

Annual Progress Report

on Implementation of the Source Protection Plans for the Thames-Sydenham & Region Source Protection Areas

Reporting Period - January 1, 2019 to December 31, 2019



For more information about the drinking water source protection plan, visit www.sourcewaterprotection.on.ca







Source Protection Annual Progress Report

I. Introduction

This annual progress report outlines the progress made in implementing our source protection plan for the Lower Thames Valley Source Protection Area, St. Clair Region Source Protection Area and Upper Thames River Source Protection Area, as required by the Clean Water Act and regulations.

This is the third Annual Report on the implementation progress of the Drinking Water Source Protection Program in the Thames-Sydenham and Region since it took effect on December 31st, 2015. This report highlights progress made toward implementation up to December 31st, 2019, and highlights the actions taken from January 1 to December 31, 2019. The report was written for the citizens of the Thames-Sydenham and Region, the Thames-Sydenham Source Protection Committee, and local stakeholders. We acknowledge and recognize the tremendous efforts made by our local municipalities, stakeholders, and the Source Protection Committee in the development of the Source Protection Plans, implementation of Source Protection Plan policies, and development of this annual report.



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.



S : Satisfactory – Some of the source protection plan policies have been implemented and/or are progressing.



L : Limited progress – A few of source protection plan policies have been implemented and/or are progressing.

Overall, significant progress in the Thames-Sydenham and Region has been made since the Source Protection Plan came into effect. During the last four years of plan implementation, 100% of the policies in the plan that address drinking water threats have been implemented or are in progress. In 2019, many of our member municipalities reported success stories stemming from the implementation of source protection plan policies. These included voluntary best management practices being undertaken by business and property owners; a doors open event at a drinking water system that attracted over 300 attendees; and the development of a special training exercise for municipal emergency response staff. Local Risk Management Officials have successfully managed 116 significant drinking water threats through the negotiation and establishment of 57 risk management plans in municipalities across the Source Protection Region since the Plan took effect. For the reasons outlined above, the Source Protection Committee feels confident in their assessment that implementation of the Source Protection Plans is progressing well/on target.

III. Our Watershed

To learn more, please read our assessment report(s) and source protection plan(s)

The Thames-Sydenham and Region is made up of the watersheds of Lower Thames Valley, the St. Clair Region, and the Upper Thames River.

The Lower Thames Valley Source Protection Area includes those lands draining into the Thames River from the community of Delaware to Lake St. Clair. It also includes the lands that drain into Lake Erie lying south of the lower Thames River watershed and a small triangle of land north of the mouth of the Thames draining directly into Lake St. Clair. This area includes most of the municipality of Chatham-Kent, the western portion of Elgin County, part of southwestern Middlesex County (including some of the City of London) and a portion of eastern Essex County. The Lower Thames Valley Source Protection Area also includes four First Nation reserves; the Chippewas of the Thames First Nation, Deleware Nation, Munsee-Deleware Nation and Oneida Nation of the Thames. Caldwell First Nation is also established in the area between Leamington and Rondeau Bay; however they currently do not have a reserve. The area covers approximately 3,274 square kilometres with a total watershed population (2001) of about 107,000.

The residents of the Lower Thames Valley Source Protection Area receive most of their municipal drinking water from Lake Erie through 3 intakes. The communities of Ridgetown and Highgate receive their drinking water from municipal wells. Some parts of the watershed within Essex County receive their municipal drinking water from intakes in Lake St. Clair. Although the drinking water for much of the population of the Lower Thames is supplied from municipal drinking water sources, some residents rely on water from private wells.

The St. Clair Region Source Protection Area includes the Sydenham River drainage basin and several smaller watersheds that drain to Lake Huron, the St. Clair River or Lake St. Clair. The Source Protection Area covers over 4,100 square kilometres and includes most of the County of Lambton, part of the Municipality of Chatham-Kent and part of the County of Middlesex with a total watershed population of 167,000. The area also includes three First Nation reserves; Chippewas of Kettle and Stoney Point, Aamjiwnaang, and Walpole Island First Nations. The residents of the St. Clair Region Source Protection Area receive most of their municipal drinking water from Lake Huron and the St. Clair River through 3 intakes. Parts of Middlesex County receive their municipally supplied drinking water from an intake in Lake Huron outside the Source Protection Region. There are no longer any communities in the St. Clair Region that receive drinking water from municipal wells. Although the drinking water for much of the population of the Lower Thames is supplied from municipal drinking water sources, some residents rely on water from private wells.

The Upper Thames River Source Protection Area includes all areas draining into the Thames River above the community of Delaware. This covers large parts of Oxford, Perth and Middlesex Counties including most of the City of London. Very small portions of Huron and Elgin Counties also drain into the upper Thames River. The area covers approximately 3,423 square kilometres with a total watershed population (2001) of about 472,000. There are no First Nations in the Upper Thames River Source Protection Area.

The residents of the Upper Thames River Source Protection Area receive their municipal drinking water from Lake Huron or Erie through 2 intakes in other Source Protection Areas. Many of the communities in Perth and Oxford Counties rely on groundwater for municipally supplied drinking water. Although the drinking water for much of the population of the Upper Thames is supplied from municipal drinking water sources, many rural residents rely on water from private wells.

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

1. Source Protection Plan Policies

Significant progress was made in 2019 to implement the policies in the Source Protection Plan. Of the policies that address significant drinking water threats, 78% have being fully implemented, compared to only 27% in 2018. Another 18% of the policies that address significant threats are currently in progress. Further progress was also made to implement the significant non-legally binding policies and the moderate and low threat policies of the SPP, with 80% and 81% of these policies being fully implemented respectively.

2. Municipal Progress: Addressing Risks on the Ground

27 municipalities in the Thames-Sydenham and Region (TSR) have vulnerable areas where significant drinking water threat policies apply. These municipalities are required to ensure that their planning and building decisions conform with the Thames-Sydenham and Region SPP, and must also ensure that their Official Plan conforms with the SPP upon the next Planning Act review.

Half of the municipalities in the TSR that have an official plan (9 of 18) have completed their required Official Plan conformity exercises. Of the remaining 9 municipalities, 7 are in the process of amending their Official Plan, and two have not yet started.

All of the municipalities in our source protection region that are responsible for day-to-day land use planning and building permit decisions, have integrated source protection requirements to ensure that their planning and building decisions conform with the policies in the TSR SPP.

3. Septic Inspections

P : Progressing Well/On Target: Under the Ontario Building Code, any on-site sewage system which has been identified as a significant drinking water threat is required to be inspected once every five years. In the Thames-Sydenham and Region there are eight municipalities which have on-site sewage systems that require mandatory inspection. Of those eight municipalities, five have completed all of the required inspections, while one municipality is still undertaking inspections. Two of the eight municipalities are in the process of decommissioning the drinking water systems where the mandatory inspections are required, and therefore will no longer require inspection.

4. Risk Management Plans

P : Progressing Well/On Target

Across the Thames-Sydenham and Region in 2019, risk management officials and inspectors carried out 181 inspections to investigate activities that could either be prohibited or require a risk management plan. These inspections took place on 147 different properties. These inspections led to the establishment of 2 new risk management plans, and another 13 which are currently in progress. This brings the total number of risk management plans established since the plan took effect to 57.

5. Provincial Progress: Addressing Risks on the Ground

P : Progressing Well/On Target

Ontario ministries are reviewing previously issued provincial approvals (i.e., prescribed instruments, such as environmental compliance approvals under the Environmental Protection Act, including OMAFRA's Actions Taken on Nutrient Management Strategies and NASM plans as well as MNRFs Aggregates (Fuel Storage) - Site Plans/Aggregate Licenses) where they have been identified as a tool in our plan to address existing activities that pose a significant risk to sources of drinking water. The provincial approvals are being amended or revoked where necessary to conform with plan policies. Our policies set out a timeline of 5 years to complete the review and make any necessary changes. The ministries have completed this for 100% of previously issued provincial approvals in our source protection region.

6. Source Protection Awareness and Change in Behaviour

New, provincial standard road signs mark locations where well-used roads cross into zones where municipal drinking water sources are the most vulnerable to contamination. The road signs provide general public awareness about the sensitivity of the area. They will also alert first responders of the need to quickly inform the appropriate authorities so action can be taken to keep contaminants out of the public water treatment and distribution system. A total of 157 Drinking Water Protection Zone signs have been installed on roadways in the Thames-Sydenham Source Protection Region.

Risk Management Officials around the Thames-Sydenham and Region report positive changes in behaviour among property and business owners they are working with. Many people in vulnerable areas want to make good choices to protect source water, and are eager and willing to make small changes to the business, such as changing to environmentally-friendly chemicals, even when they are not required to.

7. Source Protection Plan Policies: Summary of Delays

Incentive programs are not being considered by most organizations in the Thames-Sydenham Region as suggested by Policy 1.04 of the Source Protection Plan. If Provincial funding support were made available to help offset the costs of an incentive programs, more organizations would be open to the consideration of an incentive program. It should be noted that this is a non-legally binding policy in the Source Protection Plan.

Discretionary Septic System Maintenance Inspections programs targeting moderate and low septic system threats have not yet been considered by municipalities in the Thames-Sydenham and Region. Discretionary inspections are recommended in policy 3.01, and as above, it should be noted that this is a non-legally binding policy. At this point in time, municipalities have been focusing on the mandatory septic inspections as required for septic systems that pose a significant threat to drinking water. More consideration will be given to discretionary inspections once the mandatory inspections are complete. 8. Source Water Quality: Monitoring and Actions

Microcystin at the Wheatley and Chatham/South Kent Surface Water Intakes Harmful algal blooms (HABs) of blue-green algae (cyanobacteria) have been increasing in size and severity in recent years in the western basin of Lake Erie. Annual blooms have resulted in the closure of many Lake Erie beaches, as well as the shut-down of drinking water facilities on Pelee Island, and in Ohio. Microcystin-LR, a neurotoxin, is released when blue-green algae cells break down. All water treatment plants for Lake Erie systems in the Thames-Sydenham and Region have the treatment processes in place to remove microcystin-LR and provide safe drinking water during a bloom event. However, there is concern that some systems could be overwhelmed if HABs continue to increase in severity. The Great Lakes Water Quality Agreement (GLWQA) recognized that phosphorous is the limiting nutrient for cyanobacteria growth and, as such, contributes to the microcystin issue. The Conservation Authorities of the Thames-Sydenham and Region (TSR) are committed to working with senior levels of government and other partners to implement relevant actions to reduce phosphorous in our region. The TSR will also continue to consider all available data for the Wheatley and Chatham/South Kent intakes to determine whether microcystin-LR continues to be an issue for these water treatment plants.

Nitrates at the Wallaceburg Surface Water Intake

In October 2017, the Thames-Sydenham and Region Source Protection Committee (SPC) reviewed nitrate monitoring data collected between 2013 and 2017 for the Wallaceburg issue. The results of the monitoring were inconclusive and did not yield enough information to confirm the issue and delineate an Issue Contributing Area. Water treatment plant staff and managers for the Wallaceburg intake indicated that they no longer had any significant concerns regarding nitrate concentrations at the intake. The Assessment Report and Source Protection Plan will therefore be amended to indicate that nitrates are no longer an issue at the Wallaceburg intake.

Nitrogen at the Woodstock Well System

Nitrate occurs in the Thornton wellfield and Tabor wellfield of the Woodstock Drinking Water System. Nitrate levels are routinely above half of the treated water maximum allowable concentration (MAC) of 10 mg/L. Anthropogenic activities associated with agriculture, residential development and wetlands are known sources of nitrate in groundwater. Nitrates were therefore identified as an issue for both the Thornton and Tabor wellfields. An analysis of the nitrate levels in some of the wells for the Thornton wellfield revealed that nitrate levels may be leveling off or decreasing. Additional monitoring was recommended to determine whether an Issue Contributing Area (ICA) was required and whether nitrate remains an issue at the Thornton wellfield. Levels at the Tabor wellfield were significantly lower than those seen in the Thornton wellfield, but appeared to be trending upwards. The wellfield contains two highly productive wells that are a main supply of water to the system. An ICA was therefore delineated for the Tabor wellfield.

In their 2019 annual monitoring report, Oxford County indicated that there currently was not enough information available to determine changes to the concentration or trend of nitrates in either the Thornton or Tabor wellfields. The County proposes to complete a detailed review of the Thornton nitrate levels, and the effectiveness of current management strategies to determine whether the delineation of an Issue Contributing Area (ICA) is warranted.

9. Science-based Assessment Reports: Work Plans

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

10. More from the Watershed

To learn more about our source protection region, visit our Homepage: https://www.sourcewaterprotection.on.ca/