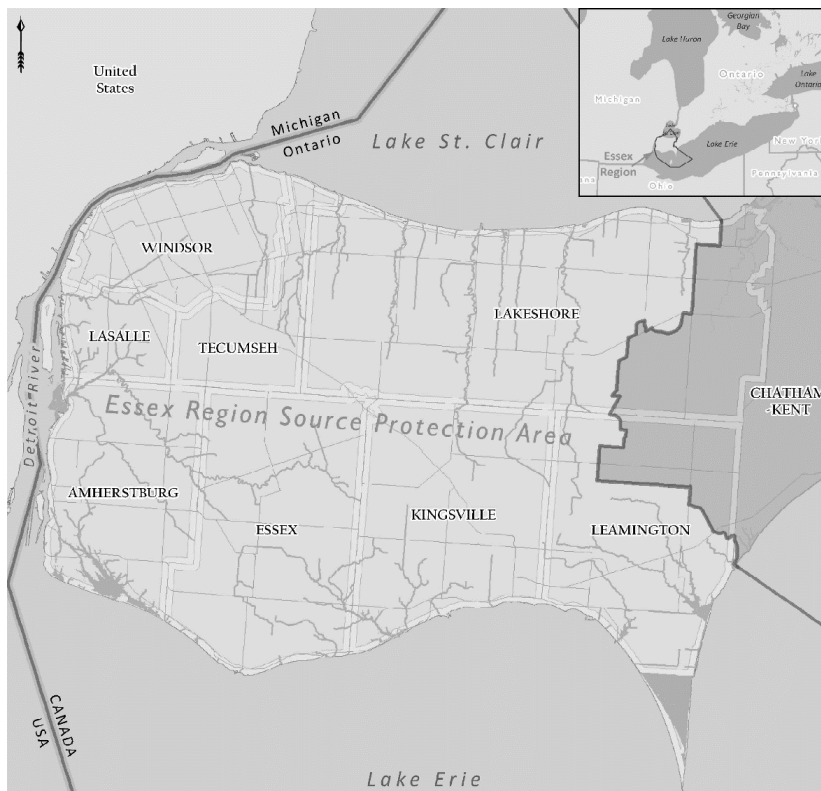


2018 ERPA Source Protection Annual Progress Report

1 May 2019

I. Introduction

This annual progress report outlines the progress made toward implementing the policies in the Essex Region Source Protection Plan (SPP) (Essex Region Source Protection Area), as required by the Clean Water Act and regulations. Our policies work by either eliminating or managing activities that could be considered a threat to our sources of drinking water and are based on the foundational knowledge that the actions we take on land have an impact on our local waterways and ultimately our sources of drinking water. Following an extensive process that included broad public input, the Essex Region SPP came into effect on October 1, 2015. This report highlights progress made toward implementation up to December 31, 2019, and highlights the actions taken from January 1 to December 31, 2018.



Scoring for certain elements of the Annual Progress Reports is based on the following options:

Progressing Well/On Target (P) – Most of the policies have been implemented &/or are progressing.

Satisfactory (S) – Some of the policies have been implemented and/or are progressing.

Limited progress (L) – A few of policies have been implemented and/or are progressing.

II. A message from your local Source Protection Committee

P – Progressing Well/On Target

The Source Protection Committee has reviewed this report and it is our unanimous opinion that implementation of the policies in the Essex Region Source Protection Plan is progressing well. The Committee is satisfied that the timelines for completion of activities are achievable. The Committee acknowledges the efforts of municipalities to incorporate Source Water Protection into their Official Plan documents. The Committee assigned a score of 'Progressing Well' to the implementation of Part IV policies as it appears that all of the previously identified existing threats will be addressed by the target date of October 1, 2020, and a process is in place to address new threats through s.59 policies. Any new threats not captured through the s.59 process will be addressed once the identified existing threats are completed.

In response to the required review legislated by s.36, the Committee has recommended projects to the Ministry to be undertaken over the next 5 years that will ensure sustained protection of our sources of drinking water. Recommendations include re-evaluating parameters of concern that were previously deemed to be below threat thresholds (e.g. E.coli). While there are international, federal and provincial initiatives ongoing to address harmful algal blooms in Lake Erie and now Lake St. Clair, these blooms continue to impact our local sources of drinking water and local efforts must be maintained to reduce factors (e.g. nutrients) contributing to favourable conditions for algal growth.

The Committee would stress the importance of this program and the evolution of the Source Protection Plan to ensure its continued relevance to our Source Protection area. It would recommend that the Ministry develop, at least, a base funding strategy to ensure the local program is able to deliver results that are effective.

III. Our Watershed

The Essex Region Source Protection Area (ERSPA) is approximately 1681 km² and coincides with the watershed boundaries of the Essex Region Conservation Authority (ERCA). The ERSPA is comprised of 28 smaller sub-watersheds, flowing northward into Lake St. Clair, westward into the Detroit River, or southward into Lake Erie. The area predominantly consists of a flat clay plain with the exception of some sandy areas, primarily in the southern portion of the Region. The predominant land use in the watershed is agriculture, due to the region's excellent farmland and growing conditions.

Municipal drinking water supplies in the Essex Region Watershed are drawn from surface water intakes in the Great Lakes system - Lake Erie, Lake St. Clair and the Detroit River. There are seven municipal Water Treatment Plants (WTPs) in the ERSPA, and one WTP outside of the ERSPA in Wheatley serving part of the Municipality of Leamington. Stoney Point and Lakeshore (Belle River) WTPs have their water intakes located in Lake St. Clair; the A. H. Weeks (Windsor) and Amherstburg WTPs have their intakes in the Detroit River; and the Harrow-Colchester South, Union, Pelee Island West Shore and the Wheatley WTPs have their intakes in Lake Erie. These municipal WTPs serve over 95 percent of the population in the ERSPA. The remaining population, less than five percent, depends on groundwater or hauled water.

In the ERSPA, the handling and storage of large volumes of liquid fuel (> 15,000 L) was identified as a significant drinking water threat (SDWT). Modeling exercises showed that a spill of this volume of fuel close to any body of water could result in contamination of the source water at our drinking water intakes. This resulted in the delineation of an extensive Event Based Area (EBA) in which large volumes of fuel are considered a threat to our drinking water. To mitigate these threats, Risk Management Plans (RMPs) that show actions are being taken to prevent spills are required to be established in consultation with a Risk Management Official.

To learn more about Source Protection in the Essex Region, please visit our website:
<https://essexregionconservation.ca/source-water-protection/>

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

1. Source Protection Plan Policies and Addressing Significant Risks

P – Progressing Well/On Target

Of the 44 policies in the Essex Region SPP that address SDWTs, 55% (24) are now fully implemented, and 41% (18) are in progress and on target to be fully implemented within the time frame set out in the Essex Region SPP. In 2017, 32% (14) of these policies were considered fully implemented. Of the remaining policies, one has been reviewed and it has been determined that no further action is required, and one has not yet been addressed. The outstanding policy is related to the use of airplane deicer chemicals and is applicable in areas where these chemicals are not used.

2. Municipal Progress: Addressing Risks on the Ground

P – Progressing Well/On Target

All of the 11 municipalities in the ERSPA have vulnerable areas where significant drinking water threat policies apply. Municipalities are required to ensure that their planning and building decisions conform with the Essex Region SPP and must also ensure that their Official Plan conforms with the SPP upon the next Planning Act review.

The County of Essex, Town of Essex, Town of Lakeshore, and the Town of LaSalle have completed their required Official Plan conformity exercises. The remaining municipalities (7 of 11) are in the process of amending their Official Plan to conform with the policies in the Essex Region SPP, with completion expected in 2019.

All lower tier municipalities are responsible for day-to-day land use planning and building permit decisions and have integrated source protection requirements to ensure that their planning and building decisions conform with the policies in the Essex Region SPP. The Essex Region Conservation Authority has been delegated by all of these municipalities to implement Part IV policies on their behalf.

3. Septic Inspections

Not applicable to the ERSPA. There are currently no policies in the Essex Region SPP that require mandatory septic inspections. However, the Committee notes that high levels of E.coli remain a concern for our local waterways and beaches. Landowners are encouraged to have their septic systems inspected and maintained regularly.

4. Risk Management Plans

P – Progressing Well

Inspections have been conducted at 383 of the 384 existing potential fuel threat locations identified in the Assessment Report; 128 of those inspections were conducted in 2018. Among the properties visited, 290 do not require a Risk Management Plan (RMP), five require further investigation, and 89 do require RMPs. Of the 89 properties requiring RMPs, 66 have RMPs in progress and 14 RMPs have been established. Thirteen of those RMPs were established in 2018. RMPs for all existing threats must be established by October 1, 2020.

Since the SPP took effect, five RMPs have been established for future (new) fuel threats through s.59 procedures. There have been no cases of non-compliance with the established RMPs. Please refer to the supplementary Risk Management report for further information.

5. Provincial Progress: Addressing Risks on the Ground

P: Progressing Well/On Target

The Essex Region SPP includes 17 policies that use Provincial Instruments (e.g. Environmental Compliance Approvals) to address future (new) and existing significant drinking water threats (SDWTs). Screening for future threats became mandatory the date the SPP came into effect (October 1, 2015). Ontario ministries have a screening mechanism in place for new applications and they amend Prescribed Instruments (PI) as needed to address any new SDWTs. Our policies set out a timeline of 5 years (October 1, 2020) to review and make necessary changes to previously issued PIs to address existing SDWTs.

In the ERSPA, 38 existing PIs were identified that may be subject to SDWT policies. All of these PIs have been reviewed, and only five activities were determined to be a SDWT. These existing SDWTs are sewage works and/or wastewater activities. In all five instances, the PI was sufficient and no additional conditions were required to mitigate the SDWT. It has been determined that all five of the identified existing threats have been addressed and there is a procedure in place to address any new threats. As a result, all of the policies that use Provincial Instruments in the Essex Region SPP are considered to be fully implemented.

6. Source Protection Awareness and Change in Behaviour

Road signs have been installed across the Essex Region Source Protection Area as part of a provincial awareness initiative. The Ontario Ministry of Transportation (MTO) is installing signs on provincial roads near Drinking Water Protection Zones, while municipalities have coordinated installation on local municipal and county roads. To date, nine of our municipalities have either completed road sign installation or have determined that no signage is necessary. The remaining municipalities are in the process of determining appropriate locations for signage. The MTO installed a total of five signs in the Essex Region in 2017 and 2018 on Hwy 401, Hwy 77 and Hwy 3. In total, there are close to 60 signs located across the region, ten of which were installed in 2018.

The new road signs identify sections of road where accidental spills could contaminate our sources of drinking water. As part of the Essex Region Source Protection Plan implementation, emergency responders have been notified about these zones so that our sources of drinking water can be protected in the event of a spill. The use of a standardized sign throughout Ontario will help to raise public awareness about the importance of protecting our local sources of drinking water.

The main risk to drinking water in our local area has been identified as liquid fuel. If a spill is observed, residents are advised to contact the Spills Action Center at 1-800-268-6060.

7. Source Protection Plan Policies: Summary of Delay

All policies in the Essex Region Source Protection Plan are on track to be fully implemented by the dates specified in the Plan.

8. Source Water Quality: Monitoring and Actions

Harmful algal blooms (HABs) are an annual occurrence in the nearshore areas of Lake St. Clair and Lake Erie. The organisms that cause HABs are cyanobacteria, also known as blue-green algae (e.g. microcystis) that produce toxins (e.g. microcystins), which can be harmful to human health. HABs in Lake Erie have increased in size and severity in recent years and have resulted in the closure of beaches throughout the western basin, and of WTPs on Pelee Island and in Ohio. In response to the growing concerns related to HABs, microcystin-LR (a specific congener of microcystin) was identified as a drinking water Issue for Lake Erie intakes in the ERSPA.

All of the ERSPA's WTPs conduct weekly monitoring of raw and treated water through the Drinking Water Surveillance Program (DWSP). During a HAB, sampling frequency increases to daily. Between 2012 and 2017, total microcystins in our source water were usually below the maximum allowable concentration for drinking water of 1.5 µg/L, however, there were

still regular occurrences of concentrations well above this value that required WTPs to implement additional treatment measures. As well, the MECP continues to issue notifications to Drinking Water Systems in Lake Erie when HABs are present or anticipated.

In 2018, municipal staff completed surveys to aid in the preparation of the ERSPA's s.36 workplan. Staff at all seven of our WTPs indicated that they consider HABs to be an operational concern; this includes WTPs with intakes in Lake St.Clair, the Detroit River and Lake Erie. WTPs employ a number of different techniques to treat raw water during a HAB, including decreasing chlorination at the intake, increasing Powdered Activated Carbon, changing coagulation dosages, and increasing filtering and backwashing. Through these treatment processes, all WTPs in the ERSPA are successfully able to remove microcystin-LR. However, there is concern that some systems could be overwhelmed if HABs increase in severity, and the additional measures come at an increased cost for upgrades and maintenance. Of note, Pelee Island's WTP underwent significant upgrades in 2015, and Union System Water Supply has upgrades planned for completion by 2021-2022 to further improve their ability to treat microcystins. Based on the DWSP data and the responses from municipal staff, the SPC included a recommendation in our s.36 workplan to determine whether microcystin-LR should be considered a drinking water issue for all of the intakes in the ERSPA, and not just those in Lake Erie.

HABs are an international issue, and in 2018, the Canadian and Ontario governments released a joint Lake Erie Action Plan that contains 120 actions that will lead to the target of 40% reduction of phosphorus to Lake Erie. The United States federal and state governments released similar documents in 2018. While the monitoring, and education and outreach policies in the Essex Region SPP related to microcystin-LR are non-legally binding, ERCA is committed to implementing relevant actions to reduce phosphorous in our region. ERSPA and ERCA staff are key partners in several projects, conduct our own research and monitoring, and have fully integrated information related to phosphorus and HABs into our education and outreach programs. HABs are a persistent problem in Lake Erie and Lake St.Clair and it will take several years of international effort to see marked improvements.

9. Science-based Assessment Reports: Work Plans

A s.36 workplan was completed and submitted to the MECP on November 30, 2018 in accordance with the Minister's order received on April 15, 2015. The workplan will ensure that the sources of drinking water in the ERSPA are adequately protected and that the information in the Assessment Report and Source Protection Plan is up to date and accurate.

A thorough review of the SPP and AR was conducted, and 15 Proposed Updates were identified. Many of the suggested updates are minor corrections that will not affect municipalities or landowners. However, some substantial updates are recommended that will require further consultation with municipalities and other stakeholders.

We expect to complete the proposed updates on or before December 31, 2023 and consultation will occur throughout the process. Should any of the proposed updates prove to be more urgent, a locally initiated amendment under Section 34 of the Clean Water Act may be required.

10. More from the Watershed

To learn more about our Source Protection Area, visit our Homepage:
<https://www.essexregionconservation.ca/programs-services/sourcewater-protection>



The Harrow-Colchester South Water Treatment Plant treats water from Lake Erie. This building includes a low-lift pump, which allows water to be pumped into the Water Treatment Plant. *Photo credit: Warren Higgins.*



Example of above-grade fuel oil storage tank



Before



After

Risk Management Plans (The Handling and Storage of Fuel)

All photos (including the before and after photo) were taken by the ERSPA RMO/I during site inspections.



Have you seen this Drinking Water Protection sign?

These signs are appearing across Ontario to raise awareness about the vulnerability of our municipal drinking water sources. Governments at the local and provincial level are placing signs along roadways where a pollution spill could have a negative impact on our drinking water sources. The main risk to drinking water in the Essex Region Source Protection Area has been identified as the handling and storing of liquid fuel. These signs indicate areas where a spill of a large volume of liquid fuel could impact one of our drinking water intakes. If a spill is identified, residents should contact the Spills Action Centre at 1-800-268-6060.