



**STAFF REPORT**

*File No. SPC Report-26/11*

**Date:** November 9, 2011  
**To:** Source Protection Committee  
**From:** Andrew Doiron, Source Protection Planning Coordinator  
**RE:** Draft Policies – Section 57 Monitoring & Road Salt

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As a result of additional feedback from the Ministry of the Environment, staff have developed new/updated policies regarding the monitoring of policies that rely on Section 57 prohibition. Further, pre-consultation with municipalities has indicated that there are concerns regarding the applicability of policies related to the application of road salt. New and updated policy wordings for Section 57 monitoring and road salt application are given below.

**Monitoring for Section 57 Prohibition Policies**

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It has been recently clarified by the Ministry of the Environment that the implementing body for source protection policies that rely on Part IV tools (including Section 57 prohibition) should be the Risk Management Official. (This was indicated as “Crown / Municipality” in the pre-consultation materials circulated to municipalities). In addition, clarification has confirmed that monitoring policies must be developed to support the policies that rely on Section 57 prohibition.

In cases where a proposed activity requires an application under the *Planning Act* or an application to the municipality to construct or change the use of a building, policy G-11 (Restricted Land Uses) will bring the matter to the attention of the Risk Management Official, who can enforce the prohibition as appropriate. However, in cases where no such application is required (e.g. establishment of a new activity on land already zoned for that purpose) there is no trigger mechanism to bring the matter to the attention of the Risk Management Official.

#### **Update to Policy G-4**

There is currently a “General” policy (G-4) that serves as the monitoring component of policies related to Risk Management Plans (i.e. Section 58 of the *Clean Water Act*). The policy simply re-iterates the reporting requirements outlined Section 65 of the General regulation made under the *Clean Water Act*, which requires the Risk Management Official to report annually to the Source Protection Authority on various details regarding the application of Part IV of the Act. This policy approach was used to have a policy that specifically refers to monitoring for policies that rely on Section 58 without duplicating existing legislation. This policy could be expanded to similarly refer to prohibitions under Section 57.

The aspects of the Section 65 reporting requirements most relevant to monitoring of prohibited activities (i.e. Section 57) refer to inspections and orders. Section 62 of the Act allows a Risk Management Inspector to enter property where they have reasonable grounds to believe that a prohibited activity is being engaged in. Further, Section 63 of the Act allows a Risk Management Inspector to issue an order to a person that they have reasonable grounds to believe is engaging in a prohibited activity. Section 65 of Act requires the Risk Management Official must report annually to the Source Protection Authority on the number of inspections carried out and the number of orders issued.

#### ***Proposed Update:***

The following change would expand the applicability of the policy to include policies that apply Section 57 prohibitions (new text in blue):

**Policy Text:** Where a policy in this Source Protection Plan ~~requires the development of a Risk Management Plan~~ **designates an activity for the purpose of Section 57 or Section 58 of the *Clean Water Act, 2006***, the Risk Management Official will undertake the reporting requirements specified in Section 65 of O. Reg. 287/07 (General) made under the *Clean Water Act, 2006*.

**Recommendation 26-11a:** Approve the above revision to be included in the source protection plan.

#### **New Policy – Compliance Inspections**

**Intent:** Require the Risk Management Official to undertake random compliance inspections of areas where activities are subject to a Section 57 prohibition.

**Rationale:** The following policy would supplement the existing requirements of the Risk Management Official by taking a more active role in the enforcement of Section 57 prohibitions.

**Policy Text:** Where an activity is prohibited under Section 57 of the *Clean Water Act, 2006*:

The Risk Management Official will:

- (1) Conduct random inspections of properties where the activity are or would be significant drinking water threats;
- (2) Issue an order under Section 63(1) of the *Clean Water Act, 2006* to any individual undertaking the prohibited activity.

**Recommendation 26-11b:** Consider the above policy wording for inclusion in the in the source protection plan.

## **Update to Road Salt Policy**

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Preliminary comments from municipalities have raised concern regarding the applicability of policies intended to address the application of road salt. It has been suggested that a strict interpretation of the threat circumstances for the application of road salt may not encourage the development of practical salt management plans. Below is a description of how road salt threats were identified for drinking water systems, a description of the concerns, and some suggesting policy wording changes to address these concerns.

### **Threats Assessment for Road Salt Application**

Per the Tables of Drinking Water Threats, the application of road salt is considered a significant drinking water threat in the following circumstances:

- 1) 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*, is greater than 8% (for a surface water system) or 80% (for a groundwater system); and
- 2) The application may result in the presence of sodium or chloride in groundwater or surface water.

The circumstances related to the total impervious surface area relate to a set of maps prepared for the Assessment Reports. These maps were prepared in accordance with a technical rule that requires that mapping be based on a 1x1km grid. An average percent impervious surface area was calculated for each grid cell. This was done with a geographic information system by creating a small buffer around highways and roads and averaging the area of these buffers over the total area of the grid cell. The grid was located such that a node of the grid coincided with the centroid of the Source Protection Region<sup>1</sup>.

Any parcels of land located within a “significantly impervious” area (*i.e.* greater than 8% for surface water or greater than 80% for groundwater) that, in the opinion of the consultants could apply road salt, were considered significant drinking water threats. Six surface water systems and no groundwater systems were identified as having significant threats based on this mapping.

### **Issues with Threats Assessment**

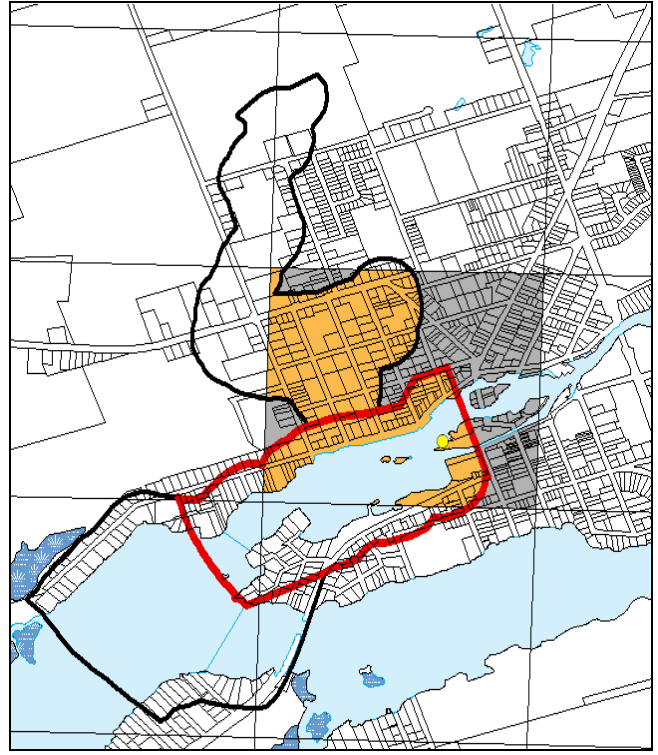
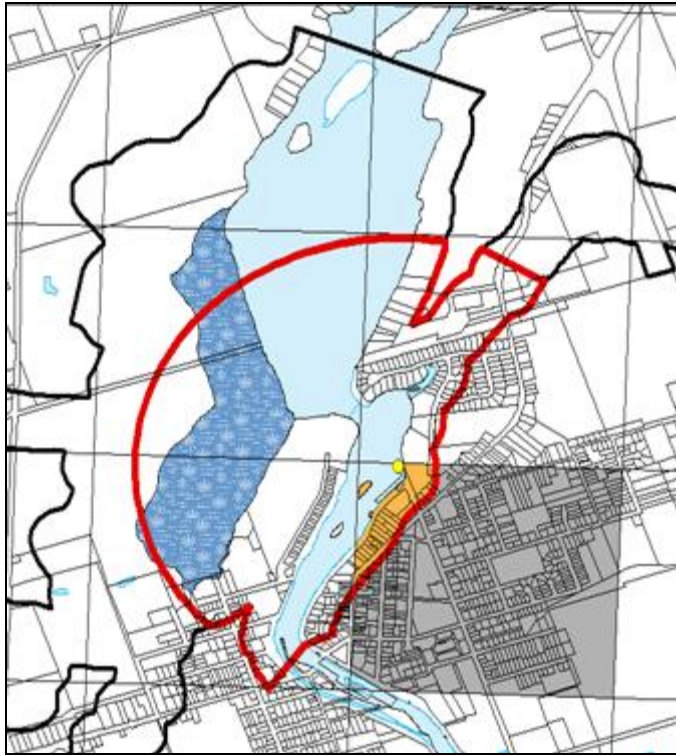
The prescribed approach for mapping of impervious surface areas results in some impractical boundaries of where activities would be significant drinking water threats. There are generally two main problems: intersected grid cells and the high sensitivity of the grid location.

#### **Intersected Grid Cells**

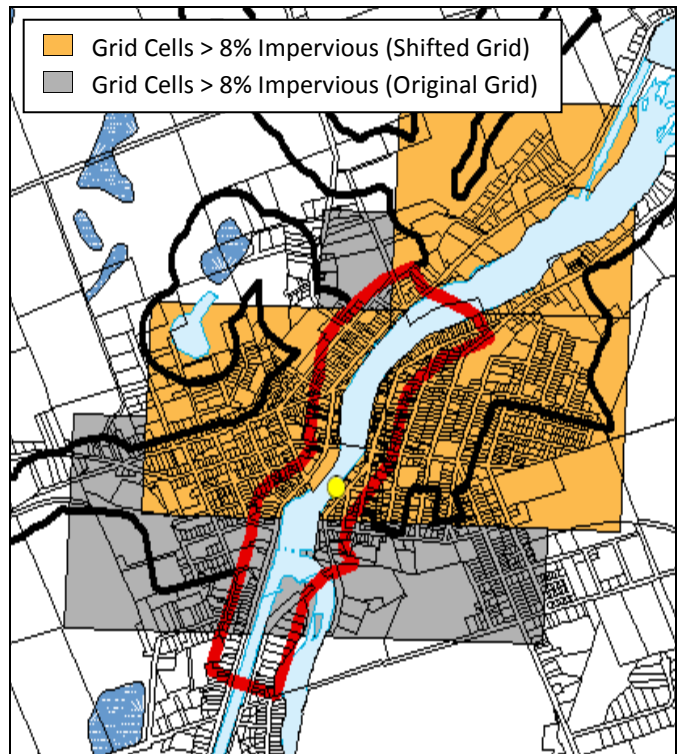
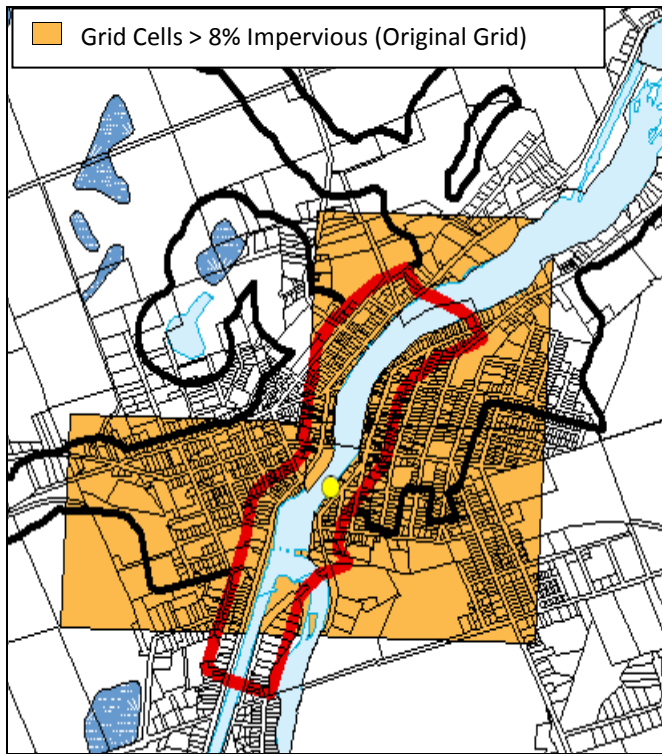
For all drinking water systems with salt application threats, all of the “significantly impervious” grid cells are intersected by a boundary of the vulnerable area. For systems where the portion of the significant cell within the vulnerable area is small (*e.g.* see Marmora example in Figure 1), the value of impervious surface area was based on a large proportion of roads located *outside* of the vulnerable area.

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<sup>1</sup> The Technical Rules specify that a node should coincide with the centroid of each Source Protection Area. Director’s approval was obtained to use a single grid for the Source Protection Region



**Figure 1:** The total impervious surface area for these grid cells is based partially on roads located outside of the vulnerable area. In Lakefield (left) almost the entire grid cell represents road outside of the vulnerable area.



**Figure 2:** The impervious surface grid for Campbellford used in the Assessment Report (left), and a grid arbitrarily shifted by 500 metres (left). The grey shaded area shows the area “left out” by the new grid that would have been included if the original grid was used.

## Location of Grid Cells

The determination of what parcels fall within the area that the threat can be significant is highly sensitive to the position of the grid. The position is arbitrary in that the Technical Rules require that a node of the grid (*i.e.* an intersection point between grid cells) must line up with the centroid of the study area. By repositioning the grid, it is possible to obtain a “significant” percentage of imperviousness in areas that are not included in the threats assessment.

## Proposed Policy Approaches

The five policies that refer to specifically to the application of road salt are as follows:

**R-1:** Requirement for Salt Management Plans

**R-2:** Monitoring of Sodium and Chloride

**R-3:** Recommended Research for Road Salt Alternatives

**R-4:** Future Construction of Roads and Impervious Surfaces

**G-3:** Education and Outreach (includes “the handling and storage of road salt”)

All of these policies are currently worded to apply “where the application of road salt is or would be a significant drinking water threat.” As described above, a strict interpretation of this statement results in some impractical boundaries for policy applicability. Proposed options for alternate “Applicable Area & Activity” text to address the stated concerns are given below.

### Proposed Options:

1. Include the entirety of the vulnerable area that includes a portion of a grid cell with a total impervious surface area greater than 8%:

*“Where the application of road salt is undertaken in an intake protection zone that includes a portion of land where the total impervious surface area is greater than 8%”*

2. Only include vulnerable areas with at least the area of one grid cell within the “significantly impervious” area:

*“Where the application of road salt is undertaken in a vulnerable area where at least one square kilometer of land is located within an area where the impervious surface area is greater than 8%”*

3. Include moderate road salt application threats. (Road salt is considered a moderate threat in even the lowest range of total impervious surface area identified in the Technical Rules (*i.e.* less than 1%) – this would mean the policy would apply in IPZs scored at least 7 and WHPAs scored at least 8)

*“Where the application of road salt is a moderate or significant drinking water threat”*

<p><b>Recommendation 26-11c:</b> Consider the above updates to the policies that address the application of road salt for inclusion in the Source Protection Plan.</p>
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