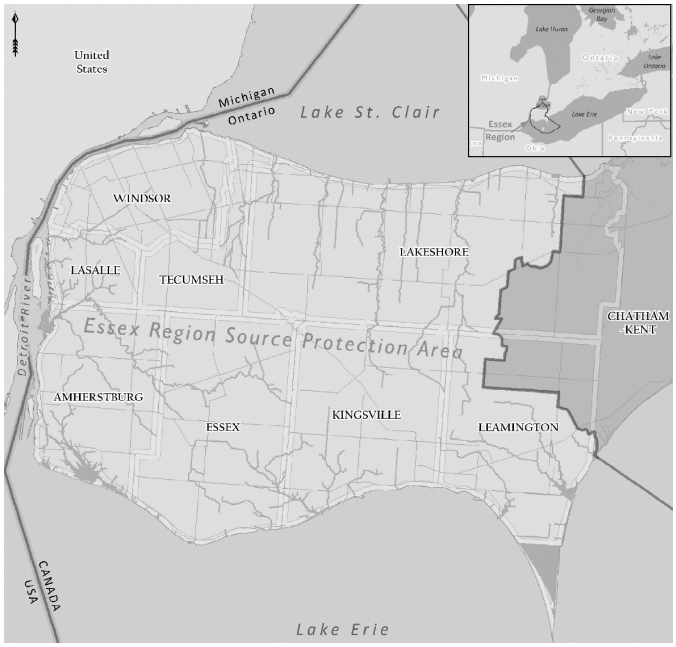
2024 ERSPA Source Protection Annual Progress Report | 1 May 2025

I. Introduction

This annual progress report outlines the progress made toward implementing the policies in the Essex Region Source Protection Plan (SPP) for the Essex Region Source Protection Area (ERSPA), as required by the *Clean Water Act* and its 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, 2024, and highlights the actions taken from January 1 to December 31, 2024.



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

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

The Essex Region Source Protection Committee has reviewed this report and once again it is our unanimous opinion that implementation of the policies in the Essex Region Source Protection Plan is P – Progressing well. We assigned municipal and provincial progress both a score of S – Satisfactory for specific reasons that are outlined in those sections of the text, but overall we feel that the Source Protection Plan and its policies are on track.

In the 2023 Report, we identified that municipal Official Plan (OP) conformity was lagging. The Committee is aware of the challenges that continue to delay the completion of the required review of OP and Zoning By-Law documents that govern development. On the advice of the Committee, the Chair and Program Manager met with our member municipalities directly via council presentations to give them an overview of the 2024 report, stressing the need to address Source Water Protection in their OPs. We provided suggestions and discussed the option of using an Official Plan Amendment (OPA) that would put some of the planning language related to Source Protection in place immediately rather than waiting for the full OP review process to be completed. This suggestion was met with favor by the City of Windsor, who were able to complete their OPA in 2024 as a direct result of our meetings. The example of this process will be shared with those municipalities that have not yet completed the required review exercise as an option to bring their planning documents into compliance with the Source Protection Plan.

The blue-green algae bloom in Lake Erie was once again rated as moderately-severe, and for the first time ever, bloom conditions were observed in the Detroit River at the Amherstburg intake. The Committee is of the opinion that Source Protection staff should continue to monitor the factors that contribute to the annual occurrence of Harmful Algal Blooms, and that microcystin should be considered a topic of ongoing discussion for all Water Treatment Plants in the Essex Region. With uncertainty south of the border, it will be increasingly important for ERSPA staff to facilitate communication amongst local water users.

We are pleased that ERCA was able to secure Federal and Provincial grant funds to reinstate water quality monitoring and stewardship programs that were paused or reduced in 2023/2024, and we are hopeful that municipalities see the value in supporting these endeavors regardless of external funding sources. Section 8 (Source Water Quality: Monitoring and Actions) of this report provides further details of these programs and successes. If we are not able to track conditions in the local environment our hands will be tied in making informed decisions regarding the efficacy of our Source Protection Program. Further, stewardship activities provide frontline interactions to encourage uptake of activities that will reduce nutrient loss to the environment.

III. Our Watershed

The Essex Region Source Protection Area (ERSPA) is approximately 1681 km^2 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 (RMO).

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

Of the 44 policies in the Essex Region SPP that address SDWTs, 38 (86%) are fully implemented and 4 (9%) are considered to be in progress. The remaining two policies have been reviewed, and it has been determined that no further action is required.

Three (3) in progress policies use s.58 (risk management plans) where the RMO has not encountered any existing SDWTs. However, these policies have been challenging to implement, and the policy approaches will be reviewed in the next SPP update. There will be no change in their implementation status until after the update is complete. Any new potential SDWTs are captured during the s.59 screening process. One (1) in progress policy requires Windsor, Lakeshore and Amherstburg to prohibit sewage treatment tanks in IPZ-1s. This policy is implemented in Windsor and Lakeshore and will be included in Amherstburg's next Official Plan update. Importantly, this activity is also prohibited using a Prescribed Instrument (PI) policy and there are no existing threats.

2. Municipal Progress: Addressing Risks on the Ground

S - Satisfactory

All of the 11 municipalities in the ERSPA have vulnerable areas where SDWT policies apply. Municipalities are required to ensure that their planning and building decisions, and their Official Plan (OP) conform with the Essex Region SPP. Six municipalities have completed their OP conformity exercise (The County of Essex, Town of Essex, LaSalle, Tecumseh, Kingsville and Windsor). Lakeshore has completed their full OP update and is awaiting approval from the County of Essex. Leamington and Amherstburg began the process of updating their OP in 2024. The Township of Pelee is considering doing an OP Amendment, which would be completed in 2025. Chatham-Kent plans to begin the OP updates in 2025.

In 2024, the PM and Chair Fuerth attended council meetings for all municipalities in the Essex Region. They provided verbal and visual presentations highlighting the work of the SPC and SPA and stressed the importance of completing OP conformity. As a direct result of this Committee's scoring and reports to Council, the City of Windsor has completed an OP Amendment that satisfies the conformity exercise and is written in a way that it will apply to any future amendments of the SPP. At the direction of the Committee, the suggested language for the OP Amendment will be shared with municipalities whose OP is not yet in conformity. Chair Fuerth and the PM will revisit councils as necessary.

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. Municipalities are encouraged to review this process annually to ensure its use and efficacy. The Essex Region Conservation Authority has been delegated by all of these municipalities to implement Part IV policies on their behalf. At the request of municipalities, ERSPA will deliver additional training to municipal staff in 2025.

In 2022 and 2023, the Committee unanimously voted to lower the municipal progress score to L – Limited Progress in order to promote Official Plan conformity. The Committee recognizes the progress that Municipalities have made and unanimously agreed to increase the progress score to S – Satisfactory for the 2024 reporting year.

3. Septic Inspections

Not applicable to the ERSPA. There are currently no polices 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

As of 2022, risk management plans (RMPs) were established for all 96 existing threats (the handling & storage of fuel) following threat verification inspections carried out in accordance with the *Clean Water Act* (CWA) by the Risk Management Official/Inspector (RMO/I). A screening process using s.59 of the CWA captures new SDWTs. Four (4) s.59 applications were reviewed in 2024 resulting in one (1) RMP established for a new fuel threat, and one RMP was in progress as of December 31, 2024, which has since been completed. Two applications were issued a Notice to Proceed because there were no proposed SDWT activities. Since the SPP took effect, 22 RMPs for new threats have been established through this process. To date, all RMPs established for new fuel tanks have been for greenhouse construction or crude oil and brine operations. There have not been any applications reviewed for the other Part IV policies applicable to Lakeshore IPZ-1, Windsor IPZ-1, Windsor IPZ-2 and Amherstburg IPZ-1.

In 2022, the RMO began conducting compliance reviews for individuals with existing Risk Management Plans issued under a s.58 (existing threats). Due to staffing changes, compliance reviews were not conducted in 2024. A second Risk Management Official/Inspector was appointed, and we anticipate completing several compliance checks 2025. Please refer to the supplementary Part IV 2024 Risk Management Services Report for further information and details.

5. Provincial Progress: Addressing Risks on the Ground

S - Satisfactory

The Essex Region SPP includes 17 policies that use Provincial Instruments (PI) (e.g. Environmental Compliance Approvals) to address SDWTs. As of 2018, all 38 of the existing PIs were reviewed, five were considered to be SDWTs where the PI was sufficient, and no additional conditions were required to mitigate the SDWT. Ontario Ministries screen new applications and amend PIs as needed to address any new SDWTs. In 2024, two new applications for SDWTs were reviewed by Provincial Ministries in vulnerable areas of the Essex Region, specifically for wastewater/sewage works. Since 2016, 40 new applications for PIs have been reviewed in the ERSPA. No new SWDTs have been identified through this process. As a result of this work, all of the policies that use PIs in the Essex Region SPP are fully implemented.

Project Managers across Ontario have begun noting some issues with the Province's approach for addressing SDWTs using Prescribed Instruments. In 2024, the Essex Region Project Manager was approached by two municipalities seeking support with new requirements for Prescribed Instruments – one for Consolidated Linear Infrastructure Environmental Compliance Approvals (sewage) and the other for Municipal Drinking Water Licenses. Both applications now require applicants to conduct an independent Source Water Risk Assessment and provide a strategy for managing or avoiding threats to drinking water, which *may* be reviewed by the Ministry. It is our understanding that all applications for these ECAs are asked to complete this exercise regardless of whether they are in a vulnerable area or proposing a SDWT activity, rather than the Ministry providing screening. In good faith, this Committee and others in Ontario wrote PI policies with the expectation that the Ministry would ensure existing tools adequately protect sources of drinking water. With these changes, the onus is put on municipalities, who turn to their local Project Manager for support, neither of whom received adequate guidance to complete this task. Notably, Project Managers were not consulted on the content and, even with intimate knowledge of Source Protection, found the instructions to be unclear. Further, unlike RMPs, the assessments are not being reviewed by the Implementing Body prior to agreement and are to be made available upon request.

The Committee received this information and discussed options for voicing our concern with the Province's approach to implementation. It was our unanimous decision to lower the Provincial Implementation score to S – Satisfactory. While the implications are minimal for the Essex Region because of the small areas where SDWTs can occur and our Project Manager's close relationship with and ability to provide support to our municipalities, we are concerned about the potential ramifications of these shortcomings in larger Source Protection Areas. We are also concerned about the potential for overlooking a threat to sources of drinking water through lack of oversight and/or completion by unqualified persons, and if this trend continues beyond municipal licenses, the opportunity for the policies to be circumvented by individuals.

6. Source Protection Awareness and Change in Behaviour

Road signs have been installed across the ERSPA as part of a provincial awareness initiative. The Ontario Ministry of Transportation (MTO) installed five signs in the Essex Region on Hwy 401, Hwy 77 and Hwy 3. Municipalities coordinated installation of more than 60 signs on local municipal and county roads. The Town of Essex installed 3 new signs in 2024.

Road signs identify areas where accidental spills could contaminate sources of drinking water. As part of the Essex Region Source Protection Plan implementation, emergency responders have been notified about these areas. The use of standardized signs throughout Ontario helps raise public awareness about the importance of protecting local sources of drinking water.

The main risk to drinking water in our local area is the handling and storage of liquid fuel. If a spill is observed, residents are advised to contact the Spills Action Center. To learn more about these road signs in the Essex Region, check out our video!

7. Source Protection Plan Policies: Summary of Delay

There have been no significant delays in the implementation of the Essex Region SPP.

8. Source Water Quality: Monitoring and Actions

Harmful algal blooms (HABs) are an annual occurrence in Lake Erie and Lake St. Clair. HABs are formed by blue-green algae (or cyanobacteria) that produce a neurotoxin called microcystin, which is a parameter listed on Schedule 2 of the Ontario Drinking Water Quality Standards. The Essex Region SPC determined that microcystin was a drinking water issue for Lake Erie intakes in 2014. The data were reviewed for all of the intakes in the Essex Region in 2023, including those in Lake St. Clair, the Detroit River and Lake Erie. The SPC recommended that microcystin be identified as a drinking water issue for all intakes based on that review.

Through Early Engagement, MECP technical staff advised that the data for intakes in the Detroit River do not support the identification of microcystin as an issue. ERSPA staff anticipated this response because the concentrations are typically below the half maximum allowable concentration (½ MAC = 0.75ug/L). The Committee's initial decision was based largely on the opinion and responses from municipalities and water treatment operators, who flagged it as an ongoing concern. The SPC has reviewed updated data and analysis that included 2023 and 2024 for both intakes. Concentrations were below the ½ MAC for both intakes in 2023, and at A.H. Weeks in 2024. However, in 2024, microcystin was detected in the Detroit River at the Amherstburg intake during the entire month of August, reaching a maximum concentration of 4.8ug/L, which is above the maximum allowable concentration of 1.5ug/L. The Committee had a productive discussion and ultimately decided to continue to recommend microcystin as a

drinking water issue for both A.H. Weeks and Amherstburg. One member reminded the Committee that their role is to look forward beyond the current data to be prepared for eventualities, particularly when there are known issues upstream and downstream. We did not anticipate seeing high concentrations of microcystin in the Detroit River, but it has now been shown to be possible. Importantly, the associated policies apply to the entire region regardless of this decision. This updated decision and analysis will be included in a report that will be part of public consultation and further consultation with the MECP before it is finalized.

Each fall, NOAA releases a final seasonal assessment for the severity of the Lake Erie HAB. The severity index ranges from zero to 10 and indicates the amount of bloom biomass over the peak 30 days of the bloom. The models are not able to predict nor report on the toxicity of the bloom. In 2024, the Lake Erie HAB received a score of 6.6, making it a moderately severe bloom. It was both more severe and larger than the bloom in 2023 and was more similar to the bloom 2022. The bloom in 2024 had the earliest start date (1 July) since 2002, with the peak bloom in mid-August, finally dissipating in mid-October. The bloom largely remained on the US side of the western basin of Lake Erie, however Union Water in Kingsville reported higher concentrations of microcystin than in years past and there were observations of bloom conditions in the central basin near Wheatley in September. Importantly, the peak bloom period lastly roughly one week, whereas the peak bloom in 2022 was 20-30 days. It is not possible to declare any trend in bloom severity nor to determine whether on-the-ground actions are responsible for lowering bloom severity as there is a great deal of variability dependant on numerous factors. It should be noted here, that under the current US Administration, NOAA has lost the capacity to communicate about HABs and other important topics. ERCA staff are well connected to the community of practitioners who work on HABs and will work toward collaborative solutions so that this messaging remains available.

The SPP includes a monitoring policy for phosphorus and microcystin, and a regional education and outreach policy for phosphorus, microcystin as a drinking water issue, and algae blooms in general. ERCA continues to be a leader in phosphorus monitoring and has integrated HABs into educational programs directed at a variety of target audiences. In our 2023 annual report we reported that many of the funding streams ERCA relies upon for monitoring were not available. We are pleased to share that ERCA staff were able to secure renewed and new sources of funding for monitoring in 2024. This includes a $6.3 million grant from the Canada Water Agency, of which approximately half will be used for an incentive program to support local solutions like cover crops, replacement of lateral drain outlets with header tiles, installation of buffer strips and more. This grant also includes enhanced monitoring in the Ruscom and Canard watersheds – two of ERCA's larger, agriculturally dominated watersheds that have previously been under studied. ERCA will also be offering learning and engagement opportunities through in-person meetings, online discussions and on-farm demonstrations. In addition, the funding to support monitoring of greenhouse influenced streams was re-instated.

9. Science-based Assessment Reports: Work Plans

The ERSPA continues to make progress towards completing our s.36 update. All 50 polices in the SPP have been reviewed and appropriately amended (30 policies), deleted (16 policies), edited (4 policies) or added (15 new policies) to align with the 2021 Technical Rules, and the number of Monitoring policies has been reduced from 45 to 5. Early Engagement with the Province was completed for all policies and two technical projects - correction of the Event Based Area and re-evaluation of microcystin as a drinking water issue. The SPC reviewed these comments and addressed suggestions as they deemed appropriate. Pre-consultation with Implementing Bodies is expected to begin in the spring of 2025 with a goal for completion of the update by the end of 2025. This process is about a year delayed in part due to the late release of the 2021 Director Technical Rules by the MECP and Covid-19. Staffing shortages and increased workload in other areas has also contributed to this delay.

10. More from the Watershed

In addition to the successful grant funding noted above, the Committee would also like to highlight upcoming projects in the Detroit River. ERCA, in partnership with the Detroit River Canadian Cleanup, received $5.2 million dollars from the Great Lakes Freshwater Ecosystem Initiative (GLFEI) from the Canadian government to build two habitat projects. The first, planned for Summer 2025, is the restoration of a finger dyke, which has been breached due to high water levels and strong river currents, at a wetland complex located north of where the Canard River flows into the Detroit River. The dyke protects the wetland habitat behind it, including the largest wild celery beds in the Detroit River. Restoring this dyke ensures that the largest marsh complex on the Canadian side of the Detroit River is protected.

The second habitat project involves the creation of six sheltering islands at the south end of Fighting Island in the Detroit River to re-establish a natural cattail marsh behind the islands. The island has experienced high rates of erosion due to currents and freighter waves, reducing the establishment of submerged and emergent vegetation in the area. The sheltering islands will allow for the slowing of the current, thereby allowing submergent and emergent vegetation to establish, creating habitat for both fish and marsh birds.

The Committee would also like to stress the importance of consistent, ongoing funding that supports monitoring of current and emerging threats. Given the restrictions under the Conservation Authorities Act, it is necessary for CAs to seek out external sources of funding through competitive grant applications, which carries a heavy administrative burden. Additionally, we are dependant on data and reporting from the US to model and track harmful algal blooms. With growing uncertainty in their ability to provide these resources, it will become increasingly important that we find local solutions, while also supporting our colleagues in the US who may also be affected by these administrative changes.

To learn more about our source protection region/area, visit our homepage: https://essexregionconservation.ca/source-water-protection/

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 placed 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 is 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 of if you observe what you suspect to be a harmful algal bloom (classic description is that it looks like green paint and often has a white/yellow scum on top), residents should contact the Spills Action Centre at 1-800-268-6060 or online: Spills Action Centre.