

CTC Source Protection Plan Annual Progress Report 2023

I. Introduction

Source protection plans are created under the *Clean Water Act, 2006*. This annual report summarizes the progress made by December 31, 2023 in implementing the Source Protection Plan for municipal drinking water systems in the Credit Valley, Toronto and Region, and Central Lake Ontario (CTC) Source Protection Region.

Protecting the sources of our drinking water is the first step in a multi-barrier approach to safeguard the quality and quantity of our water supplies. The Source Protection Plan is the culmination of extensive science-based assessment, research, consultation, and collaboration with local stakeholders and the provincial government. When policies in the Plan are implemented it ensures that activities carried out near municipal wells and lake-based intakes will not pose significant risk to drinking water supplies.

We acknowledge and recognize the efforts made by municipalities, stakeholders and the CTC Source Protection Committee in the development and implementation of the Source Protection Plan.



II. A message from your local Source Protection Committee

P : Progressing Well/Short of Target – The majority of the source protection plan policies have been implemented and/or are progressing.

This is the seventh Annual Report on implementation of the CTC Source Protection Plan (Plan) since it took effect on December 31, 2015. All stakeholders responsible for Plan policy implementation reported on their progress in 2023.

89% of the legally binding policies that address significant drinking water threats are implemented in the CTC Region. All municipalities have established processes to ensure that land use planning decisions conform to the Plan.

At the time the Plan came into effect in 2015, over 10,000 significant drinking water threats were identified in the CTC Region. Since then, field verification has reduced that number to 6,133 significant threats. 241 significant drinking water threats remain to be addressed, almost all of these within the Credit River Watershed. Furthermore, 98% of existing significant drinking water threats have been addressed through policy implementation or removed through threats verification.

Approximately 64% of the required risk management plans (RMPs) have been established to address significant threats. Three municipalities (Halton Region, Town of Erin, Town of Orangeville) with outstanding risk management plans made good progress on RMP establishment in 2023, but will need continued strong efforts to achieve the 2025 deadline for completion of RMPs to address existing significant threats.

In 2023, 108 mandatory septic system inspections were completed. Four municipalities (Town of Erin, Town of Halton Hills, Town of Whitchurch-Stouffville, City of Vaughan) collectively identified 45 overdue septic inspections as of the conclusion of 2023, and are taking steps to have those systems come into compliance.

Sodium and chloride concentrations in the raw water from municipal wells with identified issues in the drinking water systems for Orangeville and Georgetown continued to show increases in 2023. The CTC Region is collaborating with municipalities and the Oak Ridges Moraine Groundwater Program on how to improve reporting of rising sodium and chloride concentrations across the CTC.

As a result, the Committee concluded that implementation of the Plan has progressed well but is short of target in achieving the plan's objectives.

III. Our Watershed

To learn more, please read our assessment reports and source protection plan.

The CTC Source Protection Region contains over 25 large and small watersheds and spans over 3,800 km² of land, from the Oak Ridges Moraine in the north to Lake Ontario in the south. The region contains portions of the Niagara Escarpment, Oak Ridges Moraine, Greenbelt, Lake Ontario, and the most densely populated area of Canada. The CTC Source Protection Region includes 25 local municipalities and eight single tier, regional or county municipalities, 66 municipal supply wells, and 16 municipal surface water intakes in Lake Ontario. The region is complex and diverse in terms of geology, physiography, population, and development pressures. There are many, often conflicting, water uses including, drinking water supply, recreation, irrigation, agriculture, commercial and industrial uses, and ecosystem needs.

The Credit Valley Source Protection Area is formed by one main watercourse, the Credit River, and a number of smaller Lake Ontario tributaries. Nearly 1500 km of streams and creeks empty into the Credit River including Black Creek, Silver Creek, West Credit River, Shaw's Creek, East Credit River, Fletchers Creek, Caledon Creek, and several others. There are thirteen municipal water systems operating in the source protection area, two are surface water based – accessing Lake Ontario as the source; the remainder are groundwater-based. There are no municipal drinking water sources taking from the Credit River. About 1 million people make the Credit watershed their home.

The Toronto and Region Source Protection Area comprises numerous watersheds, plus their collective Lake Ontario waterfront shorelines, to incorporate portions of six upper-tier and 15 lower-tier municipalities. The nine major watersheds are Carruthers, Duffins, Etobicoke, Highland, Mimico, and Petticoat Creeks, and also the Don, Humber and Rouge Rivers. More than 5 million people live within the source protection area with the population expected to grow significantly in the years to come. There are ten municipal water systems operating in the source protection area, five are surface water based – accessing Lake Ontario as the source; the remainder are groundwater-based.

The Central Lake Ontario Source Protection Area is fully contained within the Regional Municipality of Durham. There are numerous watersheds within its boundaries, with the five major watersheds originating at the Oak Ridges Moraine. These major watersheds are Lynde, Oshawa, Farewell, Bowmanville, and Soper Creeks. There are no municipal wells within the source protection area; all municipal drinking water comes from Lake Ontario. There are three municipal drinking water systems: Whitby, Oshawa, and Bowmanville.

IV. At a Glance: Progress on Source Protection Plan Implementation

1. Source Protection Plan Policies

P : Progressing Well/On Target

There are 129 policies in the CTC Source Protection Plan. The policies address: 22 types of threats prescribed in regulation and 1 type of local drinking water threat; other actions considered necessary to protect drinking water sources; and implementation monitoring. Some policies are implemented by a single stakeholder, others by multiple stakeholders.

As of the end of 2023, 89% of legally binding policies and 90% of non-legally binding policies that address significant drinking water threats have been implemented, and the rest are in progress, or have been considered and did not require further action. 69% of policies addressing moderate and low threats have been implemented and the rest are in progress. Furthermore, approximately 98% of existing significant drinking water threats have been addressed (i.e., eliminated or managed).

2. Municipal Progress: Addressing Risks on the Ground

P : Progressing Well/On Target

It is a requirement that municipalities ensure their Official Plan (OP), and where appropriate Zoning by-law, conforms with the local source protection plan. As of December 31, 2023, out of 33 municipalities in CTC Source Protection Region, 30 municipalities have completed or are in the process of completing their OP conformity exercise. With regards to Zoning by-laws, 12 municipalities have completed or are in the process of completing their conformity exercise.

3. Septic Inspections

S: Satisfactory (inspection progress varies across the CTC)

Within the CTC Region, 279 septic systems are expected to be inspected every 5 years to satisfy the requirements of the Ontario Building Code. Municipal septic inspection programs experienced delays in recent years because of the COVID-19 pandemic and resource limitations.

In 2023, 108 inspections were completed, representing 39% of the total inspections required over the 5-year cycle. Of the systems inspected in 2023, 48% did not require any maintenance work, while 34% required minor maintenance. Eighteen percent required major maintenance.

Municipalities identified 45 overdue septic inspections as of the conclusion of 2023, and are taking steps for those systems to come into compliance.

4. Risk Management Plans

S: Satisfactory (progress varies across the CTC)

The CTC Source Protection Plan contains policies that require the development of Risk Management Plans (RMPs) to manage some drinking water threats. Screening processes are in place at municipalities to ensure applications for future development are reviewed appropriately for potential threat activities and source protection policy application.

Overall, 182 RMPs are in place within the CTC. Thirty-three of these RMPs were successfully established in 2023, the most since 2019. An additional 91 RMPs are in the process of being negotiated as of the end of the year.

There remain 106 RMPs to be negotiated to address significant threats, with 101 of these required in Halton Region, and the Towns of Orangeville and Erin. Strong efforts by these three municipalities are required to achieve the end of 2025 deadline for completion of RMPs to address existing significant threats.

There were 185 inspections carried out in 2023 by Risk Management Inspectors for prohibited or regulated activities; the most inspections completed in any year to date. There was 98% compliance with RMPs and prohibited activities that were inspected.

5. Provincial Progress: Addressing Risks on the Ground

P : Progressing Well/On Target

Ontario ministries review applications for new or amended provincial approvals (i.e., Prescribed Instruments, such as Environmental Compliance Approvals (ECAs) under the *Environmental Protection Act*), where they have been identified as a tool in our Plan, to address activities that pose a significant risk to sources of drinking water. Where necessary, conditions are added to approvals to ensure that the activity does not pose a significant threat to sources of drinking water.

Provincial ministries screen 100% of applicable incoming applications in accordance with CTC Source Protection Plan prescribed instrument policies. In 2023, ministries conducted detailed review of nine new applications within CTC: one Fuel Handling/Storage, one Permit To Take Water, six Wastewater/Sewage Works and one Nutrient Management Strategy. One Fuel Handling/Storage, one Permit To Take Water and one Nutrient Management Strategy were determined to be significant drinking water threats and had conditions included within the instrument to manage the threat. The six Wastewater/Sewage Works applications were determined not to be significant drinking water threats.

The ministries have previously reported 100% completion of review of previously issued provincial approvals in our source protection region. Three newly identified existing ECAs for Wastewater/Sewage Works were identified as requiring a detailed review for protection within the CTC in 2023, all were determined not be a significant threat.

Provincial ministries also consider source protection vulnerability when prioritizing sites for planned or proactive inspections. Ministry staff continue to receive training on the source protection program, their annual reporting requirements, and recent amendments to the Technical Rules.

6. Source Protection Awareness and Change in Behaviour

Municipalities, conservation authorities and other implementing bodies within the CTC Source Protection Region work with landowners and business owners to help safeguard our sources of drinking water. Municipalities across the CTC have established education and outreach programs, which contribute to enhancing awareness of source water protection. Examples of 2023 efforts to build awareness include:

- Orangeville marked its first full year of their water softener rebate program, to promote water conservation and reduce salt loading to municipal sewers
- Wellington County municipalities hosted forty education and outreach events targeted to: several municipal departments, maintenance contractors, septic system owners, communities and schools. Stickers and metals tags listing the Spills Action Centre number and location were handed out to property owners in vulnerable areas
- York Region has initiated a sodium and chloride research and mitigation pilot project in Stouffville
- The Lake Ontario Collaborative Group's (Peel, Toronto, Durham) Lake Ontario Water Quality Forecasting System was presented at several 2023 conferences
- Credit Valley Conservation continued education and outreach to owners of non-municipal drinking water sources to promote source water protection best practices

7. Source Protection Plan Policies: Summary of Delays

A number of policies associated with implementation of outstanding Risk Management Plans to address existing threats, remain in progress for three municipalities.

Provincewide, all source protection plans were required to include policies to address significant drinking water threats. The CTC Source Protection Committee chose to also include policies to address moderate and low drinking water threats. These moderate and low drinking water threat policies relate to the application of road salt, the handling and storage of certain chemicals and provision of education and outreach materials. Since the implementation of these moderate and low threat policies (SAL-12, SAL-13, DNAP-3, OS-3) are non-legally binding, their implementation status varies across the source protection region.

Official Plan and By-Law Zoning updates to conform with the CTC Source Protection Plan continue to be undertaken as these documents are updated.

8. Source Water Quality: Monitoring and Actions

Thirteen drinking water issues have been identified at wells in three drinking water systems in our Source Protection Region. For these drinking water systems, the Source Protection Plan requires that the municipality establish more frequent raw water quality monitoring to help further characterize concentrations and trends. All municipalities have monitoring and treatment systems in place to ensure that municipal drinking water meets the requirements of the *Safe Drinking Water Act, 2002*.

Over the past year, the CTC has been working with municipal partners to develop updated statistical methods to better assess trends in groundwater quality, focused on nitrate, sodium and chloride. The intention is to support water quality trend analysis, and issue identification, monitoring and potential delisting. The following analysis is based, where possible, on these updated methods.

In the Orangeville Drinking Water System, five wells have been identified with chloride issues and three wells with sodium issues. Chloride concentrations continue to increase in all five wells. Sodium concentrations in the affected wells also continue to increase.

In the Acton Drinking Water System, two wells have been identified with nitrate issues and concentrations appear to be declining.

In the Georgetown Drinking Water System, three wells have been identified with chloride issues and concentrations continue to increase.

Over time, appropriate monitoring will help determine if implementation of Plan policies and other actions are improving the raw water quality for these systems. Further assessment to improve water quality trend analysis across the CTC Region is continuing in 2024.

9. Science-based Assessment Reports: Work Plans

No work plans were required to be implemented for our assessment reports.

Review of the 2021 Technical Rules is ongoing and the Source Protection Committee is guiding a multi-year comprehensive review and update of the CTC Source Protection Plan and assessment reports under s.36 of the *Clean Water Act, 2006*.

In 2023, the CTC continued work on updated water quality trend analysis and issues identification methods.

10. More from the Watershed

To learn more about our source protection region, visit our new website at <https://ctcswp.ca/>