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Guelph, ON N1H 7T8 | cfcrozier.ca

MEMO

DATE	December 20, 2024	**PROJECT NO.**	2704-7158
RE	Salt Management Plan 359-369 Erb Street West, City of Guelph		

TO Region of Waterloo
150 Frederick Street
Kitchener, ON N2G 4J3

FROM Trevor Fraser, P.Eng.
C.F. Crozier & Associates Inc.

CC David Godin, M.Pl
The Planning Partnership

1.0 Introduction

C.F. Crozier & Associated Inc. (Crozier) was retained by 2296342 Ontario Inc. to prepare a Salt Management Plan in support of the Official Plan Amendment (OPA) and Zoning By-Law Amendment (ZBA) for the site located at 359-369 Erb Street West. The subject lands cover an area of approximately 0.59 ha and currently consist of existing residential apartment buildings. The site, located in a mixed residential and commercial neighbourhood, is bounded by Erb Street West to the north, Culpepper Drive to the east, and residential dwellings to the south and west.

According to the Concept Plan prepared by Savic Homes dated December 2024, the proposed development will consist of the following elements:

- Two (2) residential towers totaling 224 units, interconnected on levels 1-6 with one level of underground parking;
- An internal roadway with associated surface parking;
- One access point from Erb Street West and one access point from Culpepper Road; and
- Amenity and associated landscaped areas.

The existing apartment buildings, at-grade parking and access to Erb Street West are proposed to be demolished to accommodate the proposed residential development.

The material in this memo reflects best judgment in light of the information available at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. C.F. Crozier & Associates Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

This plan has been prepared to review the site design, considering the impact of road salt application on the local environment. This plan suggests practical methods of winter maintenance that will help limit sodium and chloride concentrations in the water supply.

2.0 Identification of Traffic Areas and Sensitive Features

The proposed development consists of two (2) residential buildings, underground parking, surface parking, structured parking, and a 6.1 m wide internal roadway. The site is accessed by one entrance from Erb Street West and one entrance from Culpepper Drive. The internal roadways are proposed to be paved surfaces with adequate storm drainage infrastructure, directing drainage to the existing storm sewers on Erb Street West and Culpepper Drive. All sidewalks and entrances to the site are anticipated to experience high pedestrian and vehicles usage, respectively.

The Owner shall ensure snowfall from the entrances and sidewalks does not accumulate around stop signs located at site entrances.

Please refer to the attached Winter Maintenance Plan (Figure 1) for the proposed site layout.

3.0 Identification of Snow-Storage/Disposal Areas

Based on the Site Plan (Savic Homes, dated December 2024), the site is covered by building rooftops, internal roadway, and landscaped areas. The snow management operations for the site propose that snow be stored within parking spaces during minor snowfall events and removed off-site during major snowfall events. The potential locations for snow storage are indicated on the Winter Maintenance Plan (Figure 1). Snow storage will primarily take place along parking spaces on the property where meltwater can be directed towards the internal area drains and storm sewer system, ultimately discharging to the existing storm sewer on Erb Street West. The areas designated for snow storage removal are anticipated to have sufficient space to store minor snow events.

4.0 Use of Alternative Products

Numerous ice control/winter maintenance products are currently available as alternatives to road salts. These do not utilize chloride dissolution to melt ice and therefore, minimize the potential release of sodium and chloride in meltwater. These alternative products are manufactured from bio-degradable sources and use ionization principles to inhibit ice and snow bonding to asphalt.

However, since these technologies are relatively new, they are more expensive than rock salt. It is also difficult to compare product performance since some of these products have not been used consistently for long periods of time.

A winter maintenance contractor that is “Smart about Salt” certified could help compare and assess the effectiveness of each alternative product available. This individual would be familiar with the various options as well as the maintenance measures required for each of them. The Owner will be able to decide if the use of an alternative product is feasible within the project budget. Recommendations for a maintenance contractor will be made available to the Owner upon request.

5.0 Engineered Measures

Site grading has been designed to ensure all runoff from the site is directed towards the area drains and captured in the internal storm sewer system. Effective drainage will reduce ice formation and subsequent salt application. All catch basins shall be inspected and maintained regularly to ensure that runoff can be captured.

Roof runoff will drain through connected roof leaders to the internal storm sewer system prior to discharging to the existing storm sewer on Erb Street West. Building downspouts will not outlet to sidewalks, pedestrian areas, or towards vehicular traffic. Ice formation and subsequent salt application is expected to reduce with the direction of rooftop runoff towards the internal stormwater system.

6.0 Operational Measures

Snow Removal/Disposal

As indicated on the Winter Maintenance Plan (Figure 1), there are designated areas on site for bulk snow storage during the minor snowfall event. The primary snow control method to be implemented is the timely removal of snow and ice from the internal roadway and pedestrian walkways. This snow is to be stored at the identified locations during minor snowfall events and trucked off-site during major snowfall events. Entrances to the site and the residential pedestrian accesses will be permitted for road salt use to ensure safe vehicle and pedestrian access, respectively. It is imperative that the snow be removed from the site in a timely manner to prevent uncontrolled snow melt from occurring and reducing the opportunity for emergency salt application. Timing for snow removal/disposal should be discussed with the certified salt maintenance contractor prior to implementation.

De-icing Agents

Private site developments are significant sources of increased chloride levels in runoff during winter and spring due to the overuse of road salts. Road salt, or sodium chloride, has an effective temperature range for melting ice between +4°C and -1°C. Application of road salt outside this temperature range should be avoided. Salt application rates usually range from 15 to 39 grams per square meter. This application rate will not be exceeded in areas that require salting. Proper road salt application machinery will be required and calibrated to apply the ice control products at a specified, controlled application rate. Application tracking worksheets should be used to track the overall de-icing agent usage on site particularly for those products that may release sodium and chloride.

Road salt will be limited on the site's internal roadways and sidewalks except for the roadway entrances located off Erb Street West and Culpepper Drive. Shoveling walkways, ploughing roadways, and the use of salt alternatives are the suggested methods for ice control within the internal roadway, parking areas, and walkways on site. It is recommended to hire a winter maintenance contractor who is familiar with various application methods, rates, and salt management reduction practices. Contractors should be aware of the appropriate guidelines and the potential impacts of excessive salt application.

Monitoring Program

Implementing a winter operation monitoring program is essential to ensure the effectiveness of this Winter Management Plan. It is recommended that both the Owner and maintenance contractor review winter operations annually to maintain efforts to reduce salt application on site and demonstrate adherence to the operations plan. The Owner and maintenance contractor should also monitor and evaluate the usage of road salt and alternative products during the winter season. Monitoring results should be reviewed after each season to identify deficiencies with current operations and opportunities to make improvements for more effective winter operations.

7.0 Summary

The proposed Winter Management Plan aims to reduce the use of road salt on the property to minimize infiltration of the salt into the subsurface. The site has been designed to drain runoff into the internal storm sewer system and outlet to the storm sewers located within Erb Street West and Culpepper Drive. Snow removal/disposal methods shall be implemented accordingly. De-icing agents should be used at appropriate application rates and tracked on a regular basis during the winter season. Although this plan is an attempt to limit the application of road salt, it should be noted that individual safety takes priority. During extreme weather events, the winter maintenance contractor should use their best judgement to ensure that sufficient ice/snow control is provided for the safety of all individuals at the site.

The Owner and maintenance contractor should be aware of this report and of the various salt management practices for winter maintenance. The implementation of this plan will help prevent the environmental impacts of excessive salt application and identify opportunities for more effective winter maintenance to ensure long term chlorine reduction for this site.

Sincerely,

C.F. CROZIER & ASSOCIATES INC.



Matt Bowman
Engineering Intern, Land Development

C.F. CROZIER & ASSOCIATES INC.

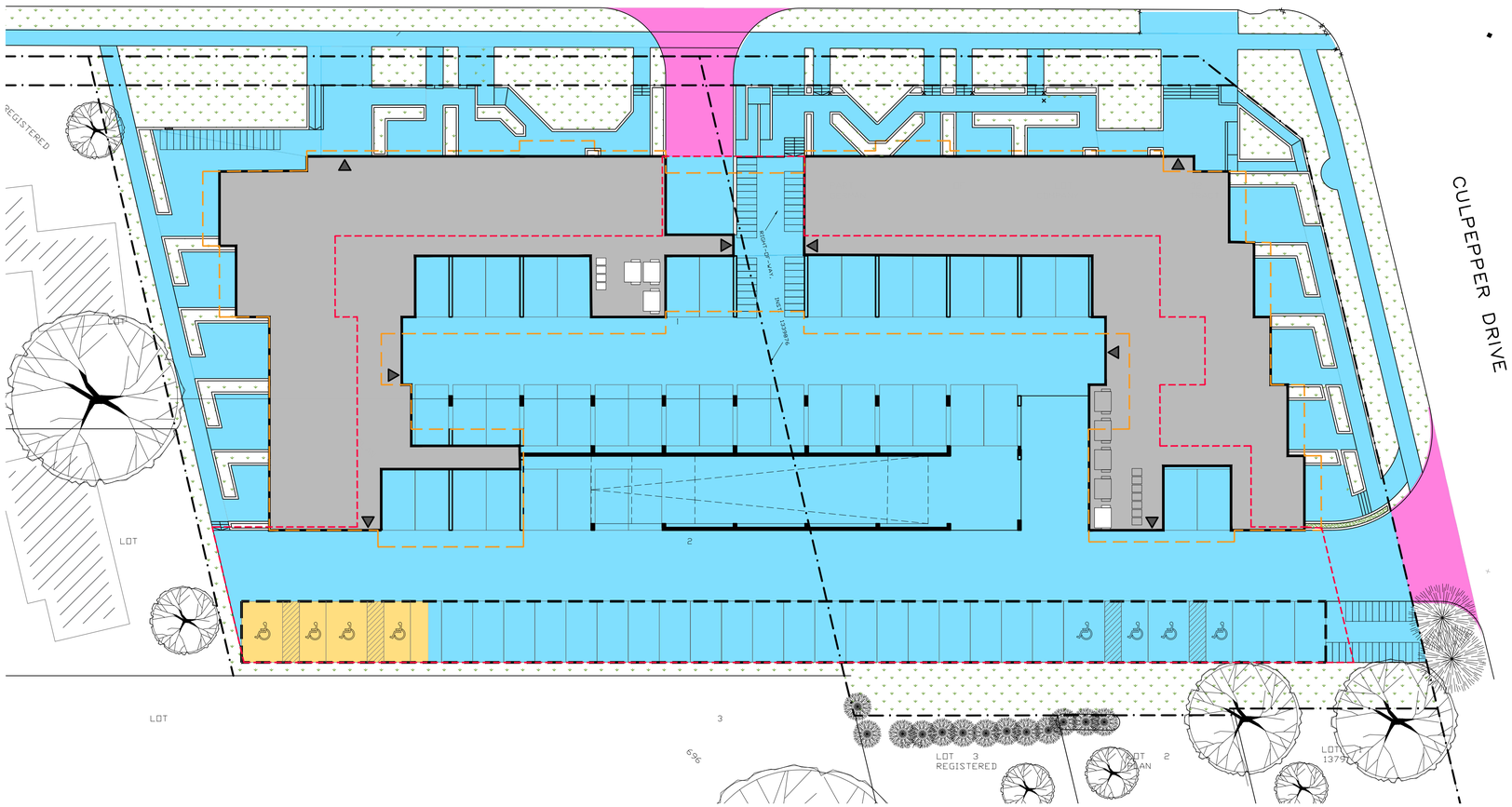


Trevor Fraser, P.Eng.
Project Manager, Land Development

MPH/tc

Encl. Winter Maintenance Plan (Figure 1)

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LEGEND

- WINTER MAINTENANCE – PROPOSED SNOW STORAGE AREAS
- PRIVATELY MAINTAINED – PARKING AREAS, ROADWAYS, AND SIDEWALKS (LIMITED SALT USE PERMITTED)
- PRIVATELY MAINTAINED – ENTRANCES (SALT USE PERMITTED)

5 0m 5 10 15 20
SCALE: 1:250

No.	ISSUE / REVISION	YYYY/MMM/DD
1	ISSUED FOR 1ST SUBMISSION OPA/ZBA	2024/DEC/20

SITE PLAN NOTES:

DESIGN ELEMENTS ARE BASED ON CONCEPTUAL SITE PLAN BY 2296342 ONT INC.
DATED: DECEMBER, 2024
JOB No. 7530-10, SHEET NUMBER: 01

DRAWING NOTES:

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THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT. DO NOT SCALE THIS DRAWING.

ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

Project

359–369 ERB STREET WEST
CITY OF WATERLOO

Drawing

WINTER MANAGEMENT PLAN

Stamp

FOR REVIEW
NOT TO BE USED FOR CONSTRUCTION

Stamp

CROZIER
CONSULTING ENGINEERS
2800 HIGH POINT DRIVE
SUITE 100
MILTON, ON L9T 6P4
905-875-0026 T
905-875-4915 F
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
M.P.H	M.P.H		2707–7158
Check	Check	Scale	Dwg.
M.B.	M.B.	1:250	FIG1