DRINKING WATER SOURCE PROTECTION
Our Actions Matter

Halton-Hamilton Source Protection Region

Source Protection Annual Progress Report 2021

I. Introduction

This annual progress report briefly summarizes the progress made in implementing the source protection plans for the Halton Region and Hamilton Region Source Protection Areas, as required by the Clean Water Act, 2006 and its regulations. It highlights actions taken to protect the quality of the sources of our drinking water and to sustain them into the future.

The source protection plan is the culmination of extensive science-based assessments, consultation with the community, and collaboration with local stakeholders and the province. The implementation of the policies it contains ensures that activities carried out in the vicinity of municipal wells and lake-based water intakes will not pose significant risk to the water sources.

Thanks to the efforts of those responsible for implementing the policies, most of the policies have been implemented and most of the significant threat activities have been managed.

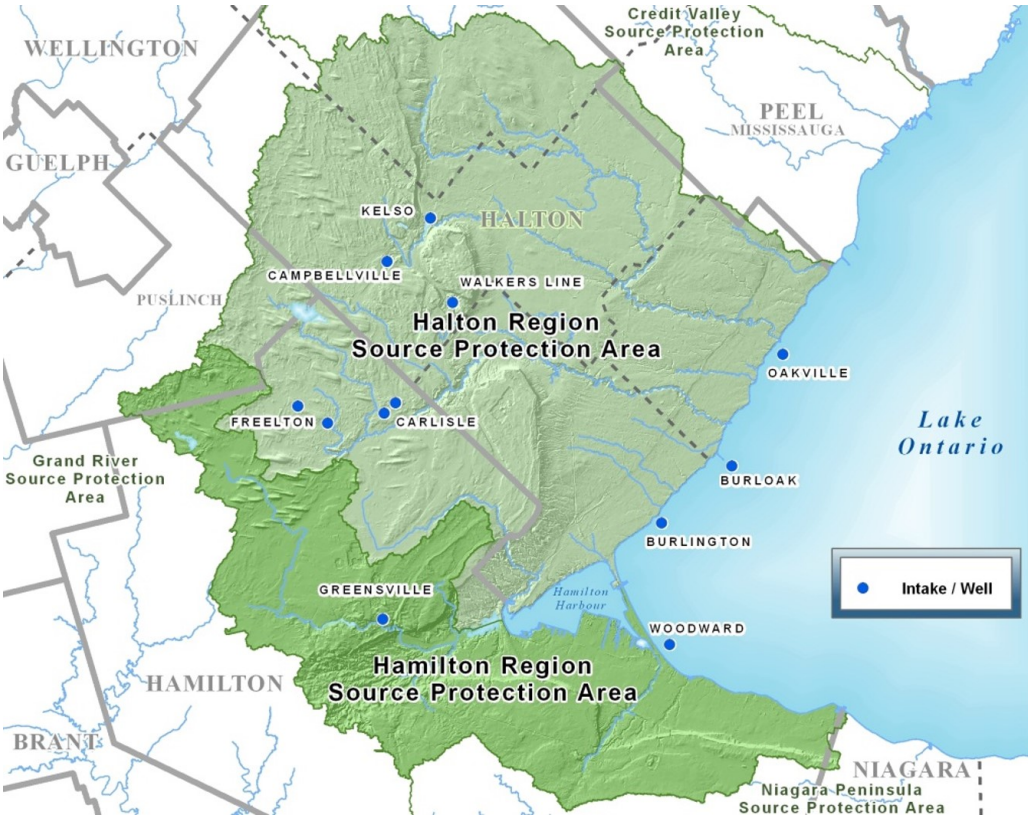

Figure 1: Hamilton-Halton Source Protection Region

II. A message from your local Source Protection Committee

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

This is the fifth Annual Progress Report prepared on implementation of the Source Protection Plan for the Halton-Hamilton Source Protection Region covering the period from December 31, 2015 to December 31, 2021, and summarizes its progress in the year 2021.

A total of 193 significant threats to municipal drinking water systems were identified as of December 31, 2021. Approximately 99% of these significant drinking water threats have been addressed which has increased from 88% for 2020. As well, 100% of the policies are considered to be implemented, in progress or require no further action. Multiple bodies consisting of the municipalities within the source protection region as well as various provincial ministries and other agencies and stakeholders are responsible for policy implementation.

As the COVID-19 pandemic continued throughout 2021, the municipalities and other policy implementers continued to adapt to the situation while making progress in policy implementation towards the protection of municipal drinking water sources. The committee was also able to undertake its communication outreach program with a virtual presentation to the commercial/industrial sector, a podcast to the general public and an exhibit at the annual Conservation Halton Hops and Harvest Festival.

Based on the review of the annual progress reporting by the bodies implementing the plan, the Halton-Hamilton Source Protection Committee is pleased to see that 99% of the significant drinking water threats have been effectively addressed in 2021 through the plan's polices in achieving the objectives of the Clean Water Act, 2006 and that a ranking score of progressing well and on target is a fair assessment on its progress.

III. Our Watershed

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

The Halton-Hamilton Source Protection Region is located at the western end of Lake Ontario and includes portions of the municipalities of the Cities of Hamilton, Burlington and Mississauga, the Regions of Halton, Peel and Niagara, the Towns of Milton, Halton Hills, Oakville and Grimsby, the County of Wellington and the Township of Puslinch. The region covers an area of 1,417 sq km of land and 720 sq km of Great Lakes waters.

Approximately 970,000 people make the source protection region their home and the region is expected to grow substantially over the next decades. The landscape is changing due to this growth and the source protection plan is in place to help guide this growth in a way that protects our vulnerable drinking water sources.

The Regional Municipality of Halton and the City of Hamilton own and operate municipal water systems within the source protection region. These systems include six intakes in Lake Ontario (Woodward (2), Burlington (2), Burloak and Oakville), three municipal well systems in Hamilton (Carlisle, Freelton and Greensville) and three municipal well systems in Halton Region (Kelso, Campbellville and Walkers Line). In addition, some homes and businesses within the source protection region are supplied water from municipal drinking water systems located in neighbouring areas. In total, these municipal water systems supply about 95 percent of the population within the source protection region with reliable, clean drinking water. About 92 percent of the population receive water from Lake Ontario and 3 percent receive groundwater. Outside the urban area, private wells and cisterns are relied on by the remaining 5 percent of the population. Private well systems and the natural environment use the same sources of water that, under the current program, the government seeks to protect for municipal supplies. In this way, maintaining a sustainable supply of clean water within the aquifers of Halton-Hamilton Source Protection Region and in Lake Ontario will benefit all residents and business operators.

Studies completed over the past few years have assessed the vulnerabilities and risks to the quality and quantity of the waters that supply the municipal wells and intakes from activities occurring on lands and in waters in their vicinity. Protection areas have been mapped and a plan developed to manage or prohibit certain activities within these areas. Follow-up assessments were completed for the Kelso, Campbellville and Greensville municipal well supplies when new data and more advanced modelling tools became available. All municipal wells have protection areas for threats to water quality, while only those where it was determined that the sustainability of the water source may be in question have protection areas for threats to water quantity. The municipal intakes in Lake Ontario also have protection zones for threats to water quality. Through 2021, comprehensive updates to the science and policies based on most recent data and feedback were carried out and will be submitted to the province of Ontario in 2022 for final approval.

The source protection plan contains policies that require or request action from provincial ministries, federal departments, municipalities, conservation authorities, landowners, and stakeholders. This report summarizes actions taken in 2021 with tracking of implementation between December 31, 2015, when the plan took effect, and December 31, 2021.

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

1. Source Protection Plan Policies

The Halton-Hamilton Source Protection Committee included policies in their source protection plan to address prescribed threats, a local threat, actions thought to be necessary to protect sources of drinking water, and the monitoring of policy implementation. All monitoring policies are being followed and are no longer tracked for policy implementation. 100% of the 60 legally binding policies, the 20 policies that are non-legally binding but address significant threat activities, and the 18 general strategic policies are implemented, are in process, or have been considered and did not require further action.

Policies are in place to manage or prohibit activities that may be proposed to occur within vulnerable areas that could pose a risk to the quality or quantity of sources of drinking water, and for activities that are currently ongoing. Approximately 99% of the existing significant threats have been managed.

Based on a continued advancement of source protection plan implementation in 2021, the progress score given for overall plan implementation status is P: Progressing well.

2. Municipal Progress: Addressing Risks on the Ground

There are 12 municipalities in the Halton-Hamilton Source Protection Region and policies are directed to eight municipalities. The policies include the requirement for municipalities to update their planning documents.

Official plan conformity exercises are completed by the City of Hamilton, County of Wellington, City of Burlington and Town of Halton Hills. Various parts of the Official plans for Burlington and Halton Hills are under appeal. The official plan conformity exercises for the Regional Municipality of Halton, and the Towns of Milton and Oakville are in progress. Zoning by law conformity is completed for City of Hamilton and Township of Puslinch.

Implementation of policies by the municipalities has progressed safely in 2021, in the face of the COVID-19 global pandemic. All policies targeting significant threat activities are in progress or implemented. Therefore municipal progress in implementing policies are given a progress score of P: Progressing well.

3. Septic Inspections

The Ontario Building Code requires that small sewage systems be re-inspected every five years through a mandatory minimal program or a discretionary more advanced program. The City of Hamilton and the Town of Milton established inspection programs in 2016.

The total number of properties within the Kelso and Campbellville areas (in Milton), and the Carlisle, Freelton and Greensville areas (in Hamilton) included in the sewage reinspection program is now 125, after field verification removed two. The first 5-year inspection cycle is successfully completed, with all required inspections undertaken. The second 5-year cycle has begun with 87 inspections already completed in 2021 by the City of Hamilton. All 87 septic systems required minor maintenance (tank pump out), while none needed major repairs. The inspection program includes outreach materials about the proper care and use of septic systems, and this also satisfies the requirements of an education and outreach policy. Therefore the municipal sewage re-inspection programs are given a progress score of P: Progressing well.

4. Risk Management Plans

Screening processes are in place at the planning and building departments of the municipalities to ensure applications for future development are reviewed appropriately for potential threat activities and source protection policy application. Applicants with properties where significant threats are possible must receive a notification from the risk management official that no plan policies apply and that planning and permitting processes may proceed. A total of 21 such notices were issued in 2021 by the City of Hamilton (18) and Halton Region (3).

Risk management officials and inspectors continued to safely verify and inspect threat activities occurring in the region in 2021, following physical distancing and other safety measures put into place in Ontario due to the COVID-19 pandemic. Due to the efforts of municipal risk management officials, all six required risk management plans were established well within the extended deadline of December 31, 2021. As well, six inspections were undertaken in 2021 where risk management plans apply. Therefore the implementation of risk management plan policies is given a progress score of P: Progressing well.

Figure 2: Kelso Drinking Water System Pump Station

5. Provincial Progress: Addressing Risks on the Ground

Ontario provincial ministries including Ministry of the Environment, Conservation and Parks (MECP), Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF), Ministry of Transportation Ontario (MTO) and Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) implement source protection policies that use prescribed instruments to manage significant threat activities.

The MECP's updated Standard Operating Policy, 2017 (Environmental Registry No. 012-2968) ensures that applications for water takings, sewage works, biosolids sites, etc. are screened. NDMNRF and MTO screen aggregate licence and permit applications. OMAFRA screened applications for which it issues/approves instruments under the Nutrient Management Act. For instruments not approved by OMAFRA, a letter of policy conformity is delegated to a certified person. No significant threats were identified through screening by the provincial ministries in 2021.

Source protection vulnerability is considered when prioritizing sites for planned inspections (pesticides program), and for proactive inspections (hauled sewage sites, processed organic waste sites, agricultural operations with existing prescribed instruments).

Ministry staff continue to be trained or have their training refreshed on the source protection program, recent amendments to the Technical Rules, and annual reporting requirements. Therefore the implementation of prescribed instruments policies by Ontario ministries are given a progress score of P: Progressing well.

6. Source Protection Awareness and Change in Behaviour

To raise awareness about protecting drinking water sources, road signs were installed in previous years near wellhead protection areas by the City of Hamilton (20) and MTO (2).

City of Hamilton reports that the Source Protection Plan continuously brings awareness about potential issues that can impact source water quantity and quality. Positive outcomes are the well decommissioning program (9 wells in 2021) and capital projects (e.g. Woodward and Dundas Wastewater Treatment Plants Upgrades). The city held online events that had a source water component (Children's Water Festival, etc.). Emergency response exercises were carried out for a spill scenario near the municipal intake. The city's new Salt Management Plan helps manage winter road salt use. The city approved a plan to reduce GHG emissions and is researching blue green algae and climate change impacts on the Lake Ontario intake.

Through 2021, Halton Region continued to sample 6 monitoring wells they established in 2019 in Campbellville to better understand chlorides sources in nearby municipal wells. Town of Milton developed a plan to implement source protection policies into their Official Plan. Best practices and Regional policy directions are being researched. There is awareness of the policy areas and policies among Town staff, and local residents. Town of Halton Hills staff are working with Regional staff on salt management plans for Town properties.

County of Wellington and Township of Puslinch report that newspaper ads were published on water conservation, salt and fertilizer use. Educational material was provided to the proponents. Social media posts were made through 2021. The source water protection website has fact sheets and other resources. A virtual Children's Groundwater Festival was successfully held, co-chaired by staff. Development reviews and inspections continued. A Drinking Water Threat Disclosure Report is required where significant threats may be present near municipal wells. This built on existing Official Plan policies since 2008 and Halton-Hamilton policies. See the website wellington.ca

Figure 3: Drinking Water Protection Road Sign

7. Source Protection Plan Policies: Summary of Delays

In 2021, all of the Halton-Hamilton source protection plan policies that directly address significant drinking water threats are implemented, in progress or considered and further actions are not required. In 2021, municipal staff achieved establishment of 100% of the required risk management plans by the extended deadline of December 31, 2021. Another milestone achieved was the completion of the first round of 5-year septic system inspections. Approximately 99% of the significant risk threats are addressed.

The general, strategic policies in the source protection plan are also 100% implemented, in progress or considered and further actions are not required. Through the Section 36 comprehensive updates to the source protection plan in 2021, discussions with policy implementers were held to streamline non legally binding strategic policies, and options discussed by the Halton-Hamilton source Protection Committee.

8. Source Water Quality: Monitoring and Actions

The Cedarvale well field is located in Georgetown, part of the Town of Halton Hills, and its protection areas for quality and quantity extend slightly into the Halton Region Source Protection Area. Well numbers 1A, 4 and 4A in this well field have rising trends in chloride concentrations and an issue contributing area has been delineated. The neighbouring Credit Valley, Toronto and Region and Central Lake Ontario (CTC) Source Protection Committee identified the need for chloride management measures. The Halton-Hamilton Source Protection Committee included policies in their plan to manage or prohibit the storage and application of road salt and the storage of snow.

Halton Region reported that the chloride concentration trends at the wells have not changed since reporting began in 2016. However, it is acknowledged that it will take time for the benefits of the implementation of associated policies to be realized.

Halton Region also identified elevated or rising chloride concentrations in the source water of the Campbellville well field. To better understand the sources of the chlorides, Halton Region constructed six groundwater monitoring wells in the Campbellville area in 2019. These wells are integrated into Halton Region's existing groundwater monitoring program and further assessment of water quality issues will be completed upon longer term data being collected and analyzed.

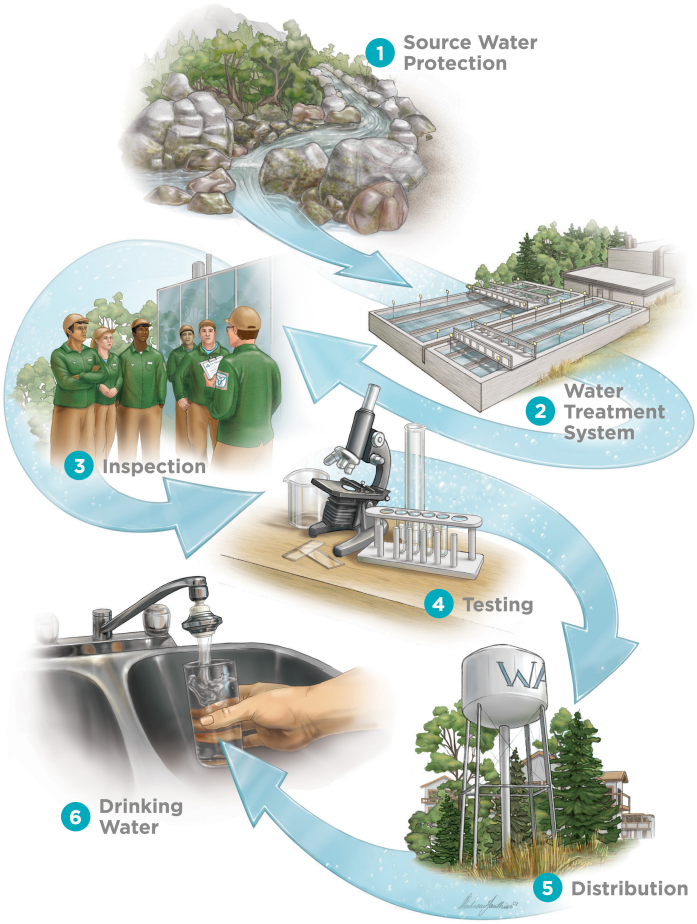

Figure 4: Multi Barrier Approach in Ontario

9. Science-based Assessment Reports: Work Plans

A work plan to undertake a comprehensive review and update of the source protection plan and assessment reports was developed in 2018. A copy of the work plan is available at the website protectingwater.ca

The Minister, MECP approved the workplan in 2019 paving the way for comprehensive updates to the source protection plan and assessment reports per Section 36 of the Clean Water Act, 2006. The Halton-Hamilton Source Protection Region (HHSPR) staff (from Conservation Halton and Hamilton Conservation Authority) carried out omnibus, comprehensive updates throughout 2021 towards a Section 36 update to the assessment reports, source protection plan and explanatory document.

The City of Hamilton provided a detailed technical study on the Freelton groundwater wellhead protection area update. HHSPR staff prepared detailed technical studies to assess contaminant transport pathways and to delineate and reassess Lake Ontario intake protection zones. Staff also proposed updates to a third of the policies to address policy implementation challenges, some of which were identified through the annual progress reporting process.

Regular meetings were held with the Source Protection Committee, and a large consultation process was undertaken involving early engagement with MECP, pre-consultation and public consultation phases. Monthly meetings with municipal staff and ad hoc meetings with other policy implementers were held by HHSPR in order to collaboratively seek input and engage on the updates and on annual progress reporting changes and requirements.

The updates carried out under Section 36 will be submitted to the MECP in spring 2022.

10. More from the Watershed

The Halton-Hamilton Source Protection Plan includes both mandatory and strategic policies. The response to both types of policies are mutually complementary in the protection of drinking water sources.

The strategic policies request municipalities, provincial ministries and others to: carry out education and outreach programs that include source protection messaging; address contaminant “shortcut” transport pathways (like improperly abandoned wells); collect climate data; educate the public about importation of excess soil; consider offering incentives to protect water sources; update spill response and salt management plans; reduce water consumption to sustain supplies; and educate those that transport dangerous goods near wells and intakes.

Municipalities and conservation authorities have long recognized the importance of the protection of water sources through integration with other initiatives. Capital projects, planning, stewardship and outreach programs complement policy implementation, and inform the community and businesses of the need to protect water and how to do it.

The MECP’s updated spill response procedures consider source protection vulnerable areas. In 2021, the ministry began its transition to a new incident management system. The MTO requires their contractors to conform to the Salt Management Plan which includes practices to protect drinking water sources.

The Climate Change Vulnerability Assessment Tool (developed in 2020 through a multi-stakeholder initiative co-chaired by Conservation Ontario and MECP) helps apply a climate change lens to municipal drinking water source quality risk assessments. Training sessions were provided by a small working group including Conservation Ontario, MECP, Conservation Halton and others in early 2021.

Through 2021, the Halton-Hamilton Source Protection Region staff, Committee and policy implementers continued online events, and developed resources and tools to continue drinking water source protection. Social media posts were developed around road salt use, fuel storage and other themes to raise awareness on source water protection. The Source Protection Committee carried out sector outreach throughout the year. Landowner and prospective applicants continue to reach out to municipal and source protection authority staff about the program and policies.

To learn more about the Halton-Hamilton Source Protection Region, visit our website at www.protectingwater.ca