

Essex Stormwater Management System

Significant Drinking Water Threat Assessment Report for Proposed Alterations

Prepared by Ontario Clean Water Agency for:

Town of Essex
33 Talbot St South
Essex, ON
N8M 1A8



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Purpose

This report is prepared to satisfy the requirements of the Consolidated Linear Infrastructure Environmental Compliance Approval for the Essex Stormwater Management System ECA #029-S701.

A drinking water threat is a land-based activity that can impact the quality of a municipal drinking water source (due to a spill or leak). Significant drinking water threat activities can only occur in vulnerable areas such as in Intake Protection Zone (IPZ), Well Head Protection Area (WHPA), and Issues Contributing Area (ICA).

Source Water Protection Areas in the Essex Region

The stormwater management system is located within the Essex Region Source Protection Area (ERSPA). Below are the intake protection zones for the region as outlined in the Essex Region Source Protection Plan (Essex Region Conservation Authority, 2015, <https://www.essexregionconservation.ca/>).

Figure 1: Vulnerability Scores Assigned to Intake Protection Zones in the ERSPA

WTP	Intake Type	IPZ-1	IPZ-2	IPZ-3a	IPZ-3b	IPZ-3c
Stoney Point	D	9.0	6.3	6.3	5.4	4.5
Lakeshore (Belle River)	D	9.0	6.3	6.3	5.4	4.5
A H Weeks (Windsor) East Intake	B	9.0	8.1			
A H Weeks (Windsor) West Intake	B	9.0	8.1			
Amherstburg	B	9.0	7.2			
Harrow – Colchester South	A	6.0	4.8			
Union Primary Intake	A	5.0	4.0			
Union Emergency Intake	A	6.0	4.8			
Pelee Island West Shore	A	6.0	4.2			

Wheatley Primary Intake	A	6.0	4.8			
Wheatley Emergency Intake	A	7.0	5.6			

- Type A: Intakes located in a Great Lake – in the case of the ERSPA there are four WTPs with six intakes which draw water from Lake Erie. These are the Harrow-Colchester South WTP, Union WTP (primary and emergency intake), Pelee Island West Shore WTP, and the Wheatley Water Treatment Plant (primary and emergency intake).
- Type B: Intake located in a connecting channel in the Great Lakes system – there are two WTPs with three intakes which take their water from the Detroit River. These are the A. H. Weeks (Windsor) WTP (east and west intakes) and the Amherstburg WTP.
- Type C: Intake located in a river which is not part of the Great Lakes system, and neither the direction nor velocity of the flow of the water at the intake is affected by a water impoundment structure – none of these types are found in the ERSPA.
- Type D: If the intake is not a Type A, B or C – this type is characteristic of Lake St. Clair in the ERSPA and includes 2 WTPs and intakes, the Lakeshore (Belle River) WTP and Stoney Point WTP.

Source Water Protection Areas in the Town of Essex



Figure 2: Map of IPZ Areas within the Town of Essex Municipal Boundary

Figure 2 was obtained from the ERCA's Online Mapping Tool (<https://www.essexregionconservation.ca/programs-services/sourcewater-protection>). It shows the intake protection zones within the Town of Essex's municipal boundary. The Harrow–Colchester South WTP is identified by the blue square. The dark red area represents the IPZ 1 and has a vulnerability score of 6.0. The dark teal area represents the IPZ 2 and has a vulnerability score of 4.8. The light teal area represents the IPZ 3 and has a vulnerability score up to 5.4.

There are no Wellhead Protection Areas within the Town of Essex municipal boundary.

In the MECP document *2021 Technical Rules under the Clean Water Act* (<https://swpip.ca>) a stormwater management system proposed alteration could be a significant threat if the activity occurs in a WHPA or IPZ and has a vulnerability score of 8 or higher.

Policy Requirements

Under the Clean Water Act policies must be established to address significant drinking water threats. The Essex Region Source Protection Plan includes policy details in Appendix A.

Based on the vulnerability score of the intake protection areas listed above there are no source protection policies that apply to proposed alterations of the Town of Essex Stormwater Management System.

Procedure to Assess Proposed Alterations

1. Proposed alterations are sent to Risk Management Official at the Essex Region Conservation Authority who provides comments. The Risk Management Official completes the following:
 - a. Use the proposed alteration location and the Essex Region Conservation Authority interactive mapping tool (<https://www.essexregionconservation.ca/programs-services/sourcewater-protection>) to determine the vulnerability rating of the location and determine if the location is in an IPZ or WHPA.
 - b. Refer to the MOECP document *2021 Technical Rules under the Clean Water Act* (<https://swpip.ca>). Use the vulnerable area (IPZ/WHPA) location and vulnerability score to determine if the proposed alteration is a significant drinking water threat.
 - c. Refer to the Essex Region Conservation Authority document *Essex Region Source Protection Plan*, updated May 28, 2019. Use the vulnerable area (IPZ/WHPA) location to determine if a Source Protection Plan Policy applies to the proposed alteration.
2. For developments that will be sensitive in nature applicants are required to provide a letter from the Protection Officer confirming that no risk management plan is required.



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Revision History

Date	Revision #	Reason for Revision	Revision By
11/28/2023	0	N/A	Stephan Hotz
11/27/2024	1	Annual review and update. Updated <i>Source Water Protection Areas in the Essex Region and Policy Requirements</i> . Added <i>Source Water Protection Areas in the Town of Essex</i> section. Removed <i>Overflow locations within the Stormwater Management System</i> section. Added <i>Procedure to Assess Proposed Alterations</i> section. Added Table 2 in Proposed Alterations Table.	Mark Billbrough