



## Essex Region Conservation Authority

### Essex Region Source Protection Committee Meeting Agenda

Meeting Date: Wednesday, December 13, 2023

Time: 4:00 pm

Location and Details: Essex Civic Centre, Room C

<b>List of Business</b>	<b>Page Number</b>
<b>1. Land Acknowledgement</b>	
<b>2. Call to Order</b>	
<b>3. Chair's Welcome</b>	
<b>4. Declarations of Conflict of Interest</b>	
<b>5. Approval of Agenda</b>	<b>1-3</b>
THAT the agenda for the Wednesday, December 13, 2023 meeting of the Essex Region Source Protection Committee (SPC) be approved.	
<b>6. Adoption of Minutes</b>	
<b>A. Essex Region Source Protection Committee (SPC)</b>	<b>4-9</b>
2023-09-13 Meeting Minutes	
THAT the minutes of the Source Protection Committee meeting held on Wednesday, September 13, 2023 be approved as presented.	

**7. Correspondence**

None.

**X-X**

**8. MECP Liaison's Update**

**9. Presentations**

None.

**10. Reports**

**A. SPC 09/23**

**10-17**

*S.36 Update – Re-delineation of Event Based Area*

THAT the SPC approve the amended Event Based Area as described in Report 09/23 to be submitted to the MECP for early engagement

**B. SPC 10/23**

**18-21**

*S.36 Update – Road Salt Policies*

THAT Report 10/23 be received and further;

THAT ERSPA prepare draft policies at the SPC's direction

**C. SPC 11/23**

**22-25**

*S.36 Update – Snow Storage Policies*

THAT Report 11/23 be received and further;

THAT ERSPA prepare draft policies at the SPC's direction

**11. New Business**

None.

**12. Other Business**

None.

### **13. Adjournment**

THAT the December 13, 2023 meeting of the Essex Region Source Protection Committee be adjourned.

### **Next Meeting**

The next meeting of the Essex Region Source Protection Committee is to be held on February 8, 2023.



## 1. Call to Order

Good evening and welcome to the September 13<sup>th</sup>, 2023 meeting of the Essex Region Source Protection Committee.

We have quorum with 7 members present, and 3 members present by Zoom. I will call the meeting to order at this time, 4:10pm.

## 2. Land Acknowledgement

We would like to begin by acknowledging that this land is the traditional territory of the Three Fires Confederacy of First Nations, comprised of the Ojibway, the Odawa, and the Potawatomi Peoples.

We acknowledge the harms and mistakes of our past as we continue to move forward in the spirit of reconciliation.

As we do at our meetings, I'll begin with a statement of gratitude and a statement of hope. I'm grateful for Lisa and Amy who are incredible supports. To Lisa for organizing our meetings and to Amy for keeping our Water Quality Program going single handedly. Thank you both for all you do. I am also grateful for everyone gathered around this table, so many of you here in person, thank you. As always, I'm hopeful that we have a good and productive meeting.

## 3. Chair's Welcome

Katie and I met with Caldwell First Nation representatives in August regarding an introduction to the Source Water Program and the source water portion of the Clean Water Act and about their opportunity to participate with representation on our committee. We welcome Jenna Maidment and Michelle McCormack of Caldwell First Nation to our meeting tonight. They have not yet been formally appointed to this committee, so they will not be able to vote, but are welcome to participate and ask questions.

The Committee Chairs from across the province met virtually on June 28<sup>th</sup>. This was a bit of an orientation for all of the newly appointed chairs and there was also discussion about the future and where we go from here.

Saira Bozin Illisinovic is here from the Ministry of the Environment, Conservation and Parks.



**Resolution SPC 15/23** Moved by Cynthia Ouellet  
Seconded by Ron Barrette

**Carried**

## 7. Correspondence

None.

## 8. MECP Liaison's Update

Saira Bozin Illisinovic has been with the Ministry long term, working mostly as a funding coordinator, but is now Senior Drinking Water Program Advisor. The Ministry is moving (perhaps temporarily) away from having dedicated, or assigned, liaison officers for each of the source protection areas. The purpose of this is to shift priorities toward the efficient and timely review and approval of the many source protection plan amendments that are going through the Ministry. We are advocating for a return to in-person meetings of Committee Chairs as it has been at least 4 years, since pre-Covid times that we have had face-to-face meetings.

## 9. Presentations

*Identifying microbial mechanisms of the break down of microcystin-LR in Lake Erie beach sand on Pelee Island using genetic techniques*

- Presented by Chelsea Salter, MSc.

## 10. Reports for Approval

**A. Report SPC 06/23 – S.36 Update – Evaluating Microcystin as a Drinking Water Issue for all Drinking Water Intakes in the Essex Region and ERCA Water Quality Program Update**

THAT microcystin-LR be identified as an issue under the Clean Water Act pursuant to Rule 115.1 for the following drinking water intakes in the Essex Region; and further,

THAT the technical work be included in the updated Assessment Report as part of the forthcoming amendment to the Source Protection Plan, under Section 36 of the Clean Water Act; and further,

THAT the SPC approve the amended policies to be submitted to the MECP for early engagement

**Resolution SPC 16/23** Moved by Tim Mousseau  
Seconded by Ron Barrette

**Carried**

**B. Report SPC 07/23** – S.36 Update – Dense non-aqueous phase liquids (DNAPLS) –  
new policies

THAT the SPC approve the attached amended policies to be submitted to the  
MECP for early engagement

**Resolution SPC 17/23** Moved by Antonietta Giofu  
Seconded by Bill Dukes

**Carried**

**C. Report SPC 08/23** – S.36 Update – Combined Sewer Overflow/Sanitary Sewer  
Overflow Policy Amendments for Prescribed Instruments

THAT the SPC approve the attached amended policies to be submitted to the  
MECP for early engagement

**Resolution SPC 18/23** Moved by Cynthia Ouellet  
Seconded by Chris Snip

**Carried**

**11. New Business**

None.

**12. Other Business**

None.

**13. Adjournment**

**Resolution SPC 19/23** Moved by Tim Mousseau  
Seconded by Ron Barrette



That the September 13, 2023 meeting of the Essex Region Source Protection Committee be adjourned at 5:54 pm. **Carried**

### Next Meeting

The next meeting of the Essex Region Source Protection Committee will tentatively be held on November 8, 2023 starting at 4:00 pm at the Essex Civic Centre, Room TBD.



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**Tom Fuerth**  
**Chair**



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**Katie Stammler**  
**Water Quality Scientist/  
Project Manager Source Water Protection**



## Essex Region Source Protection Committee

### Report 09/23

From: Katie Stammler, Source Water Project Manager  
Tom Dufour, Geomatics Technician

Date: Monday, November 27, 2023

**Subject: S.36 Update – Re-delineation of Event Based Area**

#### Recommendation

**THAT the SPC approve the amended Event Based Area as described in Report 09/23 to be submitted to the MECP for early engagement**

#### Summary

- Errors in the delineation of the Event Based Area were identified by the Risk Management Official
- Correction of these errors was included in our s.36 Workplan and in our s.36 Order received 16 May 2019
- ERSPA identified the source of the error and determined methodology and data sources to enact the correction
- The resulting corrected Event Based Layer will be provided to the MECP for review prior to consultation

#### Discussion

Further to SPC Report 02/18 and as identified in the 'Essex Region Source Protection Area Workplan for Comprehensive Review and Update of the Essex Region Source Protection Plan per Clean Water Act (2006) – Section 36' and the amended s.36 Order received 16 May 2019, this report provides and update to the delineation of the Event Based Area (EBA) to correct known errors.

#### Original delineation of the Event Based Area

The EBA was originally determined by modelling exercises completed by consulting firms. Baird conducted the modelling exercise to determine the volume limits and extent of the EBA for each intake.

Stantec created the mapping that is still in use (see attached summary from appendices in the Assessment Report). The Event Based Area was delineated for the Essex Region Source Protection Area as described in Chapter 4 of the approved ERSPA Assessment Report:

“The Event Based Area (EBA) is an area where modelling has demonstrated that a spill from a specific activity can or could cause deterioration to the raw water quality at the drinking water system. If the modelling test is met, the activity is deemed a significant drinking water threat and becomes subject to Source Protection Plan policies. For each intake in the Essex Region, the EBA is the combination of IPZ-1, IPZ-2 and IPZ-3 for modelled activities (i.e., fuel spill containing benzene, and a volume of 34,000 L) to which associated significant drinking water threat policies apply.”

Specifically, the IPZ-3 was delineated using a pre-existing watercourse layer coupled with the Essex Region Conservation Authority’s Limit of Regulated Area (LORA). The IPZ-3 was delineated as a 120m setback from the watercourses or to the extent of the LORA if it exceeds the 120m setback. This was completed as a GIS exercise using the best available information and was not ground truthed.

### Identifying the problem

While the RMO/I was completing their threat verification site visits, they noted errors in the delineation of the IPZ-3. The three basic types of errors are:

- Type I) The IPZ-3 has been delineated where there is no watercourse,
- Type II) No IPZ-3 was delineated where there is a watercourse, OR
- Type III) The IPZ-3 is incorrectly delineated

These errors can result in Risk Management Plans (RMP) being established where they aren’t actually required, or having no RMP where there should be one.

### Data sources

Over time, different watercourse (or drainage) layers have been created using the best available information at the time. These layers can consist of natural watercourses and Municipal Drains, but may miss other types of drainage features like Award Drains or Private Drains. However, ERSPA staff were unable to recreate the EBA as delineated by Stantec using any of our historical drainage layers. Upon further investigation, we found that the dataset used was the Water Virtual Flow Dataset obtained from the Ministry of Natural Resources (MNR) and the constructed drain layer obtained from Ontario Ministry of Agriculture and Rural Affairs (OMAFRA). This provincially derived dataset is not used locally as it is not an accurate representation of the drainage network in the Essex Region.

To correct the errors in the delineation of the EBA we replaced the provincial datasets representing watercourses and substituted our existing local dataset compiled by ERCA. While there are still known deficiencies in this local dataset, it represents a significant improvement over its provincial counterpart with respect to local detail. We also note that while partner municipalities also maintain watercourse (aka municipal drain) datasets, ERCA’s dataset is the only one that is a consistent standard of quality that represents connected drainage pathways across the region.

Updated delineation methodology

The updated mapping was compiled using alternate and updated data inputs applied to essentially the same methodology used previously. Below is a list of data inputs into the EBA. While the biggest change of consequence is the substitution of data source representing watercourses, updates to the regulation limit since the time of the last compilation of the EBA are also captured.

Input Component	Description of Input	Description of Change
<b>IPZ1</b>	IPZ1 as defined by previous modelling	No Change
<b>IPZ2</b>	IPZ1 as defined by previous modelling	No Change
<b>IPZ3</b>	120 m setback/buffer (240 m total width) on contributing watercourses.	Replaced source provincial datasets with local ERCA dataset.
<b>Regulation Limit</b>	Limit of Regulated Area (LORA) setback as defined by ERCA.	While no change in input, updates to the Regulation Limit dataset since last compilation of the EBA will be represented in the updated mapping.

The input components (as shown in Figure 1) are merged together using a series of GIS geoprocessing tools. In this case the GIS software used was ESRI ArcGIS ModelBuilder. The output (as shown in Figure 2) is the greatest extent of the inputs and represents the Event Based Area.

Note that the area of interest in this re-delineation exercise does not include any area outside of the ERSPA (ie portions of the County of Essex that are within the jurisdiction of the Lower Thames are excluded).

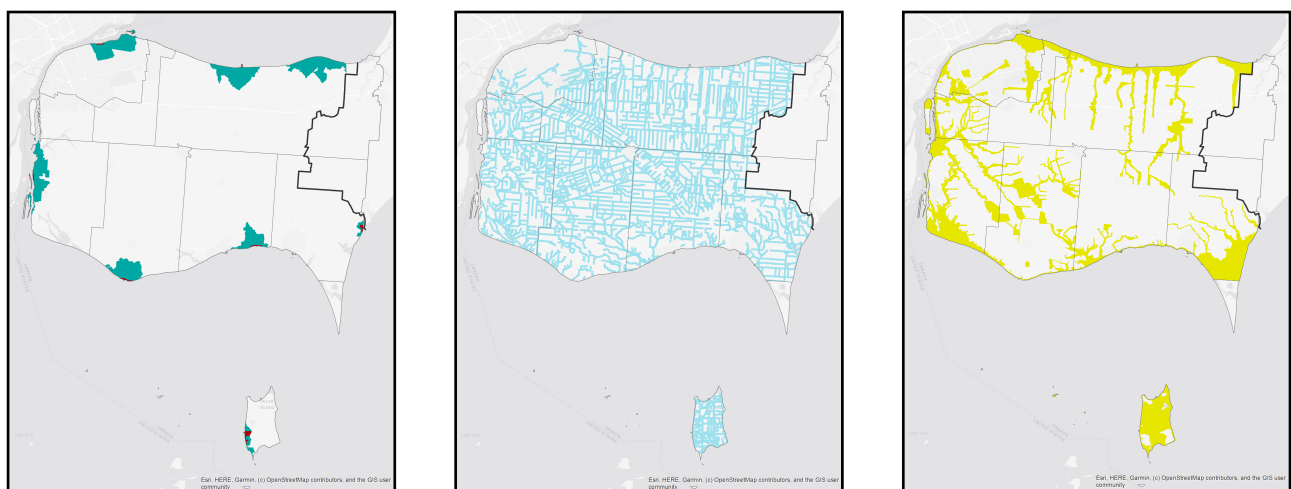


Figure 1 – Input components showing (r to l) IPZ1 & 2; IPZ3 with buffers on replacement source dataset; and Regulation Limit. Note that the regulation limit as shown does not include the 30 m setback on watercourses as this is duplicated and exceeded by the 120 m setback

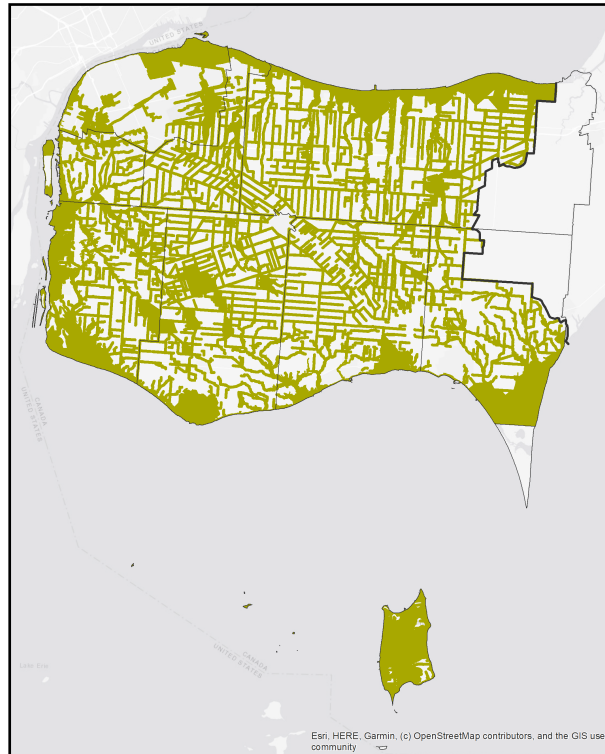


Figure 2 - Output draft extent of the Event Based Area (EBA)

### Next steps

ERSPA staff have confirmed that many of the originally identified errors have now been corrected. We are confident that the EBA is delineated with the best available data at this time. This new delineation will be provided to the MECP as part of the Early Engagement process prior to public consultation. In the interim, work will be done to identify properties that are affected by the change. In addition, the Risk Management Official will determine if any existing Risk Management Plans will be affected. Once approved for consultation, letters will be sent to affect to affected properties.

### **RECOMMENDATION**

THAT the SPC approve the amended Event Based Area as described in Report 09/23 to be submitted to the MECP for early engagement

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Katie Stammler, PhD  
Project Manager, Source Water Protection

### Attachments:

1. Written description of the extent of Event Based Area for each intake
2. Maps showing the full extent of the Event Based Area in the Essex Region

This information accompanies SPC Report 09/23 and summarizes the extent of the Event Based Area (EBA) for each drinking water intake in the Essex Region based on modelling exercises conducted by Baird. These are excerpts from appendices included in the Assessment Report, compiled here for reference. This information has been used to construct the updated maps of the EBA for each drinking water intake.

### **Stoney Point**

It was recommended that the IPZ-3 for Stoney Point should include the Ruscom River and its tributaries as well as any tributaries located between the Ruscom River and the Stoney Point intake, and any tributaries between the intake and the Essex Source Protection Region boundary, which is approximately the same distance east of the Stoney Point intake as the Ruscom River is to the west. The IPZ-3 was not extended to include Pike Creek, as Pike Creek is included in the IPZ-3 for the Belle River and Windsor intakes. However, the operator of the WTP should be made aware that the intake is vulnerable to spills in Pike Creek.

### **Belle River**

Based on the model results, it was recommended that the IPZ-3 for the Belle River intake should include the Ruscom River, Belle River, Pike Creek and their tributaries, as well as any tributaries located between these tributaries and the Belle River intake.

### **Windsor - A.H. Weeks**

Based on the model results, it was recommended that the IPZ-3 for both Windsor intakes should include Pike Creek, Puce River, Little River and their tributaries, as well as any tributaries located between Pike Creek and the Windsor intakes. Additional analyses were required to consider reverse flow in the Detroit River, based on this analysis, specific areas downstream of the intake are also included in the IPZ-3

### **Amherstburg**

It was recommended that the IPZ-3 for Amherstburg should include Turkey Creek, the Canard River, and their tributaries, as well as any tributaries located between Turkey Creek and the Amherstburg intake. Based on the model results, spills flowing into the Detroit River from locations in Windsor resulted in exceedances at Amherstburg, therefore the IPZ-3 was extended to the upstream limit of the Detroit River and includes tributaries and transport pathways flowing into the Detroit River, upstream of the Turkey Creek outlet. The IPZ-3 boundary in the Detroit River was delineated as the international boundary.

### **Harrow-Colchester**

Based on the model results, it was recommended that the IPZ-3 include Big Creek, Richmond Drain/Cedar Creek and their tributaries as well as tributaries located between Big Creek and Richmond Drain/Cedar Creek.

**Union**

Based on the model results, it was recommended that the IPZ-3 include the Richmond Drain/Cedar Creek, Sturgeon Creek and their tributaries as well as any tributaries located between Richmond Drain/Cedar Creek and Sturgeon Creek.

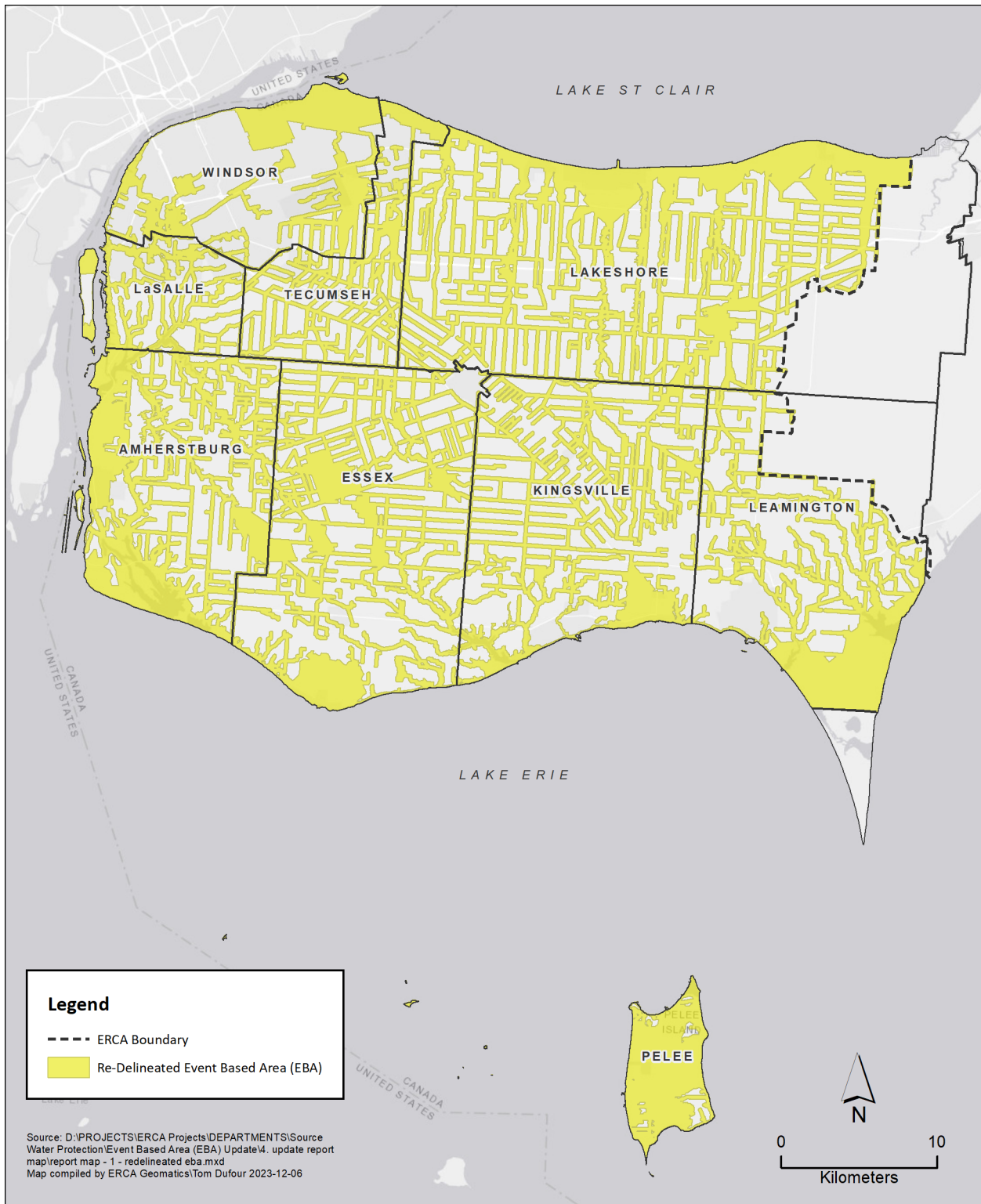
**Wheatley**

Although the Wheatley intake is within the Thames Sydenham and Region SPR, the vulnerable areas extend into the Essex Region Based on the model results, it was recommended that the IPZ-3 for the Wheatley intakes should include Pelee/Hillman Creek and their tributaries, as well as any tributaries located between these tributaries and the Wheatley intakes.

**Pelee Island**

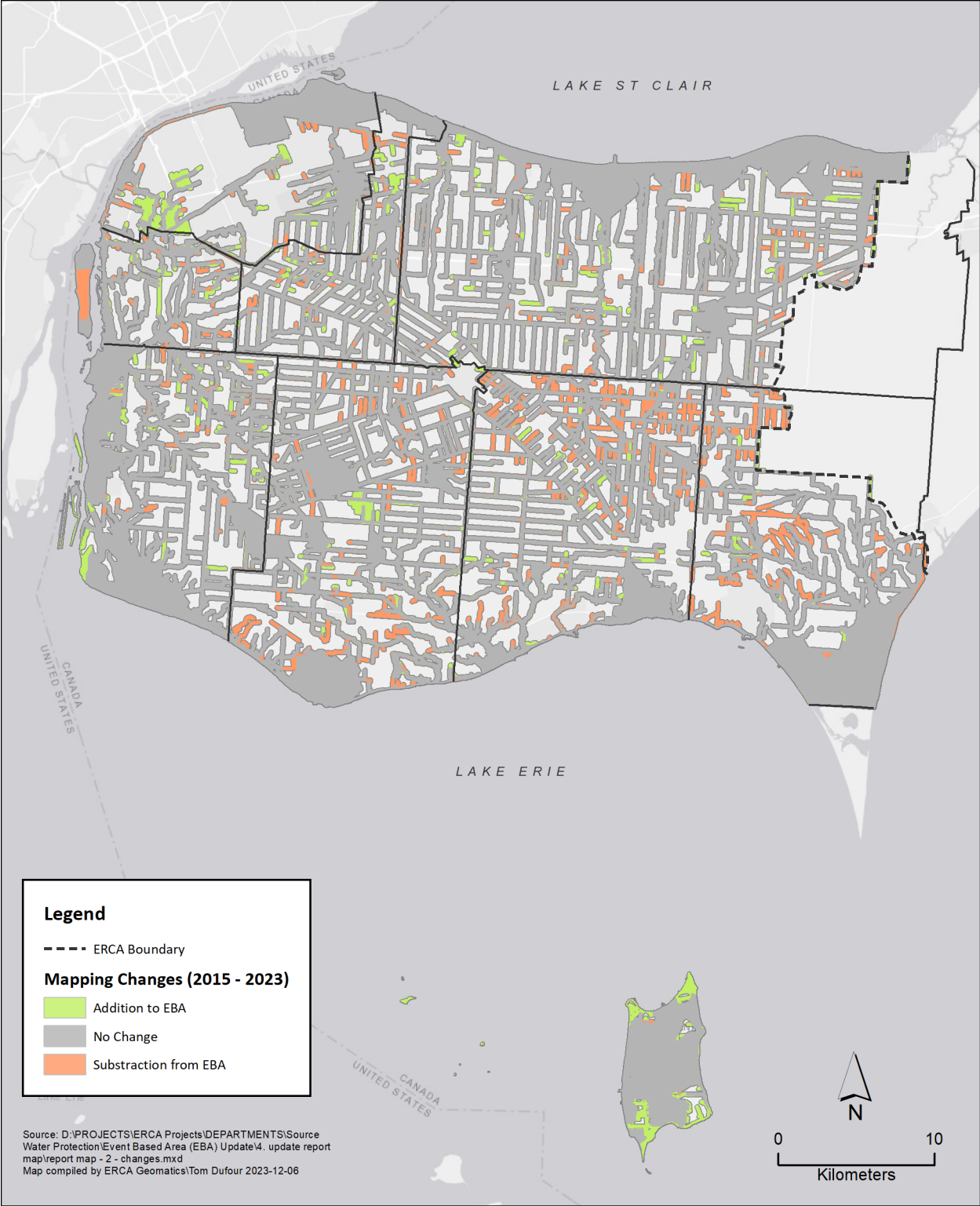
The analysis and modelling showed that a fuel spill from a tanker truck at East Shore Rd. and East-West Rd. on Pelee Island would result in an exceedance at the Pelee Island intake. Based on the model results, it was recommended that the IPZ-3 for the Pelee Island intake should include any drainage canals located between the spill and the intake, which includes all drainage canals on the island.

The first map shows the new delineation of the EBA using updated information as described in Report 09/23. The second map shows the changes between the new delineation and current delineation in the approved 2015 Source Protection Plan. The new delineation is draft until approved by the MECP.



## Re-Delineated Event Based Area (EBA) (2023)





## Event Based Area (EBA) Mapping Changes



## Essex Region Source Protection Committee

### Report 10/23

From: Katie Stammler, Source Water Project Manager

Date: Monday, November 27, 2023

**Subject: S.36 Update – Road Salt Policies**

#### Recommendation

**THAT Report 10/23 be received and further;**

**THAT ERSPA prepare draft policies at the SPC's direction**

#### Summary

- The Table of Drinking Water Threats was updated in 2021
- The threat circumstances for the storage and application of road salt were changed
- Amended and/or new policies are required in the Essex Region Source Protection Plan

#### Discussion

The application and storage of road salt has been considered to be a significant drinking water threat, however the circumstances were significantly changed in 2021. The storage of road salt for Lakeshore, Windsor and Amherstburg IPZ-1s was previously considered a SDWT, with a limit of 5000 tonnes. That limit is now reduced to 20kg, specifically if the salt is exposed to precipitation or run off. The application of road salt was considered a SDWT in areas where imperviousness is >80%, this has been reduced to areas where imperviousness is >8%.

While there is no specific drinking water standard for salt or its components (chloride and sodium), chloride affects taste and can cause corrosion in the distribution system, it has an aesthetic limit of 250 mg/L under the [Guidelines for Canadian Drinking Water Quality](#). The aesthetic limit for sodium is 200mg/L and drinking water should be below 20mg/L for those on a sodium reduced diet. One of the key considerations is the lack of feasible treatment options to remove salt once it's in the water.

A [Good Practices Guidance for Winter Maintenance in Salt Vulnerable Areas](#) was developed by a multi-stakeholder group, chaired by the Ontario Good Roads Association and Conservation Ontario. These practices can be considered by municipalities, contractors, and risk management officials under the Clean Water Act.

Circumstances

The table below includes the 2017 circumstances under which the current policies are written and the new 2021 circumstances that our policies need to align with.

2017 Circumstance	2021 Circumstance	Areas of SDWT	Current Policy Approach
The road salt is applied in an area where the percentage of total impervious surface area, as set out on a total impervious surface area map, <b>is 80 percent or more.</b>	The road salt is applied in an area where the <b>default percentage of impervious surface area is 8% or more</b>	Lakeshore IPZ-1, Windsor IPZ-1, Amherstburg IPZ-1	No Policy
1. Where salt is stored in an area where it is impacted by precipitation or surface runoff 2. The quantity stored is > <b>5000 tonnes</b>	1. The storage of road salt in a manner that the road salt is exposed to precipitation or runoff from precipitation or snow melt. 2. The quantity stored is <b>more than 20 kg. (=44lbs = 1 bag of salt)</b>	Lakeshore IPZ-1, Windsor IPZ-1, Amherstburg IPZ-1	Prohibit

About the IPZs

The above SDWT circumstances apply to Lakeshore IPZ-1, Windsor IPZ-1 and Amherstburg IPZ-1. The percentage of impervious land was evaluated when the Source Protection Plan and Assessment Report were developed. At that time, each of the affected vulnerable areas fell into the 8-80% Impervious Surface Area. Although imperviousness has not been re-evaluated, it is extremely unlikely that these areas are less impervious now. Previously, application of road salt was only required if imperviousness was >80% so the Essex Region SPP did not have a policy for this activity. With the reduction of this threshold, policies are now required to address this SDWT.

Lakeshore IPZ-1 is almost entirely occupied by a marina and associated parking lots and parkland. Windsor IPZ-1 falls within a residential area with 30-40 private dwellings along a 1.3km stretch of Riverside Drive. There are at least 10 apartment buildings or other high density housing units with parking lots. Based on a cursory review of the aerial photography, most of these parking lots are in the IPZ-2 with driveways in the IPZ-1. There are also two municipal parks with parking lots (~2400m<sup>2</sup> and 3000m<sup>2</sup>). Amherstbug IPZ-1 follows 1km of Front Road with 40-50 private lots or dwellings with driveways. There are also a few large parcels of vacant land, which could have high density residential units in the future.

## Policy Options – Storage of Road Salt

[Commercially available salt storage bins](#) have volumes ranging from 225kg to 1500kg. The smallest volume bin can hold a sufficient amount of salt to cover 4000m<sup>2</sup> (a small parking lot). In contrast, the previous limit was 5,000,000kg. Considering that the SDWT conditions are for exposed salt storage, there may be opportunity to use the information of volumes of salt that can be safely stored in commercially available boxes to inform policy decisions.

Policy options could include:

1. Education and Outreach for all volumes, including small volumes
2. s.58 Risk Management Plans to require that volumes of 225kg-1500kg be stored in closed containers. This policy could include language that exempts single dwelling residential properties. There are several apartment parking lots in Windsor IPZ-1 and the Lakeshore marina occupies the entirety of Lakeshore-IPZ-1. These properties are likely to require some volume of salt storage. An example of language that could be included is “This policy applies to properties with any land use exempt residential properties consisting of four units or fewer”.
3. s.57 prohibition of exposed salt storage above 1500kg (not likely to occur)

The current Source Protection Plan includes a policy to prohibit the storage of >5000 tonnes of salt using s.57 of the Clean Water Act, which was in alignment with the circumstances in the Director Technical Rules at the time the policy was developed and brought into effect. This policy is no longer appropriate and does not adhere to the circumstances in the 2021 Director Technical Rules.

A Road Salt Management Plan documents what a municipality currently does for winter maintenance and identifies affordable actions they can take to improve their management of road salt. Short-term actions that involve little cost include benchmarking spreader routes, calibrating existing equipment, establishing/reviewing level of service policies and tracking material usage. Longer-term actions could include improvements to storage and handling facilities and equipment upgrades or replacement. Road Salt Management Plan templates are available from the Ontario Good Roads Association at [www.ogra.org](http://www.ogra.org).

These options are presented in this report to the SPC for discussion. Pending results of discussion, ERSPA will develop draft policies for the SPC to review at their next meeting.

## Policy options – Application of Road Salt

The circumstances in the Director Technical Rules do not indicate a threshold or limit, which infers that application of any amount could be a SDWT. Similar to storage, policies could exempt residential properties with four units or fewer (or another reasonable limit). However, any property with a parking lot should be expected to ensure that salt is applied responsibly. As noted above, there are several properties within the affected IPZ-1s with parking lots where salt application would be expected to maintain winter safety. In addition, in Windsor IPZ-1 and Amherstburg IPZ-1, there are main roads that are expected to require salt application.

Policy options could include:

1. Education and Outreach – other SPAs have E&O policies and there is material available through Smart about Salt
2. s.58 Risk Management Plan for any property with a parking lot (exempting residential properties with fewer than 4 units). RMPs could require proof of completing of the Smart About Salt program and creation of a Salt Management Plan.
3. Specify Action policy for municipalities to require Salt Management Plans for roads and municipally owned properties in IPZ-1s

Note that while there is no rule or standard for application rate, [Smart about Salt](#) reports that average reported application rate is 53g/m<sup>3</sup> (11lb/1,000ft<sup>2</sup>; 490 pounds/acre). Currently, the [Code of Practice for the Environmental Management of Road Salts](#) recommends that a Salt Management Plan be completed by any road authority that uses more than 500 tonnes of road salt in a year or that applies salt in a vulnerable area (this refers to many types of sensitive areas including sources of drinking water). The Code of Practice does not address salt use on parking lots or private properties. In short, there are numerous resources available to draw from to ensure salt is applied responsibly.

These options are presented in this report to the SPC for discussion. Pending results of discussion ERSPA will develop draft policies for the SPC to review at their next meeting.

## **RECOMMENDATION**

THAT Report 10/23 be received and further;  
THAT ERSPA prepare draft policies at the SPC's direction



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Katie Stammler, PhD  
Project Manager, Source Water Protection



## Essex Region Source Protection Committee

### Report 11/23

From: Katie Stammler, Source Water Project Manager

Date: Tuesday, November 28, 2023

**Subject: S.36 Update – Snow Storage Policies**

#### Recommendation

**THAT Report 11/23 be received and further;**

**THAT ERSPA prepare draft policies at the SPC's direction**

#### Summary

- The Table of Drinking Water Threats was updated in 2021
- The threat circumstances for the storage of snow were changed
- Amended and/or new policies are required in the Essex Region Source Protection Plan

#### Discussion

Circumstances for the storage of snow apply to IPZs with scores of 8-10 (Windsor IPZ-1, Windsor IPZ-2, Lakeshore IPZ-1 and Amherstburg IPZ-1). Currently the storage of snow > 1 hectare (10,000m<sup>2</sup>) is prohibited through s.57 in IPZs with scores greater than 9 in the Essex Region. This policy adheres to the circumstances in the Director Technical Rules that were in effect when the policy was written. The 2021 circumstances include a threshold of 2000m<sup>2</sup> in IPZs with scores greater than 8 (Windsor IPZ-2) and 200m<sup>2</sup> in IPZs with scores greater than 9 (Lakeshore IPZ-1, Windsor IPZ-1, and Amherstburg IPZ-1). As a general rule, a parking space is approximately 30m<sup>2</sup>. This allotment accounts for traffic aisles, end caps, entrances and exits, and space between cars. Therefore, a 200m<sup>2</sup> parking lot could hold 6-7 cars and a 2000m<sup>2</sup> parking lot could hold up to 65 cars. Storm water outfalls draining an area of snow storage is a new threat circumstance.

Snow removed from roads and parking lots can be contaminated with salt, oil, grease and heavy metals from vehicles, litter, and airborne pollutants. The activities around snow storage and handling include:

- Snow that is pushed into large piles on a property (e.g., stored in parking lots)
- Snow transported to a central site from other locations (e.g., snow disposal sites); and
- Large snowbanks along roads that are close to surface water intakes (if accumulation meets area circumstances identified below).

Snowbanks on roads and parking areas either melt on site or are transported elsewhere to be melted or stockpiled. A number of chemicals from the storage of snow could make their way into drinking water sources including chloride, nitrogen, copper, petroleum hydrocarbons, cyanide, sodium, lead and zinc.

This threat is closely linked to the application, handling, and storage of road salt, because snow can pick up the salt that has been applied to roads. A reduction in the amount of salt applied to roads and parking areas could reduce the amount of road salt that contaminates snow. The main source of sodium, chloride and cyanide in snow is road salt; the other contaminants are generally from vehicle fluids, exhaust, brake linings, and tire and engine wear.

Circumstances

The table below includes the 2017 circumstances under which the current policies are written and the new 2021 circumstances that our policies need to align with.

Current Circumstance	New Circumstance (changes from proposed version shown)	Areas of SDWT	Current Policy Approach
The <b>snow is stored</b> at or above grade Total storage area is <b>&gt;1 hectare</b> (10,000m <sup>2</sup> )	The <b>infiltration or discharge of snowmelt</b> from the storage of snow on a site <b>where the predominant land use is commercial or industrial by any means other than a storm water drainage system outfall.</b> The area upon which snow is stored <b>&gt;200m<sup>2</sup></b> (half a basketball court) (IPZ with score >9)  The area upon which snow is stored <b>&gt;2000m<sup>2</sup></b> (5 basketball courts) (IPZ with score >8)	Lakeshore IPZ-1, Windsor IPZ-1, Amherstburg IPZ-1  Windsor IPZ-2	Prohibit
	<b>A storm water drainage system outfall</b> that serves a Snow Disposal Facility The area upon which snow is stored <b>&gt;200m<sup>2</sup></b> (IPZ with score >9)  The area upon which snow is stored <b>&gt;2000m<sup>2</sup></b> (IPZ with score >8)	Lakeshore IPZ-1, Windsor IPZ-1, Amherstburg IPZ-1  Windsor IPZ-2	No policy

About the IPZs

The above SDWT circumstances apply to Lakeshore IPZ-1, Windsor IPZ-1, Windsor IPZ-2, and Amherstburg IPZ-1.

Lakeshore IPZ-1 is almost entirely occupied by a marina and associated parking lots and parkland. Windsor IPZ-1 falls within a residential area with 30-40 private dwellings along a 1.3km stretch of Riverside Drive. There are at least 10 apartment buildings or other high density housing units with parking lots. Based on a cursory review of the aerial photography, most of these parking lots are in the IPZ-2 with driveways in the IPZ-1. There are also two municipal parks with parking lots (~2400m<sup>2</sup> and 3000m<sup>2</sup>). Windsor IPZ-2 covers an area of approximately 16km<sup>2</sup> (16,000,000m<sup>2</sup>). The western boundary is St. Luke Road (just east of Walker Road), the southern boundary is Tecumseh Road and the eastern boundary is Florence Avenue. The northern boundary includes the entire Detroit River shoreline from Walker Road to Sandpoint Beach. There is varied land use throughout this area. Amherstburg IPZ-1 follows 1km of Front Road with 40-50 private lots or dwellings with driveways as well as some businesses and the Amherstburg water treatment plant. There are also a few large parcels of vacant land, which could have high density residential units in the future. The table below summarizes the zoning for each of these areas. Because of the nature of the land use, policies for snow storage are required.

Vulnerable Area	Zoning
<b>Lakeshore (Belle River) IPZ-1</b>	Commercial
<b>Windsor IPZ-1</b>	Residential, commercial, industrial and manufacturing
<b>Windsor IPZ-2</b>	Residential, commercial, industrial and manufacturing
<b>Amherstburg IPZ-1</b>	Residential, Commercial Neighbourhood, Light Industrial, Industrial, and Environmental Protection

Guidance for snow disposal

All snow disposal sites should be evaluated by the MECP. According to the [Guidelines on Snow Disposal and De-icing Operations in Ontario](#), land disposal sites must be accessible, large enough to contain the projected maximum snow load and close to where snow is collected to be economically practical. Sites need to meet criteria based on accessibility, noise, alternate uses of the site, and visual considerations. The following criteria regarding drainage must also be considered:

**1. Surface Drainage Factors**

- The site should preferably be remote from surface watercourses. The construction of berms and dykes may be required to prevent direct drainage to a watercourse. The distance from surface water will be dependent on land slope, soil permeability, and the extent of dyking which is practicable and economical.
- The quantity of snow which can be stockpiled at a particular site should be assessed in relation to estimated runoff rates and quality, the dilution capacity of the watercourse to which the melt will discharge, and downstream water uses.
- Care should be taken in site selection that deposited snow will not seriously obstruct natural drainage patterns, and that drainage from the site will not adversely affect adjoining property.



### Known snow disposal facilities in Windsor

Windsor municipal staff indicated by email that the City currently uses two sites for snow disposal at 117 Caron Ave. and 3001 Seminole Street (Ford Test Track). It is reasonable to assume that some commercial or industrial properties with parking lots for more than 6 vehicles, could meet the circumstances to be a SDWT with sufficient snowfall that requires parking lots of these sizes to be ploughed.

### Policy Options – Storage of snow

Currently, there is a policy to prohibit snow storage of more than 1 hectare (10,000m<sup>2</sup>) in Lakeshore, Windsor and Amherstburg IPZ-1s. This amount of land being used as snow storage was extremely unlikely to happen and the policy approach was appropriate. In these areas, snow storage of >200m<sup>2</sup> is now a SDWT, and in Windsor IPZ-2, that area is 2000m<sup>2</sup>. ERSPA staff have reviewed existing policies in other Source Protection Plans, however, most have not yet been updated to reflect the lower areal coverage. Under the previous circumstances, many other SPAs opted to prohibit snow storage using s.57 and some opted to manage it using s.58 Risk Management Plans.

Policy options could include:

1. s.58 Risk Management Plans – could include appropriate terms and conditions to ensure the storage of snow and associated runoff ceases to be a significant drinking water threat. RMPs could include a clause for emergency snow storage. The policy would apply to commercial or industrial land only (as per the Director Technical Rules).
2. s.57 prohibition – if this is selected, it would only be feasible in the IPZ-1s, but may have a negative impact
3. Specify Action or Land use planning – a policy could be included to specifically direct municipalities to ensure snow is stored in a manner that does not result in the activity becoming a SDWT on municipally owned land

These options are presented in this report to the SPC for discussion. Pending results of discussion, ERSPA will develop draft policies for the SPC to review at their next meeting.

### **RECOMMENDATION**

THAT Report 11/23 be received and further;  
THAT ERSPA prepare draft policies at the SPC's direction



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