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16-18 Mill St, Georgetown - FSR - Addendum Deicing Salt

Egmond Associates Ltd (EAL) responding to regulatory concerns have discussed the use of conventional sodium chloride salt for deicing.

An undertaking and plan are attached.

- The first will be the use of conventional snow clearing by plow shovel snow thrower.
- The second will be to use calcium chloride (to -25° C) or potassium chloride (-12°C), non environmentally concerning deicers for snow and ice.
- Sand will be applied as needed, such as when Temperatures are below -12°C.

The undertaking and plan form part of the proposed design.

Regards

Egmond Associates Ltd

John VanEgmond, P.Eng. P.E., President

Attached: Deicing Work Plan





November 26, 2023 File: 30663

<u>APPENDIX 1</u> <u>Deicing Work Plan</u> <u>16-18 Mill Street, Georgetown</u>



UNDERTAKING RE DEICING AND SNOW REMOVAL

TO: WHOM IT MAY CONCERN

FROM:	
the owner(s)/manager/management t	eam (owner herein) of the parking, driveway, and sidewalk areas of 16-18 Mill
Street, Georgetown, Ontario, as repres	ented by our management board and its authorized members consisting ofy
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Vice President	signature
	_signature
	_signature

Make the following Undertaking regarding Deicing and Snow Removal

The owner undertakes that the site will use deicing methods that do not use sodium chloride salt. Instead the client will use the Deicing Plan and Protocol, 16-18 Mill St, Georgetown attached and as may be updated from time to time.

As witness hereto find our signatures		
President	signature	
Vice President	signature	
	signature	
	signature	
Date:		
Location:		



Deicing Plan and Protocol 16-18 Mill St, Georgetown

1. SNOW AND ICE BRIEFING

Snow and ice conditions, including those discussed below, may be on the site from time to time and spot to spot for durations lasting from second to days and months.

Snow – A natural crystallized form of water. The snow may be in the form or large flakes, in the form o small pellets, in form of wet flocks and fully frozen flocks. Snow may accumulate in forms including thick unlayered blankets. In layers of different strengths, thick zones of fluffy snow, and dense hard snows. Snow can make driving difficult.

Ice - May result from the freezing of water from rain, meltwater or other sources. Ice, especially with a layer of water. Ice can become slipper to walk or drive on.

Black Ice –A form of ice which may arise when the pavement and sidewalk is below 0 ° C, often below -10 °C and when water in the atmosphere freezes onto the surface. Black ice can be nearly invisible.

Ice and snow can be problematic for safe access to the site by vehicles, persons, equipment or animals.

1.1. SODIUM CHLORIDE SALT

The site will not use sodium chloride based salt for deicing. Where sodium chloride salt is present on vehicles, tenants, and contractors shall wash vehicles regularly to limit impacts at the site.

2. SUMMARY AND USERS

The present mini plan is a resource, in part for site manager (s), for snow clearing and deicing for the purpose of enhancing safety. One is cautioned that despite using the plan or any best practice, that there is no absolute safety, or best safety, there is merely safety based on actions taken. The plan is not a guarantee against accidents or litigation.

The intent is to provide the site manager, tenants, occupants, visitors, contractors, regulators, delivery persons, etc. tools related to site use and access related to snow and ice for snow and ice clearing while maintaining environmental standards that will protect the environment.

The plans assume reasonable actions and timing related to snow and ice accumulation and dissipation may not deal with all instantaneous snow and ice conditions, so that site users, occupants, visitors, managers, contractors, delivery persons, etc. shall use due care, and that children and pets on surfaces will be properly supervised.

The plan sets out methods and tools to be followed by the site manager and tenants/residents of the site above.

The plan is not a guarantee of absolute safety or highest possible or practical safety, rather the plan assumes the site manager, tenants, occupants, suppliers, delivery persons, contractors, visitors, being in a land with snow and ice will govern themselves at all times on the site to protect their safety and health, the safety and health of minors for whom they are responsible, as well as the health and safety for unattended minors and those with incapacities, the general public at the site, etc. as hazards may occur without warning or notice.

3. WARNINGS RE ICE AND SNOW

Warnings about injury, death, damage, etc. include:



- 1. Snow and ice are cold.
- 2. Snow and ice can be hard.
- 3. Snow and ice can be slippery.
- 4. Snow and ice can be uneven.
- 5. Snow and ice are heavy.

6. Shoveling snow, walking in snow, waling on ice, is or can be strenuous activity, and may trigger severe or deadly outcomes to persons engaging in the activity.

7. Do not let children, or adults, build forts, tunnels, etc as these may collapse on persons causing suffocation, death, or injury.

8. Snow and ice, if in contact, particularly prolonged contact, with skin can cause frost bite, hypothermia, and other injury and such contact

9. Chunks of ice, snow, etc. may, in the form of moving projectiles and objects, cause injury, death, damage, etc.

10. Other hazards may be present or become evident related to snow and ice.

4. SEASONAL PLANNING

Snow and ice tends to be seasonal, though these may occur at almost any time of the years./ The expected range of permeabilities to the soils encountered is set out in Table 2 below:

The snow and deicing plan shall be prepared, revised, or revisited by the site manager not later than September 1 of each year.

Below are the climate normals for Georgetown, at the Waste Water Treatment Plant, as a surrogate for the site for the period 1981 to 2010. Weather from day to day can have extremes other than those shown and may be impacted by climate change. Use the values below to plan for average conditions and extreme conditions.

Weather	Jan	Feb	Mar	Apr	May	Jun	Sep	Oct	Nov	Dec
Daily Average (°C)	-6.3	-5.2	-0.9	6	12.3	17.4	14.8	8.4	2.8	-2.9
Extreme Minimum (°C)	-33	-31.5	-28	-13	-5	-0.5	-4	-8.5	-15.5	-29.5
Date (yyyy/dd)	1984/ 16	Oct- 94	Aug- 84	May- 82	Mar- 86	Sep- 80	1993/ 30	1987/ 26	1987/ 22	1980/ 25
Extreme Daily Snowfall (cm)	40.6	27	20.3	23.6	8	0	0	11.2	15	27
Date (yyyy/dd)	1966/ 22	Nov- 88	Oct- 64	1976/ 25	1983/ 14	Jan- 63	Jan- 63	1969/ 21	1991/ 28	Oct- 92
Extreme Snow Depth (cm)	29	27	28	3	0	0	0	0	8	15
Date (yyyy/dd)	1984/ 25	Jan- 84	May- 84	Mar- 05	Jan- 83	Jan- 83	Jan- 82	Jan- 82	2005/ 25	2005/ 16

5. DAILY PLANNING



The site manager shall establish a daily weather planning routine by consulting Environmental Canada or other weather forecast. From that information the manager shall plane daily and near term snow and ice clearing.

6. GENERAL SNOW AND ICE CLEARING

The manager shall consider:

- 1. Daily and Monthly Planning.
- 2. Determine desired site outcomes for the site surface. .
- 3. Site drainage Issues.
- 4. Removal of Snow and Ice by mechanical means (shovels, plows).
- 5. Removal of Snow by chemical means (excepting Sodium Chloride salt).
- 6. Determine how to use the mechanical means and chemical means as to outcome.
- 7. Management tools.
- 8. Contracts for snow storage.
- 9. Contracts for salt contracts.
- 10. Training.

The extent of any snow removal and deicing action shall be generally manage and direct the removal actions, unless and until the management decides otherwise. This plan does not promote abandonment of any action for snow removal or deicing at the expense of safety.

6.1. MECHANICAL REMOVAL

In the first instance, snow and ice removal by mechanical means such a shovels, plows, brooms, blowers, and other mechanical means. A melter can be used as well. The removed snow shall be stored in the snow storage area or shall be removed from the site.

A melter may be used on remnant snow after mechanical removal. If a melter is used, water will be discharged into the storm sewer system.

6.2. FREEZE POINT DEPRESSANT

Various chemicals can cause ice and snow to melt at colder temperatures and break the bond between pavements and ice/snow. Below is a table of non chloride salts and lowest temperature at which there is a benefit.

Name	Calcium Chloride	Magnesium Chloride	Potassium Chloride
Lowest Working Temperature ° C	-29	-15	-7

6.3. ABRASIVE PRODUCTS

Sand, gravels, brick chips, and other abrasives may be used when ice depressants do not provide efficient depressing of the ice or snow or when the pavement and sidewalks are too cold to allow melting. Abrasives can allow traction when ice is and remans present. If salts are mixed with the abrasive the proportion should be well mixed.



6.4. CLEARING RECORDS

Records shall be kept the snow clearing and deicing. Where a contractor is used the contractor shall provide its records shall be kept for the benefit of the management operations, application rates, wights and volumes.

6.5. USER COMMENTS AND ISSUES

The manager shall maintain a record of comment and issues resulting each season. Record evidence of slips, falls, accidents, near misses, etc. for use of management and for planning future snow and ice removal plans.

7. PERFORMANCE

At the end of the snow and ice season annually, typically taken herein to be April 1 of each year. The manager shall review the seasonal snow clearing and deicing operations and provide guidance to management for future contracts and seasons.