of all water treatment plants that could be affected by a spill are notified. b. by February 1 of each year, the Ministry of the Environment, Conservation and Parks shall prepare and submit to the Source Protection Authority a report summarizing their actions for the previous year, including the number, type, and location of spills reported within intake protection zones three, adjusted thresholds, and actions taken or recommended to improve the efficiency and effectiveness of the spill reporting system. (Modified language to recognize that SAC is 'under' MECP – reference HHSPA Nov 22 – T-67-S)	Event-based IPZ-3 (no scores)	Existing	LO-PIPE-1 LO-G-1 LO-G-2	MON-4 PIPE-G-6
PIPE-G-6 Education and Outreach	Establishment of a liquid hydrocarbon pipeline	CTC Conservation Authorities	F Monitoring Policy	Where the establishment and operation of a liquid hydrocarbon pipeline is or could be a significant threat to Lake Ontario municipal intakes and groundwater municipal drinking water sources, the CTC Conservation Authorities shall on a biennial basis: a. provide educational awareness sessions on drinking water source protection to interested liquid hydrocarbon pipeline companies; b. provide relevant website addresses for approved assessment reports and the source protection plan and watershed information if available, to liquid hydrocarbon pipeline companies; c. request the Canada Energy Regulator and Technical Standards and Safety Authority to confirm their	Pipeline, threats: Event based IPZ-3 (no scores); WHPA-A, B - V. score 10; and WHPA-E - V. score 9.	Existing Future	LO-PIPE-1 LO-G-1 LO-G-2	



Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policy	
				<p>requirements for liquid hydrocarbon pipelines to manage existing significant drinking water threats;</p> <p>d. request the Canada Energy Regulator and Ontario Energy Board to confirm that their requirements for pipeline design standards, monitoring, maintenance and other relevant practices in vulnerable areas prevents a pipeline from becoming a significant drinking water threat;</p> <p>e. request information updates including new or changes to liquid hydrocarbon pipelines including 'leave to abandon' changes;</p> <p>f. request an invitation from liquid hydrocarbon pipeline owners, to observe emergency preparedness exercises relevant to the CTC Source Protection Region; and request a copy of their emergency preparedness plans when amended to protect municipal drinking water sources. (Modified – Added Leave to abandon per CO recommendation - reference HHSPA Nov 22 – T-68-C)</p>					
LO-G-5	All Spills	MECP CER	K	<p><b>Specify Action (Spill Prevention, Contingency Plans and Emergency Response)</b></p> <p>To protect drinking water sources from potential spills along highways, shipping lanes and railways, that could impact Lake Ontario's drinking water intakes, the Ministry of the Environment, Conservation and Parks and its Spills Action Centre, and the Canada Energy Regulator (CER) shall:</p> <p>Provide all available sampling data associated with a spill that could result in a significant threat to drinking water intakes located in the CTC Source Protection Region to the lead Source Protection Authority and relevant Municipality for use in local analysis and model development.</p> <p>Consider the use of data for watersheds and 'sewershed and outfall location data' for flow analyses maintained by the Conservation Authorities and;</p> <p>Consider the use of data for newly established Lake Ontario monitoring stations as well as enhanced tools such as the Lake Ontario Water Quality Forecasting System developed by the Lake Ontario Working group.</p>	IPZs	Existing & Future: Consider within 2 years	LO-G-2	MON-4 PIPE-G-6	
GEN-9	All Spills	MECP CER	K	<p><b>Specify Action (Spill Prevention, Contingency Plans and Emergency Response)</b></p> <p>To protect drinking water sources from potential spills along highways, shipping lanes and railways, that could impact the CTC Wellhead Protection Areas, the Ministry of the Environment, Conservation and Parks and its Spills Action Centre, and the Canada Energy Regulator (CER) shall:</p> <p>Provide all available sampling data (including that from third parties) associated with a spill that could result in a significant threat to Wellhead Protection Areas located in the CTC SPR to the lead SPA and relevant Municipality for use in local analysis and model development.</p> <p>Consider the use of data for watersheds and 'sewersheds' for flow analyses maintained by the Conservation Authorities.</p>	WHPAs	Existing & Future: Consider within 2 years	LO-G-5 (new)	MON-4	

## 5 References

Canadian Council of Ministers of the Environment (CCME). (2001). [Backgrounder – Petroleum Hydrocarbons in Soil – Canadian-Wide Standards \(CWS\)](https://scics.ca/en/product-produit/backgrounder-petroleum-hydrocarbons-in-soil-canada-wide-standard-cws/). <https://scics.ca/en/product-produit/backgrounder-petroleum-hydrocarbons-in-soil-canada-wide-standard-cws/>

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## Appendices

**Appendix A: Proposed Amendments to 2015 CTC SPP Pipeline Policies**

Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policy
LO-PIPE-1	Pipelines Transporting Petroleum Product (Containing Benzene) Crossing Tributaries of Lake Ontario	MECP CER OEB	K	Specify Action (Spill Prevention, Contingency Plans and Emergency Response) Where event based modelling has shown that a spill from a petroleum pipeline system reaching a tributary would be a significant drinking water threat and where the establishment and operation of a liquid hydrocarbon pipeline is or could be a significant threat to drinking water sources, the Ministry of the Environment, Conservation and Parks, the Canada Energy Regulator (CER) and Ontario Energy Board (OEB) should work with facility owners and provincial and federal regulators to develop, review and recommend necessary improvements to existing spill prevention, spill management, risk reduction, and Contingency Plans to ensure the following: a) plans are based on the depth of ground cover at surface water crossings; b) spill response time frames are established; c) responsibilities of first responders are established to ensure a prompt unified regulatory command structure to manage the spill response; d) notification protocols are established jointly with the Spills Action Centre to ensure direct notification to all potentially affected water treatment plant operators and appropriate communication to the public and media; e) notification protocols are established for significant threat activities to ensure the water plant operators are notified appropriately for a given magnitude of spill; f) that information is communicated to all responsible parties (e.g., the originators of the spill, emergency response/clean-up personnel, medical officer of health, municipal water owner and water operating authority) who are responding to the spill; g) that there are appropriate spills response plans for each crossing; h) that appropriate pipeline system failure and shut down measures and policies are included; i) a review is undertaken on the depth of ground cover over the pipeline at each crossing, including an assessment of erosion and flood risk; j) that the facility owner provides assurance concerning the integrity of their infrastructure to prevent spills where these could be a significant drinking water threat; k) that a report on the inspection of the pipeline crossings at each tributary is provided to the Source Protection Authority; l) that the pipeline design and operational best management practices are in place (including potential additional design and operational best management practices); m) that any new or expansions or pipeline replacements are constructed to meet current best design criteria; and n) a provision is included in the Contingency Plan that the facility owner work with the Office of the Fire Marshal and Emergency Management to ensure that testing of the Contingency Plan is carried out within 3 years from the date the Source Protection Plan takes effect, followed by regular (frequency and priority to be determined in consultation) emergency response preparedness exercises to address the significant threats identified.	EBA See Map 4.1	Existing & Future: Consider within 2 years (T-15) unless otherwise specified in the policy	LO-G-1 LO-G-2	MON-4
LO-G-1	All Lake Ontario Threats	MECP	K	Specify Action (Spill Prevention, Contingency Plans and Emergency Response) To protect drinking water sources from potential spills along highways, shipping lanes and railways, the Ministry of the Environment, Conservation and Parks shall: a) in consultation with the Spills Action Centre and other appropriate bodies, update notification protocols for spills to ensure direct notification of all potentially affected water treatment plant operators and appropriate communication to the public and media; b) in consultation with the Spills Action Centre and the affected municipalities, review the notification protocol for significant threat activities and adjust the protocols as required to ensure that water plant operators are notified appropriately for a given magnitude of spill; c) ensure that information is communicated to all responsible parties (e.g., the originators of the spill, emergency response/clean-up personnel, medical officer of health, municipal water system owner and water system operating authority) who are responding to the spill; and to ensure that source	EBA See Map 4.1	Existing & Future: Consider within 2 years (T-15) unless otherwise specified in the policy	LO-NGS-1 LO-SEW-1 LO-SEW-2 LO-PIPE-1 LO-FUEL-1	MON-4



Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policy
				<p>water protection drinking water area maps and data are included in pipeline route planning exercises, all existing and future emergency response plans and protocols;</p> <p>d) in consultation with the owners and operators of municipal drinking water systems, require that a Contingency Plan is developed, reviewed and/or updated under the Drinking Water Quality Management Standard to ensure that significant drinking water threats identified in the Assessment Report are included and amend the municipal drinking water license, as required;</p> <p>e) in consultation with the Office of the Fire Marshal and Emergency Management and other appropriate bodies, ensure that testing of the Contingency Plan is carried out within 3 years from the date the Source Protection Plan takes effect, followed by regular (frequency and priority to be determined in consultation) emergency response preparedness exercises to address the significant threats identified, that the determined frequency and priority is reported to the relevant source protection authority;</p> <p>f) in consultation with appropriate bodies (regulators associated with prescribed threats), promote the use of Source Water Protection mapping and data in planning, operation and emergency response protocols, and</p> <p>g) in consultation with appropriate bodies, promote spill prevention and share information about source protection with the public.</p>				
LO-G-2	Significant/ Moderate/ Low Threats All Lake Ontario Threats	MECP	J K	<p>Specify Action (Lake Ontario Collaborative Group) The Ministry of the Environment, Conservation and Parks will work in partnership with Environment Canada and municipalities responsible for providing water from systems with intakes in the western basin of Lake Ontario to establish and chair a Lake Ontario Collaborative Group (LOCG) focused on the western basin to undertake actions to support the implementation of policies to protect this source of drinking water. Within 1 year from the date the Source Protection Plan takes effect the LOCG should develop and approve Terms of Reference. The Terms of Reference should include but not be limited to defining roles, tasks, and responsibilities of the LOCG partners with respect to: 1) Sharing information about Lake Ontario circulation and water quality monitoring, and where technically feasible: a) install permanent instrumentation (e.g., continuous recording current meters with wireless telephone link to MECP Environmental Monitoring and Reporting Branch and the LOCG members) to provide real-time monitoring of current speed, direction and temperature throughout the water column for use with a 3-D Hydrodynamic Circulation Model for future forecasting of spills impact assessments and assessing spill prevention strategies; b) ensure that the real-time data are available to municipalities and conservation authorities; and c) undertake annual Lake Ontario nearshore water quality monitoring, and make the data available to municipalities and conservation authorities.</p> <p>2) Maintaining and further developing a 3-D Hydrodynamic Circulation Model or more advanced models as appropriate, with particular focus to the nearshore of Lake Ontario, to assess activities to determine their potential to be significant drinking water threats, including: a) maintaining specialized modelling expertise to undertake spills scenario modelling; and b) leading the development of typical lake circulation spill base cases to provide tools for quick assessments of spills, in real time, to provide early warning for emergency response and remedial action, including determining the parties to be notified in the event of a spill.</p> <p>3) Using the model as a consistent approach to assess potential drinking water threats from: a) other existing activities which might be a drinking water threat to one or more municipal drinking water system; b) assessing newly proposed activities which may pose a threat to one or more municipal drinking water systems at the proposal stage; and c) assessing impacts of climate change.</p> <p>4) In the event of a spill use the model to assess and respond to potential water quality impacts at municipal water treatment plant intakes.</p>	EBA See Map 4.1 IPZ-1, 2 See Map 4.2	See Policy	LO-G-3 LO-SEW-1 LO-SEW-2 LO-NGS-1 LO-PIPE-1 LO-FUEL-1	MON-4

Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policy
				5) Sharing environmental monitoring data and using modelling to inform research on topics such as, but not limited to: a) the effectiveness of risk management measures and spill contingency measures; b) cumulative impacts of point and non-point sources of contaminants on nearshore water quality; and c) the effectiveness of Source Protection Plan policies in reducing the risk related to pathogens (not limited to E. coli), including identifying the pathogens and the respective densities at different times; assessing the associated risk at intakes due to pathogens in non-disinfected wastewater and other known specific sources of these pathogens; and undertaking quantitative microbial risk assessments, using a structured research and development design (such as based on the protocols established by the US EPA), to assess the threat and adequacy of existing treatment on a plant-by-plant basis				
LO-G-3	Significant/ Moderate/ Low Threats All Lake Ontario Threats	Municipality (Peel, Toronto, Durham)	E	Specify Action (Lake Ontario Collaborative Group) The municipalities of Peel, Toronto, Durham shall participate as members of the Lake Ontario Collaborative Group (LOCG) and shall undertake tasks (including funding portions) as agreed to in the Terms of Reference established by the LOCG.	EBA See Map 4.1 IPZ-1, 2 See Map 4.2	See Policy	LO-G2	MON-1
LO-G-4	Significant/ Moderate/ Low Threats All Lake Ontario Threats	MECP	J, K	Education and Outreach The Ministry of the Environment, Conservation and Parks is requested to establish an outreach program to discuss the findings and policies arising from the source water protection program with the <del>National Energy Board</del> Canadian Energy Regulator, Ontario Energy Board, Environment Canada, Health Canada, New York State and US government agencies in order to: a) encourage collaboration on protecting our shared drinking water sources; and b) raise profile of the importance of Lake Ontario as a source of drinking water for Ontario; c) develop and deliver Lake Ontario focused Source Water Protection awareness campaigns every 8 years regarding the status and trends in Lake Ontario as a Drinking Water Source as well as existing Source Protection policies.	See Maps 4.1 and 4.2	Existing & Future: Consider within 2 years (T-15)	N/A	MON-4

See the following resources:

- [The Clean Water Act: A Plain Language Guide](#)
- [O. Reg. 287/07 under Clean Water Act](#)

## **Appendix B: Additional SPR Policies and Resources**

### **Lake Erie Lake Area Source Protection Region, 2011. Discussion Paper: The Conveyance of Oil by way of Underground Pipelines.**

LESPR Town of Grand Valley DC-GV-NB-11.1, Melancthon DC-M-NB-17.1

City of Hamilton - CH-NB-15.1 Future Specify Action WHPA-A-v.10 Monitoring

To reduce the risk due to the conveyance of oil by way of underground pipes within the meaning of O. Reg. 210/01 under the Technical Safety and Standards Act or that is subject to the National Energy Board Act, where this activity would be a significant drinking water threat, the pipeline proponent, the National Energy Board and the Ontario Energy Board are encouraged to provide the Source Protection Authority and the City the location of any new proposed pipeline within the City and/or Source Protection Area. The Source Protection Authority shall document in the annual report the number of new pipelines proposed within vulnerable areas.

#### **LESPR for Amaranth and E Garafraxa**

22. The Establishment and Operation of a Liquid Hydrocarbon Pipeline DC-AEG-NB-14.1 Future Specify Action WHPA-A v.10; WHPA-B v.10 Monitoring

To ensure this activity never becomes a significant drinking water threat, the conveyance of oil by way of underground pipeline within the meaning of O.Reg. 210/01 under the Technical Standards and Safety Authority Act or under the National Energy Board Act, the National Energy Board and Ontario Energy Board in their consideration of any pipelines within vulnerable areas where the activity would be a significant drinking water threat, are encouraged to ensure the applicant has complied with or included appropriate design standards and monitoring and maintenance practices, where applicable, to reduce the risk to drinking water sources. The Source Protection Authority shall document in the annual report the number of new pipelines proposed within vulnerable areas.

#### **ABMV**

Policy C.10.4 Hydrocarbon Pipeline was added to the Clean Water Act as threat # 22, after the initial Source Protection Plans were approved in 2015. A pipeline crosses the southern tip of the Ausable Bayfield watershed but is outside any vulnerable areas. Therefore, it cannot be a significant threat. However, the Committee chose to include a policy to address potential future threats. The policy was added in 2023 and required the pipeline operators and regulating authorities to ensure that appropriate monitoring and maintenance practices are in place.

#### **LPSPR 2015**

County of Oxford - OC-NB-1.13 Future Specify Action WHPA-A-v.10; WHPA-B-v.10 Monitoring

To ensure that the conveyance of oil by way of underground pipeline within the meaning of O. Reg. 210/01 under the Technical Safety and Standards Act or that is subject to the National Energy Board Act, never becomes a significant drinking water threat within a WHPA-A and WHPA-B with a vulnerability score of 10, the National Energy Board, Ontario Energy Board, and the pipeline proponent shall provide the Source Protection Authority and the County with the location of any new pipelines proposed within the Source Protection Region. The Source Protection Authority shall document in the annual report the number of new pipelines proposed within WHPAs, where they would be a significant drinking water threat.

## **Norfolk County - Local Threat**

The Conveyance of Oil by way of Underground Pipelines NC-NB-1.14 Future Specify Action WHPA-A-10; WHPA-B-10 Monitoring

To ensure that the conveyance of oil by way of underground pipeline within the meaning of Ontario Regulation 210/01 under the Technical Safety and Standards Act or that is subject to the National Energy Board Act, never becomes a significant drinking water threat, where this activity would be a significant drinking water threat, the pipeline proponent, the National Energy Board, and Ontario Energy Board are encouraged to provide the Source Protection Authority and the County the location of any new proposed pipeline within the County and/or Source Protection Area. The Source Protection Authority should document in the annual report the number of new pipelines proposed within vulnerable areas if a pipeline has been proposed and/or application has been received.

## **Elgin County, Bayham EC-NB-1.15 Future Specify Action WHPA-A-10 Monitoring**

To ensure that the conveyance of oil by way of underground pipeline within the meaning of Ontario Regulation 210/01 under the Technical Safety and Standards Act or is subject to the National Energy Board Act, never becomes a significant drinking water threat, where this activity would be a significant drinking water threat, the pipeline proponent, the National Energy Board and the Ontario Energy Board are encouraged to provide the Source Protection Authority and the Municipality the location of any new proposed pipeline within the Municipality and/or Source Protection Area. The Source Protection Authority should document in the annual report the number of new pipelines proposed within vulnerable areas if a pipeline has been proposed and/or application has been received.

## **Trent Conservation Coalition**

Trent – G - (6) A new sub-policy stating: “Pipeline owners should post sufficient and visibly noticeable liquid hydrocarbon pipeline identification signage for pipelines located in wellhead or intake protection areas. In addition, ‘do not anchor’ signs should be posted when there is a submerged pipeline in the area of a navigable waterway.” Policy G-6(7) was added a monitoring policy for G-6(6). Policy G-6(6) was a new policy added, related to signage for hydrocarbon pipelines. The policy requests that owners of pipelines place sufficient signage in locations of pipelines in Wellhead Protection Areas and Intake Protection Zones. The committee also thought it would be advisable to have “Do Not Anchor” signs in locations that are navigable waterways where pipelines are located on the bed of the waterway.

G-5 Added “r) Conveyance of a Liquid hydrocarbon by a pipeline” under the list of applicable activities. New hydrocarbon pipeline policies (HP) were added to the plan, see the HP section for more information.

As a result of the 2021 Technical Rule changes, the establishment and operation of hydrocarbon pipelines are now included as prescribed drinking water threats. The Committee had to develop a set of policies to address these significant threats, while also considering that the pipeline industry is already heavily regulated.

HP-1 to HP-5 are new strategic action policies, with the owner of the pipeline as the implementer (including regulators and approval authorities for HP-3). HP-1: sets out requirements for environmental protection programs, emergency management programs and emergency procedure manuals. HP-2: that recommended practices by the Canadian Energy Pipeline Association are met. HP-3: that source protection authorities be included in the consultation process and be given the opportunity to provide feedback for new pipelines, changes to a pipeline or change in material being transported in a pipeline. HP-4: that the applicable source protection authority is advised of any abandonment or change of use of any pipelines. HP-5: that watercourses in the Lower Trent Source Protection Area, within IPZ 1, IPZ 2

and IPZ 3 with a score of 9 or 10 are to be considered when deciding on valve or equipment placement.

HP-6 is a new strategic action policy with Conservation Authorities as the implementer. This policy is to ensure that CAs are to provide the pipeline owners with information on watershed characteristics, flood warnings and statements and other local data for the purposes of source protection.

HP-7 is a new strategic action policy with the hydrocarbon pipeline regulators as the implementer. It states that “drinking water threats are to be included in inspection programs where a liquid hydrocarbon pipeline or a potential release from a liquid hydrocarbon pipeline would be considered a significant drinking water threat.”

HP-8 is a new monitoring policy for Lower Trent and Ganaraska Conservation Authorities to request and report on information from the owner of the pipeline, pertaining to the results of the integrity inspections and significant pipeline maintenance that occurred within vulnerable areas.

New policy HP-9 is similar to HP-1 addressed above, however the applicable activities for this policy specifically address moderate and low threats, where HP-1 to HP-8 policies are for significant threats. This is the only moderate and low threat policy in the plan.

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To reduce the risk due to the conveyance of oil by way of underground pipes within the meaning of O. Reg. 210/01 under the Technical Safety and Standards Act or that is subject to the National Energy Board Act, where this activity would be a significant drinking water threat, the pipeline proponent, the National Energy Board and the Ontario Energy Board are encouraged to provide the Source Protection Authority and the City the location of any new proposed pipeline within the City and/or Source Protection Area. The Source Protection Authority shall document in the annual report the number of new pipelines proposed within vulnerable areas.

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The Conveyance of Oil by way of Underground Pipelines NC-NB-1.14 Future Specify Action WHPA-A-10; WHPA-B-10 Monitoring

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## **Elgin County, Bayham EC-NB-1.15 Future Specify Action WHPA-A-10 Monitoring**

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HP-7 is a new strategic action policy with the hydrocarbon pipeline regulators as the implementer. It states that “drinking water threats are to be included in inspection programs where a liquid hydrocarbon pipeline or a potential release from a liquid hydrocarbon pipeline would be considered a significant drinking water threat.”

HP-8 is a new monitoring policy for Lower Trent and Ganaraska Conservation Authorities to request and report on information from the owner of the pipeline, pertaining to the results of the integrity inspections and significant pipeline maintenance that occurred within vulnerable areas.

New policy HP-9 is similar to HP-1 addressed above, however the applicable activities for this policy specifically address moderate and low threats, where HP-1 to HP-8 policies are for significant threats. This is the only moderate and low threat policy in the plan.

**TO: Chair and Members of the Source Protection Committee  
Meeting #1/24, February 21, 2024**

**FROM: Behnam Doulatyari, Program Manager, CTC Source  
Protection Region**

**RE: Review of the CTC Source Protection Plan Nutrient Policies**

### **KEY ISSUES**

Proposed new nutrient (ASM, NASM, LIV, FER) policies for the CTC Source Protection Plan, in compliance with the 2021 Director's Technical Rules and updates to *Nutrient Management Act*.

### **RECOMMENDATION**

**THAT** the CTC Source Protection Committee endorse amendments consistent with the direction outlined in this report to Nutrient Policies (ASM, NASM, LIV, FER) of the CTC Source Protection Plan;

**AND FURTHER THAT** staff be directed to incorporate the new policy text as part of a forthcoming amendment to the CTC Source Protection Plan, under Section 36 of the *Clean Water Act*.

### **Background**

The Ministry of the Environment, Conservation and Parks' Tables of Circumstances (2009, 2013, 2017, 2021) identifies the following sub-threat activities:

- Application of Agricultural Source Material (ASM) to Land
- Storage of Agricultural Source Material (ASM)
- Management of Agricultural Source Material (ASM) - Aquaculture
- Application of Non-Agricultural Source Material (NASM) to Land
- Handling and Storage of Non-Agricultural Source Material (NASM)
- Application of Commercial Fertilizer (FER)
- Handling and Storage of Commercial Fertilizer (FER)
- ASM Generation – Livestock Grazing (LIV) or Pasturing
- ASM Generation – Outdoor Confinement Area or Farm-Animal Yard (LIV)

Most of these activities are defined in O. Reg. 267/03 which are made under the *Nutrient Management Act, 2002* as regulated by the Ontario Ministry of Agriculture, Food and Rural

Affairs (OMAFRA) and the Ontario Ministry of Environment, Climate Change and Parks (MECP). Facilities where commercial fertilizer is manufactured or refined are not included in the provincial *Nutrient Management Act* because they are regulated under federal *Fertilizer Act, 1985*.

Under the *Nutrient Management Act*, a farmer may be required to have one or more of these three documents:

- A Nutrient Management Strategy (NMS);
- A Nutrient Management Plan (NMP); and/or
- A Non-agricultural Source Material Plan (NASM Plans).

OMAFRA is responsible for the *Nutrient Management Act* and the training of Nutrient Management Certificate and Licence Holders who prepare NMPs, NMSs, and NASM Plans.

The *Nutrient Management Act* generally identifies three policy regimes:

- Farm operations greater than 300 Nutrient Units (NU)
- Farm operations greater than 5 and less than 300 Nutrient Units (NU)
- Farm operations less than 5 Nutrient Units (NU)

Non-Phased in Farms (e.g. those that generate between 5 and 300 NU, and that have not expanded their operation since September 2003), do not require a Nutrient Management Plan (NMP) or Nutrient Management Strategy (NMS) or Non-Agricultural Source Material Plan (NASM Plan).

In the s.36 CTC Workplan, CTC staff were directed to undertake an assessment of the following tasks related to nutrient management:

- Task 2 - Review agricultural source material policies (ASM-2, ASM-4) for gaps related to allowing a Risk Management Plan (RMP) when a Nutrient Management Plan (NMP)/Strategy (NMS) is required, but has expired, or when a NMP is voluntarily in place.
- Task 3 - Review policies ASM-1 and ASM-2, in particular duplication of requirements where NMP/NMS is in place on a property where a Risk Management Plan (RMP) is also required (i.e., soil testing).
- Task 4 - Review the need for prohibiting the application of commercial fertilizer in wellhead protection area-A (WHPA-A).
- Task 10 - Re-evaluate the appropriateness of a risk management plan approach for all agricultural policies currently requiring prohibition outside of the WHPA-A.

Under the 2021 amendments to the Director's Technical Rules (DTR), the vulnerable areas where the above prescribed threat activities can lead to a significant drinking water threat were not changed. However, there were some changes to the following two circumstances:

- Category 1 NASMs can no longer be a significant drinking water threat, except for non-farm herbivorous manure.
- Handling and Storage of Commercial Fertilizer is no longer dependent on the land use; it is a significant drinking water threat if more than 2,500 kg is stored on site in any form, including liquid or solid.

## Analyses

The areas of applicability for ASM, NASM, LIV, FER policies across the CTC Source Protection Region are attached in **Attachment A**. The discussion paper titled Review of CTC Nutrient Policies (ASM, NASM, LIV & FER) in **Attachment B** provides analysis of current policy gaps, implementation challenges, municipal feedback and other consultations, and recommendations for updated policies presented in this report.

The interplay between significant drinking water threats under the *Clean Water Act* and Prescribed Instruments under the *Nutrient Management Act* have been source of concern since the start of the source protection program. Potential policy gaps identified in the discussion paper include, but are not limited to, the following:

- Nutrient Management Plans (NMPs) are Non-Registered and receive little oversight from OMAFRA and/or MECP;
- Non-Phased in Farms (e.g. those that generate between 5 and 300 NU, and that have not expanded their operation since September 2003), do not require a Nutrient Management Plan (NMP) for application of Agricultural Source Material (ASM).
- As of July 2019, Nutrient Management Strategies (NMS) no longer expire and now carry on indefinitely, with a handful of exceptions.
- Non-Phased in Farms (e.g. those that generate between 5 and 300 NU, and that have not expanded their operation since September 2003), do not require a Nutrient Management Strategy (NMS) for storage and handling of Agricultural Source Material (ASM).
- Non-Agricultural Source Material (NASM) Plans can be Registered or Non-Registered: Category 3 NASM Plans are Registered; Category 2 NASM Plans can be Registered or Non-Registered; and Category 1 NASM Plans are Non-Registered. Non-Registered NASM Plans receive little oversight from OMAFRA and/or MECP and Significant Drinking Water Threats can still pertain to Category 2 Non-Registered Plans (application of NASM less than CM2) and Category 1 NASM Non-Registered Plans (non-farm herbivorous manure).

## Proposed Policy Considerations

The following considerations are relevant to the proposed policies:

- To the extent possible, policy consistency with neighboring source protection regions is prioritized.

- There are no Intake Protection Zones (IPZs) with a vulnerability score more than 6 in CTC, therefore, throughout this report the focus is limited to groundwater-based drinking water systems and IPZs are not discussed.
- It should be further noted that existing CTC Source Protection Region policies refer to Issue Contributing Area(s) – Nitrates but policies refer to Issue Contributing Area(s) – Nitrogen. The purpose of this change is to be consistent with the Director’s Technical Rules and neighboring Source Protection Regions.
- Finally, vulnerability scores are a science-based method for delineating risk, and areas where these activities can be a significant drinking water threat are part of the most vulnerable areas designated under the *Clean Water Act*. CTC prohibition policies outside WHPA-A are narrowly defined and only apply to these most vulnerable areas. The CTC Source Protection Committee, when creating the policies, considered the threat from the activities considered in this report to warrant extra protection. Prohibiting future new threat activities was seen as being precautionary.

**Application and Storage of Agricultural Source Material (ASM)**

The current nutrient management policies in the CTC Source Protection Plan (**Attachment C**) includes five policies addressing existing and future significant drinking water threats from the application or storage of agricultural source material directed to provincial agencies or Risk Management Officials. The Explanatory Document describes the rationale for the policy approach. All current policies include language indicating they apply where an activity is, or would be, a significant drinking water threat, and a bulleted list of locations where/when a significant drinking water threat is possible.

The proposed nutrient management policies (**Attachment D**) include three policies addressing existing and future significant drinking water threats from the application or storage of agricultural source material directed to provincial agencies or Risk Management Officials. The rationale behind the proposed revisions is to close potential policy gaps related to: (1) application and storage of agricultural source material related to non-phased in farms; (2) storage of agricultural source material related to the removal of expiry dates on Nutrient Management Strategies; and (3) application of agricultural source materials where NMPs are issued by Nutrient Management Certificate and Licence Holders rather than a provincial body.

ID	Tool	Current Policy	Proposed Policy
ASM-1	Prescribed Instrument	Prohibition limited to existing and future application of ASM in some vulnerable areas where it would be a significant drinking water threat (SDWT).	Policy removed
ASM-2 (1)	Prohibition (s.57)	Prohibition limited to existing and future application of ASM in some vulnerable areas where it would be a SDWT.	No change
ASM-2 (2)	RMP (s.58)	Risk Management Plan required where existing and future application of ASM	Risk Management Plan required where existing and future application of ASM



ID	Tool	Current Policy	Proposed Policy
		would be SDWT but would not be covered by prohibition.	would be a SDWT but would not be covered by prohibition. Exemption for Prescribed Instrument.
ASM-3	Prescribed Instrument	Prohibition limited to future storage of ASM in some vulnerable areas where it would be a SDWT.	Policy removed
ASM-4 (1)	Prohibition (s.57)	Prohibition limited to future storage of ASM in some vulnerable areas where it would be a SDWT.	No change
ASM-4 (2)	RMP (s.58)	Risk Management Plan required where existing and future storage of ASM would be a SDWT but would not be covered by prohibition.	Risk Management Plan required where existing and future storage of ASM would be a SDWT but would not be covered by prohibition. Exemption for Prescribed Instrument.
ASM-5	Prescribed Instrument	Prohibition of existing and future aquaculture where it would be SDWT.	No change

**Application and Storage of Non-Agricultural Source Material (NASM)**

The current nutrient management policies in the CTC Source Protection Plan (**Attachment C**) includes five policies addressing existing and future significant drinking water threats from the application or handling & storage of non-agricultural source material directed to provincial agencies or Risk Management Officials. The Explanatory Document describes the rationale for the policy approach. All current policies include language indicating they apply where an activity is, or would be, a significant drinking water threat, and a bulleted list of locations where/when a significant drinking water threat is possible.

The proposed nutrient management policies (**Attachment D**) include six policies addressing existing and future significant drinking water threats from the application or storage of agricultural source material directed to provincial agencies or Risk Management Officials. The rationale behind the proposed revisions is to close potential policy gaps related to: (1) application, handling and storage of non-agricultural source material related to non-phased in farms; and (2) application, handling and storage of non-agricultural source material (Category 1 or 2 NASM) where a NASM Plan is not required.

ID	Tool	Current Policy	Tool	Proposed Policy
NASM-1 (1)	Prohibition (s.57)	Prohibition limited to existing and future application of NASM (Category 1) in WHPA-A where it would be a SDWT.	Prohibition (s.57)	Prohibition limited to existing and future application of NASM (Category 1) containing manure in WHPA-A where it would be a SDWT.
NASM-1 (2)	RMP (s.58)	Risk Management Plan required where existing and future application of	RMP (s.58)	Risk Management Plan required where existing and future application of

ID	Tool	Current Policy	Tool	Proposed Policy
		NASM (Category 1) would be a SDWT but would not be covered by prohibition.		NASM (Category 1) containing manure would be a SDWT but would not be covered by prohibition.
NASM-2 (1)	Prohibition (s.57)	Prohibition limited future handling and storage of NASM (Category 1) in WHPA-A where it would be a SDWT.	Prohibition (s.57)	Prohibition limited future handling and storage of NASM (Category 1) containing manure in WHPA-A where it would be a SDWT.
NASM-2 (2)	RMP (s.58)	Risk Management Plan required where existing and future handling and storage of NASM (Category 1) would be a SDWT but would not be covered by prohibition.	RMP (s.58)	Risk Management Plan required where existing and future handling and storage of NASM (Category 1) containing manure would be a SDWT but would not be covered by prohibition.
NASM-3 (1)	Prescribed Instrument	Prohibition limited to future application of NASM (Category 2 & 3) in vulnerable areas where it would be a SDWT.	Prohibition (s.57)	Prohibition limited to future application of NASM (Category 2) in vulnerable areas where it would be a SDWT.
NASM-3 (2)	Prescribed Instrument	Prescribed Instrument required where existing application of NASM (Category 2 & 3) would be a SDWT but would not be covered by prohibition. Prescribed Instrument would continue only until the expiry of the current approval.	RMP (s.58)	Risk Management Plan required where existing application of NASM (Category 2) in vulnerable areas where it would be a SDWT. Exemption for Prescribed Instrument.
NASM-4	Prescribed Instrument	Prohibition of existing and future handling and storage of NASM (Category 2 & 3) in vulnerable areas where it would be a SDWT.	Prescribed Instrument	Prohibition of existing and future handling and storage of NASM (Category 2 & 3) in vulnerable areas where it would be a SDWT.

ID	Tool	Current Policy	Tool	Proposed Policy
NASM-5	Education and Outreach	MECP and OMAFRA shall provide Prescribed Instrument holders with information on drinking water threats and the risk to nearby municipal wells where the application, handling, and storage of NASM is, or would be, a SDWT.	Education and Outreach	MECP and OMAFRA shall provide Prescribed Instrument holders with information on drinking water threats and the risk to nearby municipal wells where the application, handling, and storage of NASM is, or would be, a SDWT. In addition, MECP and OMAFRA shall update Risk Management Officials on the scope and content of education and outreach materials.
NASM-6	n/a	n/a	Prescribed Instrument	Prohibition of existing and future application of NASM (Category 3) in vulnerable areas where it would be a SDWT.

**ASM Generation – Livestock Grazing or Pasturing and ASM Generation – Outdoor Confinement Area or Farm-Animal Yard**

The current nutrient management policies in the CTC Source Protection Plan (**Attachment C**) includes four policies addressing existing and future significant drinking water threats from agricultural source material generation directed to provincial agencies or Risk Management Officials. The Explanatory Document describes the rationale for the policy approach. All current policies include language indicating they apply where an activity is, or would be, a significant drinking water threat, and a bulleted list of locations where/when a significant drinking water threat is possible.

The proposed nutrient management policies (**Attachment D**) include two policies addressing existing and future significant drinking water threats from the generation of agricultural source material directed to provincial agencies or Risk Management Officials. The rationale behind the proposed revisions is to close potential policy gaps related to: (1) application and storage of agricultural source material related to non-phased in farms; and (2) storage of agricultural source material related to the removal of expiry dates on Nutrient Management Strategies.

ID	Tool	Current Policy	Proposed Policy
LIV-1 (1)	Prohibition (s.57)	Prohibition limited to existing and future livestock grazing or pasturing in WHPA-A, with an animal density unit $\geq 1$ , in an Issue Contributing	Prohibition limited to existing and future livestock grazing or pasturing in WHPA-A, with an animal density unit $\geq 1$ , in an Issue Contributing Area

ID	Tool	Current Policy	Proposed Policy
		Area (Nitrates or Pathogens) where it would be a SDWT.	(Nitrogen or Pathogens) where it would be a SDWT.
LIV-1 (2)	RMP (s.58)	Risk Management Plan required where existing and future livestock grazing or pasturing would be a SDWT but would not be covered by prohibition.	Risk Management Plan required where existing and future livestock grazing or pasturing would be a SDWT but would not be covered by prohibition. Residential land use with ≤5 Nutrient Units, outside WHPA-A, the Risk Management Official can use an annual inspection program.
LIV-2	Prescribed Instrument	Prohibition limited to future outdoor confinement area or farm-animal yard in some vulnerable areas where it would be a SDWT.	Policy removed
LIV-3 (1)	Prohibition (s.57)	Prohibition limited to future outdoor confinement area or farm-animal yard in some vulnerable areas where it would be a SDWT.	No change
LIV-3 (2)	RMP (s.58)	Risk Management Plan required where existing and future outdoor confinement or farm-animal yard would be SDWT but would not be covered by prohibition.	Risk Management Plan required where existing and future application of ASM would be SDWT but would not be covered by prohibition. Exemption for Prescribed Instrument.

**Application and Storage of Commercial Fertilizer**

The current nutrient management policies in the CTC Source Protection Plan (**Attachment C**) includes four policies addressing existing and future significant drinking water threats from the application or handling & storage of commercial fertilizer directed to provincial agencies or Risk Management Officials. The Explanatory Document describes the rationale for the policy approach. All current policies include language indicating they apply where an activity is, or would be, a significant drinking water threat, and a bulleted list of locations where/when a significant drinking water threat is possible.

The proposed nutrient management policies (**Attachment D**) include three policies addressing existing and future significant drinking water threats from the application or handling and storage of commercial fertilizer material directed to provincial agencies or Risk Management Officials. The rationale behind the proposed revisions is to close potential policy gaps related to: (1) application and storage of commercial fertilizer related to non-phased in farms; (2) handling and storage of commercial fertilizer related to the removal of expiry dates on Nutrient Management Strategies; and (3) application of commercial fertilizer where the NMPs are issued by Nutrient Management Certificate and Licence Holders rather than a provincial body.

ID	Tool	Current Policy	Proposed Policy
FER-1	Prescribed Instrument	Prohibition limited to future application of commercial fertilizer	Policy removed

ID	Tool	Current Policy	Proposed Policy
		in some vulnerable areas where it would be a SDWT.	
FER-2 (1)	Prohibition (s.57)	Prohibition limited to existing and future application of commercial fertilizer in some vulnerable areas where it would be a SDWT.	Prohibition limited to existing and future application of commercial fertilizer in WHPA-A where it would be a SDWT.
FER-2 (2)	RMP (s.58)	Risk Management Plan required where application of commercial fertilizer would be a SDWT but would not be covered by prohibition.	No change beyond WHPA-E in an Issue Contributing Area (Nitrates/Nitrogen) now captured.
FER-3 (1)	Prohibition (s.57)	Prohibition limited to future handling and storage of commercial fertilizer in WHPA-A where it would be a SDWT.	No change
FER-3 (2)	RMP (s.58)	Risk Management Plan required where handling and storage of commercial fertilizer would be a SDWT but would not be covered by prohibition.	No change
FER-4	Education and Outreach	Municipality and MECP are requested to provide education and outreach materials and programs to individuals and owners/tenants of non-agriculturally zoned lands where application, handling, and storage of commercial fertilizer would be a SDWT.	No change

**Next Steps**

Staff will prepare proposed nutrient policy revisions to the CTC Source Protection Plan (SPP) and Explanatory Document. These proposed revisions will be brought back to the SPC for endorsement as part of the amendment to the SPP under section 36 of the *Clean Water Act*.

**Report prepared by:**

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Date: February 21, 2024

**Attachments (5)**

**Attachment A: Applicable Areas in CTC**

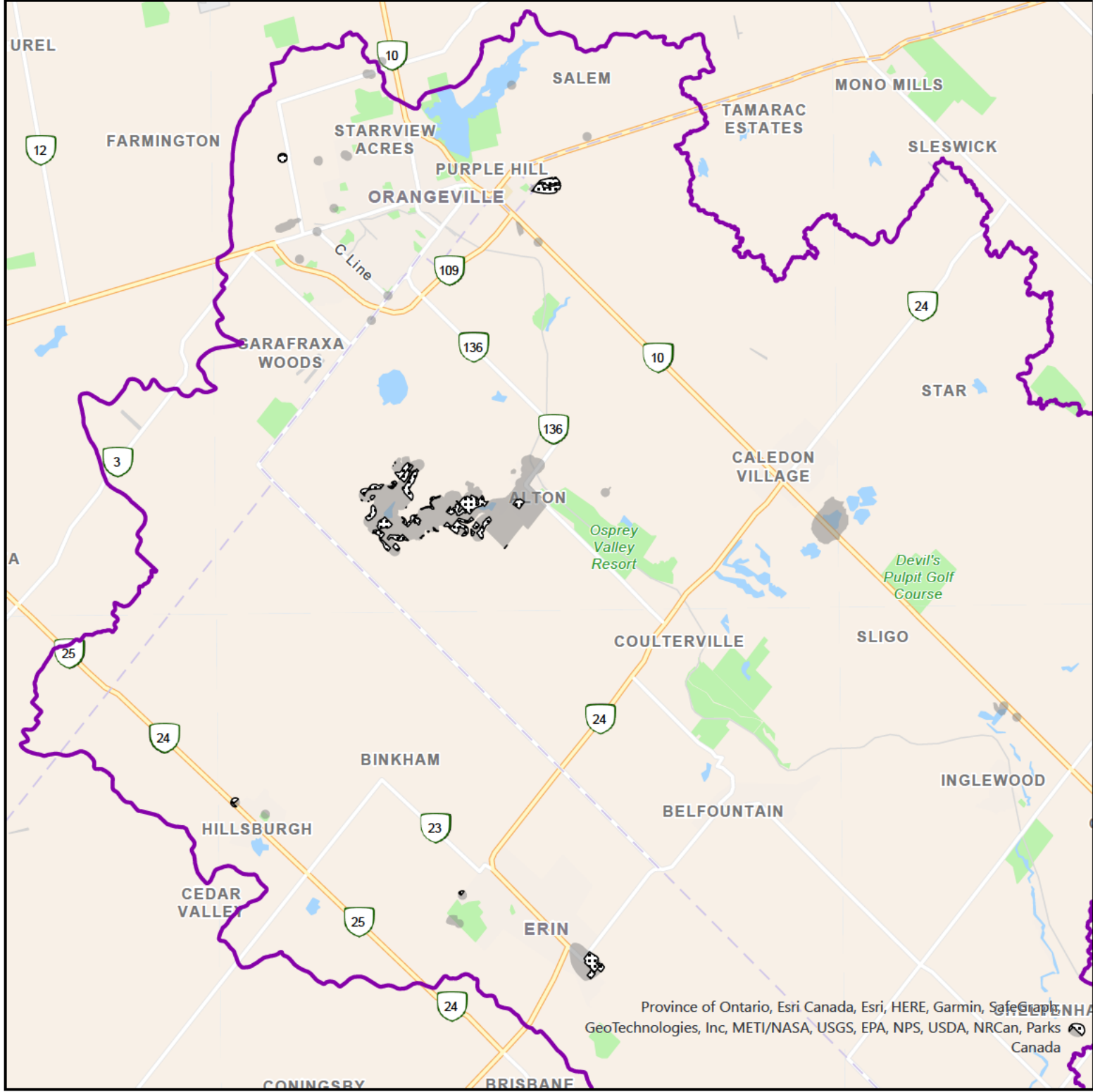
**Attachment B: Discussion Paper: Review of CTC Nutrient Policies (ASM, NASM, LIV & FER)**

**Attachment C: CTC Source Protection Plan and Explanatory Document Nutrient Policies – Highlighted changes**




**Attachment D: CTC Source Protection Plan and Explanatory Document – Nutrient Policies – Proposed changes**

**Attachment E: Comment Matrix and Municipal Analysis**





### Agricultural Lands within Vulnerable Areas




-  Agricultural Lands
-  Vulnerable Areas
-  CVC Boundary

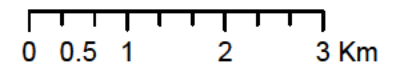
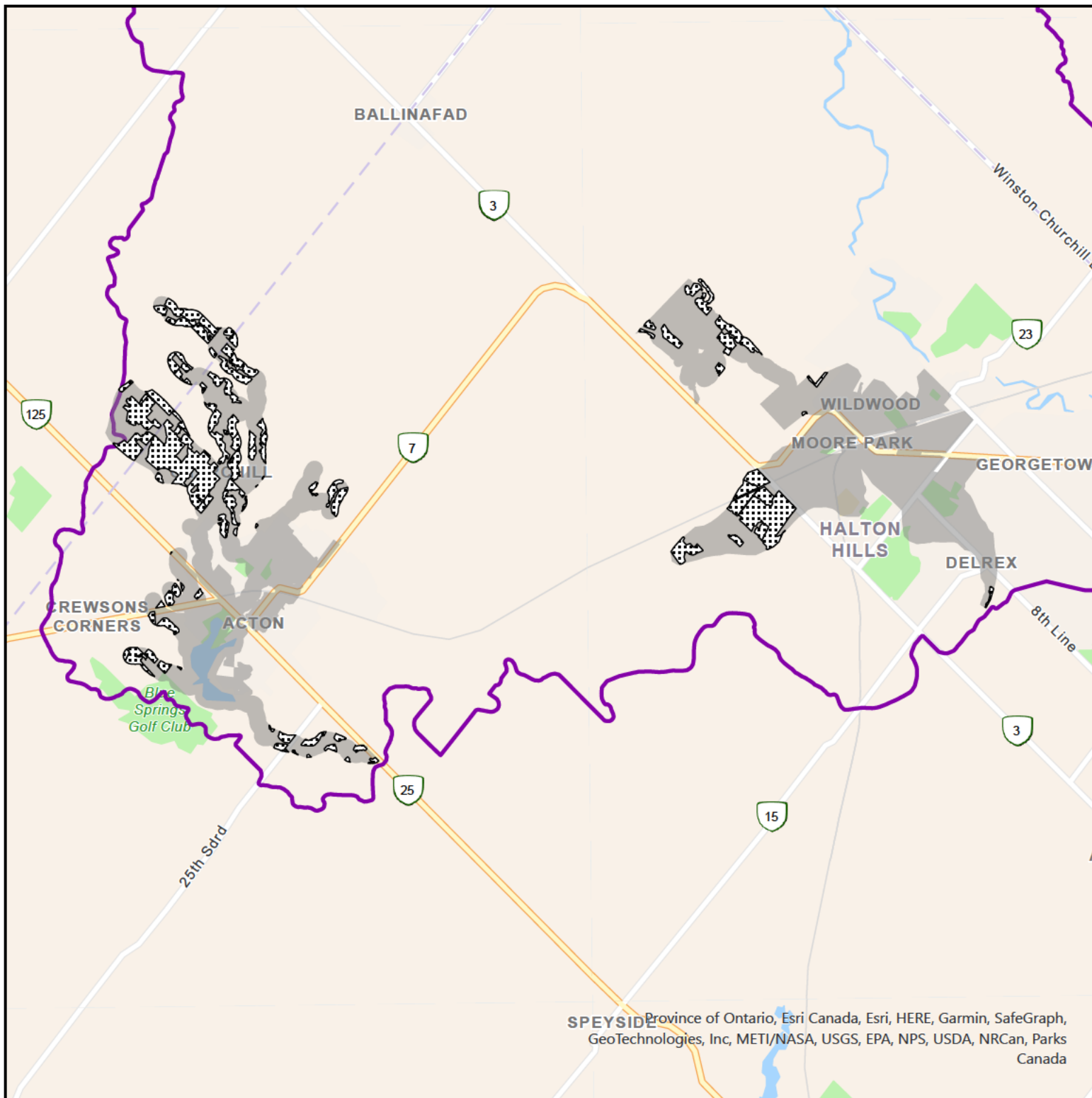
Data Source:  
CVC ELC (2023)



Province of Ontario, Esri Canada, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, NRCan, Parks Canada

## Agricultural Lands within Vulnerable Areas

-  Agricultural Lands
-  Vulnerable Areas
-  CVC Boundary






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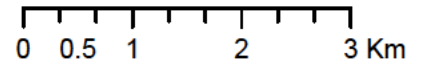
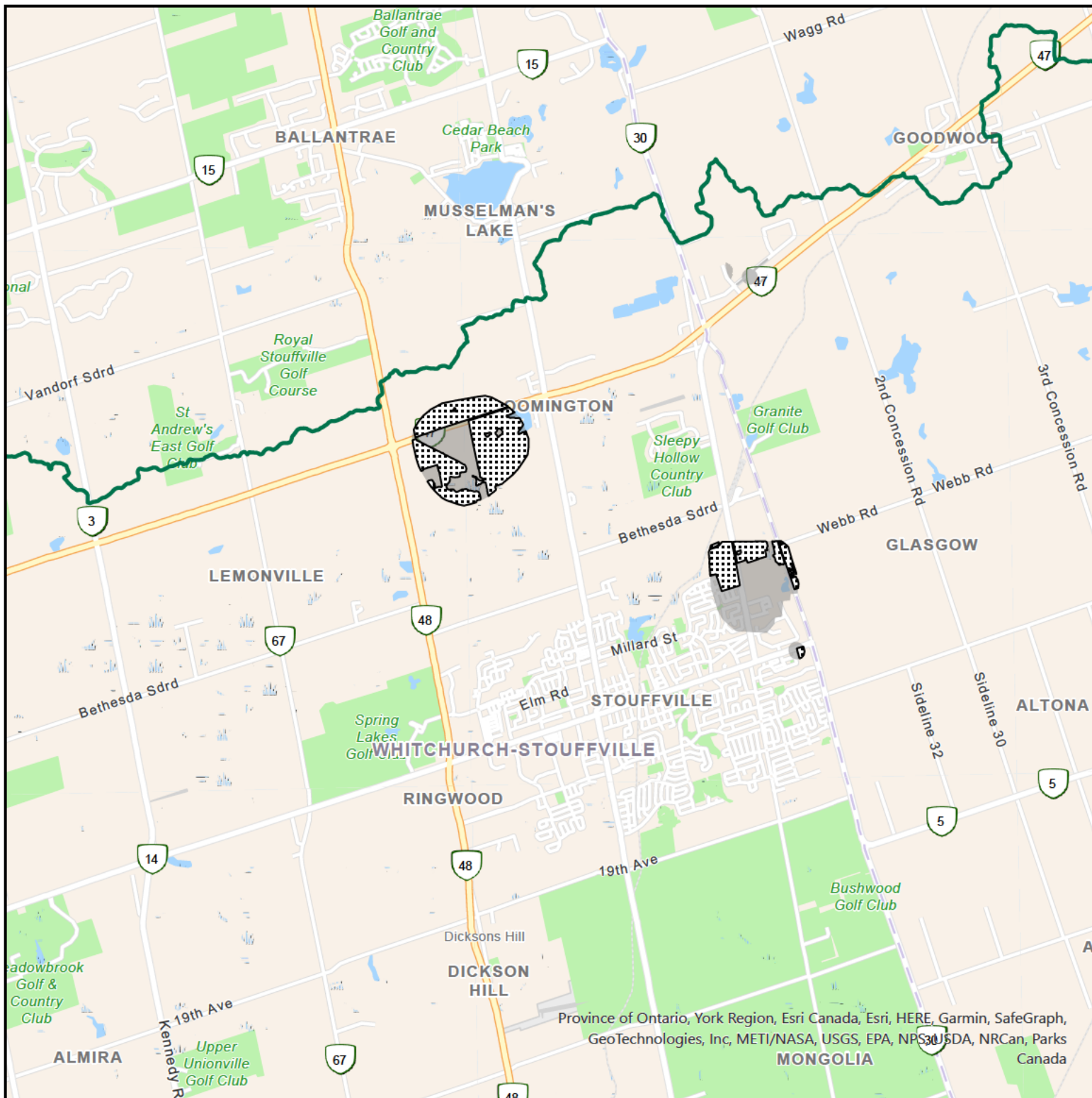


**Credit Valley  
Conservation**  
inspired by nature

Province of Ontario, Esri Canada, Esri, HERE, Garmin, SafeGraph,  
GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, NRCan, Parks  
Canada

# Agricultural Lands within Vulnerable Areas

-  Agricultural Lands
-  Vulnerable Areas
-  TRCA Boundary



Data Source:  
TRCA Natural Land Cover (2017)



Province of Ontario, York Region, Esri Canada, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, NRCan, Parks Canada



# Discussion Paper: Review of CTC Nutrient Policies (ASM, NASM, LIV & FER)

DRAFT

Prepared for February 21, 2024 CTC Source Protection Committee Meeting

Prepared by Kristina Anderson, Senior Hydrogeologist, Toronto and Region Conservation Authority

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## Introduction and Background

The CTC (Credit Valley -Toronto and Region- Central Lake Ontario) Source Protection Plan, along with the supporting Assessment Reports, was approved by the Province of Ontario (MOECC) in July 2015 and came into effect on December 31, 2015. Along with the approval, an order was also issued under Section 36 (S. 36) of the *Clean Water Act, 2006* by the Minister of the Environment and Climate Change in July 2015 to prepare and submit a workplan for updating the Source Protection Plan. A S. 36 order, which was issued to all Source Protection Regions, specifies a broad scale review focused on keeping the Assessment Report and Source Protection Plan up to date with general amendments and policy efficacy changes. The CTC 2018 Section 36 workplan sets out a number of tasks, each with their own completion date, ranging from April 2019 to June 2024. The Province later allowed for flexible and open workplan deadlines.

Subsequently, on July 22, 2019 MECP issued an amendment to S. 36 order to the CTC Source Protection Region in which parts of the workplan were identified as mandatory components to include in the S. 36 updates. These, among other things, include review of policies for agricultural activities that impose prohibitions outside of a WHPA-A and those that address nutrients. Specifically, Table 1 in the CTC S. 36 workplan (P. ii) includes:

- Task 2 - Review agricultural source material policies (ASM-2, ASM-4) for gaps related to allowing a Risk Management Plan (RMP) when a Nutrient Management Plan (NMP)/Strategy (NMS) is required, but has expired, or when a NMP is voluntarily in place.
- Task 3 - Review policies ASM-1 and ASM-2, in particular duplication of requirements where NMP/NMS is in place on a property where a Risk Management Plan (RMP) is also required (i.e., soil testing).
- Task 4 - Review the need for prohibiting the application of commercial fertilizer in wellhead protection area-A (WHPA-A).
- Task 10 - Re-evaluate the appropriateness of a Risk Management Plan (RMP) approach for all agricultural policies currently requiring prohibition outside of the WHPA-A.

In addition, there are optional/enabling provisions in the 2021 Director's Technical Rules pertaining to Category 1 NASMs and the handling and storage of commercial fertilizer. Category 1 NASMs, except for non-farm herbivorous manure, are no longer considered a significant drinking water threat. The handling and storage of commercial fertilizer was previously based on the type of land use (e.g. retail; excluding manufacturing, processing) and mass stored but is now based solely on mass of fertilizer storage.

Within the CTC Source Protection Plan, vulnerable areas where nutrient related activities are classified as a significant drinking water threat are limited to the Credit Valley Source Protection Authority and Toronto and Region Source Protection Authority. There are no drinking water wells or intakes within Central Lake Ontario Source Protection Authority where nutrient related activities are classified as a significant drinking water threat. The drinking water systems with the largest relevant vulnerable areas are Alton, Acton, Georgetown, and Whitchurch-Stouffville. There are also relatively small areas in Caledon East and Kleinberg.

Table 1 Area and Percentage of Land Potentially Affected by Nutrient Policies within CTC Source Protection Region

	Area (ha)	Percentage	Number of Parcels
Vulnerable areas (WHPA A & B with vs=10, WHPA E with vs>=8, and ICA Nitrate)	2621.14	-	-
CVC's Agricultural areas within vulnerable areas	436.4	16.65%	182
TRCA's Agricultural areas within vulnerable areas	149.8	5.71%	41
Total Agricultural areas in both CVC and TRCA	586.2	22.36%	223

Within the CTC Source Protection Plan, there are no drinking water intakes in the CTC Source Protection Region where nutrient related activities are classified as significant drinking water threats. However, there are eleven nutrient policies that require prohibition of activities outside of the WHPA-A.

Table 2. CTC Source Protection Policies Prohibiting Nutrient Related Activities Outside of the WHPA-A and Number of Affected Parcels (s.36 Workplan 2018)

Policy	Description	Tool	Prohibition outside of WHPA-A	Number of Affected Parcels
ASM-1	Application of Agricultural Source Material to Land	Prescribed Instrument	<ul style="list-style-type: none"> <li>WHPA-B (VS=10) in an Issue Contributing Area for Pathogens (future)</li> <li>WHPA-E in an Issue Contributing Area for Nitrates or Pathogens (future)</li> </ul>	15
ASM-2	Application of Agricultural Source Material to Land	Part IV	<ul style="list-style-type: none"> <li>WHPA-B (VS=10) in an Issue Contributing Area for Pathogens (future)</li> <li>WHPA-E in an Issue Contributing Area for Nitrates or Pathogens (future)</li> </ul>	18
ASM-3	Storage of Agricultural Source Material	Prescribed Instrument	<ul style="list-style-type: none"> <li>WHPA-B (VS=10) in an Issue Contributing Area for Pathogens (future)</li> <li>WHPA-E in an Issue Contributing Area for Nitrates or Pathogens (future)</li> </ul>	19

Policy	Description	Tool	Prohibition outside of WHPA-A	Number of Affected Parcels
ASM-4	Storage of Agricultural Source Material	Part IV	<ul style="list-style-type: none"> <li>• WHPA-B (VS=10) in an Issue Contributing Area for Pathogens (future)</li> <li>• WHPA-E in an Issue Contributing Area for Nitrates or Pathogens (future)</li> </ul>	19
ASM-5	Management of Agricultural Source Material	Prescribed Instrument	<ul style="list-style-type: none"> <li>• An Issue Contributing Area for Pathogens (existing, future)</li> </ul>	5
NASM-3	Application of Non-Agricultural Source Material to Land	Prescribed Instrument	<ul style="list-style-type: none"> <li>• WHPA-B (VS=10) (future)</li> <li>• WHPA-E (VS=&gt;8) (future)</li> <li>• The remainder of an Issue Contributing Area for Nitrates or Pathogens (future)</li> </ul>	99
NASM-4	Handling and Storage of Non-Agricultural Source Material to Land	Prescribed Instrument	<ul style="list-style-type: none"> <li>• WHPA-B (VS=10) (existing, future)</li> <li>• WHPA-E (VS=&gt;8) (existing, future)</li> <li>• The remainder of an Issue Contributing Area for Nitrates or Pathogens (existing, future)</li> </ul>	99
LIV-2	The Use of Land as an Outdoor Confinement Area of a Farm-Animal Yard	Prescribed Instrument	<ul style="list-style-type: none"> <li>• WHPA-B (VS=10) in an Issue Contributing Area for Nitrates or Pathogens (future)</li> <li>• WHPA-E in an Issue Contributing Area for Nitrates or Pathogens (future)</li> </ul>	19
LIV-3	The Use of Land as an Outdoor Confinement Area of a Farm-Animal Yard	Part IV	<ul style="list-style-type: none"> <li>• WHPA-E in an Issue Contributing Area for Nitrates or Pathogens (future)</li> </ul>	19
FER-1	Application of Commercial Fertilizer to Land	Prescribed Instrument	<ul style="list-style-type: none"> <li>• WHPA-E in an Issue Contributing Area for Nitrates (future)</li> </ul>	9

Policy	Description	Tool	Prohibition outside of WHPA-A	Number of Affected Parcels
FER-2	Application of Commercial Fertilizer to Land	Part IV	<ul style="list-style-type: none"> <li>WHPA-E in an Issue Contributing Area for Nitrate (future)</li> </ul>	9

This discussion paper, prepared in support of a report to the CTC Source Protection Committee on the above tasks, examines the current challenges identified with regards to: CTC Source Protection Plan nutrient policies; feedback from MECP on these policies; changes from the 2021 Director’s Technical Rules; changes to the 2014/15 O. Reg. 267/03 under the *Nutrient Management Act* between 2014/15 to 2022/23; and provide recommendations towards existing policy gaps and/or duplications.

## Regulatory and Policy Framework

### Nutrient Management Act

The *Nutrient Management Act* was proclaimed June 30, 2003 and came into force September 30, 2003. Under the *Nutrient Management Act*, a farmer may be required to have one or more of these three documents:

- A Nutrient Management Strategy (NMS);
- A Non-Agricultural Source Material Plan (NASM Plan); and
- A Nutrient Management Plan (NMP).

OMAFRA is responsible for the *Nutrient Management Act* and training of nutrient management certificate and licence holders who prepare NMS, NASM Plans, and NMP.

The *Nutrient Management Act* generally identifies three policy regimes:

1. Greater than 300 Nutrient Units (NU);
2. Greater than 5 and Less than 300 Nutrient Units (NU); and
3. Less than 5 Nutrient Units (NU).

### Phased in Versus Non-Phased in Farms

With respect to application, handling and storage of agricultural source material and commercial fertilizer, as well as agricultural source generation, the definitions of Phased in versus Non-Phased in are as follows:



- Phased in Farms (e.g. those that generate between greater than 300 NU or that have expanded their operation since September 2003), require a Nutrient Management Plan (NMP) and/or Nutrient Management Strategy (NMS).
- Non-Phased in Farms (e.g. those that generate between 0 and 300 NU and that have not expanded their operation since September 2003), do not require a Nutrient Management Plan (NMP) or Nutrient Management Strategy (NMS).

With respect to application, handling and storage of non-agricultural source material, the definitions of Phased in versus Non-Phased in are as follows:

- Phased in Farms (e.g. those that generate greater than 300 NU, or that expanded their operation since September 2023, or that receive off-farm anaerobic digestion material in a regulated mixed anaerobic digestion facility), require a Non-Agricultural Source Material Plan (NASM Plan).
- Non-Phased in Farms (e.g. those that generate between 0 and 300 NU, and that have not expanded their operation since 2003, and that do not receive off-farm anaerobic digestion material in a regulated mixed anaerobic digestion facility), do not require a Non-Agricultural Source Material Plan (NASM Plan).

The Environmental Commissioner published three reports between 2014 and 2018 related to nutrient policies entitled: (1) 2014 Annual Report Source Water Protection, (2) 2016 Annual Report Source Water Protection, and (3) 2018 Annual Environmental Protection Report Back to Basics. One recommendation identified in the 2014 Annual Report Source Water Protection was to phase in the remaining farms in Ontario that generate or apply nutrients so that they also must adhere to the requirements of the *Nutrient Management Act* and its regulations. As of the writing of this report, this recommendation has not been adopted by the province. Therefore, outside of Prescribed Instruments under the *Nutrient Management Act*, Risk Management Plans remain an important tool to address significant drinking water threats related to nutrients application, handling, storage and generation. Section 1.0.1(1) of Ontario Regulation 287/07 lists a number of provincial instruments that have been prescribed under the *Clean Water Act*, allowing them to be used to implement policies in a source protection plan and manage threats to source water. These prescribed instruments include Nutrient Management Strategies, Nutrient Management Plans and NASM Plans.

## Nutrient Management Strategy

Circumstances that would require a NMS include:

- Livestock numbers on a farm that are equivalent to or greater than 300 NU;
- Construction/expansion of a livestock barn and/or manure storage facility on a farm that has equivalent to or greater than 5 NU;
- Construction/excavation on an earthen manure storage facility on a farm that has equivalent to or greater than 5 NU; and
- Receiving off-farm material for digestion in an anaerobic digester on a farm with any number of NU.

A NMS outlines the following:

1. The calculation of the manure to be generated from the livestock;

2. Proof of adequate storage capacity for the manure;
3. An acceptable management plan for runoff and farm wash water; and
4. A farmstead sketch showing that new and expanding facilities are acceptable distances away from wells and watercourses.

## Non-Agricultural Source Material Plan

Most NASM Plans are for farms applying sewage biosolids on their fields but other types of NASM materials include food processing wash waters and residuals, and ash products from the forestry sector.

NASMs are classified under one of the following three categories:

- Category 1: e.g. Leaf and yard waste that has not been composted
- Category 2: e.g. organic waste matter that contains no meat or fish and is derived from food processing at a bakery
- Category 3: e.g. pulp and paper biosolids, paunch manure and sewage biosolids.

The regulation requires a NASM Plan for application or storage of Category 2 or 3 NASM. NASM Plans must be prepared by a NASM Plan Development Certificate holder and must comply with the regulation, the Nutrient Management Protocol, the NASM Odour Guide and the Sampling and Analysis Protocol. A NASM Plan is a legal document that demonstrates that the application of NASM is done correctly. It considers site-specific information and demonstrates that the application rates of NASM and other nutrients are appropriate for the crops being grown. It also includes a contingency plan that outlines what can be done in the event of an emergency (i.e. spill).

Most NASM Plans must be approved by the Ministry of Agriculture, Food and Rural Affairs (OMAFRA). OMAFRA will notify the local municipality (lower or single tier) that an application site has been approved to accept NASM. The notification is sent to the Clerk and is circulated as needed. The regulation requires you have an approved (registered) NASM Plan whenever you:

- Apply Category 3 NASM to land;
- Apply Category 2 NASM with higher concentrations of regulated metal to land (CM2); and
- Store and apply any Category 2 or 3 NASM.

Category 2 NASMs with a higher concentration of regulated metal (CM2) are outlined in Schedule 5 of O.Reg. 267/03: General, under the *Nutrient Management Act*. This schedule regulates metal content of NASMs and includes two tables Table 1 – CM1 NASM and Table 2 – CM2 NASM. Schedule 6 governs the Pathogen Content of NASM and includes two tables Table 1 – CP1 NASM and Table 2 – CP2 NASM. NASM cannot be land applied if it has any of these characteristics: (1) the content of regulated metal exceeds Schedule 5 Table CM2 NASM (2) the content of *E.coli* exceeds Schedule 6 Table 2 CP2 NASM and (3) Odor category – Table OC3.



NASM Plan soil testing pertains to plant available phosphorus, potassium, regulated metals, soil pH, and parameters related to the NASM being applied.

## Nutrient Management Plan

Circumstances that would require a NMP include:

- Livestock numbers on a farm that are equivalent to or great than 300 NU; and
- Farm requiring a NMS is also within 100 m of a municipal well.

A NMP outlines the following:

- Nutrient applications in farm field;
- Crop rotation;
- Tillage;
- Projected yields; and
- Other management approaches to optimize the utilization of nutrients by the crops while safeguarding the environment.

NMP soil testing pertains to plant available phosphorus, potassium, regulated metals, and soil pH.

## Nutrient Management Certificate and Licence Holders

OMAFRA offers several certificates and licences relevant to nutrient management including:

- AOP Certification (Preparing Nutrient NMS / NMP for themselves);
- AOSPD Certificate (Preparing NMS / NMP for someone else);
- NASM Plan Development Certificate (Preparing NASM Plans);
- PMAB Licence (Spreading ASM and NASM as Commercial Operation)
- Broker Certificate (Receiving, Storing, Delivering ASM);
- Technician Licence (Spreading ASMs and NASMs for operations that require a NMP or NASM Plan); and
- Greenhouse Nutrient Feedwater (GNF) Management.

OMAFRA has revised the training of nutrient management certificate and licence holders to include source water protection. Guidance has been developed for Risk Management Officials, farms and certified individuals that prepare Nutrient Management Plans to use to help determine if a prescribed instrument conforms to the significant drinking water threat policies. They are available at <https://www.nutrientmanagement.ca/courses>. Training was also delivered by OMAFRA to certified preparers on requirements and responsibilities of incorporating source water protection into prescribed instruments (Nutrient Management Plans included).

## Insights and Takeaways

### Halton-Hamilton SPR

During Early Engagement with MECP by Halton Hamilton SPR (HHSR), during June to August 2021, MECP provided the following options with respect to Agricultural Source Material (ASM) while the s.36 amendment was underway:

- Option 1: Update prescribed instruments (Nutrient Management Plans and strategies) to replace OMAFRA with MECP but this relies on MECP conducting compliance inspection but MECP does not issue/approve strategies so a gap remains (emphasis added).
- Option 2: Update the current Risk Management Plan policies to not limit them to farms not phased-in under the *Nutrient Management Act*. Ontario Reg 287/07 provides an avenue for a person to be exempt from *Clean Water Act* Section 58 Risk Management Plan where the person holds a prescribed instrument that already adequately regulates a threat activity. OMAFRA revised training of nutrient management certificate and licence holders to include source water protection.
- Option 3: retain update shown in pre-consultation package only changing monitoring policy part b to rely on MECP rather than OMAFRA. Consistent with Grand River policy but will leave comment from OMAFRA unaddressed (emphasis added).
- Option 4: replace OMAFRA with nutrient management certificate and licence holders. Would address root of problem with actual prescribed instrument issuer as the implementing body and monitoring policy could be one that relies on the training provided by OMAFRA to the implementer but unclear whether legally binding (emphasis added).

Further discussions were held on September 13, 2021, and October 5, 2021 between HHSR and MECP. Ministry staff relied on the exemption from Risk Management Plans afforded under Section 58 and 61 of Ontario Regulation 287/07, under the *Clean Water Act*, with respect to prescribed instruments. Furthermore, they argued that the *Clean Water Act* identifies the responsibility to implement the prescribed instrument with whomever issues the instrument, and, for Nutrient Management Plans, that would be the certified nutrient management consultants and certified farmers. HHSR ultimately moved forward with the s.36 process without addressing nutrient policies because of time constraints.

### CTC SPR

During a CTC Amendments Working Group (November 7, 2021) several ideas/concerns were raised:

- Discussion around enforcement challenges in areas outside of WHPA-A can be a challenge where <5 NU with respect to ASM Generation – Livestock Grazing threat balanced against the Walkerton tragedy occurring on a hobby farm operating in the 5 to 30 NU legislation/policy regime.

- Discussion around the risk of commercial fertilizer being managed by mitigation as opposed to prohibition and that fertilizer prohibitions creates a perception of an uneven playing field by agricultural producers.

Follow up discussions with Risk Management Official(s)/Inspector(s) who raised the concern around the Risk Management Plans where <5 NU with respect to ASM Generation – Livestock Grazing threat were held. Discussion focused on approaches taken by other Source Protection Regions and land uses on properties where <5 NU are found.

During a CTC Implementation Working Group meeting (April 6, 2023) several ideas/concerns were raised:

- Recommendation to contact external partner agencies (RMOs, MECP) for clarification on how the Prescribed Instruments (NMP, NMS, NASM Plan) under the *Nutrient Management Act* work in practice.

One referral from the CTC Implementation Working Group was an inspector from MECP. Discussion focused on legislative/policy framework and soil testing policies and observations. Discussion also led to referral to policy expert within OMAFRA who CTC program staff plan on sharing a draft copy of the proposed policies with before returning to the CTC Source Protection Committee. The second referral from the CTC Implementation Working Group was a Risk Management Official who is also an agricultural owner/operator. Discussion focused on legislative/policy framework, soil testing research, and standard industry practices. Discussion also led to referral to a former Risk Management Official who is currently employed by OMAFRA. The third referral from the CTC Implementation Working Group was another Risk Management Official. Discussion focused on legislative/policy framework and soil testing policies/incentives.

The discussion with the referred OMAFRA staff focused on legislative/policy framework, soil testing policies and research, standard industry practices, and current events related to pelletized biosolids. Discussion also led to referral to a NASM expert within OMAFRA. The next discussion with both technical OMAFRA staff focused on legislative/policy framework, soil testing research, standard and best industry practices, and provincial/federal response to current events related to pelletized biosolids.

In total, four municipal/conservation authority staff and three provincial staff were consulted. Highlights from those discussions are summarized below:

Table 3. CTC SPR Consultation with external stakeholders

	Prescribed Instrument (NMS, NMP, NASM Plan)	Risk Management Plans	Threats (ASM, NASM, FER)	Soil Testing
<b>Municipalities / Conservation Authorities</b>	Encourages Nutrient Management Certificate and Licence Holders	Recommended aligning RMPs with rotation practice (application of nutrients	Noted (1) application of NASM less common than application of ASM and FER	Noted soil testing requirement previously applicable to ASM and NASM

	Prescribed Instrument (NMS, NMP, NASM Plan)	Risk Management Plans	Threats (ASM, NASM, FER)	Soil Testing
	to act as signatory	commonly one in three years but varies with crops, lease agreements, etc.)	and (2) lack of nutrient application may encourage invasive species propagation	policies removed due to poor compliance
<b>MECP/ OMAFRA</b>	Noted more third-party business involved with NASM Plans	Recommended structuring nutrient policies in a way that nutrient management certificate and licence holders are not held to the standard of upholding conformity with source protection policies.	Noted (1) precision application more difficult with solids than liquid and soil testing more likely with precision application and (2) Canadian Food Inspection Agency, regulates the <u>Fertilizer Act</u> , which deals with importation and sale of biosolids active on PFAS portfolio.	Noted soil testing in advance of application of fertilizer standard industry practice but soil testing in advance of ASM less common

During a Amendment Working Group meeting (May 31, 2023) several ideas/concerns were raised:

- Recommendation to direct application of agricultural source material, non-agricultural source material, and commercial fertilizer towards a risk management approach and provide an exemption for holders of a prescribed instrument which Saugeen, Grey Sauble, Northern Bruce Peninsula Source Protection Region has undertaken as their preferred approach. Risk Management Officials cited advantages of the risk management approach in terms of engagement and inspections. Where the Prescribed Instrument is not registered by a provincial agency, ensure the prescribed instrument is in compliance with the CTC Source Protection Plan in the form of a statement of conformity.
- Discussed around an inspection policy approach for residential properties with <5 NU with respect to ASM Generation – Livestock Grazing threat.
- Discussion around soil testing requirements in relation to Prescribed Instruments (Nutrient Management Plans, Nutrient Management Strategies, and NASM Plans) and in relation to jurisdictional review.



During a Source Protection Committee meeting (December 6, 2023) several ideas/concerns were raised:

- Discussion around the history of the soil testing requirement and around the scientific validity of the soil testing within the CTC Source Protection Plan.

When the original policies were drafted, there was little to no discussion around the soil testing requirement. At SPC Meeting #2/14, in response to Ministry feedback on proposed water quality policies, the Committee directed staff to draft language about use of Best Management Practices for policies ASM-1 and ASM-2. Subsequently at SPC Meeting #4/14, the Committee discussed and endorsed addition of soil testing clauses to policies ASM-1 and ASM-2.

However, during policy development, there was considerable discussion around the source of the nitrogen that led to the creation of the Issue Contributing Area at Davidson. A nitrate mass load estimate was undertaken with the following sources identified: application of nutrients (75%), livestock grazing (11%), and private septic systems (14%).

In total, five municipal/conservation authority staff, one provincial staff and two academic staff were consulted. Highlights from those discussions are summarized below:

Table 4. CTC SPR Consultation with external stakeholders

	Soil Testing
<b>Municipalities / Conservation Authorities</b>	<p>One RMP negotiated where consult did a NPK test and input results into NMAN.</p> <p>Consider source of nitrogen when drafting policies. If source excess nitrogen from agricultural practices, then nutrient policies relevant tool to address. If source excess nitrogen from private septic, then sewage policies relevant tool to address.</p> <p>Support reducing geographic scope to Issue Contributing Area - Nitrogen</p>
<b>MECP/ OMAFRA</b>	<p>Soil testing, NPK test appropriate for P&amp;K, testing at 15 cm, storage at room temperature, lab (pre side dress nitrate test) appropriate for N, testing at 30 cm, storage refrigerated or frozen</p> <p>Lab test cost \$25/sample, OMAFRA would support either farmer taking sample or consultants as there are fact sheets on protocols, limitations in farming doing it them self is soil auger to get to 30 cm depth (max rooting depth)</p> <p>Nitrogen is applied twice per year – early spring and late spring. OMAFRA recommends soil testing before initial early spring application (25%), late spring application (75%), and post-harvest but the most important soil test (and in line with current agronomic practice) is pre sidedress in late spring. Post-harvest soil testing in part to inform decision on cover crop.</p>

	<p>Agrisuite/NMAN software looks at many variables including (credits from manure, N from previous crops, etc.). N soil test is best way to address N status in soils but the side dress test is time and temperature limited. Time of year is very busy for farmers and above 75F (23-24c) mineralization of nitrogen.</p> <p>No need to separate out annual vs perennial crops when recommending Agrisuite (NMAN) as the software addresses these considerations.</p> <p>80% of nitrogen application related to corn, followed by cereals (wheat, barley, etc.). With some varieties of corn it is not possible to put a cover crop because of late harvest; however, silage corn is harvested early and even without soil testing OMAFRA would encourage a cover crop such as rye to address potential excess nitrogen</p> <p>Consider requiring/recommending soil testing for application of commercial fertilizer in addition to agricultural source material.</p> <p>Support reducing geographic scope to Issue Contributing Area - Nitrogen</p>
<p><b>Academia</b></p>	<p>A lot of science goes into provincial best management practices and BMP often become part of regulation</p> <p>To address complex question of agricultural system and exportation of biomass, we too often try to re-invent the wheel, looking to the Agrisuite (NMAN) to address application excess nitrogen makes sense</p> <p>Research out of Waterloo about transient nature of nitrates</p> <p>Different crops have different leachate potential, corn highest leaching potential, alfalfa is nitrogen-fixing</p> <p>50 years of research in Scandinavian countries has shown great success in reducing nitrates through agricultural best management practices</p> <p>Accountability, success of policy is reducing nitrates reaching municipal well(s)</p> <p><b>Support reducing geographic scope to Issue Contributing Area - Nitrogen</b></p>



## Policy Analysis

### Agricultural Source Material

#### Legal Definitions

The CTC Source Protection Plan came into effect on December 31, 2015 and relied upon the legal definition within the provincial *Nutrient Management Act* from January 1, 2014 to June 30, 2015. There have been some slight revisions to the definition of agricultural source material in the intervening eight years.

Table 5. Section 1 Definitions and General, Part 1 Definitions and Interpretation, O.Reg. 267/03, under the *Nutrient Management Act*, Agricultural Source Material Definition

Ontario Regulation 267/03 (2014/15)	Ontario Regulation 267/03 (2022/23)
<ul style="list-style-type: none"> <li>Manure produced by farm animals, including associated bedding materials.</li> </ul>	<ul style="list-style-type: none"> <li>Manure, including associated bedding materials, whether or not located on an agricultural operation.</li> </ul>
<ul style="list-style-type: none"> <li>Runoff from farm-animal yards and manure storages.</li> </ul>	<ul style="list-style-type: none"> <li>Runoff from farm animal yards, outdoor confinement areas and permanent nutrient storage facilities that contain only manure and associated bedding materials, whether or not located on an agricultural operation.</li> </ul>
<ul style="list-style-type: none"> <li>Washwaters from agricultural operations that have not been mixed with human body waste.</li> </ul>	<ul style="list-style-type: none"> <li>No change</li> </ul>
<ul style="list-style-type: none"> <li>Organic materials produced by intermediate operations that process materials described in paragraph 1, 2 or 3.</li> </ul>	<ul style="list-style-type: none"> <li>No change</li> </ul>
<ul style="list-style-type: none"> <li>Anaerobic digestion output, if,                             <ul style="list-style-type: none"> <li>the anaerobic digestion materials were treated in a mixed anaerobic digestion facility,</li> <li>at least 50 per cent, by volume, of the total amount of anaerobic digestion materials were on-farm anaerobic digestion materials, and</li> <li>the anaerobic digestion materials did not contain sewage biosolids or human body waste.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>No change</li> </ul>

Ontario Regulation 267/03 (2014/15)	Ontario Regulation 267/03 (2022/23)
<ul style="list-style-type: none"> <li>Regulated compost as defined in subsection 1 (1) of Ontario Regulation 106/09 (Disposal of Dead Farm Animals) made under the Act; (“matières de source agricole”, “MSA”)</li> </ul>	<ul style="list-style-type: none"> <li>No change</li> </ul>

## Jurisdiction Review

The agricultural source material policies of three neighboring Source Protection Regions (SPR) were reviewed. These include:

- South Georgian Bay Lake Simcoe (SGBL SPR) approved policies.
- Lake Erie (LE SPR) approved policies.
- Halton-Hamilton (HH SPR) approved policies.

The policy treatments by these adjacent SPR are summarized, below.

Table 6. Agricultural Source Material Significant Threat Jurisdiction Review

	Lake Erie Source Protection Area	Lake Simcoe and Georgian Bay Source Protection Area	Halton Hamilton Source Protection Area
<b>Prohibition (s.57)</b>	Limited to specific vulnerable areas in specific municipalities.	Limited to WHPA-A and IPZ-1	
<b>Risk Management Plans (s.58)</b>	General approach for non-phased in farms existing and future activities that would be SDWT	General approach for non-phased in farms existing and future activities that would be SDWT	
<b>Restricted Land Use Planning (s.59)</b>	Screen areas where activity would be a SDWT.	Screen areas where activity would be a SDWT.	Screen areas where activity would be a SDWT.
<b>Prescribed Instrument</b>	General approach for phased in farms existing and future activities that would be SDWT	Existing and future activity that would be a SDWT but not covered by prohibition.	General approach for phased in farms existing and future activities that would be SDWT
<b>Land Use Planning</b>		Planning documents to be amended to prohibit	Proponents compelled to disclose activities expected to

	Lake Erie Source Protection Area	Lake Simcoe and Georgian Bay Source Protection Area	Halton Hamilton Source Protection Area
		future ASM storage within WHPA-A or IPZ-1	occur on property where would be SDWT
<b>Education and Outreach</b>		Undertake a program focusing on properties where activity would be SDWT	Undertake a program focusing on properties where activity would be SDWT
<b>Other Tools</b>		Compliance incentives of agricultural operations by MECP	Compliance inspections/incentives of agricultural operations by MECP

### CTC Outstanding Threats

The most recent number of remaining significant drinking water threats comes from the 2022 Annual Report summarized, below.

Table 7. Agricultural Source Material Threats Identified (2022)

	Original threat count (a)	Field verified new threats (b)	Threats discounted through field verification (c)	Threats addressed through policy tools (d)	Remaining significant drinking water threats (a+b-c-d=e)
The application of Agricultural Source Material to land	65	6	40	15	16
The storage of Agricultural Source Material	39	11	36	5	9

### Management Practices of Potential Interest

With respect to manure application, best agricultural management practices dictate to incorporate solid-spread, liquid-broadcast or irrigated-liquid manure within 24 hours in the spring. The rationale is to prevent denitrification, specifically loss of N gases to atmosphere on moist, poorly drained soils. (Canada, Ontario and Agricultural Adaptation Council 2005 and personal conversation CVC Ag. Rep. 2023).

However, groundwater recharge generally takes place in the spring and fall and nitrogen percolates easily into groundwater through the soil along with rainwater recharge or irrigation water. This best agricultural management practice has the potential to introduce nitrogen directly into the groundwater system. By contrast, because ammonia volatilizes rapidly when to sunshine and air, the risk to the groundwater system is greatly reduced if manure is not incorporated into the soil within 24 hours.

A difference should be noted between annual (cash) crops and perennial crops. Where a farmer is growing perennial hay and pasture crops and where the biomass above is removed but the plant structure below is left, the application of agricultural source material is not usually undertaken as part of a soil management regime.

### Land Use Trends of Potential Interest

The risk of nutrient movement off a field due to erosion or leaching is balanced by the amount of groundcover and root mass available to absorb the nutrients. The lowest risk of nutrient movement off a field will occur when there is a permanent sod with a dense root network receiving little or no fertilizer. Long-term application of chemical fertilizer has the potential to promote invasive species. Any practice, such as cover crops to uptake nitrogen left behind by the main crop and/or manure application, that increases the amount of groundcover or root mass helps lower the risk of nutrient loss. (Ontario Soil Crop 2022)

However, urbanizing land use patterns within CTC are such that many farmers within our jurisdiction rent their farms often with short-term leases. Lack of ownership and/or long-term leases has the potential to discourage investment in soil health. While RMOs in other parts of Ontario may be able to check in based upon a predetermined crop rotation schedule, more regular visits may be required due to dynamic land ownership/use patterns.

## Non-Agricultural Source Material

### Legal Definitions

The CTC Source Protection Plan came into effect on December 31, 2015 and relied upon the legal definition within the provincial *Nutrient Management Act* from January 1, 2014 to June 30, 2015. There have been some slight revisions to the definition of non-agricultural source material in the intervening eight years.

Table 8. Section 1 Definitions and General, Part 1 Definition and Interpretation, O.Reg. 267/03, under the *Nutrient Management Act*, Non-Agricultural Source Material Definition

Ontario Regulation 267/03 (2014/15)	Ontario Regulation 267/03 (2022/23)
<ul style="list-style-type: none"> <li>• Pulp and paper biosolids</li> </ul>	<ul style="list-style-type: none"> <li>• No change</li> </ul>

Ontario Regulation 267/03 (2014/15)	Ontario Regulation 267/03 (2022/23)
<ul style="list-style-type: none"> <li>• Sewage biosolids</li> </ul>	<ul style="list-style-type: none"> <li>• No change</li> </ul>
<ul style="list-style-type: none"> <li>• Anaerobic digestion output, if less than 50 per cent, by volume, of the total amount of anaerobic digestion materials that were treated in the mixed anaerobic digestion facility were on-farm anaerobic digestion materials.</li> </ul>	<ul style="list-style-type: none"> <li>• Anaerobic digestion output, if less than 50 per cent, by volume, of the total amount of anaerobic digestion materials that were treated in the mixed anaerobic digestion facility were on-farm anaerobic digestion materials.                             <ul style="list-style-type: none"> <li>○ Restricted anaerobic digestion output.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• Any other material that is not from an agricultural source and that is capable of being applied to land as a nutrient; (“matières de source non agricole”, “MSNA”)</li> </ul>	<ul style="list-style-type: none"> <li>• Any other material,                             <ul style="list-style-type: none"> <li>○ that is not from an agricultural source and that is capable of being applied to land as a nutrient, and</li> <li>○ that is not an agricultural source material; (“matières de source non agricole”, “MSNA”)</li> </ul> </li> </ul>

### Jurisdiction Review

The non-agricultural source material policies of three neighboring Source Protection Regions (SPR) were reviewed. These include:

- South Georgian Bay Lake Simcoe (SGBL SPR) approved policies.
- Lake Erie (LE SPR) approved policies.
- Halton-Hamilton (HH SPR) approved policies.

The policy treatments by these adjacent SPR are summarized, below.

Table 9. Non-Agricultural Source Material Significant Threat Jurisdiction Review

	Lake Erie Source Protection Area	Lake Simcoe and Georgian Bay Source Protection Area	Halton Hamilton Source Protection Area
<b>Prohibition (s.57)</b>	Limited to specific vulnerable areas in specific municipalities	Limited to WHPA-A and IPZ-1	
<b>Risk Management Plans (s.58)</b>		General approach where approval under the <u>Nutrient Management Act</u> or <u>Environmental Protection Act</u> is not	



	Lake Erie Source Protection Area	Lake Simcoe and Georgian Bay Source Protection Area	Halton Hamilton Source Protection Area
		required for existing and future activities that would be SDWT	
<b>Restricted Land Use Planning (s.59)</b>	Screen areas where activity would be a SDWT.	Screen areas where activity would be a SDWT	Screen areas where activity would be a SDWT.
<b>Prescribed Instrument</b>	General approach existing and future activities related to NASMS containing materials from a meat or sewage works that would be SDWT	General approach where approval under the <u>Nutrient Management Act</u> or <u>Environmental Protection Act</u> is required for existing and future activities that would be SDWT	General approach for existing and future activities related to Category 2 and 3 NASMs that would be SDWT
<b>Land Use Planning</b>		Planning documents to be amended to prohibit future NASM storage within WHPA-A or IPZ-1	Proponents compelled to disclose activities expected to occur on property where would be SDWT
<b>Education and Outreach</b>		Undertake a program focusing on properties where activity would be SDWT	General approach for existing and future activities related to Category 1 NASMs that would be SDWT
<b>Other Tools</b>		Compliance incentives of agricultural operations by MECP	Compliance inspections/incentives of agricultural operations by MECP



## CTC Outstanding Threats

The most recent number of remaining significant drinking water threats comes from the 2022 Annual Report summarized, below.

Table 10. Non-Agricultural Source Material Threats Identified (2022)

	Original threat count (a)	Field verified new threats (b)	Threats discounted through field verification (c)	Threats addressed through policy tools (d)	Remaining significant drinking water threats (a+b-c-d=e)
The application of Non-Agricultural Source Material to land	9	2	8	0	3
The handling and storage of Non-Agricultural Source Material	0	0	0	0	0

## Emerging Contaminants of Concern

### Per-and Polyfluoroalkyl Substances (PFAS)

While many PFASs have been found in biosolids, PFOS (Perfluorooctanesulfonic acid) and PFOA (Perfluorooctanoic acid) are among the most abundant and have the largest data sets to support risk assessment. PFOS and PFOA do not readily degrade via aerobic or anaerobic processes. The only dissipation mechanisms in water are dispersion, advection, and sorption to particulate matter such as biosolids in the wastewater stream. While PFOS and PFOA have largely been phased out of production in Canada, their resistance to environmental degradation causes a lingering concern for exposure. They can also be formed from precursors in the environment. PFOS and PFOA are both highly persistent in the environment and highly mobile. Both chemicals tend to bioaccumulate in humans, terrestrial organisms, and aquatic organisms. PFAS sources of concern include paper mills and residuals, industrial cleaning products, floor wax (e.g., in schools), metal coating facilities, consumer products (e.g., textiles), car washes, and aqueous film forming foam.

While PFOS and PFOA are still produced in the United States, production there is being phased out. On March 14, 2023, the United States Environmental Protection Agency proposed the PFAS National Primary Drinking Water Regulation. Additional information regarding the proposed regulation can be found here: <https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas>.

There has been media coverage related to Quebec’s temporary moratorium of biosolid imports from the United States as it works to establish control mechanisms and thresholds for PFAS. Environment Canada and Health Canada are undertaking a joint state of science, and the Canadian Food Inspection Agency, which regulates the *Fertilizer Act*, which deals with the importation and sale of biosolids is also active on this portfolio. Staff are hopeful that the next round of Director’s Technical Rules will consider PFAS, with work at the provincial and federal level expected to be resolved by that time.

## Legal Definitions

The CTC Source Protection Plan was approved on December 31, 2015 and relied upon the legal definition within the provincial Nutrient Management Act from January 1, 2014 to June 30, 2015. There have been no revisions to the definition of livestock in the intervening eight years.

Table 11. Section 1 Definitions and General, Part 1 Definition and Interpretation, O.Reg. 267/03, under the Nutrient Management Act, Livestock Definition

Ontario Regulation 267/03 (2014/15)	Ontario Regulation 267/03 (2022/23)
<ul style="list-style-type: none"> <li>“livestock” includes poultry and ratites (flightless, large, long-necked, and long-legged birds)</li> </ul>	<ul style="list-style-type: none"> <li>No change</li> </ul>

## Jurisdiction Review

The agricultural source material generation policies of three neighboring Source Protection Regions (SPR) were reviewed. These include:

- South Georgian Bay Lake Simcoe (SGBL SPR) approved policies.
- Lake Erie (LE SPR) approved policies.
- Halton-Hamilton (HH SPR) approved policies.

The policy treatments by these adjacent SPR are summarized, below.

Table 12. Livestock Significant Threat Jurisdiction Review

	Lake Erie Source Protection Area	Lake Simcoe and Georgian Bay Source Protection Area	Halton Hamilton Source Protection Area
<b>Prohibition (s.57)</b>		Limited to WHPA-A and IPZ-1 for non-phased in farms and where the number of animals on the land at any time is	

	Lake Erie Source Protection Area	Lake Simcoe and Georgian Bay Source Protection Area	Halton Hamilton Source Protection Area
		sufficient to generate nutrients at an annual rate that is greater than 0.5 nutrient units/acre for phased-in farms	
<b>Risk Management Plans (s.58)</b>	General approach for non-phased in farms existing and future activities that would be SDWT, variation in vulnerable areas in specific municipalities	General approach for non-phased in farms existing and future activities that would be SDWT	General approach for non-phased in farms existing and future activities that would be SDWT
<b>Restricted Land Use Planning (s.59)</b>	Screen areas where activity would be a SDWT.	Screen areas where activity would be a SDWT.	Screen areas where activity would be a SDWT.
<b>Prescribed Instrument</b>	General approach for phased in farms existing and future activities that would be SDWT, variation in vulnerable areas in specific municipalities	General approach for phased in farms existing and future activities that would be SDWT	General approach for phased in farms existing and future activities that would be SDWT
<b>Land Use Planning</b>		Planning documents to be amended to prohibit future outdoor confinement or farm animal yard within WHPA-A or IPZ-1	Proponents compelled to disclose activities expected to occur on property where would be SDWT
<b>Education and Outreach</b>		Undertake program in WHPA-B and E where there are less than 5 nutrients units per farm property	
<b>Other Tools</b>	Compliance incentives of agricultural operations by MECP in specific municipalities	Compliance incentives of agricultural operations by MECP	Compliance inspections/incentives of agricultural operations by MECP

## CTC Outstanding Threats

The most recent number of remaining significant drinking water threats comes from the 2022 Annual Report summarized, below.

Table 13. Livestock Threats Identified (2022)

	Original threat count (a)	Field verified new threats (b)	Threats discounted through field verification (c)	Threats addressed through policy tools (d)	Remaining significant drinking water threats (a+b-c-d=e)
Livestock, Outdoor Confinement and/or Farm Animal Yard	176	4	161	6	13

## Commercial Fertilizer

### Legal Definitions

The CTC Source Protection Plan came into effect on December 31, 2015 and relied upon the legal definition within the provincial *Nutrient Management Act* which in turn relied upon the legal definition within the federal *Fertilizer Act* from February 27, 2015 to January 1, 2019. There have been no revisions to the definition of fertilizer in the intervening eight years.

Table 14. Section 2 Definitions, under the *Fertilizer Act*, Fertilizer Definition

Fertilizer Act (2015)	Fertilizer Act (2022/23)
<ul style="list-style-type: none"> <li>Means any substance or mixture of substances, containing nitrogen, phosphorus, potassium or other plant food, manufactured, sold or represented for use as plant nutrient.</li> </ul>	<ul style="list-style-type: none"> <li>No change</li> </ul>

## Jurisdiction Review

The commercial fertilizer policies of three neighboring Source Protection Regions (SPR) were reviewed. These include:

- South Georgian Bay Lake Simcoe (SGBL SPR) approved policies.
- Lake Erie (LE SPR) approved policies.
- Halton-Hamilton (HH SPR) approved policies.

The policy treatments by these adjacent SPR are summarized, below.

Table 15. Commercial Fertilizer Significant Threat Jurisdiction Review

	Lake Erie Source Protection Area	Lake Simcoe and Georgian Bay Source Protection Area	Halton Hamilton Source Protection Area
<b>Prohibition (s.57)</b>		General approach for future handling and storage activities that would be SDWT, as well as general approach within an ICA for existing and future handling and storage activities	
<b>Risk Management Plans (s.58)</b>	General approach for non-phased in farms existing and future activities that would be SDWT, variation in vulnerable areas in specific municipalities	General approach for non-phased in farms existing application activities that would be SDWT, includes requirement for NPK soil test, as well as general approach for existing handling and storage activities that would be SDWT	General approach for non-phased in farms existing and future activities that would be SDWT
<b>Restricted Land Use Planning (s.59)</b>	Screen areas where activity would be a SDWT.	Screen areas where activity would be a SDWT.	Screen areas where activity would be a SDWT.
<b>Prescribed Instrument</b>	General approach for phased in farms existing and future activities that would be SDWT, variation	General approach for phased in farms existing and future activities that would be SDWT, includes requirement for	General approach for phased in farms existing and future activities that would be SDWT

	Lake Erie Source Protection Area	Lake Simcoe and Georgian Bay Source Protection Area	Halton Hamilton Source Protection Area
	in vulnerable areas in specific municipalities	NPK soil test within Issue Contributing Area-Nitrogen	
<b>Land Use Planning</b>		Planning documents to be amended to prohibit future commercial fertilizer storage within WHPA-A or IPZ-1	Proponents compelled to disclose activities expected to occur on property where would be SDWT
<b>Education and Outreach</b>		Undertake a program focusing on properties where activity would be SDWT	Undertake a general program focusing on properties where activity would be SDWT and a specific program encouraging golf courses to obtain an Audubon Co-operative Sanctuary Certification
<b>Other Tools</b>		Compliance incentives of agricultural operations by MECP	Compliance inspections agricultural operations by MECP

### CTC Outstanding Threats

The most recent number of remaining significant drinking water threats comes from the 2022 Annual Report summarized, below.

Table 16. Commercial Fertilizer Threats Identified (2022)

	Original threat count (a)	Field verified new threats (b)	Threats discounted through field verification (c)	Threats addressed through policy tools (d)	Remaining significant drinking water threats (a+b-c-d=e)
The application of	57	24	46	26	9



	Original threat count (a)	Field verified new threats (b)	Threats discounted through field verification (c)	Threats addressed through policy tools (d)	Remaining significant drinking water threats (a+b-c-d=e)
commercial fertilizer					
The storage and handling of commercial fertilizer	89	12	86	15	1

## Conclusions and Recommendations

### Potential Policy Gaps

Significant drinking water threats, related to the application, handling, and storage of agricultural source material and commercial fertilizer, as well as agricultural source material generation (livestock grazing and outdoor confined areas), are regulated by Nutrient Management Plans and Nutrient Management Strategies, under the *Nutrient Management Act*, for phased-in farms but are not similarly regulated for non-phased-in farms.

In addition, Nutrient Management Plans are not overseen by OMAFRA and/or MECP but instead are overseen by Nutrient Management Certificate and Licence holders who may be third parties or owner-operators.

CTC staff are recommending the CTC Source Protection Committee consider restructuring policies related to the application, handling, and storage of agricultural source material and commercial fertilizer, as well as agricultural source material generation, in a similar manner as Saugeen, Grey Sauble, Northern Bruce Peninsula Source Protection Region utilizing Section 61 of Ontario Regulation 287/07.

Significant drinking water threats related to the application, handling and storage, of (Category 1) non-agricultural source material are regulated outside of the use of NASM Plans (e.g. setbacks, testing of material, etc.). Significant drinking water threats related to the application of some (Category 2) non-agricultural source material are regulated through the use of **non-approved** NASM Plans (e.g. prepared by NASM Plan Development Certificate holder). Significant drinking water threats related to the application of some (Category 2) and all (Category 3) non-agricultural source material are regulated through the use of **approved** NASM Plans (e.g. prepared by NASM Plan Development Certificate holder and reviewed by OMAFRA). Significant drinking water threats, related to the handling and storage of all (Category 2 and 3) non-

agricultural source material are regulated through the use of **approved** NASM Plans (e.g. prepared by NASM Plan Development Certificate holder and reviewed by OMAFRA).

CTC staff are recommending the CTC Source Protection Committee consider restricting the Category 1 and 2 non-agricultural source material policies in a similar manner as Saugeen, Grey Sauble, Northern Bruce Peninsula Source Protection Region Source Protection Region utilizing Section 61 of Ontario Regulation 287/07.

CTC staff's recommendations are in line with MECP and OMAFRA. Both provincial agencies advocate for the use of a conformity statement with local source protection plans where relying on a Prescribed Instrument. In addition, as part of the preparation of this report, conversations were held with OMAFRA staff who advocated to avoid making Nutrient Management Certificate and Licence holders the implementing body for nutrient related policies where possible.

Where a person holds a Prescribed Instrument, it should be noted that Section 61 of Ontario Regulation 287/07 requires the following actions:

- To give notice to the Risk Management Official that the regulated activity is subject to a prescribed instrument;
- To provide to the Risk Management Official a copy of the prescribed instrument identified in the notice; and
- To identify where in the prescribed instrument a statement of conformity with significant drinking water threats set out in the local source protection plan (or where the prescribed instrument does not contain a statement of conformity to provide an accompanying statement of conformity).

Where a person does not hold a Prescribed Instrument, it should be noted that Section 61 of Ontario Regulation 287/07 requires the following actions:

- To give notice to the Risk Management Official that the regulated activity will be subject to a prescribed instrument.
- To abide by the timeframe the Risk Management Official sets out in a written notice the person engaged in the regulated activity must obtain a prescribed instrument; and
- To abide by the termination of the exemption should the prescribed instrument not be provided to the Risk Management Official within the aforementioned timeframe.

## Director's Technical Rules

The optional/enabling provisions in the 2021 Director's Technical Rules pertain to Category 1 NASMs and the handling and storage of commercial fertilizer. Category 1 NASMs, except for non-farm herbivorous manure, are no longer considered a significant drinking water threat. The handling and storage of commercial fertilizer was previously based on the type of land use (e.g. retail; excluding manufacturing, processing) and mass stored but is now based solely on mass of fertilized storage.

CTC staff are recommending the CTC Source Protection Committee utilizing some of the optional/enabling provisions in the 2021 Director's Technical Rules. The items are outlined below:

- CTC staff are recommending lifting the RMP policies pertaining to the application, as well as the handling and storage, of Category 1 NASMs except for non-farm herbivorous manure; and
- CTC staff are recommending amending the RMP policy pertaining to the handling and storage of commercial fertilizer to focus on the mass of fertilizer stored.

### s.36 CTC Workplan Order

In the s.36 CTC Workplan Order, MECP directed CTC staff to undertake an assessment of the impacts of nutrient related prohibitions outside of the WHPA-A on the agricultural community. Over the last several years, CTC staff undertaking this assessment concluded from a scientific perspective, that prohibitions outside of the WHPA-A including WHPA-B (VS=10), WHPA-E, and ICA-Nitrates (and Pathogens), are, in general, narrow in scope and warranted based on the risk.

However, there are some small exceptions to this statement. CTC staff acknowledge the prohibition on commercial fertilizer outside of the WHPA-A may, in conjunction with the prohibition of the application of Agricultural Source Material, place agricultural producers at a competitive disadvantage.

In addition, thorough discussions with the Amendments Working Group, CTC staff learned from Risk Management Officials and Risk Management Inspectors that Risk Management Plans pertaining to livestock grazing and pasturing where the farm in question is residential and less than 5 NU in size are creating an administrative burden.

Staff are recommending the CTC Source Protection Committee consider revising current prohibitions. The items are outlined below:

- CTC staff are recommending lifting the prohibition around the application of commercial fertilizer outside of the WHPA-A; and
- CTC staff are recommending lifting the requirement for a Risk Management Plan in relation to livestock grazing and pasturing where the farm in question is residential and less than 5 NU in size in favor of an inspection policy.

### Other Considerations

CTC staff acknowledge the effectiveness/uptake of the soil testing policy in relation to the application of Agricultural Source Material policy has been less than originally intended.

Over the last several years, CTC staff have undertaken this assessment concluding from a scientific perspective, that the requirement for soil testing with respect to the application of

agricultural source material should be reconsidered. Although not explicitly stated in the policy text, it was understood that soil testing referred to an agronomic (NPK) soil test. However, while an NPK test is suitable for determining Phosphorus (P) and Potassium (K), it is not suitable for determining Nitrogen (N). A pre-sidedress nitrate test, collected 7 days prior to the application of nutrients, is the appropriate test for entering into the OMAFRA software (Agrisuite/NMAN) or equivalent to determine nutrient application rates.

CTC staff are recommending the CTC Source Protection Committee consider revising current requirements. The item is outlined below:

- CTC staff are recommending that the requirement for soil testing be: (1) limited to Issue Contributing Areas – Nitrogen; (2) expanded from the application of ASM to include application of ASM and FER; (3) undertaken in conjunction with the use of the OMAFRA software (Agrisuite/NMAN); and (4) support around the type of test and testing methodology to be provided in the explanatory document.

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## 10.4 AGRICULTURAL THREATS

### 10.4.1 Agricultural Source Material (ASM)

#### Definition

Agricultural Source Material (ASM) is a class of nutrients that can be applied to land for the purpose of improving the growth of agricultural crops and soil conditioning. Ontario Regulation 267/03 under the **Nutrient Management Act, 2002**, lists the following sources of ASM that may be produced, applied, stored, handled, or used on a farm:

- manure produced by farm animals (includes bedding materials);
- runoff 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 biosolids or human body waste; and
- **regulated compost (which contains dead farm animals).**

Storing ASM can be at or above grade in a permanent nutrient storage facility or on a temporary field nutrient storage site (solid ASM only).

#### Why is ASM a Threat to Drinking Water Sources?

A number of chemicals and pathogens from ASM could make their way into drinking water sources. The Ministry of the Environment, Conservation and Parks' **Tables of Drinking Water Threats (2009)** identifies the following sub-threat activities:

- The application of ASM to land **(see circumstances #1-18, 1944)**
- The storage of ASM **(see circumstances #1201-1224, 1962-1964)**
- The management of ASM – aquaculture **(see circumstance #1955)** (Note: there are no existing or future significant threats possible for management of ASM).

ASM threats can occur on large or small farms – those regulated by the Nutrient Management Act, 2002 (producing more than 300 nutrient units or phased-in) and those not regulated by the Act (producing less than 5 nutrient units or not yet phased-in). ASM is produced on farms with livestock, and under certain conditions, there are specific chemicals and pathogens that are able to make their way from ASM application and storage sites into groundwater drinking sources. The Ministry of the Environment, Conservation and Parks' Tables of Drinking Water Threats identifies the following chemicals and pathogens as potential concerns:

- Nitrogen
- Total phosphorus
- Pathogens

Nitrogen is a concern for surface and groundwater, while phosphorus is only a concern for surface water, for example, in **WHPAs where the wells are assessed as GUDI (groundwater under the influence of surface water)**. Permanent nutrient storage facilities are generally (but not always) located near barns and outdoor confinement areas. Temporary field nutrient storage facilities can be located near barns and outdoor confinement areas, as well as on fields where the ASM will be applied. The storage and application of ASM as potential threats to drinking water sources, is dependent on the vulnerability score of the specific area, and the combination of the percentage of managed land<sup>2</sup> and density<sup>3</sup> of livestock in the vulnerable area.

See **Table 10-4** for when and where application and storage of ASM may be a significant drinking water threat. Note: to determine if a specific activity is a significant drinking water threat consult the Tables of Drinking Water Threats for the

specific circumstances that must be met for the activity to be a threat. These activities may also be significant drinking water threats anywhere within an Issue Contributing Area (ICA) for **Nitrates** or Pathogens. There are not currently any Issue Contributing Areas for pathogens within the CTC Source Protection Region. If the activity meets the description of **circumstances** in the *Tables of Drinking Water Threats* it is a significant drinking water threat irrespective of vulnerability score.

Table 10-4: When/where ASM may be a significant drinking water threat (2009 Table of Drinking Water Threats)

Prescribed Drinking Water Threat	ASM Threat Sub-Category	Area and Vulnerability Score (VS)	Threat Classification Level
			Significant
			DTR 2009
The application, storage and management of agricultural source material	The application of agricultural source material to land	• WHPA-A	✓
		• WHPA-B (VS = 10)	✓
		• WHPA-E (VS ≥ 8)	✓
		• Anywhere in an ICA for <b>Nitrates</b> or Pathogens	✓
	The storage of agricultural source material	• WHPA-A	✓
		• WHPA-B (VS = 10)	✓
		• WHPA-E (VS ≥ 8)	✓
		• Anywhere in an ICA for <b>Nitrates</b> or Pathogens	✓
	The management of agricultural source material - aquaculture	• Anywhere in WHPA-E in an ICA for Pathogens	✓

Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policies
ASM-1	Application of Agricultural Source Material (ASM) to Lands	OMAFRA	C	<p><b>Prescribed Instrument</b></p> <p>1) The application of ASM to land shall be prohibited where the activity is, or would be, a significant drinking water threat in any of the following areas:</p> <ul style="list-style-type: none"> <li>• WHPA-A (existing, future); or</li> <li>• WHPA-B (VS=10) in an Issue Contributing Area for Pathogens (future); or</li> <li>• WHPA-E in an Issue Contributing Area for Nitrates or Pathogens (future).</li> </ul>	See Maps 1.1 – 1.21	<p>Future Immediately (T-3)</p> <p>Existing Upon expiry or within five years (T-2)</p>	N/A	MON-4
				<p>2) Where the application of ASM to land is an area where the activity is, or would be, a significant drinking water threat, the Nutrient Management Plan or Strategy that governs the activity shall be reviewed or established to ensure appropriate terms and conditions are included so that the activity ceases to be, or does not become, a significant drinking water threat. In addition to any other risk management measures required through the Prescribed Instrument, the Prescribed Instrument shall as a minimum ensure:</p> <p>a) The application of ASM is not applied during restricted periods, or another time when the soil is snow covered or frozen consistent with the limitations of subsection 52.2 – 52.4 of Ontario Regulation 267/03 under the <i>Nutrient Management Act, 2002</i> to avoid runoff; and</p> <p>b) Soil testing is required for plant available nitrogen each year prior to application of</p>		<p>Future Immediately (T-3)</p> <p>Existing: 3 years (T-1)</p>	GEN-1 GEN-2	MON-2

				<p>ASM to determine appropriate application rates, in any of the following areas:</p> <ul style="list-style-type: none"><li>• WHPA-B (VS=10) which is not in an Issue Contributing Area for Nitrates or Pathogens (existing, future); or</li><li>• WHPA-E (VS&gt;=8) which is not an Issue Contributing Area for Nitrates or Pathogens (existing, future); or</li><li>• WHPA-B (VS=10) in an Issue Contributing Area for Nitrates (existing, future); or</li><li>• WHPA-B (VS=10) in an Issue Contributing Area for Pathogens (existing); or</li><li>• WHPA-E in an Issue Contributing Area for Nitrates or Pathogens (existing); or</li><li>• The remainder of an Issue Contributing Area for Nitrates or Pathogens (existing, future)</li></ul>				
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Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policies
ASM-2	Application of Agricultural Source Material (ASM) to Lands	RMO	G	<p>Part IV, s.57, s.58</p> <p>For farms that do not require a Nutrient Management Plan or Strategy, where the application of ASM is, or would be, a significant drinking water threat, the following actions shall be taken:</p> <p>1) The application of ASM to land shall be prohibited where the activity is, or would be, a significant drinking water threat in any of the following areas:</p> <ul style="list-style-type: none"> <li>• WHPA-A (existing, future); or</li> <li>• WHPA-B (VS=10) in an Issue Contributing Area for Pathogens (future); or</li> <li>• WHPA-E in an Issue Contributing Area for Nitrates or Pathogens (future).</li> </ul>	See Maps 1.1 – 1.21	<p>Future Immediately (T-5)</p> <p>Existing 180 days (T-4)</p>	GEN-1	MON-2
			H	<p>2) The application of ASM is designed for the purpose of s.58 under the <i>Clean Water Act</i>, requiring risk management plans, where the threat is, or would be significant. In addition to any other risk management measures risk management plan, the risk management plan shall as a minimum ensure:</p> <p>a) The application of ASM is not applied during restricted periods, or another time when the soil is snow covered or frozen consistent with the limitations of subsection 52.2 – 52.4 of Ontario Regulation 267/03 under the <i>Nutrient Management Act, 2002</i> to avoid runoff; and</p> <p>b) Soil testing is required for plant available nitrogen each year prior to application of ASM to determine appropriate application rates, in any of the following areas:</p> <ul style="list-style-type: none"> <li>• WHPA-B (VS=10 which is not in an Issue Contributing Area for Nitrates or Pathogens (existing, future); or</li> </ul>		<p>Future Immediately (T-7)</p> <p>Existing: 1 year / 5 years (T-6)</p>	GEN-1 GEN-2	MON-2

				<ul style="list-style-type: none"> <li>• WHPA-E (VS&gt;=8) which is not an Issue Contributing Area for Nitrates or Pathogens (existing, future); or</li> <li>• WHPA-B (VS=10) in an Issue Contributing Area for Nitrates (existing, future); or</li> <li>• WHPA-B (VS=10) in an Issue Contributing Area for Pathogens (existing); or</li> <li>• WHPA-E in an Issue Contributing Area for Nitrates or Pathogens (existing); or</li> </ul> <p>The remainder of an Issue Contributing Area for Nitrates or Pathogens (existing, future)</p>				
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Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policies
ASM-3	Storage of Agricultural Source Material (ASM) to Lands	OMAFRA	C	<p><b>Prescribed Instrument</b></p> <p>1) The storage of ASM shall be prohibited where the activity is, or would be, a significant drinking water threat in any of the follow areas:</p> <ul style="list-style-type: none"> <li>• WHPA-A (future); or</li> <li>• WHPA-B (VS=10) in an Issue Contributing Area for Nitrates or Pathogens (future); or</li> <li>• WHPA-E in an Issue Contributing Area for Nitrates or Pathogens (future).</li> </ul>	See Maps 1.1 – 1.21	Future Immediately (T-3)	N/A	MON-4
				<p>2) Where the storage of ASM is an area where the activity is, or would be, a significant drinking water threat, the Nutrient Management Plan or Strategy that governs the activity shall be reviewed or established to ensure appropriate terms and conditions area included so that the activity ceases to be, or does not become, a significant drinking water threat in any of the following areas:</p> <ul style="list-style-type: none"> <li>• WHPA-A (existing); or</li> <li>• WHPA-B (VS=10) which is not in an Issue Contributing Area for Nitrates or Pathogens (existing, future); or</li> <li>• WHPA-E (VS&gt;=8) which is not an Issue Contributing Area for Nitrates or Pathogens (existing, future); or</li> <li>• WHPA-B (VS=10) in an Issue Contributing Area for Nitrates or Pathogens (existing, future); or</li> <li>• WHPA-B (VS=10) in an Issue Contributing Area for Nitrates or Pathogens (existing); or</li> <li>• WHPA-E in an Issue Contributing Area for Nitrates or Pathogens (existing); or</li> </ul> <p>The remainder of an Issue Contributing Area for Nitrates or Pathogens (existing, future)</p>		Future Immediately (T-3)  Existing: 3 years (T-1)	GEN-3	MON-4

Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policies
ASM-4	Storage of Agricultural Source Material (ASM)	RMO	G	<p>Part IV, s.57, s.58</p> <p>For farms that do not require a Nutrient Management Plan or Strategy where the application of ASM is, or would be, a significant drinking water threat, the following actions shall be taken:</p> <p>1) The storage of ASM shall be prohibited where the activity is, or would be, a significant drinking water threat in any of the follow areas:</p> <ul style="list-style-type: none"> <li>• WHPA-A (existing, future); or</li> <li>• WHPA-B (VS=10) in an Issue Contributing Area for Nitrates or Pathogens (future); or</li> <li>• WHPA-E in an Issue Contributing Area for Nitrates or Pathogens (future).</li> </ul>	See Maps 1.1 – 1.21	Future Immediately (T-5)	GEN-1	MON-2
			H	<p>1) The storage of ASM is designed for the purpose of s.58 under the <i>Clean Water Act</i>, requiring risk management plans, where the threat is, or would be significant in any of the following areas:</p> <ul style="list-style-type: none"> <li>• WHPA-A (existing); or</li> <li>• WHPA-B (VS=10) which is not an Issue Contributing Area for Nitrates or pathogens (existing, future); or</li> <li>• WHPA-E (VS &gt;=8) which is not an Issue Contributing Area for Nitrates or Pathogens (existing, future);</li> <li>• WHPA-B (VS=10) in an Issue Contributing Area for Nitrates or Pathogens (existing); or</li> <li>• WHPA-E (VS &gt;=8) in an Issue Contributing Area for Nitrates or Pathogens (existing); or</li> <li>• The remainder of an Issue Contributing Area for nitrates or pathogens (existing, future).</li> </ul>		<p>Future Immediately (T-7)</p> <p>Existing: 1year / 5 years (T-6)</p>	GEN-1 GEN-2	MON-2

ASM-5	Management of Agricultural Source Material (ASM) (Aquaculture)	MECP	C	<p><b>Prescribed Instrument</b></p> <p>The management of ASM (aquaculture) shall be prohibited where the activity is, or would be, a significant drinking water threat in the following areas:</p> <ul style="list-style-type: none"> <li>An Issue Contributing Area for Pathogens (existing, future).</li> </ul>	See Map 1.9	<p>Future Immediately (T-3)</p> <p>Existing: Upon expiry or within 5 years (T-2)</p>	N/A	MON-4
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## 10.4.2 Non-Agricultural Source Material (NASM)

### Definition

The application to land, handling, and storage of non-agricultural source material (NASM) are prescribed drinking water threats listed in Regulation 287/07 under the **Clean Water Act, 2006**. NASM is one class of nutrients that are not produced on a farm and can be applied to land for the purpose of improving the growth of agricultural crops and for soil conditioning. NASM includes the following materials that are intended to be applied to land as nutrients:

- 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); and
- 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).

Furthermore, the Categories of NASM are broken into 3 groups:

- **Category 1 – unprocessed plant based materials such as fruit and vegetable peels;**
- Category 2 – processed plant based materials such as bakery washwater;
- Category 3 – animal based materials such as meat and dairy washwater, sewage biosolids, and any material that is not listed in the other categories.

NASM can be applied to both agricultural and non-agricultural lands for nutrient enhancement and soil conditioning purposes. NASM 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 NASM stored for more than 24 hours). There are restrictions about what types of NASM can be stored on a farm and for how long.

### Why is NASM a Threat to Drinking Water Sources?

Chemicals and pathogens from NASM could make their way into drinking water sources. The Ministry of the Environment's Tables of Drinking Water Threats (2009) identifies the following sub-threat activities:

- The application of NASM to land (includes treated septage) (see circumstances #37-54, 1970- 1971)
- The handling and storage of NASM (see circumstances #1409-1432, 1965-1968)

Under certain conditions, specific chemicals and pathogens can make their way from NASM application, handling or storage sites into groundwater drinking sources. The Ministry of the Environment, Conservation and Parks' Tables of Drinking Water Threats identifies the following chemicals and pathogens as potential concerns:

- Nitrogen
- Total phosphorus
- Pathogens

Nitrogen is a concern for both surface and groundwater, but phosphorus is mainly a concern for surface water. Nitrogen and phosphorus, are typically associated with human waste, household and personal care products (such as soap and detergents), and animal by-products. Pathogens are associated with the following sources of NASM:

- seafood processing operations
- dairy product manufacturing operations
- pulp and paper mills
- animal food manufacturing operations (from animal sources)
- meat plants
- sewage works

The assessment of chemical threats for the application of NASM to land considered the geographic location, percentage of managed land and livestock density. The assessment of pathogen threats for the application of NASM to land considered the geographic location and the source of the material. The assessment of NASM storage sites, considered the geographic location, whether the storage facility is temporary or permanent, the source of the material, and whether the material is stored above or below grade.

See Table 10-5 for when and where application and storage of NASM may be a significant drinking water threat. Note: to determine if a specific activity is a significant drinking water threat consult the Tables of Drinking Water Threats for the specific circumstances that must be met for the activity to be a threat. These activities may also be significant drinking water threats anywhere within an Issue Contributing Area (ICA) for nitrates or pathogens. There are not currently any Issue Contributing Areas for pathogens within the CTC Source Protection Region. If the activity meets the description of circumstances in the Tables of *Drinking Water Threats* it is a significant drinking water threat irrespective of vulnerability score.

Table 20-5: When/where NASM may be a significant drinking water threat (2009 Table of Drinking Water Threats)

Prescribed Drinking Water Threat	NASM Threat Sub-Category	Area and Vulnerability Score (VS)	Threat Classification Level
			Significant
			DTR 2009
The application, handling, and storage of non-agricultural source material to land	The application of non-agricultural source material to land (including treated septage)	• WHPA-A	✓
		• WHPA-B (VS = 10)	✓
		• WHPA-E (VS ≥ 8)	✓
		• Anywhere in an ICA for Nitrates or Pathogens	✓
	The storage of non-agricultural source material	• WHPA-A	✓
		• WHPA-B (VS = 10)	✓
		• WHPA-E (VS ≥ 8)	✓
		• Anywhere in an ICA for Nitrates or Pathogens	✓

Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policies
NASM-1	Application of Non-Agricultural Source Material (NASM) to Land (Category 1)	RMO	G	<p>Part IV, s.57, s.58</p> <p>Where the application of NASM (Category 1) to land is, or would be, a significant drinking water threat, the following actions shall be taken:</p> <ul style="list-style-type: none"> <li>The application of NASM (Category 1) to land is designated for the purpose of s.57 under the <i>Clean Water Act</i>, and is therefore prohibited where the threat is, or would be significant, in the following areas: <ul style="list-style-type: none"> <li>WHPA-a (existing, future).</li> </ul> </li> </ul>	See Maps 1.1 – 1.21	<p>Future Immediately (T-5)</p> <p>Existing: 180 days (T-4)</p>	GEN-1	MON-2
			H	<p>2) The application of NASM (Category 1) to land is designated for the purpose of s.58 under the <i>Clean Water Act</i>, requiring risk management plans, where the threats is, or would be significant, in any of the following areas:</p> <ul style="list-style-type: none"> <li>WHPA-B (VS=10) which is not in an Issue Contributing Area for Nitrates (existing, future); or</li> <li>WHPA=E (VS&gt;=8) which is not in an Issue Contributing Area for Nitrates (existing, future); or</li> <li>The remainder of an Issue Contributing Area for Nitrates (existing, future).</li> </ul>		<p>Future Immediately (T-7)</p> <p>Existing: 1 year / 5 years (T-6)</p>	GEN-1 GEN-2 NASM-5	MON-2



Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policies
NASM-2	Handling and Storage of Non-Agricultural Source Material (NASM) to Land (Category 1)	RMO	G	<p>Part IV, s.57, s.58</p> <p>Where the handling and storage of NASM (Category 1) is, or would be, a significant drinking water threat, the following actions shall be taken:</p> <p>1) The handling and storage of NASM (Category 1) is designated for the purpose of s.57 under the <i>Clean Water Act</i>, and is therefore prohibited where the threat is, or would be significant, in the following areas:</p> <ul style="list-style-type: none"> <li>• WHPA-a (future).</li> </ul>	See Maps 1.1 – 1.21	Future Immediately (T-5)	GEN-1	MON-2
			H	<p>2) The handling and storage of NASM (Category 1) is designated for the purpose of s.58 under the <i>Clean Water Act</i>, requiring risk management plans, where the threat is, or would be significant, in any of the following areas:</p> <ul style="list-style-type: none"> <li>• WHPA-A (existing); or</li> <li>• WHPA-B (VS=10) (existing, future); or</li> <li>• WHPA-E (VS&gt;=8) (existing, future); or</li> <li>• The remainder of an Issue Contributing Area for Nitrates (existing, future).</li> </ul>		<p>Future Immediately (T-7)</p> <p>Existing: 1 year / 5 years (T-6)</p>	<p>GEN-1</p> <p>GEN-2</p> <p>NASM-5</p>	MON-2

Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policies
NASM-3	Application of Non-Agricultural Source Material (NASM) to Land (Category 2 and 3)	OMAFRA MECP	C	<b>Prescribed Instrument</b>  1) The application of NASM (Category 2 and 3) to land shall be prohibited where the activity would be a significant drinking water threat in any of the following areas: <ul style="list-style-type: none"> <li>• WHPA-A (future); or</li> <li>• WHPA-B (VS=10) (future); or</li> <li>• WHPA-E (VS&gt;= 8) (future); or</li> <li>• The remainder of an Issue Contributing Area for Nitrates or Pathogens (future).</li> </ul>	See Maps 1.1 – 1.21	Future Immediately (T-3)	N/A	MON-4
				2) The application of NASM to land (existing) may continue only until the expiry of the current approval, after which time it would be considered as a future activity.		Existing: Upon expiry or within 5 years (T-2)	NASM-5	MON-4

Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policies
NASM-4	Handling and Storage of Non-Agricultural Source Material (NASM) (Category 2 and 3)	OMAFRA MECP	C	<p><b>Prescribed Instrument</b></p> <p>The handling and storage of NASM (Category 2 and 3) shall be prohibited where the activity is, or would be, a significant drinking water threat in any of the following areas:</p> <ul style="list-style-type: none"> <li>• WHPA-A (existing, future); or</li> <li>• WHPA-B (VS=10) (existing, future); or</li> <li>• WHPA-E (VS&gt;=8) (existing, future); or</li> </ul> <p>The remainder of an Issue Contributing Area for Nitrates or Pathogens (existing, future).</p>	See Maps 1.1 – 1.21	<p>Future Immediately (T-3)</p> <p>Existing: Upon expiry or within 5 years (T-2)</p>	N/A	MON-4
NASM-5	Application of NASM to Land  Handling and Storage of NASM	OMAFRA  MECP	K	<p><b>Education and Outreach</b></p> <p>The Ministry of Environment, Conservation and Parks and the Ministry of Agriculture, Food and Rural Affairs are requested to provide to landowners and haulers that have a Prescribed Instrument or Risk Management Plan to haul, store or apply NASM, information on the importance of protecting source water and the location of the nearby municipal wells where the application, handling, and storage of NASM is, or would be, a significant drinking water threat in any of the following areas:</p> <ul style="list-style-type: none"> <li>• WHPA-A (existing, future); or</li> <li>• WHPA-B (VS = 10) (existing, future); or</li> <li>• WHPA-E (VS ≥ 8) (existing, future); or</li> <li>• the remainder of an Issue Contributing Area for Nitrates or Pathogens (existing, future).</li> </ul>	See Maps 1.1 - 1.21	Existing & Future: Consider within 2 years (T-15)	GEN-8 NASM-1 NASM-2 NASM-3	MON-4

### 10.4.3 Livestock

#### Definition

The use of land for livestock grazing or pasturing, an outdoor confinement area or a farm-animal yard are prescribed drinking water threats listed in Regulation 287/07 under the **Clean Water Act**, 2006 and are defined as follows:

- Livestock includes dairy, beef, swine, poultry, horses, goats, sheep, ratites (flightless birds), furbearing animals, deer, elk, game animals and birds, and other animals identified in the Minimum Distance Separation Guidelines ([http://www.omafra.gov.on.ca/english/landuse/guide\\_toc.htm](http://www.omafra.gov.on.ca/english/landuse/guide_toc.htm)).
- Grazing and pasturing land is considered to be the land on which livestock eat growing herbaceous plants.
- An outdoor confinement area is an enclosure for livestock, deer, elk, or game animals, and is further defined in O. Reg. 267/03 under the Nutrient Management Act, 2002 as follows:
  1. It has no roof, except as described below in #3;
  2. It is composed of fences, pens, corrals or similar structures;
  3. It may contain a shelter to protect the animals from the wind or another shelter with a roof of an area of less than 20 square metres;
  4. It has permanent or portable feeding or watering equipment;
  5. The animals are fed or watered at the enclosure;
  6. The animals may or may not have access to other buildings or structures for shelter, feeding or watering; and
  7. Grazing and foraging provides less than 50 percent of dry matter intake.
- Farm-animal yards are outdoor livestock areas lined with concrete other than those meeting the definition of an outdoor confinement area. Food and water are not provided in farm-animal yards. They are generally used as outdoor exercise areas or as holding areas when barns are being cleaned.

#### Why is Livestock Grazing, Pasturing and Outdoor Confinement a Threat to Drinking Water Sources?

Livestock threats can be on large or small farms – those regulated by the **Nutrient Management Act**, 2002 (producing more than 300<sup>4</sup> nutrient units or phased-in) and those not regulated by the NMA (less than 5 nutrient units). Chemicals and pathogens from the use of land as livestock grazing, pasturing, outdoor confinement, or farm-animal yards could make their way into drinking water sources. The Ministry of the Environment, Conservation and Parks' **Tables of Drinking Water Threats (2009)** identifies the following sub-threat activities:

- Use of land as livestock grazing or pasturing, an outdoor confinement area or farm-animal yard
  - Livestock/grazing (see circumstances #200-205, 1945)
  - Outdoor confinement (see circumstances #206-211, 1946)

Under certain conditions, specific chemicals and pathogens can make their way from livestock grazing, pasturing, outdoor confinement, or farm-animal yards into groundwater drinking sources. The Ministry of the Environment, Conservation and Parks' Tables of Drinking Water Threats identifies the following chemicals and pathogens as potential concerns:

- Nitrogen
- Total phosphorus
- Pathogens

Nitrogen is a concern for both surface and groundwater, while phosphorus is a concern primarily for surface water. Generally speaking, the greater the number of livestock kept in a space, the greater the accumulation of manure, and the greater the risk of contaminating water sources with these nutrients and pathogens. Accordingly, the assessment of the potential threat to drinking water sources from use of land as livestock grazing or pasturing land, an outdoor confinement area or a farm-animal yard is dependent on the concentration of manure in a given area.

See Table 10-6 for when and where livestock may be a significant drinking water threat. Note: to determine if a specific activity is a significant drinking water threat consult the Tables of Drinking Water Threats for the specific circumstances that must be met for the activity to be a threat. These activities may also be significant drinking water threats anywhere within an Issue Contributing Area (ICA) for Nitrates or Pathogens. There are not currently any Issue Contributing Areas for pathogens within the CTC Source Protection Region. If the activity meets the description of circumstances in the Tables of Drinking Water Threats it is a significant drinking water threat irrespective of vulnerability score.

Table 30-6: When/where NASM may be a significant drinking water threat (2009 Table of Drinking Water Threats)

Prescribed Drinking Water Threat	Livestock Threat Sub-Category	Area and Vulnerability Score (VS)	Threat Classification Level
			Significant
			DTR 2009
The use of land as livestock grazing or pasturing land, an outdoor confinement area or a farm-animal yard	The use of land as livestock grazing or pasturing land	• WHPA-A	✓
		• WHPA-B (VS = 10)	✓
		• WHPA-E (VS ≥ 8)	✓
		• Anywhere in an ICA for Nitrates or Pathogens	✓
	The use of land as an outdoor confinement area or a farm-animal yard	• WHPA-A	✓
		• WHPA-B (VS = 10)	✓
		• WHPA-E (VS ≥ 8)	✓
		• Anywhere in an ICA for Nitrates or Pathogens	✓

Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policies
LIV-1	The Use of Land as Livestock Grazing or Pasturing Land (O. Reg. 385/08, s.3)	RMO	G	<p>Part IV, s.57, s.58</p> <p>Where the use of land as livestock grazing or pasturing land is, or would be, a significant drinking water threat, the following actions shall be taken:</p> <p>1) The use of land as livestock grazing or pasturing land (with an animal density &gt;1 Nutrient Unit per acre) is designated for the purpose of s.57 under the <i>Clean Water Act</i>, and is therefore prohibited where the threat is, or would be significant, in any of the following areas:</p> <ul style="list-style-type: none"> <li>• WHPA-A in an Issue Contributing Area for Nitrates or Pathogens (existing, future).</li> </ul>	See Maps 1.1 – 1.21	<p>Future Immediately (T-5)</p> <p>Existing: 180 days (T-4)</p>	GEN-1	MON-2
			H	<p>2) The use of land as livestock grazing or pasturing land is designated for the purpose of s. 58 under the <i>Clean Water Act</i>, requiring risk management plans, where the threat is, or would be significant, in any of the following areas:</p> <ul style="list-style-type: none"> <li>• WHPA-A not in an Issue Contributing Area for Nitrates or Pathogens (existing, future); or</li> <li>• WHPA-A in an Issue Contributing Area for Nitrates or Pathogens with an animal density &lt; 1 Nutrient Unit per acre (existing, future); or</li> <li>• WHPA-B (VS=10) (existing, future); or</li> <li>• WHPA-E (VS&gt;=8) (existing, future); or</li> </ul> <p>The remainder of an Issue Contributing Area for Nitrates or Pathogens (existing, future).</p>		<p>Future: Immediately (T-7)</p> <p>Existing: 1 year / 5 years (T-6)</p>	GEN-1 GEN-2	MON-2



Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policies
LIV-2	The Use of Land as an Outdoor Confinement Area or a Farm-Animal Yard (O. Reg. 385/08, s.3)	OMAFRA	C	<p><b>Prescribed Instrument</b></p> <p>1) The use of land as an outdoor confinement area or farm-animal yard shall be prohibited where the activity would be significant drinking water threat in any of the following areas:</p> <ul style="list-style-type: none"> <li>• WHPA-A (future); or</li> <li>• WHPA-B (VS=10) in an Issue Contributing Area for Nitrates or Pathogens (future); or</li> <li>• WHPA-E in an Issue Contributing Area for Nitrates or Pathogens (future).</li> </ul>	See Maps 1.1 – 1.21	Future Immediately (T-3)	N/A	MON-4
				<p>2) Where the use of land as an outdoor confinement area or farm-animal yard is an area where the activity is, or would be, a significant drinking water threat, the Nutrient Management Plan or Strategy that governs the activity shall be reviewed or established to ensure appropriate terms and conditions are included so that the activity ceases to be, or does not become, a significant drinking water threat in any of the following areas:</p> <ul style="list-style-type: none"> <li>• WHPA=A (existing); or</li> <li>• WHPA-B (VS=10) which is not an Issue Contributing Area for Nitrates or Pathogens (existing, future); or</li> <li>• WHPA-E (VS&gt;= 8) which is not in an Issue Contributing Area for Nitrates or Pathogens (existing, future); or</li> <li>• WHPA-B (VS=10) in an Issue Contributing Area for Nitrates or Pathogens (existing); or</li> <li>• WHPA-E in an Issue Contributing Area for Nitrates (existing); or</li> </ul> <p>The remainder of an Issue Contributing Area for Nitrates or Pathogens (existing, future).</p>		Future: Immediately (T-3) Existing: 3 years (T-1)	GEN-3	MON-4

Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policies
LIV-3	The Use of Land as an Outdoor Confinement Area or a Farm-Animal Yard (O. Reg. 385/08, s.3)	RMO	G	<p>Part IV, s.57, s.58</p> <p>For lands that do not require a Nutrient Management Plan or Strategy where the use of lands as an outdoor confinement area or farm-yard animal yard is, or would be, a significant drinking water threat, the following actions shall be taken:</p> <p>1) The use of land as an outdoor confinement area or farm-animal yard is designated for the purpose of s.57 under the <i>Clean Water Act</i>, and is therefore prohibited where the threat would be significant in any of the following areas:</p> <ul style="list-style-type: none"> <li>• WHPA-A (future); or</li> <li>• WHPA-B (VS=10) in an Issue Contributing Area for Nitrates or Pathogens (future); or</li> <li>• WHPA-E in an Issue Contributing Area for Nitrates or Pathogens (future).</li> </ul>	See Maps 1.1 – 1.21	Future Immediately (T-3)	GEN-1	MON-2
				<p>2) The use of land as an outdoor confinement area or farm-animal yard is designated for the purpose of s.58 under the <i>Clean Water Act</i>, requiring risk management plans, where the threat is, or would be significant, in any of the following areas:</p> <ul style="list-style-type: none"> <li>• WHPA=A (existing); or</li> <li>• WHPA-B (VS=10) which is not an Issue Contributing Area for Nitrates or Pathogens (existing, future); or</li> <li>• WHPA-E (VS&gt;= 8) which is not in an Issue Contributing Area for Nitrates or Pathogens (existing, future); or</li> </ul>		<p>Future: Immediately (T-3)</p> <p>Existing: 1 year / 5 years (T-6)</p>	GEN-1 GEN-2	MON-2

				<ul style="list-style-type: none"><li>• WHPA-B (VS=10) in an Issue Contributing Area for Nitrates or Pathogens (existing); or</li><li>• WHPA-E in an Issue Contributing Area for Nitrates (existing); or</li><li>• The remainder of an Issue Contributing Area for Nitrates or Pathogens (existing, future).</li></ul>				
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## 10.5 COMMERCIAL FERTILIZER

### Definition

Commercial fertilizer is one of the prescribed drinking water threats listed in Regulation 287/07 under the **Clean Water Act**, 2006. Commercial fertilizer is a manufactured compound containing nitrogen, phosphorus, potassium, or other minerals intended for use as a plant nutrient. In the drinking water source protection process, commercial fertilizer is distinguished from other nutrient sources – agricultural source material (ASM) and non-agricultural source material (NASM).

### Why is Fertilizer a Threat to Drinking Water Sources?

Chemicals from the application, handling and storage of fertilizer could make their way into drinking water sources. The Ministry of the Environment, Conservation and Parks' **Tables of Drinking Water Threats (2009)** identifies the following sub-threat activities:

- The application of commercial fertilizer to land (see circumstances #19-36)
- The handling and storage of commercial fertilizer (see circumstances #1273-1288)

The nitrogen and phosphorus in commercial fertilizer can enter drinking water sources due to the improper use and storage of the fertilizer. The improper use of fertilizer includes the application of fertilizer without consideration for nutrients already available in the soil and plant requirements, or the inappropriate timing of application for plant growth cycles and weather conditions. Potential impacts of storing fertilizer relate to leaks and spills from aging infrastructure or improper storage techniques. Phosphorus is often associated with runoff and soil erosion from both the storage and application of commercial fertilizer.

The Ministry of the Environment, Conservation and Parks' Tables of Drinking Water Threats identifies the following chemicals as potential concerns:

- Nitrogen
- Total phosphorus

Nitrogen is a concern for both surface and groundwater, but phosphorus is primarily a concern for surface water. The assessment of potential threats to drinking water sources from commercial fertilizer application is dependent on the location and the combination of the percentage of managed land, and livestock density in the vulnerable area and where the fertilizer is applied. The potential threat to drinking water from the storage of fertilizer depends on the location, type of facility where it is stored, and the quantity stored.

See **Table 10-7** for when and where application and storage of commercial fertilizer may be a significant drinking water threat. Note: to determine if a specific activity is a significant drinking water threat consult the Tables of Drinking Water Threats for the specific circumstances that must be met for the activity to be a threat. These activities may also be significant drinking water threats anywhere within an Issue Contributing Area (ICA) for Nitrates. If the activity meets the description **of circumstances** in the *Tables of Drinking Water Threats* it is a significant drinking water threat irrespective of vulnerability score.

Table 40-7: When/where commercial fertilizer may be a significant drinking water threat (2009 Table of Drinking Water Threats)

Prescribed Drinking Water Threat	Commercial Threat Sub-Category	Area and Vulnerability Score (VS)	Threat Classification Level
			Significant
			DTR 2009
The application, handling, and storage of commercial fertilizer	The application of commercial fertilizer to land	• WHPA-A	✓
		• WHPA-B (VS = 10)	✓
		• WHPA-E (VS ≥ 9)	✓
		• Anywhere in an ICA for Nitrates or Pathogens	✓
	The storage of commercial fertilizer	• WHPA-A	✓
		• WHPA-B (VS = 10)	✓
		• Anywhere in an ICA for Nitrates or Pathogens	✓

Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policies
FER-1	Application of Commercial Fertilizer to Land	OMAFRA	C	<p><b>Prescribed Instrument</b></p> <p>1) The application of commercial fertilizer (containing nitrogen) to land shall be prohibited where the activity is, or would be, a significant drinking water threat in any of the following areas:</p> <ul style="list-style-type: none"> <li>• WHPA-A (existing, future); or</li> <li>• WHPA-E in an Issue Contributing Area for Nitrates (future).</li> </ul>	See Maps 1.1 – 1.21	<p>Future Immediately (T-3)</p> <p>Existing: Upon expiry or within 5 years (T-2)</p>	N/A	MON-4
				<p>2) Where the application of commercial fertilizer (containing nitrogen or phosphorus) to land is in an area where the activity is, or would be, a significant drinking water threat, the Nutrient Management Plan or Strategy that governs the activity shall be reviewed or established to ensure appropriate terms and conditions are included so that the activity ceases to be, or does not become, a significant drinking water threat in any of the following area:</p> <ul style="list-style-type: none"> <li>• WHPA-B (VS=10) (existing, future); or</li> <li>• WHPA-E (VS&gt;= 9) which is not in an Issue Contributing Area for Nitrates (existing, future); or</li> <li>• WHPA-E in an Issue Contributing Area for Nitrates (existing); or</li> <li>• The remainder of an Issue Contributing Area for Nitrates (existing, future).</li> </ul>		<p>Future: Immediately (T-3)</p> <p>Existing: 3 years (T-1)</p>	GEN-3	MON-4



Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policies
FER-2	Application of Commercial Fertilizer to Land	RMO	G	<p>Part IV, s.57, s.58</p> <p>For lands that do not require a Nutrient Management Plan or Strategy where the application of commercial fertilizer to land is, or would be, a significant drinking water threat (excluding incidental quantities for personal use), the following actions shall be taken:</p> <p>1) The application of commercial fertilizer (containing nitrogen) is for the purpose s.57 under the <i>Clean Water Act</i>, and is therefore prohibited where the threat is, or would be significant, in any of the following:</p> <ul style="list-style-type: none"> <li>• WHPA-A (existing, future); or</li> <li>• WHPA-E in an Issue Contributing Area for Nitrates (future).</li> </ul>	See Maps 1.1 – 1.21	<p>Future Immediately (T-5)</p> <p>Existing: 180 days (T-4)</p>	GEN-1	MON-2
			H	<p>2) The application of commercial fertilizer (containing nitrogen or phosphorus) to land is designated for the purpose of s.58 under the <i>Clean Water Act</i>, requiring risk management plans, where the threat is, or would be significant, in any of the following areas:</p> <ul style="list-style-type: none"> <li>• WHPA-B (VS=10) (existing, future); or</li> <li>• WHPA-E (VS&gt;= 9) which is not in an Issue Contributing Area for Nitrates (existing, future); or</li> <li>• WHPA-E in an Issue Contributing Area for Nitrates (existing); or</li> <li>• The remainder of an Issue Contributing Area for Nitrates (existing, future).</li> </ul>		<p>Future: Immediately (T-7)</p> <p>Existing: 1 year / 5 years (T-6)</p>	<p>GEN-1</p> <p>GEN-2</p>	MON-2

Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policies
FER-3	Handling and Storage of Commercial Fertilizer to Land	RMO	G	<p>Part IV, s.57, s.58</p> <p>For farms and other lands where the handling and storage of commercial fertilizer to land is, or would be, a significant drinking water threat (excluding incidental quantities for personal use), the following actions shall be taken:</p> <p>1) The handling and storage of commercial fertilizer to land is designated for the purpose of s.57 under the <i>Clean Water Act</i>, and is therefore prohibited where the threat would be significant in the following area:</p> <ul style="list-style-type: none"> <li>• WHPA-A (future).</li> </ul>	See Maps 1.1 – 1.21	Future Immediately (T-5)	GEN-1	MON-2
			H	<p>1) The handling and storage of commercial fertilizer to land is designated for the purpose of s.58 under the <i>Clean Water Act</i>, requiring risk management plans, where the threat is, or would be significant, in any of the following areas:</p> <ul style="list-style-type: none"> <li>• WHPA-A (existing, future); or</li> <li>• WHPA-B (VS=10) (existing, future); or</li> <li>• The remainder of an Issue Contributing Area for Nitrates (existing, future).</li> </ul> <p>Without limiting other requirements, risk management plans shall include conditions to require storage of quantities over 2,500 kg to be within a covered structure.</p>		<p>Future: Immediately (T-7)</p> <p>Existing: 1 year / 5 years (T-6)</p>	GEN-1 GEN-2	MON-2
FER-4	Application of Commercial Fertilizer to Land	Municipality MECP	E	<p><b>Education and Outreach</b></p> <p>The municipality shall deliver education and outreach materials and programs where the application, handling and storage of commercial</p>	See Maps 1.1 - 1.21	Existing & Future: Implement within 2 years (T-10)	GEN-8	MON-1
			K					MON-4

	<p>Handling and Storage of Commercial Fertilizer</p>		<p>fertilizer is, or would be, a significant drinking water threat, targeted towards:</p> <p>a) an individual for personal use to promote timely fertilizer application and best management practices in urban settings; and</p> <p>b) owners/tenants of non-agriculturally zoned lands to promote best management practices to safeguard water supplies from drinking water threats; in any of the following areas:</p> <ul style="list-style-type: none"> <li>• WHPA-A (existing, future); or</li> <li>• WHPA-B (VS = 10) (existing, future); or</li> <li>• WHPA-E (VS = 9 for application; or</li> <li>• the remainder of an Issue Contributing Area for Nitrates (existing, future).</li> </ul> <p>Where appropriate education and outreach materials prepared by the Ministry of the Environment, Conservation and Parks are available, the municipality shall deliver those materials.</p>				
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Agricultural Source Material (ASM) Policies

ASM-1

Policy ASM-1 prohibits existing and future application of agricultural source material to land in WHPA-A and future application of agricultural source material to land in WHPA-B (VS = 10) in an Issue Contributing Area for Pathogens and in any WHPA-E in an Issue Contributing Area for Nitrates or Pathogens.

The application of agricultural source material to land is otherwise managed through the Prescribed Instrument.

The prohibition of the existing application of agricultural source material to land in WHPA-A is already a requirement under the Nutrient Management Act for phased-in farms.

The CTC Source Protection Committee concluded that wherever the land application of agricultural source material is a significant drinking water threat as defined by the Clean Water Act, 2006 that the activity should be carefully assessed. The Nutrient Management Act was passed prior to the Province developing its scoring system for an activity deemed to be a significant drinking water threat. The CTC Source Protection Committee considers the threat from application of agricultural source material within the most vulnerable portions of the Issue Contributing Area (WHPA-B with a vulnerability score of 10 and WHPA-E) for Nitrates or Pathogens to warrant extra protection. Prohibiting future new threat activities is seen as being precautionary.

This policy is a balance between protecting the municipal source of drinking water and allowing existing farming practices to continue with the implementation of management practices to reduce runoff or infiltration of excess nitrate or pathogens in the remainder of Issue Contributing Area. The CTC Source Protection Committee has chosen to include requirements for soil testing to ensure that excess agricultural source material is not applied and to limit application periods to when the agricultural source material can be broken down and utilized as a nutrient source. These requirements are in line with current best management practices recommended by the Ministry of Agriculture, Food and Rural Affairs. To ensure necessary information to assess the amount of agricultural source material that should be applied to a specific crop and location, the nutrient levels in the agricultural source material should also be tested annually to ensure the correct application rate.

Municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.

ASM-2

Policy ASM-2 prohibits existing and future application of agricultural source material to land in WHPA-A and future application of agricultural source material to land in WHPA-B (VS = 10) in an Issue Contributing Area for Pathogens and in any WHPA-E in an Issue Contributing Area for Nitrates or Pathogens.

The application of agricultural source material to land is otherwise managed requiring a Risk Management Plan.

	<p>The prohibition of the existing application of agricultural source material to land in WHPA-A is already a requirement under the Nutrient Management Act for phased-in farms. The WHPA-A is highly vulnerable and the potential for contamination of a municipal well from activities taking place in this area is high and therefore other tools, such as Risk Management Plans, were not considered adequate to protect the drinking water source. By prohibiting agricultural activities that are significant drinking water threats in the WHPA-A the CTC Source Protection Committee applied the intent of the Nutrient Management Act equitably to all farms. Only some wells in the CTC are located on agricultural lands and where they are, only a small area of farmland will be affected by the prohibition in WHPA-A (the 100-metre radius around a municipal well); and the affected activities could be easily directed elsewhere on the property outside of the WHPA-A as the application of agricultural source materials doesn't require structures (barns, etc.) to be moved. The CTC Source Protection Committee considered that the financial implications to affected farming operations would not be onerous.</p> <p>The CTC Source Protection Committee concluded that wherever the land application of agricultural source material is a significant drinking water threat as defined by the Clean Water Act, 2006 that the activity should be carefully assessed. The Nutrient Management Act was passed prior to the Province developing its scoring system for an activity deemed to be a significant drinking water threat. The CTC Source Protection Committee considers the threat from the application of agricultural source material within the most vulnerable portions of the Issue Contributing Area (WHPA-B with a vulnerability score of 10 and WHPA-E) for Nitrates or Pathogens to warrant extra protection. Prohibiting future new threat activities is seen as being precautionary.</p> <p>This policy is a balance between protecting the municipal source of drinking water and allowing existing farming practices to continue with the implementation of management practices to reduce runoff or infiltration of excess nitrate or pathogens in the remainder of Issue Contributing Area. The CTC Source Protection Committee has chosen to include requirements for soil testing to ensure that excess agricultural source material is not applied and to limit application periods to when the agricultural source material can be broken down and utilized as a nutrient source. These requirements are in line with current best management practices recommended by the Ministry of Agriculture, Food and Rural Affairs. To ensure necessary information to assess the amount of agricultural source material that should be applied to a specific crop and location, the nutrient levels in the agricultural source material should also be tested annually to ensure the correct application rate.</p> <p>Municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.</p>
ASM-3	<p>Policy ASM-3 prohibits the future storage of agricultural source material in WHPA-A, WHPA-B (VS = 10) in an Issue Contributing Area for Nitrates or Pathogens and in any WHPA-E in an Issue Contributing Area for Nitrates or Pathogens.</p> <p>The storage of agricultural source material is otherwise managed through the Prescribed Instrument.</p>

	<p>The CTC Source Protection Committee concluded that wherever the storage of agricultural source material is a significant drinking water threat as defined by the Clean Water Act, 2006 that the activity should be carefully assessed. The Nutrient Management Act was passed prior to the Province developing its scoring system for an activity deemed to be a significant drinking water threat. The CTC Source Protection Committee considers the threat from storage of agricultural source material within WHPA-A and in the most vulnerable portions of the Issue Contributing Area (WHPA-B with a vulnerability score of 10 and WHPA-E) for Nitrates or Pathogens to warrant extra protection. Prohibiting future new threat activities is seen as being precautionary.</p> <p>This policy is a balance between protecting the municipal source of drinking water and allowing existing farming practices to continue with the implementation of management practices to reduce runoff or infiltration. The Source Protection Committee did not want to create undue hardship on farmers by prohibiting existing agricultural source material storage in vulnerable areas due to the difficulties of moving the structure and the investment already made where there is a structure. Where existing agricultural source material is being stored, constructing a new storage structure is allowed per the existing activity definition where it provides greater protection than existing storage. It is expected that any existing uncovered storage of agricultural source material in an area where it is a significant drinking water threat will require a new structure to ensure that it is covered to reduce runoff and infiltration. This policy allows such risk management measures to be implemented. However, where a new structure for existing storage activities can be located outside of a vulnerable area, this is preferred.</p> <p>The prohibition of future new activities does not limit the current farming practices. The definition of existing activities in this Source Protection Plan recognizes that an activity which had been engaged in on a site within the preceding ten years prior to Source Protection Plan approval is deemed an existing activity and therefore not subject to future prohibition policies.</p> <p>Municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.</p>
ASM-4	<p>Policy ASM-4 prohibits the future storage of agricultural source material in WHPA-A, WHPA-B (VS = 10) in an Issue Contributing Area for Nitrates or Pathogens and in any WHPA-E in an Issue Contributing Area for Nitrates or Pathogens.</p> <p>The storage of agricultural source material is otherwise managed requiring a Risk Management Plan.</p> <p>The CTC Source Protection Committee concluded that wherever the storage of agricultural source material is a significant drinking water threat as defined by the Clean Water Act, 2006 that the activity should be carefully assessed. The Nutrient Management Act was passed prior to the Province developing its scoring system for an activity deemed to be a significant drinking water threat. The CTC Source Protection Committee considers the threat from storage of agricultural source material within WHPA-A and in the most vulnerable portions of the Issue Contributing Area (WHPA-B with a vulnerability score of 10 and WHPA-E) for Nitrates or Pathogens to warrant extra protection. Prohibiting future new threat activities is seen as being precautionary.</p>



	<p>This policy is a balance between protecting the municipal source of drinking water and allowing existing farming practices to continue with the implementation of management practices to reduce runoff or infiltration. The Source Protection Committee did not want to create undue hardship on farmers by prohibiting existing agricultural source material storage in vulnerable areas due to the difficulties of moving the structure and the investment already made where there is a structure. Where existing agricultural source material is being stored, constructing a new storage structure is allowed per the existing activity definition where it provides greater protection than existing storage. It is expected that any existing uncovered storage of agricultural source material in an area where it is a significant drinking water threat will require a new structure to ensure that it is covered to reduce runoff and infiltration. This policy allows such risk management measures to be implemented. However, where a new structure for existing storage activities can be located outside of a vulnerable area, this is preferred.</p> <p>The prohibition of future new activities does not limit the current farming practices. The definition of existing activities in this Source Protection Plan recognizes that an activity which had been engaged in on a site within the preceding ten years prior to Source Protection Plan approval is deemed an existing activity and therefore not subject to future prohibition policies.</p> <p>Municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.</p>
<p>ASM-5</p>	<p>Policy ASM-5 prohibits the existing and future management of agricultural source material (aquaculture).</p> <p>Based on technical work in the CTC, no existing aquaculture activities which would result in the management of agricultural source material (from the ponds) were identified where they would be significant drinking water threats, therefore the CTC Source Protection Committee does not think that there is any impact from prohibiting existing activities. Prohibition of future activities is seen as being precautionary.</p> <p>Municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.</p>

Non-Agricultural Source Material (ASM) Policies	
NASM-1	<p>Policy NASM-1 prohibits the existing and future application of non-agricultural source material (Category 1) to land in WHPA-A.</p> <p>The application of non-agricultural source material (Category 1) to land is otherwise managed requiring a Risk Management Plan.</p> <p>The CTC was advised that there is no Prescribed Instrument issued for this activity under the Nutrient Management Act. The CTC Source Protection Committee determined any application of non-agricultural source material within close proximity to the municipal well or intake would provide an unnecessary risk to drinking water. The Source Protection Committee concluded that section 57 will effectively achieve prohibition in WHPA-A while maintaining the goal of protecting source water and ensuring these threats cease to be or do not occur in the future. The prohibition of the existing application of non-agricultural source material (Category 1) in WHPA-A mimics the prohibition under the Nutrient Management Act for other farming activities. No existing threats from this activity were identified in the CTC so prohibition of existing activities will likely have no impact.</p> <p>Application of non-agricultural source material outside of WHPA-A is allowed subject to the appropriate risk management requirements as set out in a Risk Management Plan.</p> <p>Category 1 non-agricultural source material is made up of uncomposted leaf materials and vegetable peelings which does not contain any animal matter and thus has low likelihood of containing pathogens.</p> <p>Municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.</p>
NASM-2	<p>Policy NASM-2 prohibits future handling and storage of non-agricultural source material (Category 1) in WHPA-A.</p> <p>The handling and storage of non-agricultural source material (Category 1) is otherwise managed requiring a Risk Management Plan.</p> <p>The CTC Source Protection Committee did not want to create undue hardship on farmers by prohibiting existing storage of non-agricultural source material (Category 1) due to the difficulties of moving the structure and the investment already made. Where existing non-agricultural source material (Category 1) storage exist, constructing a new structure is allowed per the existing activity definition where it provides greater protection than the existing storage. However, where a new structure can be located outside of a vulnerable area, this is preferred.</p> <p>Category 1 non-agricultural source material is made up of uncomposted leaf materials and vegetable peelings which does not contain any animal matter and thus has low likelihood of containing pathogens.</p>

	<p>Municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.</p>
NASM-3	<p>Policy NASM-3 prohibits future application of non-agricultural source material (Category 2 and 3) to land where it would be a significant drinking water threat. The existing application of non-agricultural source material (Category 2 and 3) to land may continue only until the expiry of the current approval, after which time it would be considered a future activity.</p> <p>The application of non-agricultural source material is otherwise managed through the Prescribed Instrument.</p> <p>The CTC Source Protection Committee concluded that wherever the application of non-agricultural source material (Categories 2 or 3) is a significant drinking water threat as defined by the Clean Water Act, 2006 that the activity should be carefully assessed. The Nutrient Management Act was passed prior to the Province developing its scoring system for an activity deemed to be a significant drinking water threat. The CTC Source Protection Committee considers the threat from the application of non-agricultural source material (Categories 2 or 3) within WHPA-A, WHPA-B (with a vulnerability score of 10) and WHPA-E (with a vulnerability score equal to or greater than 8) and the remainder of the Issue Contributing Area for Nitrates or Pathogens to warrant extra protection. Prohibiting future threat activities is seen as being precautionary.</p> <p>This policy is a balance between protecting the municipal source of drinking water and allowing existing practices to continue until expiry of any existing approvals.</p> <p>The threats verification work by the Source Protection Authority has not identified any sites where there is existing application of non-agricultural source material that would be a significant drinking water threat. Therefore, the CTC Source Protection Committee considered that the financial implications to affected farming operations would not be onerous.</p> <p>Non-agricultural source material categories are defined under the Nutrient Management Act – a variety of vegetable processing wastes (Category 2); or other organic wastes such as meat processing, municipal or industrial sewage or other wastes that meet the contaminant guidelines (Category 3). Category 2 or 3 non-agricultural source materials are generally imported to the agricultural property for application and subject to time limited approvals to prevent the buildup of persistent contaminants in the soil.</p> <p>Municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.</p>
NASM-4	<p>Policy NASM-4 prohibits existing and future handling and storage of non-agricultural source material (Category 2 and 3) where it would be a significant drinking water threat.</p> <p>The application of non-agricultural source material is otherwise managed through the Prescribed Instrument.</p>

The CTC Source Protection Committee concluded that wherever the handling and storage of non-agricultural source material (Categories 2 or 3) is a significant drinking water threat as defined by the Clean Water Act, 2006 that the activity should be carefully assessed. The Nutrient Management Act was passed prior to the Province developing its scoring system for an activity deemed to be a significant drinking water threat. The CTC Source Protection Committee considers the threat from the handling and storage of non-agricultural source material (Categories 2 or 3) within WHPA-A, WHPA-B (with a vulnerability score of 10) and WHPA-E (with a vulnerability score equal to or greater than 8) and the remainder of the Issue Contributing Area for Nitrates or Pathogens to warrant extra protection. The CTC Source Protection Committee concluded that the threat to sources of drinking water was higher from non-agricultural source materials (Category 2 and 3) due to the nature of the materials included (particularly from pathogens and nitrates) than in Category 1, and therefore other tools, such as Risk Management Plans, were not considered adequate to protect the drinking water source. Prohibiting future threat activities is seen as being precautionary.

The technical work did not identify any sites where there is existing storage of non-agricultural source material (Category 2 or 3) and therefore no storage facilities would be impacted. Therefore, the CTC Source Protection Committee considered that there was unlikely any financial implications to farming operations.

Non-agricultural source material categories are defined under the Nutrient Management Act – a variety of vegetable processing wastes (Category 2); or other organic wastes such as meat processing, municipal or industrial sewage or other wastes that meet the contaminant guidelines (Category 3). Category 2 or 3 non-agricultural source materials are generally imported to the agricultural property for application and subject to time limited approvals to prevent the buildup of persistent contaminants in the soil.

Municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.

NASM-5

Policy NASM-5 manages the application, handling, and storage of non-agricultural source material through the use of education and outreach targeted towards landowners and haulers that have a Prescribed Instrument or Risk Management Plan to haul, store or apply non-agricultural source material.

Education and outreach policies have been proposed as part of the suite of tools to ensure that actions that can be taken to reduce the threat is made available to property owners in the vulnerable areas. Actions undertaken by individuals and businesses who know what to do to protect a drinking water source can be very effective as part of the protection approach.

Municipalities are also encouraged to distribute these materials to property owners in areas where the threat to municipal drinking water is low or moderate where action can also help to protect sources of other drinking water supplies (see GEN-8).

	Furthermore, municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.
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Livestock (LIV) Policies

LIV-1

Policy LIV-1 prohibits the existing and future use of land as livestock grazing or pasturing land (with an animal density of >1 Nutrient Unit per acre) in WHPA-A in an Issue Contributing Area for Nitrates or Pathogens.

The use of land as livestock grazing or pasturing land is otherwise managed requiring a Risk Management Plan.

The CTC Source Protection Committee considers the threat from livestock grazing and pasturing within an Issue Contributing Area for Nitrates or Pathogens to warrant extra protection. While the Nutrient Management Act does not apply to livestock grazing and pasturing, the CTC Source Protection Committee felt the threat from this activity where the density of animals is greater than 1 nutrient unit per acre is comparable to the application of agricultural source material. The WHPA-A is highly vulnerable and the potential for contamination of a municipal well from activities taking place in this area is high and therefore other tools, such as Risk Management Plans, were not considered adequate to protect the drinking water source. Therefore, the CTC Source Protection Committee concluded that prohibition in WHPA-A in an Issue Contributing Area for Nitrates or Pathogens is consistent with the prohibition of agricultural source material application.

In terms of impact on landowners only some wells in the CTC are located on agricultural lands and where they are, only a small area of farmland may be affected by the prohibition in WHPA-A (the 100 metre radius around a municipal well) if the livestock density is greater than 1 nutrient unit per acre; and therefore the CTC Source Protection Committee concluded that moving grazing and pasturing from WHPA-A to other areas of the farm or reducing the livestock density in WHPA-A below the threshold is a feasible risk prevention measure with limited impact. Therefore, the CTC Source Protection Committee considered that the financial implications to affected farming operations would be minimal.

Municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.

LIV-2

Policy LIV-2 prohibits the future use of land as an outdoor confinement area or a farm-animal yard in WHPA-A, WHPA-B (VS = 10) in an Issue Contributing Area for Nitrates or Pathogens and in any WHPA-E in an Issue Contributing Area for Nitrates and Pathogens.

The use of land as an outdoor confinement area or a farm-animal yard is otherwise managed through the Prescribed Instrument.

The prohibition of the expansion of the capacity or siting a new farm-animal yard or outdoor confinement area in WHPA-A is already a requirement under the Nutrient Management Act for phased-in farms.



	<p>The CTC Source Protection Committee concluded that wherever this is a significant drinking water threat as defined by the Clean Water Act, 2006 that the activity should be carefully assessed. The Nutrient Management Act was passed prior to the Province developing its scoring system for an activity deemed to be a significant drinking water threat.</p> <p>This policy is a balance between protecting the municipal source of drinking water and allowing existing farming practices to continue with the implementation of management practices to reduce runoff or infiltration. The CTC Source Protection Committee did not want to create undue hardship on farmers by prohibiting existing livestock confinement areas or farm-animal yards due to the difficulties of moving the structure and the investment already made. Where existing outdoor confinement areas or farm-animal yards exist, constructing a new structure is allowed per the existing activity definition where it provides greater protection than the existing storage. However, where a new structure can be located outside of a vulnerable area, this is preferred. Prohibiting future new threat activities is seen as being precautionary.</p> <p>The CTC Source Protection Committee considers the threat from outdoor confinement areas or farm-animal yards within an Issue Contributing Area for Nitrates or Pathogens to warrant extra protection. Thus, the policy for future prohibition also applies to the most vulnerable portions of the Issue Contributing Area (WHPA-B with a vulnerability score of 10 and WHPA-E) for Nitrates or Pathogens.</p> <p>Municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.</p>
LIV-3	<p>Policy LIV-3 prohibits the future use of land as an outdoor confinement area or a farm-animal yard in WHPA-A, WHPA-B (VS = 10) in an Issue Contributing Area for Nitrates or Pathogens and in any WHPA-E in an Issue Contributing Area for Nitrates and Pathogens.</p> <p>The use of land as an outdoor confinement area or a farm-animal yard is otherwise managed requiring a Risk Management Plan.</p> <p>The prohibition of the expansion of the capacity or siting a new farm-animal yard or outdoor confinement area in WHPA-A is already a requirement under the Nutrient Management Act for phased-in farms and the CTC Source Protection Committee wanted to maintain consistency between farms phased-in and not phased-in to the Nutrient Management Act requirements.</p> <p>This policy is a balance between protecting the municipal source of drinking water and allowing existing farming practices to continue with the implementation of management practices to reduce runoff or infiltration. The CTC Source Protection Committee did not want to create undue hardship on farmers by prohibiting existing livestock confinement areas or farm-animal yards due to the difficulties of moving the structure and the investment already made. Where existing outdoor confinement areas or farm-animal yards exist, constructing a new structure is allowed per the existing activity definition where it provides greater protection than the existing activity. However, where a new structure can be located outside of a vulnerable area, this is preferred. Prohibiting future new threat activities is seen as being precautionary.</p>

The CTC Source Protection Committee considers the threat from outdoor confinement areas or farm-animal yards within an Issue Contributing Area for Nitrates or Pathogens to warrant extra protection. Thus, the policy for future prohibition also applies to the most vulnerable portions of the Issue Contributing Area (WHPA-B with a vulnerability score of 10 and WHPA-E) for Nitrates or Pathogens.

Municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.

Commercial Fertilizer (FER) Policies	
FER-1	<p>Policy FER-1 prohibits the existing and future application of commercial fertilizer in WHPA-A and the future application of commercial fertilizer in any WHPA-E in an Issue Contributing Area for Nitrates. The application of commercial fertilizer is otherwise managed through the Prescribed Instrument.</p> <p>The CTC Source Protection Committee chose to apply prohibition to the existing and future application of commercial fertilizer to land in WHPA-A as it is already a requirement under the Nutrient Management Act for phased-in farms and wanted to maintain consistency between farms phased-in and not phased-in to the Nutrient Management Act requirements.</p> <p>The CTC Source Protection Committee considers the threat from application of nitrate containing fertilizer within an Issue Contributing Area for Nitrates to warrant extra protection. Thus, the policy for future prohibition applies beyond the WHPA-A in an Issue Contributing Area for Nitrates in the WHPA-E where excess fertilizer can leach into the surface water. The CTC Source Protection Committee concluded that the precautionary approach be applied when dealing with a WHPA-E in an Issue Contributing Area for Nitrates due to their sensitive nature.</p> <p>Municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.</p>
FER-2	<p>Policy FER-2 prohibits the existing and future application of commercial fertilizer in WHPA-A and the future application of commercial fertilizer in any WHPA-E in an Issue Contributing Area for Nitrates.</p> <p>The application of commercial fertilizer is otherwise managed by requiring a Risk Management Plan.</p> <p>The CTC Source Protection Committee chose to apply prohibition to the existing and future application of commercial fertilizer to land in WHPA-A as it is already a requirement under the Nutrient Management Act for phased-in farms. The WHPA-A is highly vulnerable and the potential for contamination of a municipal well from activities taking place in this area is high and therefore other tools, such as Risk Management Plans, were not considered adequate to protect the drinking water source. By prohibiting agricultural activities that are significant drinking water threats in the WHPA-A the CTC Source Protection Committee applied the intent of the Nutrient Management Act equitably to all farms. Only small areas of farmland will be affected by the prohibition in WHPA-A (the 100-metre radius around a municipal well) and the affected activities could be easily directed elsewhere on the property outside of the WHPA-A as the application of commercial fertilizer doesn't require structures (barns, etc.) to be moved.</p> <p>The CTC Source Protection Committee considered that the financial implications to affected farming operations would be minimal. The CTC Source Protection Committee considers the threat from application of nitrate containing fertilizer within an Issue Contributing Area</p>

	<p>for Nitrates to warrant extra scrutiny. Thus, the policy for future prohibition also applies to the most vulnerable portion of the Issue Contributing Area (WHPA-E) for Nitrates.</p> <p>Municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.</p>
FER-3	<p>Policy FER-3 prohibits the future handling and storage of commercial fertilizer in WHPA-A.</p> <p>The handling and storage of commercial fertilizer is otherwise managed by requiring a Risk Management Plan.</p> <p>The Nutrient Management Act does not have provisions regarding the storage of commercial fertilizer and as such the CTC Source Protection Committee chose to apply Part IV tools to farms and other lands where the handling and storage of commercial fertilizer is or would be a significant drinking water threat. The CTC Source Protection Committee took into consideration the burden of being required to move existing structures used in the storage of commercial fertilizer and as such only applied prohibition within the WHPA-A for future activities. The CTC Source Protection Committee concluded that future facilities can be located outside of WHPA-A when dealing with large farm properties.</p> <p>For both existing and future large quantities of fertilizer storage, the Source Protection Committee is requiring mandatory storage within a covered structure to reduce accidental release, along with any other provisions deemed necessary in the Risk Management Plan.</p> <p>Municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.</p>
FER-4	<p>Policy FER-4 manages the existing and future application, handling, and storage of commercial fertilizer through the use of education and outreach targeted towards individuals as well as owners/tenants of non-agriculturally zoned lands.</p> <p>This policy is the only one to deal with the threat posed by the application, handling, and storage of small quantities of commercial fertilizers by individuals for use on their personal property which is a significant drinking water threat only within an Issue Contributing Area for Nitrates. The CTC Source Protection Committee is required to develop a policy to address this threat.</p> <p>Therefore, the Source Protection Committee concluded that this policy is an appropriate balance between protecting the municipal source of drinking water and avoiding the workload burden on the Risk Management Official and costs to landowners that would result from requiring a Risk Management Plan.</p>

An education and outreach strategy should be developed by the municipality that includes a suite of actions to ensure that affected property owners understand and take actions to protect municipal supplies. This should include ongoing efforts and follow-up analysis to assess effectiveness as this is a standalone policy, not a companion to other policies directed at the same threat activity. Education and outreach materials should clearly set out actions that property owners should take to reduce the threat in the vulnerable areas. Where education and outreach materials have been prepared by the Ministry of the Environment and Climate Change the municipality shall deliver those materials, otherwise the municipality shall develop their own materials for delivery.

Municipalities are also encouraged to distribute these materials to property owners in areas where the threat to municipal drinking water is low or moderate where action can also help to protect sources of other drinking water supplies (see GEN-8). Voluntary actions undertaken by individuals and businesses to protect a drinking water source can be very effective as part of the protection approach.

Furthermore, municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.

## 10.4 AGRICULTURAL THREATS

### 10.4.1 Agricultural Source Material (ASM)

#### Definition

Agricultural Source Material (ASM) is a class of nutrients that can be applied to land for the purpose of improving the growth of agricultural crops and soil conditioning. Ontario Regulation 267/03 under the Nutrient Management Act, 2002, lists the following sources of ASM that may be produced, applied, stored, handled, or used on a farm:

- manure produced by farm animals (includes bedding materials);
- runoff 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 biosolids or human body waste; and
- **non-farm herbivorous manure.**

Storing ASM can be at or above grade in a permanent nutrient storage facility or on a temporary field nutrient storage site (solid ASM only).

#### Why is ASM a Threat to Drinking Water Sources?

**Nutrients** from ASM could make their way into drinking water sources. The Ministry of the Environment, Conservation and Parks' Tables of Drinking Water Threats (2021) identifies the following sub-threat activities:

- The application of ASM to land
- The storage of ASM
- The management of ASM – aquaculture (Note: there are no existing or future significant threats possible for the management of ASM).

ASM threats can occur on large or small farms – those regulated by the Nutrient Management Act, 2002 (producing more than 300 nutrient units or phased-in) and those not regulated by the Act (producing less than 5 nutrient units or not yet phased-in). ASM is produced on farms with livestock, and under certain conditions, there are specific chemicals and pathogens that are able to make their way from ASM application and storage sites into groundwater drinking sources. The Ministry of the Environment, Conservation and Parks' Tables of Drinking Water Threats identifies the following chemicals and pathogens as potential concerns:

- Nitrogen
- Total phosphorus
- Pathogens

Nitrogen is a concern for surface and groundwater, while phosphorus is only a concern for surface water, for example, in **WHPA-Es**. Permanent nutrient storage facilities are generally (but not always) located near barns and outdoor confinement areas. Temporary field nutrient storage facilities can be located near barns and outdoor confinement areas, as well as on fields where the ASM will be applied. The storage and application of ASM as potential threats to drinking water sources, is dependent on the vulnerability score of the specific area, and the combination of the percentage of managed land<sup>2</sup> and density<sup>3</sup> of livestock in the vulnerable area.

See **Table 10-4** for when and where application and storage of ASM may be a significant drinking water threat. Note: to determine if a specific activity is a significant drinking water threat, consult the Table of Drinking Water Threats for the specific circumstances that must be met for the activity to be a threat. These activities may also be significant drinking water threats anywhere within an Issue Contributing Area (ICA) for **Nitrogen** or Pathogens. There are not currently any Issue Contributing Areas for pathogens within the CTC Source Protection Region. If the activity meets the description of



in the *Tables of Circumstances*, it is a significant drinking water threat irrespective of vulnerability score. As of March 2024, Table 10-4 includes the threat classification level from the 2009/2013/2017/2021 Director Technical Rules (DTR).

Table 10-4: When/where ASM may be a significant drinking water threat (2009/2013/2017/2021 Table of Drinking Water Threats)

Prescribed Drinking Water Threat	ASM Threat Sub-Category	Area and Vulnerability Score (VS)	Threat Classification Level
			Significant
			DTR 2009/2013/2017/2021
The application, storage and management of agricultural source material	The application of agricultural source material to land	• WHPA-A	✓
		• WHPA-B (VS = 10)	✓
		• WHPA-E (VS ≥ 8)	✓
		• Anywhere in an ICA for <b>Nitrogen</b> or Pathogens	✓
	The storage of agricultural source material	• WHPA-A	✓
		• WHPA-B (VS = 10)	✓
		• WHPA-E (VS ≥ 8)	✓
		• Anywhere in an ICA for <b>Nitrogen</b> or Pathogens	✓
	The management of agricultural source material - aquaculture	• Anywhere in WHPA-E in an ICA for Pathogens	✓

Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policies
ASM-1	Application of Agricultural Source Material (ASM) to Lands	OMAFRA	C	<p><del>Prescribed Instrument</del></p> <p><del>1) The application of ASM to land shall be prohibited where the activity is, or would be, a significant drinking water threat in any of the follow areas:</del></p> <ul style="list-style-type: none"> <li><del>• WHPA-A (existing, future); or</del></li> <li><del>• WHPA-B (VS=10) in an Issue Contributing Area for Pathogens (future); or</del></li> <li><del>• WHPA-E in an Issue Contributing Area for Nitrates or Pathogens (future).</del></li> </ul>	See Maps <del>1.1</del> <del>1.21</del>	<p>Future Immediately (T-3)</p> <p>Existing Upon expiry or within five years (T-2)</p>	N/A	MON-4
				<p><del>2) Where the application of ASM to land is an area where the activity is, or would be, a significant drinking water threat, the Nutrient Management Plan or Strategy that governs the activity shall be reviewed or established to ensure appropriate terms and conditions are included so that the activity ceases to be, or does not become, a significant drinking water threat. In addition to any other risk management measures required through the Prescribed Instrument, the Prescribed Instrument shall as a minimum ensure-</del></p> <p><del>a) The application of ASM is not applied during restricted periods, or another time when the soil is snow covered or frozen consistent with the limitations of subsection 52.2 – 52.4 of Ontario Regulation 267/03 under the Nutrient Management Act, 2002 to avoid runoff; and</del></p> <p><del>b) Soil testing is required for plant available nitrogen each year prior to application of</del></p>		<p>Future Immediately (T-3)</p> <p>Existing: 3 years (T-1)</p>	GEN-1 GEN-2	MON-2

				<p>ASM to determine appropriate application rates, in any of the following areas:</p> <ul style="list-style-type: none"> <li>● <del>WHPA-B (VS=10) which is not in an Issue Contributing Area for Nitrates or Pathogens (existing, future); or</del></li> <li>● <del>WHPA-E (VS&gt;=8) which is not an Issue Contributing Area for Nitrates or Pathogens (existing, future); or</del></li> <li>● <del>WHPA-B (VS=10) in an Issue Contributing Area for Nitrates (existing, future); or</del></li> <li>● <del>WHPA-B (VS=10) in an Issue Contributing Area for Pathogens (existing); or</del></li> <li>● <del>WHPA-E in an Issue Contributing Area for Nitrates or Pathogens (existing); or</del></li> <li>● <del>The remainder of an Issue Contributing Area for Nitrates or Pathogens (existing, future)</del></li> </ul>				
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Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policies
ASM-2	Application of Agricultural Source Material (ASM) to Land	RMO	G	<p><b>Part IV, s.57</b></p> <p>The application of ASM to land is designated for the purpose of s.57 under the <u>Clean Water Act</u>, and therefore is prohibited, in an area where the activity is, or would be, a significant drinking water threat, in the following instances:</p> <ol style="list-style-type: none"> <li>1. Within a WHPA-A (existing or future activity).</li> <li>2. Within a WHPA vulnerable area in an Issue Contributing Area (Nitrogen or Pathogens) (future activity).</li> </ol>	See Maps 1.1 – 1.21	<p>Future Immediately (T-5)</p> <p>Existing 180 days (T-4)</p>	GEN-1	MON-2
			H	<p><b>Part IV, s.58</b></p> <p>The application of ASM to land is designated for the purpose of s.58 of the <u>Clean Water Act</u>, and therefore requires a Risk Management Plan (RMP), in an area where the activity is, or would be a significant drinking water threat, in the following instances:</p> <ol style="list-style-type: none"> <li>1. Within a WHPA vulnerable area in an Issue Contributing Area (Nitrogen or Pathogens) (existing activity).</li> <li>2. Within WHPA a vulnerable area outside of an Issue Contributing Area (existing or future activity).</li> <li>3. Within an Issue Contributing Area (Nitrogen or Pathogens) outside of WHPA vulnerable area (existing or future activity).</li> </ol>		<p>Future Immediately (T-7)</p> <p>Existing: 1 year / 5 years (T-6)</p>	GEN-1 GEN-2	MON-2

			<p>Prior to the application of ASM, soil testing is required for plant available nitrogen.</p> <p>A RMP is not required if a Nutrient Management Plan is provided to the Risk Management Official which conforms to the Source Protection Plan as described in s.61 of O.Reg. 287/07 under the <u>Clean Water Act</u>.</p>				
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Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policies
ASM-3	Storage of Agricultural Source Material (ASM) to Lands	OMAFRA	C	<p><del>Prescribed Instrument</del></p> <p>1) <del>The storage of ASM shall be prohibited where the activity is, or would be, a significant drinking water threat in any of the follow areas:</del></p> <ul style="list-style-type: none"> <li><del>• WHPA-A (future); or</del></li> <li><del>• WHPA-B (VS=10) in an Issue Contributing Area for Nitrates or Pathogens (future); or</del></li> <li><del>• WHPA-E in an Issue Contributing Area for Nitrates or Pathogens (future).</del></li> </ul>	See Maps 1.1-1.21	Future Immediately (T-3)	N/A	MON-4
				<p>2) <del>Where the storage of ASM is an area where the activity is, or would be, a significant drinking water threat, the Nutrient Management Plan or Strategy that governs the activity shall be reviewed or established to ensure appropriate terms and conditions area included so that the activity ceases to be, or does not become, a significant drinking water threat in any of the following areas:</del></p> <ul style="list-style-type: none"> <li><del>• WHPA-A (existing); or</del></li> <li><del>• WHPA-B (VS=10) which is not in an Issue Contributing Area for Nitrates or Pathogens (existing, future); or</del></li> <li><del>• WHPA-E (VS&gt;=8) which is not an Issue Contributing Area for Nitrates or Pathogens (existing, future); or</del></li> <li><del>• WHPA-B (VS=10) in an Issue Contributing Area for Nitrates or Pathogens (existing, future); or</del></li> <li><del>• WHPA-B (VS=10) in an Issue Contributing Area for Nitrates or Pathogens (existing); or</del></li> <li><del>• WHPA-E in an Issue Contributing Area for Nitrates or Pathogens (existing); or</del></li> <li><del>• The remainder of an Issue Contributing Area for Nitrates or Pathogens (existing, future)</del></li> </ul>		Future Immediately (T-3)  Existing: 3 years (T-1)	GEN-3	MON-4



Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policies
ASM-4	Storage of Agricultural Source Material (ASM)	RMO	G	<p><b>Part IV, s.57</b></p> <p>The storage of ASM is designated for the purpose of s.57 under the <u>Clean Water Act</u>, and therefore is prohibited, in an area where the activity is, or would be, a significant drinking water threat, in the following instances:</p> <ol style="list-style-type: none"> <li>1. Within a WHPA-A (future activity).</li> <li>2. In all WHPA vulnerable areas within an Issue Contributing Area (Nitrogen or Pathogens) (future activity).</li> </ol>	See Maps 1.1 – 1.21	Future Immediately (T-5)	GEN-1	MON-2
			H	<p><b>Part IV, s.58</b></p> <p>The storage of ASM is designated for the purpose of s.58 of the <u>Clean Water Act</u>, and therefore requires a Risk Management Plan (RMP), in an area where the activity is, or would be a significant drinking water threat, in the following instances:</p> <ol style="list-style-type: none"> <li>1. Within a WHPA-A (existing activity).</li> <li>2. Within WHPA vulnerable areas within an Issue Contributing Area (Nitrogen or Pathogens) (existing activity).</li> <li>3. Within WHPA vulnerable areas outside of Issue Contributing Areas (existing or future activity).</li> <li>4. Issue Contributing Areas (Nitrogen or Pathogens) outside of WHPA vulnerable areas (existing or future activity).</li> </ol> <p>A RMP is not required if a Nutrient Management Strategy is provided to the Risk Management Official and conforms to the Source Protection Plan as</p>		<p>Future Immediately (T-7)</p> <p>Existing: 1year / 5 years (T-6)</p>	GEN-1 GEN-2	MON-2

				described in s.61 of O.Reg. 287/07 under the <u>Clean Water Act</u> .				
<b>ASM-5</b>	Management of Agricultural Source Material (ASM) (Aquaculture)	MECP	C	<p><b>Prescribed Instrument</b></p> <p>The existing or future management of ASM (Aquaculture) is prohibited, in an area where the activity is, or would be, a significant drinking water threat, in the following instances:</p> <ol style="list-style-type: none"> <li>1. Within an Issue Contributing Area (Pathogens).</li> </ol>	See Map 1.9	Future: Immediately (T-3)	N/A	MON-4

## 10.4.2 Non-Agricultural Source Material (NASM)

### Definition

The application to land, handling, and storage of non-agricultural source material (NASM) are prescribed drinking water threats listed in Regulation 287/07 under the Clean Water Act, 2006. NASM is one class of nutrients that are not produced on a farm and can be applied to land for the purpose of improving the growth of agricultural crops and for soil conditioning. NASM includes the following materials that are intended to be applied to land as nutrients:

- 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); and
- 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).

Furthermore, the Categories of NASM are broken into 3 groups:

- Category 1 – unprocessed ed plant material (for example, vegetable culls, leaf and yard waste that has not been composted) **as well as non-farm herbivorous manure\***;
- Category 2 – processed plant-based materials such as bakery washwater;
- Category 3 – animal-based materials such as meat and dairy washwater, sewage biosolids, and any material that is not listed in the other categories.

**\*It is important to note that Category 1 NASMs are not considered a significant drinking water threat with the exception of non-farm herbivorous manure.**

NASM can be applied to both agricultural and non-agricultural lands for nutrient enhancement and soil conditioning purposes. NASM 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 NASM stored for more than 24 hours). There are restrictions about what types of NASM can be stored on a farm and for how long.

### Why is NASM a Threat to Drinking Water Sources?

**Nutrients** from NASM could make their way into drinking water sources. The Ministry of the Environment's Tables of Drinking Water Threats (2021) identifies the following sub-threat activities:

- The application of NASM to land
- The handling and storage of NASM.

Under certain conditions, specific chemicals and pathogens can make their way from NASM application, handling or storage sites into groundwater drinking sources. The Ministry of the Environment, Conservation and Parks' Tables of Drinking Water Threats identifies the following chemicals and pathogens as potential concerns:

- Nitrogen
- Total phosphorus
- Pathogens

Nitrogen is a concern for both surface and groundwater, but phosphorus is mainly a concern for surface water. Nitrogen and phosphorus, are typically associated with human waste, household and personal care products (such as soap and detergents), and animal by-products. Pathogens are associated with the following sources of NASM:

- seafood processing operations
- dairy product manufacturing operations
- pulp and paper mills
- animal food manufacturing operations (from animal sources)

- meat plants
- sewage works

The assessment of chemical threats for the application of NASM to land considered the geographic location, percentage of managed land and livestock density. The assessment of pathogen threats for the application of NASM to land considered the geographic location and the source of the material. The assessment of NASM storage sites, considered the geographic location, whether the storage facility is temporary or permanent, the source of the material, and whether the material is stored above or below grade.

See Table 10-5 for when and where application and storage of NASM may be a significant drinking water threat. Note: to determine if a specific activity is a significant drinking water threat consult the Tables of Drinking Water Threats for the specific circumstances that must be met for the activity to be a threat. These activities may also be significant drinking water threats anywhere within an Issue Contributing Area (ICA) for nitrates or pathogens. There are not currently any Issue Contributing Areas for pathogens within the CTC Source Protection Region. If the activity meets the description in the *Tables of Circumstances* it is a significant drinking water threat irrespective of vulnerability score. As of March 2024, Table 10-5 includes the threat classification level from the 2009/2013/2017/2021 Director Technical Rules (DTR).

Table 10-5: When/where NASM may be a significant drinking water threat (2009/2013/2017/2021 Table of Drinking Water Threats)

Prescribed Drinking Water Threat	NASM Threat Sub-Category	Area and Vulnerability Score (VS)	Threat Classification Level
			Significant
			DTR 2009/2013/2017/2021
The application, handling, and storage of non-agricultural source material to land	The application of non-agricultural source material to land (including treated septage)	• WHPA-A	✓
		• WHPA-B (VS = 10)	✓
		• WHPA-E (VS ≥ 8)	✓
		• Anywhere in an ICA for Nitrogen or Pathogens	✓
	The storage of non-agricultural source material	• WHPA-A	✓
		• WHPA-B (VS = 10)	✓
		• WHPA-E (VS ≥ 8)	✓
		• Anywhere in an ICA for Nitrogen or Pathogens	✓

Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policies
NASM-1	Application of (Category 1) Non-Agricultural Source Material (NASM) containing manure to Land	RMO	G	<p><b>Part IV, s.57</b></p> <p>The application of (Category 1) NASM containing manure to land is designated for the purpose of s.57 under the <u>Clean Water Act</u>, and therefore is prohibited, in an area where the activity is, or would be, a significant drinking water threat, in the following instances:</p> <ol style="list-style-type: none"> <li>1. Within a WHPA-A (existing or future activity).</li> </ol>	See Maps 1.1 – 1.21	<p>Future Immediately (T-5)</p> <p>Existing: 180 days (T-4)</p>	GEN-1	MON-2
			H	<p><b>Part IV, s.58</b></p> <p>The application of (Category 1) NASM containing manure to land is designated for the purpose of s.58 of the <u>Clean Water Act</u>, and therefore requires a Risk Management Plan (RMP), in an area where the activity is, or would be a significant drinking water threat, in the following instances:</p> <ol style="list-style-type: none"> <li>1. Within a WHPA vulnerable area in an Issue Contributing Area (Nitrogen or Pathogens) (existing or future activity).</li> <li>2. Within a WHPA vulnerable area outside of an Issue Contributing Area (existing or future activity).</li> <li>3. Within an Issue Contributing Area (Nitrogen or Pathogen) outside of WHPA vulnerable areas (existing or future activity).</li> </ol>		<p>Future Immediately (T-7)</p> <p>Existing: 1 year / 5 years (T-6)</p>	GEN-1 GEN-2 NASM-7	MON-2

Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policies
NASM-2	Handling and Storage of (Category 1) Non-Agricultural Source Material (NASM) containing manure.	RMO	G	<p><b>Part IV, s.57</b></p> <p>The handling and storage of (Category 1) NASM containing manure is designated for the purpose of s.57 under the <u>Clean Water Act</u>, and therefore is prohibited, in an area where the activity is, or would be, a significant drinking water threat, in the following instances:</p> <ol style="list-style-type: none"> <li>1. Within a WHPA-A (future activity).</li> </ol>	See Maps 1.1 – 1.21	Future Immediately (T-5)	GEN-1	MON-2
			H	<p><b>Part IV, s.58</b></p> <p>The handling and storage of (Category 1) NASM containing manure is designated for the purpose of s.58 of the <u>Clean Water Act</u>, and therefore requires a Risk Management Plan (RMP), in an area where the activity is, or would be a significant drinking water threat, in the following instances:</p> <ol style="list-style-type: none"> <li>1. Within a WHPA-A (existing activity).</li> <li>2. Within a WHPA vulnerable area in an Issue Contributing Area (Nitrogen or Pathogens) (existing or future activity).</li> <li>3. Within WHPA vulnerable areas outside of an Issue Contributing Area (existing or future activity).</li> <li>4. Within an Issue Contributing Area (Nitrogen or Pathogens) outside of WHPA vulnerable areas (existing or future activity).</li> </ol>		<p>Future Immediately (T-7)</p> <p>Existing: 1 year / 5 years (T-6)</p>	<p>GEN-1</p> <p>GEN-2</p> <p>NASM-7</p>	MON-2



Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policies
NASM-3	Application of (Category 2) Non-Agricultural Source Material (NASM) to Land	RMO	G	<p><b>Part IV, s.57</b></p> <p>The future application of (Category 2) NASM to land is designated for the purpose of s.57 under the <u>Clean Water Act</u>, and therefore is prohibited, in an area where the activity is, or would be, a significant drinking water threat.</p>	See Maps 1.1 – 1.21	Future Immediately (T-5)	N/A	MON-2
			H	<p><b>Part IV, s.58</b></p> <p>The existing application of (Category 2) NASM to land is designated for the purpose of s.58 of the <u>Clean Water Act</u>, and therefore requires a Risk Management Plan (RMP), in an area where the activity is, or would be a significant drinking water threat.</p> <p>A RMP is not required if a NASM Plan is provided to the Risk Management Official and conforms to the Source Protection Plan as described in s.61 of O.Reg. 287/07 under the <u>Clean Water Act</u>.</p>		Existing: 1 year / 5 years (T-6)	NASM-7	MON-2

Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policies
NASM-4	Handling and Storage of (Category 2 & 3) Non-Agricultural Source Material (NASM)	OMAFRA MECP	C	<b>Prescribed Instrument</b>  The existing or future handling and storage of (Category 2 & 3) NASM is prohibited, in an area where the activity is, or would be, a significant drinking water threat.	See Maps 1.1 – 1.21	Future Immediately (T-3)	N/A	MON-4
NASM-5	Application of NASM to Land  Handling and Storage of NASM	OMAFRA MECP	K	<b>Education and Outreach</b>  Where the existing or future application, handling or storage, of NASM is, or would be, a significant drinking water threat, Ministry of the Environment, Conservation and Parks (MECP) and Ministry of Agriculture, Food and Rural Affairs (OMFRA) shall provide Prescribed Instrument holders information on drinking water threats and the risk to nearby municipal wells.  MECP and OMFRA should update Risk Management Officials on the scope and content of education and outreach activities with Prescribed Instrument holders to ensure consistency in communication between implementing bodies.	See Maps 1.1 - 1.21	T-10	GEN-8 NASM-1 NASM-2 NASM-3 NASM-5	MON-4
NASM-6	Application of (Category 3) Non-Agricultural Source Material (NASM) to Land	OMAFRA MECP	C	<b>Prescribed Instrument</b>  The existing or future application of (Category 3) NASM to land is prohibited, in an area where the activity is, or would be, a significant drinking water threat.	See Maps 1.1 – 1.21	Future Immediately (T-3)	N/A	MON-4

### 10.4.3 Livestock

#### Definition

The use of land for livestock grazing or pasturing, an outdoor confinement area or a farm-animal yard are prescribed drinking water threats listed in Regulation 287/07 under the Clean Water Act, 2006 and are defined as follows:

- Livestock includes dairy, beef, swine, poultry, horses, goats, sheep, ratites (flightless birds), furbearing animals, deer, elk, game animals and birds, and other animals identified in the Minimum Distance Separation Guidelines (2017).
- Grazing and pasturing land is considered to be the land on which livestock eat growing herbaceous plants.
- An outdoor confinement area is an enclosure for livestock, deer, elk, or game animals, and is further defined in O. Reg. 267/03 under the Nutrient Management Act, 2002 as follows:
  1. It has no roof, except as described below in #3;
  2. It is composed of fences, pens, corrals or similar structures;
  3. It may contain a shelter to protect the animals from the wind or another shelter with a roof of an area of less than 20 square metres;
  4. It has permanent or portable feeding or watering equipment;
  5. The animals are fed or watered at the enclosure;
  6. The animals may or may not have access to other buildings or structures for shelter, feeding or watering; and
  7. Grazing and foraging provides less than 50 percent of dry matter intake.
- Farm-animal yards are outdoor livestock areas lined with concrete other than those meeting the definition of an outdoor confinement area. Food and water are not provided in farm-animal yards. They are generally used as outdoor exercise areas or as holding areas when barns are being cleaned.

#### Why is Livestock Grazing, Pasturing and Outdoor Confinement a Threat to Drinking Water Sources?

Livestock threats can be on large or small farms – those regulated by the Nutrient Management Act, 2002 (producing more than 300<sup>4</sup> nutrient units or phased-in) and those not regulated by the NMA (less than 5 nutrient units). **Nutrients** from the use of land as livestock grazing, pasturing, outdoor confinement, or farm-animal yards could make their way into drinking water sources. The Ministry of the Environment, Conservation and Parks' Tables of Drinking Water Threats (2021) identifies the following sub-threat activities:

- **ASM Generation – Livestock or Grazing**
- **ASM Generation – Outdoor Confinement Area or Farm Animal Yard**

Under certain conditions, specific chemicals and pathogens can make their way from livestock grazing, pasturing, outdoor confinement, or farm-animal yards into groundwater drinking sources. The Ministry of the Environment, Conservation and Parks' Tables of Drinking Water Threats identifies the following chemicals and pathogens as potential concerns:

- Nitrogen
- Total phosphorus
- Pathogens

Nitrogen is a concern for both surface and groundwater, while phosphorus is a concern primarily for surface water. Generally speaking, the greater the number of livestock kept in a space, the greater the accumulation of manure, and the greater the risk of contaminating water sources with these nutrients and pathogens. Accordingly, the assessment of the potential threat to drinking water sources from use of land as livestock grazing or pasturing land, an outdoor confinement area or a farm-animal yard is dependent on the concentration of manure in a given area.

See **Table 10-6** for when and where livestock may be a significant drinking water threat. Note: to determine if a specific activity is a significant drinking water threat consult the Tables of Drinking Water Threats for the specific circumstances

that must be met for the activity to be a threat. These activities may also be significant drinking water threats anywhere within an Issue Contributing Area (ICA) for Nitrates or Pathogens. There are not currently any Issue Contributing Areas for pathogens within the CTC Source Protection Region. If the activity meets the description in the *Tables of Circumstances* it is a significant drinking water threat irrespective of vulnerability score. As of March 2024, Table 10-6 includes the threat classification level from the 2009/2013/2017/2021 Director Technical Rules (DTR).

Table 10-6: When/where ~~NASM~~ LIV may be a significant drinking water threat (2009/2013/2017/2021 Table of Drinking Water Threats)

Prescribed Drinking Water Threat	Livestock Threat Sub-Category	Area and Vulnerability Score (VS)	Threat Classification Level
			Significant
			DTR 2009/2013/2017/2021
The use of land as livestock grazing or pasturing land, an outdoor confinement area or a farm-animal yard	The use of land as livestock grazing or pasturing land	• WHPA-A	✓
		• WHPA-B (VS = 10)	✓
		• WHPA-E (VS ≥ 8)	✓
		• Anywhere in an ICA for Nitrogen or Pathogens	✓
	The use of land as an outdoor confinement area or a farm-animal yard	• WHPA-A	✓
		• WHPA-B (VS = 10)	✓
		• WHPA-E (VS ≥ 8)	✓
		• Anywhere in an ICA for Nitrogen or Pathogens	✓

Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policies
LIV-1	The Use of Land as Livestock Grazing or Pasturing Land	RMO	G	<p>Part IV, s.57</p> <p>The use of land as livestock grazing or pasture is designated for the purpose of s.57 under the <u>Clean Water Act</u>, and therefore is prohibited, in an area where the activity is, or would be, a significant drinking water threat, in the following instances:</p> <ol style="list-style-type: none"> <li>1. Within a WHPA-A in an Issue Contributing Area (Nitrogen or Pathogens) (existing or future activity).</li> </ol>	See Maps 1.1 – 1.21	<p>Future Immediately (T-5)</p> <p>Existing: 180 days (T-4)</p>	GEN-1	MON-2
			H	<p>Part IV, s.58</p> <p>The use of land as livestock grazing or pasture is designated for the purpose of s.58 of the <u>Clean Water Act</u>, and therefore requires a Risk Management Plan (RMP), in an area where the activity is, or would be a significant drinking water threat, in the following instances:</p> <ol style="list-style-type: none"> <li>1. Within a WHPA-A outside of an Issue Contributing Area (Nitrogen or Pathogens) (existing or future activity)</li> <li>2. Within a WHPA-A in an Issue Contributing Area (Nitrogen or Pathogens) with an animal density <math>\leq 1</math> nutrient unit per acre (existing activity),</li> <li>3. Within a WHPA vulnerable area in an Issue Contributing Area (Nitrogen or Pathogens) (existing or future activity).</li> <li>4. Within a WHPA vulnerable area outside of an Issue Contributing Area (Nitrogen or Pathogens) (existing or future activity)</li> <li>5. Issue Contributing Areas (Nitrogen or Pathogens) outside of the WHPA vulnerable areas (existing or future activity).</li> </ol>		<p>Future: Immediately (T-7)</p> <p>Existing: 1 year / 5 years (T-6)</p>	GEN-1 GEN-2	MON-2

				Despite the above, in residential land use with $\leq 5$ nutrient units, outside WHPA-A, where existing use of land as livestock grazing or pasture is, or would be a significant drinking water threat, the Risk Management Official can use an annual inspection program to ensure that the activity ceases or does not become to be significant drinking water threat.				
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Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policies
LIV-2	The Use of Land as an Outdoor Confinement Area or a Farm Animal Yard (O. Reg. 385/08, s.3)	OMAFRA		<p><del>s.57, Prescribed Instrument</del></p> <p><del>1) The use of land as an outdoor confinement area or farm animal yard shall be prohibited where the activity would be significant drinking water threat in any of the following areas:</del></p> <ul style="list-style-type: none"> <li><del>• WHPA-A (future); or</del></li> <li><del>• WHPA-B (VS=10) in an Issue Contributing Area for Nitrates or Pathogens (future); or</del></li> <li><del>• WHPA-E in an Issue Contributing Area for Nitrates or Pathogens (future).</del></li> </ul> <p>The use of land as an outdoor confinement area or farm animal yard is prohibited and is designated for the purposes of s.57 of the <i>Clean Water Act</i>.</p>	See Maps 1.1-1.21	Future Immediately (T-3)	N/A	MON-4
				<p>2) Where the use of land as an outdoor confinement area or farm animal yard is an area where the activity is, or would be, a significant drinking water threat, the Nutrient Management Plan or Strategy that governs the activity shall be reviewed or established to ensure appropriate terms and conditions are included so that the activity ceases to be, or does not become, a significant drinking water threat in any of the following areas:</p> <ul style="list-style-type: none"> <li>• WHPA-A (existing); or</li> <li>• WHPA-B (VS=10) which is not an Issue Contributing Area for Nitrates or Pathogens (existing, future); or</li> <li>• WHPA-E (VS&gt;= 8) which is not in an Issue Contributing Area for Nitrates or Pathogens (existing, future); or</li> </ul>		Future: Immediately (T-3)  Existing: 3 years (T-1)	GEN-3	MON-4

			€	<ul style="list-style-type: none"> <li>● <del>WHPA B (VS=10) in an Issue Contributing Area for Nitrates or Pathogens (existing); or</del></li> <li>● <del>WHPA-E in an Issue Contributing Area for Nitrates (existing); or</del></li> <li>● <del>The remainder of an Issue Contributing Area for Nitrates or Pathogens (existing, future).</del></li> </ul>				
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Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policies
LIV-3	The Use of Land as an Outdoor Confinement Area or a Farm-Animal Yard	RMO	G	<p><b>Part IV, s.57</b></p> <p>The use of land as an outdoor confinement area or farm animal-yard is designated for the purpose of s.57 under the <u>Clean Water Act</u>, and therefore is prohibited, in an area where the activity is, or would be, a significant drinking water threat, in the following instances:</p> <ol style="list-style-type: none"> <li>1. Within WHPA-A (future activity).</li> <li>2. Within a WHPA vulnerable area in an Issue Contributing Area (Nitrogen or Pathogens) (future activity).</li> </ol>	See Maps 1.1 – 1.21	Future Immediately (T-3)	GEN-1	MON-2
			H	<p><b>Part IV, s.58</b></p> <p>The use of land as an outdoor confinement area or farm animal-yard is designated for the purpose of s.58 of the <u>Clean Water Act</u>, and therefore requires a Risk Management Plan (RMP), in an area where the activity is, or would be a significant drinking water threat, in the following instances:</p> <ol style="list-style-type: none"> <li>1. Within WHPA-A (existing activity)</li> <li>2. Within a WHPA vulnerable area in an Issue Contributing Area (Nitrogen or Pathogens) (existing activity)</li> <li>3. Within a WHPA vulnerable area outside of an Issue Contributing Area (Nitrogen or Pathogens) (existing or future activity).</li> <li>4. Issue Contributing Areas (Nitrogen or Pathogens) outside of WHPA vulnerable areas (existing or future activity).</li> </ol>		<p>Future: Immediately (T-3)</p> <p>Existing: 1 year / 5 years (T-6)</p>	GEN-1 GEN-2	MON-2

				A RMP is not required if a Nutrient Management Strategy is provided to the Risk Management Official which conforms to the Source Protection Plan as described in s.61 of O.Reg. 287/07 under the <u>Clean Water Act</u> .				
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## 10.5 COMMERCIAL FERTILIZER

### Definition

Commercial fertilizer is one of the prescribed drinking water threats listed in Regulation 287/07 under the Clean Water Act, 2006. Commercial fertilizer is a manufactured compound containing nitrogen, phosphorus, potassium, or other minerals intended for use as a plant nutrient. In the drinking water source protection process, commercial fertilizer is distinguished from other nutrient sources – agricultural source material (ASM) and non-agricultural source material (NASM).

### Why is Fertilizer a Threat to Drinking Water Sources?

**Nutrients** from the application, handling and storage of fertilizer could make their way into drinking water sources. The Ministry of the Environment, Conservation and Parks' Tables of Drinking Water Threats (2021) identifies the following sub-threat activities:

- The application of commercial fertilizer to land
- The handling and storage of commercial fertilizer

The nitrogen and phosphorus in commercial fertilizer can enter drinking water sources due to the improper use and storage of the fertilizer. The improper use of fertilizer includes the application of fertilizer without consideration for nutrients already available in the soil and plant requirements, or the inappropriate timing of application for plant growth cycles and weather conditions. Potential impacts of storing fertilizer relate to leaks and spills from aging infrastructure or improper storage techniques. Phosphorus is often associated with runoff and soil erosion from both the storage and application of commercial fertilizer.

The Ministry of the Environment, Conservation and Parks' Tables of Drinking Water Threats identifies the following chemicals as potential concerns:

- Nitrogen
- Total phosphorus

Nitrogen is a concern for both surface and groundwater, but phosphorus is primarily a concern for surface water. The assessment of potential threats to drinking water sources from commercial fertilizer application is dependent on the location and the combination of the percentage of managed land, and livestock density in the vulnerable area and where the fertilizer is applied. The potential threat to drinking water from the storage of fertilizer depends on the location, type of facility where it is stored, and the quantity stored.

See **Table 10-7** for when and where application and storage of commercial fertilizer may be a significant drinking water threat. Note: to determine if a specific activity is a significant drinking water threat consult the Tables of Drinking Water Threats for the specific circumstances that must be met for the activity to be a threat. These activities may also be significant drinking water threats anywhere within an Issue Contributing Area (ICA) for Nitrogen. If the activity meets the description in the *Tables of Circumstances* it is a significant drinking water threat irrespective of vulnerability score. **As of March 2024, Table 10-7 includes the threat classification level from the 2009/2013/2017/2021 Director Technical Rules (DTR).**

Table 10-7: When/where commercial fertilizer may be a significant drinking water threat (2009/2013/2017/2021 Table of Drinking Water Threats)

Prescribed Drinking Water Threat	Commercial Threat Sub-Category	Area and Vulnerability Score (VS)	Threat Classification Level
			Significant
			DTR 2009/2013/2017/2021
The application, handling, and storage of commercial fertilizer	The application of commercial fertilizer to land	• WHPA-A	✓
		• WHPA-B (VS = 10)	✓
		• WHPA-E (VS ≥ 9)	✓
		• Anywhere in an ICA for <b>Nitrogen</b>	✓
	The storage of commercial fertilizer	• WHPA-A	✓
		• WHPA-B (VS = 10)	✓
• Anywhere in an ICA for <b>Nitrogen</b>		✓	



Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policies
FER-1	Application of Commercial Fertilizer to Land	OMAFRA	C	<p><b>Prescribed Instrument</b></p> <p><del>1) The application of commercial fertilizer (containing nitrogen) to land shall be prohibited where the activity is, or would be, a significant drinking water threat in any of the following areas:</del></p> <ul style="list-style-type: none"> <li><del>• WHPA-A (existing, future); or</del></li> <li><del>• WHPA-E in an Issue Contributing Area for Nitrates (future).</del></li> </ul>	See Maps 1.1-1.21	<p><del>Future Immediately (T-3)</del></p> <p>Existing: Upon expiry or within 5 years (T-2)</p>	N/A	MON-4
				<p><del>2) Where the application of commercial fertilizer (containing nitrogen or phosphorus) to land is in an area where the activity is, or would be, a significant drinking water threat, the Nutrient Management Plan or Strategy that governs the activity shall be reviewed or established to ensure appropriate terms and conditions are included so that the activity ceases to be, or does not become, a significant drinking water threat in any of the following area:</del></p> <ul style="list-style-type: none"> <li><del>• WHPA-B (VS-10) (existing, future); or</del></li> <li><del>• WHPA-E (VS &gt;= 9) which is not in an Issue Contributing Area for Nitrates (existing, future); or</del></li> <li><del>• WHPA-E in an Issue Contributing Area for Nitrates (existing); or</del></li> <li><del>• The remainder of an Issue Contributing Area for Nitrates (existing, future).</del></li> </ul>		<p>Future: Immediately (T-3)</p> <p>Existing: 3 years (T-1)</p>	GEN-3	MON-4

Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policies
FER-2	Application of Commercial Fertilizer to Land	RMO	G	<p><b>Part IV, s.57</b></p> <p>The application of commercial fertilizer to land is designated for the purpose of s.57 under the <u>Clean Water Act</u>, and therefore is prohibited, in an area where the activity is, or would be, a significant drinking water threat, in the following instances:</p> <ol style="list-style-type: none"> <li>1. Within a WHPA-A (existing or future activity).</li> </ol>	See Maps 1.1 – 1.21	<p>Future Immediately (T-5)</p> <p>Existing: 180 days (T-4)</p>	GEN-1	MON-2
			H	<p><b>Part IV, s.58</b></p> <p>The application of commercial fertilizer to land is designated for the purpose of s.58 of the <u>Clean Water Act</u>, and therefore requires a Risk Management Plan (RMP), in an area where the activity is, or would be a significant drinking water threat, in the following instances:</p> <ol style="list-style-type: none"> <li>1. Within a WHPA vulnerable area in an Issue Contributing Area (Nitrogen) (existing or future activity).</li> <li>2. Within a WHPA vulnerable area outside of an Issue Contributing Area (Nitrogen) (existing or future)</li> <li>3. Within an Issue Contributing Area (Nitrogen) outside of WHPA vulnerable areas (existing or future activity).</li> </ol> <p>A RMP is not required if a Nutrient Management Plan is provided to the Risk Management Official and conforms to the Source Protection Plan as described in s.61 of O.Reg. 287/07 under the <u>Clean Water Act</u>.</p>		<p>Future: Immediately (T-7)</p> <p>Existing: 1 year / 5 years (T-6)</p>	GEN-1 GEN-2	MON-2

Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policies
FER-3	Handling and Storage of Commercial Fertilizer	RMO	G	<p>Part IV, s.57</p> <p>The handling and storage of commercial fertilizer is designated for the purpose of s.57 under the <u>Clean Water Act</u>, and therefore is prohibited, in an area where the activity is, or would be, a significant drinking water threat, in the following instances:</p> <ol style="list-style-type: none"> <li>1. Within a WHPA-A (future activity).</li> </ol>	See Maps 1.1 – 1.21	Future Immediately (T-5)	GEN-1	MON-2
			H	<p>Part IV, s.58</p> <p>The handling and storage of commercial fertilizer is designated for the purpose of s.58 of the <u>Clean Water Act</u>, and therefore requires a Risk Management Plan (RMP), in an area where the activity is, or would be a significant drinking water threat, in the following instances:</p> <ol style="list-style-type: none"> <li>1. Within a WHPA-A (existing activity)</li> <li>2. Within a WHPA vulnerable area in an Issue Contributing Area (Nitrogen) (existing or future activity).</li> <li>3. Within a WHPA vulnerable area outside of an Issue Contributing Area (Nitrogen) (existing or future activity)</li> <li>4. Within an Issue Contributing Area (Nitrogen) outside of WHPA vulnerable areas (existing or future activity).</li> </ol>		<p>Future: Immediately (T-7)</p> <p>Existing: 1 year / 5 years (T-6)</p>	GEN-1 GEN-2	MON-2

				<p>Where the handling and storage of commercial fertilizer is, or would be, a significant drinking water threat, the RMP at a minimum requires:</p> <ol style="list-style-type: none"> <li>1. Liquid fertilizer to be stored in a double-walled tank or secondary containment facilities, with collision protection.</li> <li>2. Dry fertilizer to be stored undercover on impervious floor surfaces with no drainage outlets.</li> </ol>				
<b>FER-4</b>	<p>Application of Commercial Fertilizer to Land</p> <p>Handling and Storage of Commercial Fertilizer</p>	<p>Municipality</p> <p>MECP</p>	<p>E</p> <p>K</p>	<p><b>Education and Outreach</b></p> <p>The municipality shall deliver education and outreach materials and programs where the application, handling and storage of commercial fertilizer is, or would be, a significant drinking water threat, targeted towards:</p> <ol style="list-style-type: none"> <li>1. An individual for personal use to promote timely fertilizer application and best management practices in urban settings; and</li> <li>2. Owners/tenants of non-agriculturally zone lands to promote best management practices to safeguard drinking water supplies.</li> </ol> <p>Where appropriate education and outreach materials prepared by the Ministry of Environment, Conservation and Parks are available, the municipality shall deliver those materials.</p>	<p>See Maps 1.1 - 1.21</p>	<p>Existing &amp; Future: implement within 2 year (T-10)</p>	<p>GEN-8</p>	<p>MON-1</p> <p>MON-4</p>

Agricultural Source Material (ASM) Policies	
ASM-1	<p><del>Policy ASM-1 prohibits existing and future application of agricultural source material to land in WHPA-A and future application of agricultural source material to land in WHPA-B (VS = 10) in an Issue Contributing Area for Pathogens and in any WHPA-E in an Issue Contributing Area for Nitrates or Pathogens.</del></p> <p><del>The application of agricultural source material to land is otherwise managed through the Prescribed Instrument.</del></p> <p><del>The prohibition of the existing application of agricultural source material to land in WHPA-A is already a requirement under the Nutrient Management Act for phased-in farms.</del></p> <p><del>The CTC Source Protection Committee concluded that wherever the land application of agricultural source material is a significant drinking water threat as defined by the Clean Water Act, 2006 that the activity should be carefully assessed. The Nutrient Management Act was passed prior to the Province developing its scoring system for an activity deemed to be a significant drinking water threat. The CTC Source Protection Committee considers the threat from application of agricultural source material within the most vulnerable portions of the Issue Contributing Area (WHPA-B with a vulnerability score of 10 and WHPA-E) for Nitrates or Pathogens to warrant extra protection. Prohibiting future new threat activities is seen as being precautionary.</del></p> <p><del>This policy is a balance between protecting the municipal source of drinking water and allowing existing farming practices to continue with the implementation of management practices to reduce runoff or infiltration of excess nitrate or pathogens in the remainder of Issue Contributing Area. The CTC Source Protection Committee has chosen to include requirements for soil testing to ensure that excess agricultural source material is not applied and to limit application periods to when the agricultural source material can be broken down and utilized as a nutrient source. These requirements are in line with current best management practices recommended by the Ministry of Agriculture, Food and Rural Affairs. To ensure necessary information to assess the amount of agricultural source material that should be applied to a specific crop and location, the nutrient levels in the agricultural source material should also be tested annually to ensure the correct application rate.</del></p> <p><del>Municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.</del></p>
ASM-2	<p>WHPA vulnerable areas where the application of Agricultural Source Material (ASM) to land is, or would be, a significant drinking water threat under the Director's Technical Rules (DTR) 2021, include:</p> <ol style="list-style-type: none"> <li>1. WHPA-A (VS=10)</li> <li>2. WHPA-B (VS=10)</li> <li>3. WHPA-E (VS ≥8)</li> </ol> <p>Note: VS= Vulnerability Score.</p>

Issue Contributing Areas where the application of Agricultural Source Material (ASM) to land is, or would be, a significant drinking water threat under the Director's Technical Rules (DTR) 2021, include:

1. Nitrogen
2. Phosphorus
3. Pathogens

Note: The policy is currently limited to Issue Contributing Area - Nitrogen and Pathogens.

Policy ASM-2 prohibits existing and future application of ASM to land in a WHPA-A, future application of ASM to land in a WHPA-B (VS = 10) in an Issue Contributing Area for Nitrogen and Pathogens, and in a WHPA-E (VS  $\geq$ 8) in an Issue Contributing Area for Nitrogen or Pathogens. The prohibition of the application of ASM to land in a WHPA-A is already a requirement under the Nutrient Management Act for phased-in farms ( $\geq$  300 nutrient units). The CTC Source Protection Plan prohibition of the application of ASM to land in a WHPA-A is not distinct to phased-in farms (<300 nutrient units).

The CTC Source Protection Committee concluded that wherever the land application of agricultural source material is a significant drinking water threat as defined by the Clean Water Act, 2006 that the activity should be carefully assessed. The Nutrient Management Act was passed prior to the Province developing its scoring system for an activity deemed to be a significant drinking water threat. The CTC Source Protection Committee considers the threat from the application of Agricultural Source Material within the most vulnerable portions of the Issue Contributing Area (WHPA-B with a vulnerability score of 10 and WHPA-E with a vulnerability score 8 or greater) for Nitrogen and/or Pathogens to warrant extra protection. Prohibiting future new threat activities is seen as being precautionary.

~~There are a limited number of agricultural parcels in the CTC Source Protection Region located in WHPA vulnerable areas within an Issue Contributing Area (Nitrogen or Pathogens). Moreover, where the application of ASM to land is taking place, moving the activity from one part of a parcel to another does not require structures (barns, etc.) to be moved. Therefore, within the CTC Source Protection Region, the Committee does not view the policy as onerous to farm operators.~~

The application of ASM to land is otherwise regulated under the Clean Water Act through a Risk Management Plan (RMP) unless exempted under section 61 of O. Reg 287/07. Where the property owner requests an exemption for a Prescribed Instrument the proponent will notify the Risk Management Official (RMO) that the activity is subject to a Nutrient Management Plan (NMP), as described in Section 61 of O. Reg. 287/07, including the submission of the NMP. The NMP must contain a statement of conformity to the Source Protection Plan (SPP) policies on significant drinking water threats.

The contents of an RMP shall be guided by the requirements for a Nutrient Management Plan (NMP) in Part III, section 23 to 26 of O. Reg. 267/03 under the Nutrient Management Act (NMA). Since NMPs have a five-year term for renewal, it is recommended that Risk



	<p>Management Plans are renewed at a minimum every five-years or based on crop rotational patterns. During restricted period and other times when soil is snow-covered or frozen, the application of ASM is prohibited under the circumstances outlined in subsection 52.2-52.5 of O. Reg 267/03.</p> <p>The CTC Committee recommends the use of best management approaches and tools provided in the Nutrient Management Training and Certification Program. Prior to the application of ASM, OMAFRA recommends soils testing. An agronomic soil test (NPK test) is suitable for Phosphorus (P) and Potassium (K). It is recommended to sample fields every 3 to 5 years because these values are relatively stable. The sample(s) should be taken at a depth of around 15 cm and can be held at room temperature. A pre sidedress nitrate test is suitable for Nitrate (N). It is recommended to sample fields every 3 to 5 years because this value changes chemical form very quickly in soil. The sample(s) should be taken at a depth of 30 cm and should be refrigerated or frozen to prevent microbial action from changing the Nitrogen form while enroute to the lab. OMAFRA recommends one composite sample per 25 acres with one core taken approximately every acre (all cores thoroughly mixed to create composite sample with a least 20 cores per composite sample). Additional information on soil sampling and analysis for managing crop nutrients can be found on the <a href="#">OMAFRA website</a> . Soil sampling should be used in conjunction with nutrient management planning software, NMAN, or similar to calculate crop nutrient balances for the RMP. The calculations should be reviewed in years where nutrients are applied, and the RMP should be updated so that it accurate reflects the anticipated operation on the farm unit during the following year.</p> <p>Municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.</p>
ASM-3	<p><del>Policy ASM-3 prohibits the future storage of agricultural source material in WHPA-A, WHPA-B (VS = 10) in an Issue Contributing Area for Nitrates or Pathogens and in any WHPA-E in an Issue Contributing Area for Nitrates or Pathogens. The storage of agricultural source material is otherwise managed through the Prescribed Instrument.</del></p> <p><del>The CTC Source Protection Committee concluded that wherever the storage of agricultural source material is a significant drinking water threat as defined by the Clean Water Act, 2006 that the activity should be carefully assessed. The Nutrient Management Act was passed prior to the Province developing its scoring system for an activity deemed to be a significant drinking water threat. The CTC Source Protection Committee considers the threat from storage of agricultural source material within WHPA-A and in the most vulnerable portions of the Issue Contributing Area (WHPA-B with a vulnerability score of 10 and WHPA-E) for Nitrates or Pathogens to warrant extra protection. Prohibiting future new threat activities is seen as being precautionary.</del></p> <p><del>This policy is a balance between protecting the municipal source of drinking water and allowing existing farming practices to continue with the implementation of management practices to reduce runoff or infiltration. The Source Protection Committee did not want to create undue hardship on farmers by prohibiting existing agricultural source material storage in vulnerable areas due to the difficulties of moving the structure and the investment already made where there is a structure. Where existing agricultural source material is</del></p>

	<p>being stored, constructing a new storage structure is allowed per the existing activity definition where it provides greater protection than existing storage. It is expected that any existing uncovered storage of agricultural source material in an area where it is a significant drinking water threat will require a new structure to ensure that it is covered to reduce runoff and infiltration. This policy allows such risk management measures to be implemented. However, where a new structure for existing storage activities can be located outside of a vulnerable area, this is preferred.</p> <p>The prohibition of future new activities does not limit the current farming practices. The definition of existing activities in this Source Protection Plan recognizes that an activity which had been engaged in on a site within the preceding ten years prior to Source Protection Plan approval is deemed an existing activity and therefore not subject to future prohibition policies.</p> <p>Municipalities are also required to continue to monitor the aquifer and report on the results (see GEN 7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.</p>
ASM-4	<p>WHPA vulnerable areas where the storage of Agricultural Source Material (ASM) is, or would be, a significant drinking water threat under the Director’s Technical Rules (DTR) 2021, include:</p> <ol style="list-style-type: none"> <li>1. WHPA-A (VS=10)</li> <li>2. WHPA-B (VS=10)</li> <li>3. WHPA-E (VS ≥8)</li> </ol> <p>Note: VS= Vulnerability Score.</p> <p>Issue Contributing Areas where the storage of Agricultural Source Material (ASM) is, or would be, a significant drinking water threat under the Director’s Technical Rules (DTR) 2021, include:</p> <ol style="list-style-type: none"> <li>1. Nitrogen</li> <li>2. Phosphorus</li> <li>3. Pathogens</li> </ol> <p>Note: The policy is currently limited to Issue Contributing Area - Nitrogen and Pathogens.</p> <p>Policy ASM-4 prohibits the future storage of Agricultural Source Material (ASM) in WHPA-A, WHPA-B (VS = 10) in an Issue Contributing Area for Nitrogen or Pathogens and WHPA-E in an Issue Contributing Area for Nitrogen or Pathogens. The CTC Source Protection Plan recognizes that an activity which had been engaged in on a site within the preceding ten years prior to the CTC Source Protection Plan approval is deemed an existing activity and therefore not subject to future prohibition policies.</p> <p>The CTC Source Protection Committee concluded that wherever the storage of agricultural source material is a significant drinking water threat as defined by the <u>Clean Water Act</u>, 2006 that the activity should be carefully assessed. The <u>Nutrient Management Act</u> was passed prior to the Province developing its scoring system for an activity deemed to be a significant drinking water threat. The</p>

	<p>CTC Source Protection Committee considers the threat from storage of Agricultural Source Material within WHPA-A and in the most vulnerable portions of the Issue Contributing Area (WHPA-B with a vulnerability score of 10 and WHPA-E with a vulnerability score of 8 or greater) for Nitrogen or Pathogens to warrant extra protection. Prohibiting future new threat activities is seen as being precautionary.</p> <p>The prohibition of the storage of ASM in a WHPA-A is already a requirement under the <u>Nutrient Management Act</u> for phased-in farms (<math>\geq 300</math> nutrient units). The CTC Source Protection Plan prohibition of the storage of ASM in a WHPA-A is not distinct to non-phased-in farms (<math>&lt;300</math> nutrient units).</p> <p><del>There are a limited number of agricultural parcels in the CTC Source Protection Region located in WHPA vulnerable areas within an Issue Contributing Area (Nitrogen or Pathogens).</del> Where existing Agricultural Source Material is being stored, constructing a new storage structure is allowed per the existing activity definition where it provides greater protection than existing storage. It is expected that any existing uncovered storage of Agricultural Source Material in an area where it is a significant drinking water threat will require a new structure to ensure that it is covered to reduce runoff and infiltration. This policy allows such risk management measures to be implemented. <del>It is preferred that new structures for existing storage activities are located outside of a vulnerable area, if possible.</del></p> <p>The storage of Agricultural Source Material is otherwise regulated under the <u>Clean Water Act</u> through a Risk Management Plan (RMP) unless exempted under section 61 of O. Reg 287/07. Where the property owner requests an exemption for a Prescribed Instrument the proponent will notify the RMO that the activity is subject to a Nutrient Management Strategy (NMS), as described in Section 61 of O. Reg. 287/07, including the submission of the NMS.</p> <p>The contents of an RMP should be guided by the requirements for a Nutrient Management Strategy (NMS) in Part III, section 17 to 22 of O. Reg. 267/03 under the <u>Nutrient Management Act</u>.</p> <p>Municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.</p>
ASM-5	No change

Non-Agricultural Source Material (ASM) Policies	
NASM-1	<p>WHPA vulnerable areas where the application of (Category 1) Non-Agricultural Source Material (NASM) containing manure to land is, or would be, a significant drinking water threat under the Director’s Technical Rules (DTR) 2021, include:</p> <ol style="list-style-type: none"> <li>1. WHPA-A (VS=10)</li> <li>2. WHPA-B (VS=10)</li> <li>3. WHPA-E (VS ≥8)</li> </ol> <p>Note: VS= Vulnerability Score.</p> <p>Issue Contributing Areas where the application of (Category 1) NASM to land is, or would be, a significant drinking water threat under the Director’s Technical Rules (DTR) 2021, include:</p> <ol style="list-style-type: none"> <li>1. Nitrogen</li> <li>2. Phosphorus</li> <li>3. Pathogens</li> </ol> <p>Policy NASM-1 prohibits the existing and future application of (Category 1) Non-Agricultural Source Material containing manure to land in WHPA-A. Applying (Category 1) Non-Agricultural Source Material containing manure to land is generally not considered a significant drinking water threat except for non-farm herbivorous manure.</p> <p>The application of (Category 1) Non-Agricultural Source Material containing manure to land is regulated under the <u>Clean Water Act</u> through a Risk Management Plan (RMP). The contents of an RMP should be guided by the requirements for a Non-Agricultural Source Material Plan (NASM Plan) in Part III, section 26 of O. Reg. 267/03 under the <u>Nutrient Management Act</u>.</p> <p>The CTC was advised that there is no Prescribed Instrument issued for this activity under the <u>Nutrient Management Act</u>. The CTC Committee determined any application of Non-Agricultural Source Material containing manure within close proximity to the municipal well or intake would provide an unnecessary risk to drinking water. The CTC Committee concluded that section 57 will effectively achieve prohibition in WHPA-A while maintaining the goal of protecting source water and ensuring these threats cease to be or do not occur in the future. No existing threats from this activity were identified in the CTC so prohibition of existing activities will likely have no impact.</p> <p>Municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.</p>
NASM-2	<p>WHPA vulnerable areas where the handling and storage of (Category 1) Non-Agricultural Source Material (NASM) containing manure is, or would be, a significant drinking water threat under the Director’s Technical Rules (DTR) 2021, include:</p> <ol style="list-style-type: none"> <li>1. WHPA-A (VS=10).</li> </ol>

	<ol style="list-style-type: none"> <li>2. WHPA-B (VS=10).</li> <li>3. WHPA-E (VS ≥8).</li> </ol> <p>Note: VS= Vulnerability Score.</p> <p>Issue Contributing Areas where the application of (Category 1) NASM is, or would be, a significant drinking water threat under the Director’s Technical Rules (DTR) 2021, include:</p> <ol style="list-style-type: none"> <li>1. Nitrogen</li> <li>2. Phosphorus</li> <li>3. Pathogens</li> </ol> <p>Policy NASM-2 prohibits the future handling and storage of (Category 1) Non-Agricultural Source Material containing manure in WHPA-A. Handling and storage of (Category 1) Non-Agricultural Source Material is generally not considered a significant drinking water threat except for non-farm herbivorous manure.</p> <p>The handling and storage of (Category 1) Non-Agricultural Source Material containing manure is regulated under the <u>Clean Water Act</u> through a Risk Management Plan (RMP). The contents of an RMP should be guided by the requirements for a Non-Agricultural Source Material Plan (NASM Plan) in Part III, section 26 of O. Reg. 267/03 under the <u>Nutrient Management Act</u>.</p> <p>The CTC Source Protection Committee did not want to create undue hardship on farmers by prohibiting existing storage of (Category 1) Non-Agricultural Source Material due to the difficulties of moving the structure and the investment already made. Where existing (Category 1) Non-Agricultural Source Material contain manure storage is present, constructing a new structure is allowed per the existing activity definition where it provides greater protection than the existing storage. However, where a new structure can be located outside of a vulnerable area, this is preferred.</p> <p>Municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.</p>
NASM-3	<p>WHPA vulnerable areas where the application of (Category 2) Non-Agricultural Source Material (NASM) to land is, or would be, a significant drinking water threat under the Director’s Technical Rules (DTR) 2021, include:</p> <ol style="list-style-type: none"> <li>1. WHPA-A (VS=10)</li> <li>2. WHPA-B (VS=10)</li> <li>3. WHPA-E (VS ≥8)</li> </ol> <p>Note: VS= Vulnerability Score.</p>

Issue Contributing Areas where the application of (Category 2) NASM to land is, or would be, a significant drinking water threat under the Director's Technical Rules (DTR) 2021, include:

1. Nitrogen
2. Phosphorus
3. Pathogens

Policy NASM-3 prohibits the future application of (Category 2) Non-Agricultural Source Material to land where it would be a significant drinking water threat. The application of (Category 2) Non-Agricultural Source Material to land is regulated under the Clean Water Act through a Risk Management Plan (RMP). The contents of an RMP should be guided by the requirements for a Non-Agricultural Source Material Plan (NASM Plan) in Part III, section 26 of O. Reg. 267/03 under the Nutrient Management Act.

The CTC Source Protection Committee concluded that wherever the application of (Category 2) Non-Agricultural Source Material to land is a significant drinking water threat as defined by the Clean Water Act, 2006 that the activity should be carefully assessed. The Nutrient Management Act was passed prior to the Province developing its scoring system for an activity deemed to be a significant drinking water threat. The CTC Source Protection Committee considers the threat from the application of (Category 2) Non-Agricultural Source Material to land within WHPA-A, WHPA-B (with a vulnerability score of 10) and WHPA-E (with a vulnerability score equal to or greater than 8) and the remainder of an Issue Contributing Area to warrant extra protection. Prohibiting future threat activities is seen as being precautionary.

This policy is a balance between protecting the municipal source of drinking water and allowing existing practices to continue until expiry of any existing approvals.

~~The threats verification work by the Source Protection Authority has not identified any sites where there is existing application of (Category 2) Non-Agricultural Source Material to land that would be a significant drinking water threat. Therefore, the CTC Source Protection Committee considered that the financial implications to affected farming operations would not be onerous.~~

Non-Agricultural Source Material categories are defined under the Nutrient Management Act (e.g. organic waste matter that contains no meat or fish and is derived from food processing at a bakery). (Category 2) NASMs with a higher concentration of regulated metal (CM2) are outlined in Schedule 5 of O.Reg. 267/03 require a NASM Plan approved/registered with OMAFRA. (Category 2) Non-Agricultural Source Materials are generally imported to the agricultural property for application and subject to time limited approvals to prevent the buildup of persistent contaminants in the soil.



	<p>Municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.</p>
<p>NASM-4</p>	<p>WHPA vulnerable areas where the handling and storage of (Category 2 &amp; 3) Non-Agricultural Source Material (NASM) is, would be, a significant drinking water threat under the Director’s Technical Rules (DTR) 2021, include:</p> <ol style="list-style-type: none"> <li>1. WHPA-A (VS=10)</li> <li>2. WHPA-B (VS=10)</li> <li>3. WHPA-E (VS ≥8)</li> </ol> <p>Note: VS= Vulnerability Score.</p> <p>Issue Contributing Areas where the application of (Category 2 &amp; 3) NASM is, or would be, a significant drinking water threat under the Director’s Technical Rules (DTR) 2021, include:</p> <ol style="list-style-type: none"> <li>1. Nitrogen</li> <li>2. Phosphorus</li> <li>3. Pathogens</li> </ol> <p>Policy NASM-5 prohibits the future handling and storage of (Category 2 &amp; 3) Non-Agricultural Source Material where it would be a significant drinking water threat. The handling and storage of (Category 2 &amp; 3) Non-Agricultural Source Material is regulated under the <u>Nutrient Management Act</u> through a Non-Agricultural Source Material Plan (NASM Plan).</p> <p>The CTC Source Protection Committee concluded that wherever the handling and storage of (Category 2 &amp; 3) Non-Agricultural Source Material is a significant drinking water threat as defined by the <u>Clean Water Act</u>, 2006 that the activity should be carefully assessed. The <u>Nutrient Management Act</u> was passed prior to the Province developing its scoring system for an activity deemed to be a significant drinking water threat. The CTC Source Protection Committee considers the threat from the handling and storage of (Category 2 &amp; 3) Non-Agricultural Source Material within WHPA-A, WHPA-B (with a vulnerability score of 10) and WHPA-E (with a vulnerability score equal to or greater than 8) and the remainder of an Issue Contributing Area to warrant extra protection. The CTC Source Protection Committee concluded that the threat to sources of drinking water was higher from (Category 2 &amp; 3) Non-Agricultural Source Materials due to the nature of the materials included (particularly from pathogens and nitrogen) than in (Category 1) Non-Agricultural Source Material, and therefore other tools, such as Risk Management Plans, were not considered adequate to protect the drinking water source. Prohibiting future threat activities is seen as being precautionary.</p> <p>The technical work did not identify any sites where there is existing storage of Non-Agricultural Source Material (Category 2 &amp; 3) and therefore no storage facilities would be impacted. Therefore, the CTC Source Protection Committee considered that there was unlikely any financial implications to farming operations.</p>

	<p>Non-Agricultural Source Material categories are defined under the <u>Nutrient Management Act</u>. Handling and Storage of (Category 3) NASMs requires a NASM Plan approved/registered with OMAFRA. (Category 2 &amp; 3) Non-Agricultural Source Materials are generally imported to the agricultural property for application and subject to time limited approvals to prevent the buildup of persistent contaminants in the soil.</p> <p>Municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.</p>
NASM-5	<p>Policy NASM-6 manages the application, handling, and storage of Non-Agricultural Source Material through the use of education and outreach targeted towards landowners and haulers that have a Prescribed Instrument or Risk Management Plan to haul, store or apply Non-Agricultural Source Material.</p> <p>The scope and content of education and outreach activities should be communicated to Risk Management Officials to ensure consistency between implementing bodies.</p> <p>Education and outreach policies have been proposed as part of the suite of tools to ensure that actions that can be taken to reduce the threat is made available to property owners in the vulnerable areas. Actions undertaken by individuals and businesses who know what to do to protect a drinking water source can be very effective as part of the protection approach.</p> <p>Municipalities are also encouraged to distribute these materials to property owners in areas where the threat to municipal drinking water is low or moderate where action can also help to protect sources of other drinking water supplies (see GEN-8).</p> <p>Furthermore, municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.</p>
NASM-6	<p>WHPA vulnerable areas where the application of (Category 3) Non-Agricultural Source Material (NASM) to land is, or would be, a significant drinking water threat under the Director’s Technical Rules (DTR) 2021, include:</p> <ol style="list-style-type: none"> <li>1. WHPA-A (VS=10)</li> <li>2. WHPA-B (VS=10)</li> <li>3. WHPA-E (VS ≥8)</li> </ol> <p>Note: VS= Vulnerability Score.</p> <p>Issue Contributing Areas where the application of (Category 3) NASM to land is, or would be, a significant drinking water threat under the Director’s Technical Rules (DTR) 2021, include:</p> <ol style="list-style-type: none"> <li>1. Nitrogen</li> </ol>

2. Phosphorus
3. Pathogens

Policy NASM-4 prohibits the future application of (Category 3) Non-Agricultural Source Material where it would be a significant drinking water threat. When the CTC Source Protection Plan was approved on December 31, 2015, the existing application of (Category 3) Non-Agricultural Source Material to land was permitted to continue until the expiry of the current approval. In 2023, it was expected that no Prescribed Instruments remained in place.

The CTC Source Protection Committee concluded that wherever the application of Non-Agricultural Source Material (Category 3) is a significant drinking water threat as defined by the Clean Water Act, 2006 that the activity should be carefully assessed. The Nutrient Management Act was passed prior to the Province developing its scoring system for an activity deemed to be a significant drinking water threat. The CTC Source Protection Committee considers the threat from the application of Non-Agricultural Source Material (Category 3) within WHPA-A, WHPA-B (with a vulnerability score of 10) and WHPA-E (with a vulnerability score equal to or greater than 8) and the remainder of an Issue Contributing Area to warrant extra protection. Prohibiting future threat activities is seen as being precautionary.

This policy is a balance between protecting the municipal source of drinking water and allowing existing practices to continue until expiry of any existing approvals.

~~The threats verification work by the Source Protection Authority has not identified any sites where there is existing application of Non-Agricultural Source Material that would be a significant drinking water threat. Therefore, the CTC Source Protection Committee considered that the financial implications to affected farming operations would not be onerous.~~

Non-Agricultural Source Material categories are defined under the Nutrient Management Act (e.g. pulp and paper biosolids, paunch manure and sewage biosolids). Application of (Category 3) NASMs to land requires a NASM Plan approved/registered with OMAFRA. (Category 3) Non-Agricultural Source Materials are generally imported to the agricultural property for application and subject to time limited approvals to prevent the buildup of persistent contaminants in the soil.

Municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.

Livestock (LIV) Policies

LIV-1

Threat Description: (O. Reg. 385/08, s.3)

WHPA vulnerable areas where the use of land as livestock grazing or pasturing land is, or would be, a significant drinking water threat under the Director's Technical Rules (DTR) 2021, include:

1. WHPA-A (VS=10)
2. WHPA-B (VS=10)
3. WHPA-E (VS ≥8)

Note: VS= Vulnerability Score.

Issue Contributing Areas where the use of land as livestock grazing or pasturing land is, or would be, a significant drinking water threat under the Director's Technical Rules (DTR) 2021, include:

1. Nitrogen
2. Phosphorus
3. Pathogens

Note: The policy is currently limited to Issue Contributing Area - Nitrogen and Pathogens.

Policy LIV-1 prohibits the existing and future use of land as livestock grazing or pasturing land (with an animal density of >1 Nutrient Unit per acre) in WHPA-A in an Issue Contributing Area for Nitrogen or Pathogens. The use of land as livestock grazing or pasturing land is otherwise managed requiring a Risk Management Plan.

The CTC Source Protection Committee considers the threat from livestock grazing and pasturing within an Issue Contributing Area for Nitrogen or Pathogens to warrant extra protection. While the Nutrient Management Act does not apply to livestock grazing and pasturing, the CTC Source Protection Committee felt the threat from this activity where the density of animals is greater than 1 nutrient unit per acre is comparable to the application of Agricultural Source Material. The WHPA-A is highly vulnerable and the potential for contamination of a municipal well from activities taking place in this area is high and therefore other tools, such as Risk Management Plans, were not considered adequate to protect the drinking water source. Therefore, the CTC Source Protection Committee concluded that prohibition in WHPA-A in an Issue Contributing Area for Nitrogen or Pathogens is consistent with the prohibition of Agricultural Source Material application.

In terms of impact on landowners only some wells in the CTC are located on agricultural lands and where they are, only a small area of farmland may be affected by the prohibition in WHPA-A (the 100 metre radius around a municipal well) if the livestock density is greater than 1 nutrient unit per acre; and therefore the CTC Source Protection Committee concluded that moving grazing and pasturing from WHPA-A to other areas of the farm or reducing the livestock density in WHPA-A below the threshold is a feasible risk prevention

	<p>measure with limited impact. Therefore, the CTC Source Protection Committee considered that the financial implications to affected farming operations would be minimal.</p> <p>In 2023, an enabling provision was added where residential land use with less than 5 nutrients units, outside WHPA-A was introduced. The CTC Source Protection felt providing the Risk Management Official greater discretion in these situations was in line with neighbouring Source Protection Regions while continuing to provide sufficient risk management measures to protect drinking water sources. Ongoing inspections should be conducted annually or on a basis deemed appropriate by the Risk Management Official. Inspection efforts should be prioritized based on systems that pose the greatest risk to sources of drinking water.</p> <p>Municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.</p>
LIV-2	<p><del>Policy LIV-2 prohibits the future use of land as an outdoor confinement area or a farm animal yard in WHPA-A, WHPA-B (VS = 10) in an Issue Contributing Area for Nitrates or Pathogens and in any WHPA-E in an Issue Contributing Area for Nitrates and Pathogens.</del></p> <p><del>The use of land as an outdoor confinement area or a farm animal yard is otherwise managed through the Prescribed Instrument.</del></p> <p><del>The prohibition of the expansion of the capacity or siting a new farm animal yard or outdoor confinement area in WHPA-A is already a requirement under the Nutrient Management Act for phased-in farms.</del></p> <p><del>The CTC Source Protection Committee concluded that wherever this is a significant drinking water threat as defined by the Clean Water Act, 2006 that the activity should be carefully assessed. The Nutrient Management Act was passed prior to the Province developing its scoring system for an activity deemed to be a significant drinking water threat.</del></p> <p><del>This policy is a balance between protecting the municipal source of drinking water and allowing existing farming practices to continue with the implementation of management practices to reduce runoff or infiltration. The CTC Source Protection Committee did not want to create undue hardship on farmers by prohibiting existing livestock confinement areas or farm animal yards due to the difficulties of moving the structure and the investment already made. Where existing outdoor confinement areas or farm animal yards exist, constructing a new structure is allowed per the existing activity definition where it provides greater protection than the existing storage. However, where a new structure can be located outside of a vulnerable area, this is preferred. Prohibiting future new threat activities is seen as being precautionary.</del></p> <p><del>The CTC Source Protection Committee considers the threat from outdoor confinement areas or farm animal yards within an Issue Contributing Area for Nitrates or Pathogens to warrant extra protection. Thus, the policy for future prohibition also applies to the most vulnerable portions of the Issue Contributing Area (WHPA-B with a vulnerability score of 10 and WHPA-E) for Nitrates or Pathogens.</del></p>

	<p>Municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.</p>
LIV-3	<p>Threat Description: (O. Reg. 385/08, s.3)</p> <p>WHPA vulnerable areas where the use of land as an outdoor confinement area or farm animal-yard is, or would be, a significant drinking water threat under the Director’s Technical Rules (DTR) 2021, include:</p> <ol style="list-style-type: none"> <li>1. WHPA-A (VS=10)</li> <li>2. WHPA-B (VS=10)</li> <li>3. WHPA-E (VS ≥8)</li> </ol> <p>Note: VS= Vulnerability Score.</p> <p>Issue Contributing Areas where the use of land as an outdoor confinement area or farm animal-yard is, or would be, a significant drinking water threat under the Director’s Technical Rules (DTR) 2021, include:</p> <ol style="list-style-type: none"> <li>1. Nitrogen</li> <li>2. Phosphorus</li> <li>3. Pathogens</li> </ol> <p>Note: The policy is currently limited to Issue Contributing Area - Nitrogen and Pathogens.</p> <p>Policy LIV-3 prohibits the future use of land as an outdoor confinement area or a farm-animal yard in WHPA-A, WHPA-B (VS = 10) in an Issue Contributing Area for Nitrogen or Pathogens and in any WHPA-E in an Issue Contributing Area for Nitrogen and Pathogens.</p> <p>The prohibition of the expansion of the capacity or siting a new farm-animal yard or outdoor confinement area in WHPA-A is already a requirement under the <u>Nutrient Management Act</u> for phased-in farms and the CTC Source Protection Committee wanted to maintain consistency between farms phased-in and not phased-in to the <u>Nutrient Management Act</u> requirements.</p> <p>The prohibition of the use of land as an outdoor confinement area or farm animal-yard in a WHPA-A is already a requirement under the <u>Nutrient Management Act</u> for phased-in farms (≥ 300 nutrient units). The CTC Source Protection Plan prohibition of the use of land as an outdoor confinement area or farm animal-yard in a WHPA-A is not distinct to phased-in farms (&lt;300 nutrient units).</p> <p>This policy is a balance between protecting the municipal source of drinking water and allowing existing farming practices to continue with the implementation of management practices to reduce runoff or infiltration. The CTC Source Protection Committee did not want to create undue hardship on farmers by prohibiting existing livestock confinement areas or farm-animal yards due to the difficulties of moving the structure and the investment already made. Where existing outdoor confinement areas or farm-animal yards exist,</p>



constructing a new structure is allowed per the existing activity definition where it provides greater protection than the existing activity. However, where a new structure can be located outside of a vulnerable area, this is preferred. Prohibiting future new threat activities is seen as being precautionary.

The CTC Source Protection Committee considers the threat from outdoor confinement areas or farm-animal yards within an Issue Contributing Area for Nitrates or Pathogens to warrant extra protection. Thus, the policy for future prohibition also applies to the most vulnerable portions of the Issue Contributing Area (WHPA-B with a vulnerability score of 10 and WHPA-E with a vulnerability score of 8 or greater) for Nitrogen or Pathogens.

The land use as an outdoor confinement area or farm-animal yard otherwise regulated under the Clean Water Act through a Risk Management Plan (RMP) unless exempted under section 61 of O. Reg 287/07. Where the property owner requests an exemption for a Prescribed Instrument the proponent will notify the RMO that the activity is subject to a Nutrient Management Strategy (NMS), as described in Section 61 of O. Reg. 287/07, including the submission of the NMS.

The contents of an RMP should be guided by the requirements for a Nutrient Management Strategy (NMS) in Part III, section 17 to 22 of O. Reg. 267/03 under the Nutrient Management Act.

Municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.

Commercial Fertilizer (FER) Policies	
FER-1	<p><del>Policy FER-1 prohibits the existing and future application of commercial fertilizer in WHPA-A and the future application of commercial fertilizer in any WHPA-E in an Issue Contributing Area for Nitrates. The application of commercial fertilizer is otherwise managed through the Prescribed Instrument.</del></p> <p><del>The CTC Source Protection Committee chose to apply prohibition to the existing and future application of commercial fertilizer to land in WHPA-A as it is already a requirement under the Nutrient Management Act for phased-in farms and wanted to maintain consistency between farms phased-in and not phased-in to the Nutrient Management Act requirements.</del></p> <p><del>The CTC Source Protection Committee considers the threat from application of nitrate-containing fertilizer within an Issue Contributing Area for Nitrates to warrant extra protection. Thus, the policy for future prohibition applies beyond the WHPA-A in an Issue Contributing Area for Nitrates in the WHPA-E where excess fertilizer can leach into the surface water. The CTC Source Protection Committee concluded that the precautionary approach be applied when dealing with a WHPA-E in an Issue Contributing Area for Nitrates due to their sensitive nature.</del></p> <p><del>Municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.</del></p>
FER-2	<p>WHPA vulnerable areas where the application of commercial fertilizer (FER) to land is, or would be, a significant drinking water threat under the Director's Technical Rules (DTR) 2021, include:</p> <ol style="list-style-type: none"> <li>1. WHPA-A (VS=10)</li> <li>2. WHPA-B (VS=10)</li> <li>3. WHPA-E (VS ≥9)</li> </ol> <p>Note: VS= Vulnerability Score.</p> <p>Issue Contributing Areas where the application of commercial fertilizer to land is, or would be, a significant drinking water threat under the Director's Technical Rules (DTR) 2021, include:</p> <ol style="list-style-type: none"> <li>1. Nitrogen</li> <li>2. Phosphorus</li> </ol> <p>Note: The policy is currently limited to Issue Contributing Area - Nitrogen.</p> <p><del>Policy FER-2 prohibits the existing and future application of FER commercial fertilizer to land in WHPA-A. The WHPA-A is a geographically limited in size (100 m around the wellhead). Where the application of commercial fertilizer to land is taking place, moving the activity from one part of a parcel to another does not require structures (barns, etc.) to be moved. Therefore, within the CTC, the Committee does not view the policy as onerous to farm operators. The prohibition of the application of FER to land in a</del></p>

	<p>WHPA-A is already a requirement under <a href="#">The Nutrient Management Act</a> for phased-in farms (<math>\geq 300</math> nutrient units). The CTC Source Protection Plan prohibition of the application of FER to land in a WHPA-A is not distinct to non-phased in farms (<math>&lt;300</math> nutrient units)</p> <p>The application of commercial fertilizer to land is regulated under the <a href="#">Clean Water Act</a> through a Risk Management Plan (RMP) unless exempted under section 61 of O. Reg 287/07. Where the property owner requests an exemption for a Prescribed Instrument the proponent will notify the Risk Management Official that the activity is subject to a Nutrient Management Plan (NMP), as described in Section 61 of O. Reg. 287/07, including the submission of the NMP. The NMP must contain a statement of conformity to the Source Protection Plan (SPP) policies on significant drinking water threats.</p> <p>The contents of an RMP shall be guided by the requirements for a Nutrient Management Plan (NMP) in Part III, section 24 of O. Reg. 267/03 under the <a href="#">Nutrient Management Act</a> (NMA). Since NMPs have a five-year term for renewal, it is recommended that Risk Management Plans are renewed at a minimum of every five-years or based on crop rotational patterns.</p> <p>The CTC Committee recommends the use of best management approaches and tools provided in the Nutrient Management Training and Certification Program. Prior to the application of ASM, <a href="#">OMAFRA recommends soils testing. An agronomic soil test (NPK test) is suitable for Phosphorus (P) and Potassium (K). It is recommended to sample fields every 3 to 5 years because these values are relatively stable. The sample(s) should be taken at a depth of around 15 cm and can be held at room temperature. A pre sidedress nitrate test is suitable for Nitrate (N). It is recommended to sample fields every 3 to 5 years because this value changes chemical form very quickly in soil. The sample(s) should be taken at a depth of 30 cm and should be refrigerated or frozen to prevent microbial action from changing the Nitrogen form while enroute to the lab. OMAFRA recommends one composite sample per 25 acres with one core taken approximately every acre (all cores thoroughly mixed to create composite sample with a least 20 cores per composite sample). Additional information on soil sampling and analysis for managing crop nutrients can be found on the <a href="#">OMAFRA website</a> . Soil sampling should be used in conjunction with nutrient management planning software, NMAN, or similar to calculate crop nutrient balances for the RMP. The calculations should be reviewed in years where nutrients are applied, and the RMP should be updated so that it accurate reflects the anticipated operation on the farm unit during the following year.</a></p> <p>Municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.</p>
FER-3	<p>WHPA vulnerable areas where the handling and storage of commercial fertilizer is, or would be, a significant drinking water threat under the Director’s Technical Rules (DTR) 2021, include:</p> <ol style="list-style-type: none"> <li>1. WHPA-A (VS=10)</li> <li>2. WHPA-B (VS=10)</li> </ol> <p>Note: VS= Vulnerability Score.</p>

	<p>Issue Contributing Areas where the handling and storage of commercial fertilizer is, or would be, a significant drinking water threat under the Director’s Technical Rules (DTR) 2021, include:</p> <ol style="list-style-type: none"> <li>1. Nitrogen</li> <li>2. Phosphorus</li> </ol> <p>Note: The policy is currently limited to Issue Contributing Area - Nitrogen.</p> <p>Policy FER-3 prohibits the future handling and storage of commercial fertilizer in WHPA-A. The handling and storage of commercial fertilizer is otherwise managed by requiring a Risk Management Plan.</p> <p>The <u>Nutrient Management Act</u> does not have provisions regarding the storage of commercial fertilizer and as such the CTC Source Protection Committee chose to apply Part IV tools to farms and other lands where the handling and storage of commercial fertilizer is or would be a significant drinking water threat. The CTC Source Protection Committee took into consideration the burden of being required to move existing structures used in the storage of commercial fertilizer and as such only applied prohibition within the WHPA-A for future activities. The CTC Source Protection Committee concluded that future facilities can be located outside of WHPA-A when dealing with large farm properties.</p> <p>In 2021, the Province released a new set of Director’s Technical Rules. These rules provided an option to amend the focus from total mass on the property to individual focus in liquid form. For both existing and future large quantities of fertilizer storage, the Source Protection Committee is requiring (1) liquid fertilizer to be stored in a double-walled tank or secondary containment facilities with collision protection and (2) dry fertilizer to be stored undercover on impervious floor surface with no drainage outlets to reduce accidental release, along with any other provisions deemed necessary in the Risk Management Plan.</p> <p>Municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.</p>
FER-4	<p>Policy FER-4 manages the existing and future application, handling, and storage of commercial fertilizer through the use of education and outreach targeted towards individuals as well as owners/tenants of non-agriculturally zoned lands.</p> <p>This policy is the only one to deal with the threat posed by the application, handling, and storage of small quantities of commercial fertilizers by individuals for use on their personal property which is a significant drinking water threat only within an Issue Contributing Area for Nitrates. The CTC Source Protection Committee is required to develop a policy to address this threat.</p> <p>Therefore, the Source Protection Committee concluded that this policy is an appropriate balance between protecting the municipal source of drinking water and avoiding the workload burden on the Risk Management Official and costs to landowners that would result from requiring a Risk Management Plan.</p>

An education and outreach strategy should be developed by the municipality that includes a suite of actions to ensure that affected property owners understand and take actions to protect municipal supplies. This should include ongoing efforts and follow-up analysis to assess effectiveness as this is a standalone policy, not a companion to other policies directed at the same threat activity. Education and outreach materials should clearly set out actions that property owners should take to reduce the threat in the vulnerable areas. Where education and outreach materials have been prepared by the Ministry of the Environment, Climate Change, and Parks the municipality shall deliver those materials, otherwise the municipality shall develop their own materials for delivery.

Where the application of commercial fertilizer to land is occurring on a golf course, the proponent is encouraged to obtain an Audubon Co-operative Sanctuary Certification.

Municipalities are also encouraged to distribute these materials to property owners in areas where the threat to municipal drinking water is low or moderate where action can also help to protect sources of other drinking water supplies (see GEN-8). Voluntary actions undertaken by individuals and businesses to protect a drinking water source can be very effective as part of the protection approach.

Furthermore, municipalities are also required to continue to monitor the aquifer and report on the results (see GEN-7). Should the contaminant levels continue to increase, it may be necessary to review this policy and others associated with the Issue.





2023-374

Moved: Councillor Macintosh  
Seconded: Councillor Stevens

That all Consent Agenda items for the December 11, 2023 Council Meeting listed under 13.1 Staff Reports, 13.2 Correspondence, and 13.3 Committee/Board Minutes, be received;

And that the recommendations listed under 13.1 Staff reports, be received.

Result: Carried Unanimously

That report INS-2023-080, Update on Status of Establishing Risk Management Plans for Source Water Protection, be received;

And that Council direct the Clerk to circulate a copy of Report No. INS-2023-080 to the Chair of the Credit Valley - Toronto and Region - Central Lake Ontario Source Protection Committee for their information.

**Subject: Update on Status of Establishing Risk Management Plans for Source Water Protection**

**Department: Infrastructure Services**

**Division: Planning**

**Report #: INS-2023-080**

**Meeting Date: 2023-12-11**

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### **Recommendations**

**That report INS-2023-080, Update on Status of Establishing Risk Management Plans for Source Water Protection, be received;**

**And that Council direct the Clerk to circulate a copy of Report No. INS-2023-080 to the Chair of the Credit Valley - Toronto and Region - Central Lake Ontario Source Protection Committee for their information.**

### **Background and Analysis**

The Clean Water Act was enacted in 2006 following recommendations of Justice O’Conner and the Walkerton Inquiry to protect municipal drinking water supplies in Ontario. Previously enacted legislation, such as the Safe Drinking Water Act, focus on drinking water treatment, the qualifications and training of drinking water operators, and water quality testing. The Clean Water Act (the “Act”) has brought a new approach to managing municipal drinking water systems in Ontario by requiring that drinking water sources be protected from both water quality and quantity threats.

The Act requires the establishment of Source Protection Committees comprised of representatives from watershed stakeholder groups and the public at large. Source Protection Committees were tasked with the development of local level Source Protection Plans to protect drinking water resources and ensure that drinking water threats (to the quality and quantity of water resources) were addressed. The Town of Orangeville is located within the Credit Valley watershed and is subject to the Source Protection Plan for the Credit Valley – Toronto and Region –Central Lake Ontario (CTC) Source Protection Region. The CTC Source Protection Plan (the Plan) came into effect on December 31, 2015.

The CTC Source Protection Plan and the Clean Water Act identify a range of policy tools for regulating existing and future activities recognized as significant drinking water threats. One of the policy tools for managing threats includes the development of Risk Management Plans. Risk Management Plans are binding agreements that identify the

best management practices to be implemented on a property so that activities identified as risks to drinking water cease to be, or never become significant drinking water threats. Policies in the CTC Source Protection Plan call on municipal source protection staff to negotiate Risk Management Plans with businesses and landowners undertaking threat activities in vulnerable areas around municipal wells.

Policies in the Plan also specify implementation timelines for the establishment of Risk Management Plans. Timelines in the Plan originally called for RMPs for existing properties to be established by December 31, 2020. In July of 2020, the original deadline was extended for 3 years by the Ministry Environment, Conservation, and Parks until Dec. 31, 2023. This decision acknowledged the numerous challenges municipalities faced, including the significant amount of time required to complete an RMP, resource and capacity limitations faced by municipal staff, and delays in RMP development due to the COVID-19 pandemic.

With the December 31<sup>st</sup>, 2023 deadline approaching, municipalities with remaining RMPs requested an additional 2 year extension to the timeline for the completion of RMPs. With the restrictions from the COVID-19 pandemic proving longer and more challenging than originally anticipated, more time is required to complete negotiations. Given the resulting multi-year gap in RMP negotiations due to the pandemic, the process of re-engaging landowners has been slow, particularly where changes in ownership or management have taken place. The time-consuming nature of RMP negotiation, particularly due to the disruption caused by the COVID-19 pandemic has in some cases reset the clock on previous efforts, and establishment of RMPs remains a challenging activity.

Staff vacancies and recruitment were a specific challenge for the Town. The departure of the sole source protection staff in 2021 delayed RMP development progress while recruitment efforts to hire a Source Water Protection Coordinator were underway. During this time, the Town hired environmental consulting firm (Blumetric Environmental) to deal primarily with time sensitive planning matters, while the completion of the outstanding RMPs was to be resumed once the role was filled. RMP negotiations resumed in November 2022 following the successful recruitment of the Town's new Source Protection Coordinator. In August 2023, this was once again vacated until the recent hire of Irena Kontrec in October 2023.

In light of the challenges faced by municipalities, the MECP extended the deadline for the completion of RMPs to December 31<sup>st</sup>, 2025. To support the extension request, the CTC Source Protection Committee required the Town of Orangeville, and other municipalities with outstanding Risk Management Plans, to submit a work plan outlining the timing to complete the remaining Risk Management Plans. Staff are directed to apprise Council of the extended implementation deadline and confirm support of the Risk Management Plan workplan for the remaining two years.

To date, Risk Management Plans have been established on 37 properties in Orangeville. The majority of these Risk Management Plans have addressed road salt

and snow storage activities. There are currently 29 outstanding properties that require an RMP. The drinking water threats to be addressed on these properties primarily include road salt storage and handling activities, as well as snow storage and chemical handling and storage. The required work plan and forecast to completion, based on the 29 remaining properties is summarized in Table 1 below. Staff aim to complete 15 Risk Management Plans in 2024 and 14 Plans in 2025. The detailed workplan submitted to the CTC Source Protection Committee is available for reference as Attachment 1. While progress has been slow in the last year due to the implementation challenges outlined above, source protection staff intend to devote a significant amount of time and resources to completing the remaining RMPs by the December 31, 2025, deadline.

**Table 1. Number of RMPs completed in 2023 and RMPs to be Completed in 2024/2025**

<b>Year</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
<b>Estimated Number of Risk Management Plans Completed/ to be Completed</b>	5	15	14

For the remaining properties, staff will continue to work with landowners through outreach, education and negotiation to establish Risk Management Plans. Where repeated outreach efforts are not successful at establishing Risk Management Plans for identified properties, staff may need to rely on enforcement tools so that all required Risk Management Plans are established by the deadline. Enforcement tools under the Clean Water Act include legal Notices and Orders to establish RMPs where voluntary negotiation is not achieved.

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## **Strategic Alignment**

### **Strategic Plan**

Strategic Goal: Sustainable Infrastructure

Objective: Maintain Current Assets

### **Sustainable Neighbourhood Action Plan**

Theme: Natural Resources and the Environment

Strategy: Protect, improve or restore the quality and quantity of water resources; Continue to provide access to safe drinking water that meets the needs of the community

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### **Notice Provisions**

There are no notice provisions applicable to this report.

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### **Financial Impact**

Source Protection Plans and risk management efforts are coordinated by the Town's Source Water Protection Coordinator within the Planning Division of Infrastructure Services.

Funding of the Source Water Protection Coordinator role is sourced from the user-fee Water Services budget.

Respectfully submitted

Tim Kocialek P. Eng, PMP  
General Manager, Infrastructure Services

Reviewed by

Brandon Ward, MCIP, RPP  
Manager, Planning

Prepared by

Irena Kontrec  
Source Water Protection Co-ordinator, Planning

### **Attachment(s):**

1. S.58 RMP Extension Work Plan

**Report INS-2023-080 – Attachment 1**  
**S. 58 RMP Extension Work Plan**

Note: Existing/outstanding SDWT's in this workplan refer to those that were originally required to have RMP's in place Dec. 31, 2020 to manage them, as per the CTC Source Protection Plan policy #T-6. In July 2020, the implementation deadline for SPP policy T-6 was extended by 3 years until Dec. 31, 2023. On March 23, 2023 the CTC SPC directed staff request a further 2-year deadline extension from MECP.

**Instructions**

**Work Plan:** Fill in Yellow Cells. This template assumes RMOs will establish annual targets for RMP completion, and may employ notices and/or impose RMPs, as needed, to achieve annual targets. Blue content is required. Add additional milestone tasks to Column A as appropriate (e.g., # site visits).

**Annual Progress Reports:** Fill in green cells annually, beginning in January 2024

Date of update:	11-Jan-21		31-Jan-22		01-Feb-23		January 2024 update (as of Jan. 1, 2024)	January 2025 update (as of Jan. 1, 2025)	January 2026 update (as of Jan. 1, 2026)
	Date		Date		Date		Date	Date	Date
Municipality:	Town of Orangeville								
Risk Management Official(s):	Irena Kontrec	Muriel Kim-Brisson, Tiffany Svensson		Muriel Kim-Brisson, Tiffany Svensson		RMO(s)	RMO(s)	RMO(s)	
	Progress Reports (SDWT/parcels/RMPs)								
# Outstanding Existing SDWTs (requiring RMPs):	83	80		66			0	0	0
Summary of Outstanding Existing SDWTs (requiring RMPs) by type:									
Waste	0	0		0					
Sewage	12 (N/A)	12 (N/A)		12 (N/A)		N/A	N/A	N/A	
ASM application	0	0		0					
ASM storage	0	0		0					
Aquaculture	N/A	N/A		N/A		N/A	N/A	N/A	
NASM application	0	0		0					
NASM storage	0	0		0					
Fertilizer application	0	0		0					
Fertilizer storage	0	0		0					
Pesticide application	0	0		0					
Pesticide storage	0	0		0					
Road salt application	35	34		27					
Road salt storage	0	0		0					
Snow storage	35	34		28					
Fuel H&S	0	0		0					
DNAPL H&S	13	12		11					
Organic solvents H&S	0	0		0					
Aircraft de-icing	0	0		0					
Water demand	N/A	N/A		N/A		N/A	N/A	N/A	
Recharge reduction	0	0		0					
OCA/FAY	0	0		0					
Livestock Grazing/Pasturing	0	0		0					
Liquid hydrocarbon pipeline	N/A	N/A		N/A		N/A	N/A	N/A	
# of properties with outstanding required RMPs (existing threats):	38	36		34					
# of Outstanding Risk Management Plans (existing threats):	38	36		40					
# existing SDWTs addressed by established RMPs (cumulative):	79	85		85					
# of properties with RMPs established (cumulative):	34	37		37					
# of total RMPs established (cumulative):	34	37		37					
<b>Work Plan (Previous workplan targets pre-entered)</b>									
Targets/Dates (Annual)									
RMO Tasks	2021		2022		2023		2024		2025
Develop Workplan and submit to CTC Program Manager	Monday January 11, 2021		N/A		30-Jun-23		N/A		N/A
Target # RMPs to be completed	10		15		16		15		14
OPTIONAL: Send warning letter to all persons requiring risk management plans	30-Jun-21		16-May-22		07-Feb-23		08-Jan-24		06-Jan-25
Issue s. 58 (7) notice, if necessary	17-Jan-22		01-Dec-22		03-Jul-23		04-Mar-24		03-Mar-25
Issue s. 58 (10) notices, if necessary	N/A		N/A		31-Oct-23		02-Jul-24		01-Jul-25
Completion Date for completion of outstanding existing RMP's					Target date: Dec 31, 2023		31-Dec-25		
Resource Challenges contributing to delays?	Amendments to existing RMPs, staff vacancies, COVID-19, re-engagement of land owners/managers, other implementation requirements								
Annual Workplan Progress (due by Feb. 1st of each following year)									
Annual Progress	2021		2022		2023		2024		2025
Actual RMPs completed	2		0		5				
RMPs in progress as of end of year	6		7		7				
Actual warning letters sent	1		0		30				
Date warning letters sent	Feb. 23, 2021 (by mail), May 17, 2021 (by mail) and Aug. 24, 2021 (by email).		N/A		07-Feb-23				
Actual s. 58 (7) notices sent	0		0		0				
Date s. 58 (7) notices sent	N/A		N/A		N/A				
Actual s. 58 (10) notices sent	0		0		0				
Date s. 58 (10) notices sent	N/A		N/A		N/A				
Implementation Challenges	Ongoing pandemic, Risk Management staff turnover and recruitment challenges. Draft RMPs were prepared for five properties but review comments and/or final signatures were not obtained before departure of staff in October 2021.		Ongoing pandemic, absence of full-time Risk Management staff operating locally.		Departure of Rebecca Smart, the Town's Source Water Protection Coordinator in August 2023.				
Proposed Mitigation Strategies	BluMetric Environmental Inc. was retained in January 2022 to serve as source protection staff (RMO/RMI) on a 6-month contract		Rebecca Smart was hired by the Town of Orangeville in November 2022 as the town's Source Water Protection Coordinator.		Irena Kontrec hired as Source Protection Coordinator on October 23, 2023. BluMetric Environmental will provide support to Irena on an as-needed basis.				
Additional Resources to Implement Work Plan	See above		See above		See above				

List applicable SPP policy
WST-1 or WST-6?
ASM-2
ASM-4
NASM-1
NASM-2
FER-2
FER-3
PES-1
PES-2
SAL-1 or SAL-2?
SAL-7
SNO-1
FUEL-3
DNAP-1
OS-1
DI-1
REC-2
LIV-3
LIV-1



**Town of Erin Resolution  
Regular Council Meeting**

**Agenda Number:** 11.2.1.1.

**Resolution  
Number** 23-327

**Title:** Update on Status of Risk Management Plans for Source Water  
Protection

**Date:** December 14, 2023

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**Moved By** Councillor Cheyne

**Seconded By** Councillor Ryan

**Be it resolved that** Town of Erin Council receive report number W2023-06 "*Update on Status of Risk Management Plans for Source Water Protection*" for information;

**And that** Council direct the Clerk to circulate the report to the CTC Source Protection Committee and the Region of Halton for information.

Carried

  
\_\_\_\_\_  
Mayor, Michael Dehn





# Town of Erin

## Corporate Report

<b>Department:</b> Infrastructure Services	<b>Report Number:</b> W2023-06
<b>Business Unit:</b> Water	<b>Meeting Date:</b> 12/14/2023
<b>Presented/ Prepared By:</b> Kyle Davis, Risk Management Official	

### Subject

**Update on Status of Risk Management Plans for Source Water Protection**

### Recommendation

**Be it resolved that** Town of Erin Council receive report number W2023-06 “*Update on Status of Risk Management Plans for Source Water Protection*” for information;  
**And that** Council direct the Clerk to circulate the report to the CTC Source Protection Committee and the Region of Halton for information.

### Highlights

The Town continues to implement the source protection program as outlined in the *Clean Water Act* including negotiation of Risk Management Plans with property owners and / or persons engaged in activities. Negotiation is ongoing with the 7 remaining Risk Management Plans and the forecasted progress is to complete these remaining Risk Management Plans prior to the December 31, 2025 deadline.

### Background

The Town of Erin is subject to two Source Protection Plans pursuant to the *Clean Water Act, 2006*: the Credit Valley, Toronto and Region and Central Lake Ontario (CTC) Plan and the Grand River Plan. These Source Protection Plans outline requirements to ensure protection of municipal groundwater supply from potential contamination resulting from a variety of activities on the landscape. These activities are prescribed under the *Clean Water Act, 2006* and its associated regulations and guidance documents and include manure application / storage, livestock grazing, fertilizer / pesticide application, liquid fuel and chemical handling / storage and winter maintenance activities including road salt application. The Source Protection Plans use a number of regulatory and non-regulatory tools to ensure that protection and these range from limited prohibition and regulatory approvals to education, outreach and incentives. One of the regulatory tools are Risk Management Plans.

Risk Management Plans are a regulatory approval issued by the Town’s Risk Management Official pursuant to their authority under the *Clean Water Act, 2006*. This approval can apply to existing or new activities and sets out requirements for the person engaged in the activity to follow. The person engaged in the activity can be the property owner, tenant or contractor. An example is a farmer who is applying manure and fertilizer

on a property that they rent. In this case the farmer is the person engaged in the activity. The requirements vary depending on the activity being regulated, however, follow provincial best practices and in some cases re-enforce other provincial legislation such as the Liquid Fuel Code.

The Province has mandated that the source water protection program be proactive and, where possible, a collaborative approach. This applies to Risk Management Plans since Part IV of the *Clean Water Act, 2006* specifies that Risk Management Officials must first negotiate with persons engaged in the activity and attempt to agree upon a Risk Management Plan. If negotiations fail, then a Risk Management Official has the authority to impose a Risk Management Plan via order, however, only after a 120 day period has passed during which negotiations are meant to continue. This proactive and collaborative approach has been re-enforced by various Provincial directions and training since implementation of the source protection program began.

The CTC Source Protection Plan has been in effect since December 31, 2015 and this is the Source Protection Plan that applies to the majority of the Town and all of the Town's municipal well sites in Hillsburgh and Erin. Additionally, the Region of Halton operates a series of municipal wells in the vicinity of the municipal boundary and the wellhead protection areas and one municipal well are located within the Town. As outlined in the 2022 Annual Report to Council, staff work on a number of initiatives including negotiation of Risk Management Plans to ensure that the Town is implementing the requirements of the *Clean Water Act, 2006* and the source protection program.

In 2015, 479 activities were identified as significant drinking water threats within the Town of Erin. As of November 27, 2023, there 7 Risk Management Plans remaining to be negotiated that cover 25 significant drinking water threats on 8 properties. As of the same date, there are 5 Risk Management Plans established that cover 9 significant drinking water threats on 5 properties. The remaining 7 Risk Management Plans consist of seven agricultural or rural residential properties and one on an institutional property. The majority of these remaining properties are located within the Region of Halton wellhead protection areas along the Halton-Erin Townline. The remaining significant drinking water threat activities are managed through a number of other methods including the septic inspection program, provincial approvals and education programs or the threats are no longer present.

## **Discussion**

Source Protection staff are actively involved in negotiations with persons engaged in the activities to either come to an agreement on the Risk Management Plan or to confirm if Risk Management Plans are not required at the properties. The deadline to establish Risk Management Plans in the CTC Source Protection Plan has been extended twice, most recently by the Province to December 31, 2025. The Province has indicated that this will likely be the last extension of the deadline. The CTC Source Protection Committee has directed the Town and other municipalities still negotiating Risk Management Plans to provide semi-annual work plan updates to the Source Protection Committee and to provide an update to their respective municipal Councils outside of the

annual reporting process. Negotiation is ongoing with the 7 remaining Risk Management Plans and the forecasted progress is to complete these remaining Risk Management Plans prior to the December 31, 2025 deadline. If negotiations stall or fail, the Risk Management Official will be required to issue orders to establish the Risk Management Plans.

### **Strategic Pillar**

Healthy Lifestyle & Vibrant Community

### **Financial Impact**

There are no additional financial impacts associated with this report nor necessary to complete the remaining 7 Risk Management Plans. The outlined Risk Management Plan negotiations are included in existing Town and County budgets.

### **Conclusion**

Negotiation is ongoing with the 7 remaining Risk Management Plans and the forecasted progress is to complete these remaining Risk Management Plans prior to the December 31, 2025 deadline. If negotiations stall or fail, the Risk Management Official will be required to issue orders to establish the Risk Management Plans.

### **Attachments**

None.

Kyle Davis

Risk Management Official

Jim Sawkins

Interim Chief Administrative Officer