December 10, 2025
VH Project No. 32948-23

Chabad of Guelph
81 College Avenue West
Guelph, Ontario, N1G 1S2

Re: Winter Maintenance Plan
Proposed Chabad Development
81 College Avenue West, City of Guelph

1.0 Introduction

Van Harten Surveying Inc. was retained to prepare a Winter Maintenance Plan in support of the Zoning By-law Amendment application for the proposed Chabad development located at 81 College Avenue West in the City of Guelph. The purpose of this plan is to outline snow removal and salt management procedures for the site.

This Winter Maintenance Plan is intended to serve as a general guideline for snow removal and salt application. However, public safety takes precedence over this plan. It is the responsibility of both the Winter Maintenance Contractor and the Site Owner to continuously assess site conditions and ensure that snow and ice control measures are implemented appropriately to maintain safe conditions for all users of the site.

2.0 Existing Site Conditions

The site encompasses an area of approximately 0.33 hectares and is currently occupied by a single detached residential dwelling, an associated driveway, and landscaped areas. The property is bounded by residential dwellings to the north, east, and west, and by College Avenue West to the south.

3.0 Proposed Site Conditions

According to the Site Plan prepared by a+Link Architecture, the proposed development will include the following:

- A 535 m² Chabad facility with an attached 212 m² two-storey residence and a 41 m² garage/nanny suite
- An asphalt parking lot and internal access drive aisle
- Landscaped and amenity areas

Access to the development will be provided via a 7.0 metre wide driveway from College Avenue West. The existing residential dwelling and driveway on the property will be demolished to accommodate the proposed development.

4.0 Methodology

The Winter Maintenance Plan for the site will address the following key components:

- Identification of high-traffic areas, sensitive features, and designated snow storage locations
- Recommendations to support the establishment of effective salt application rates
- Recommendations for appropriate engineering measures, operational practices, and monitoring procedures
- Development of an adaptive benchmark system to assist the Site Owner and Winter Maintenance Contractor in implementing responsible winter maintenance practices with minimal environmental impact
- Provision of a spill prevention and response plan

It is recommended that this plan be reviewed in conjunction with the Transportation Association of Canada TAC) – Syntheses of Best Management Practices for Road Salt Management.

4.1 Identification of Traffic Areas and Sensitive Features

The proposed development will consist of a three-storey Chabad facility, a two-storey dwelling, associated parking areas, and landscaped spaces. Access to the site will be provided via a 7.0 metre wide entrance from College Avenue West.

Snow accumulation requiring removal is expected within the site entrance, parking lot, and sidewalk areas. High-traffic areas have been identified as the site entrance and the zones surrounding the accessible parking spaces. These areas may require the application of chloride-based salt to maintain safe pedestrian and vehicular access. All designated high-traffic areas are identified in the Winter Maintenance Plan attached to this report.

A permeable paver parking area is proposed at the rear of the site. It is recommended that chloride-based salt not be used in this area. If ice buildup occurs, alternative de-icing agents should be used sparingly to preserve the function of the permeable system and minimize environmental impact.

According to the Ministry of the Environment, Conservation and Parks Source Protection Information Atlas accessed February 21, 2025 , the site is located within Wellhead Protection Area B, with a vulnerability score of 8, and lies within an issue-contributing area related to trichloroethylene or another dense non-aqueous phase liquid DNAPL). As a result, salt application on-site should be minimized wherever feasible to protect local groundwater resources.

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4.2 Identification of Snow Storage/Disposal Areas

As previously noted, snowfall requiring removal will accumulate within the site entrance, parking lot, and sidewalk areas. Due to the size and layout of the site, minor snowfall events will be managed through on-site snow storage within designated areas. However, excess snow beyond the capacity of these storage areas is proposed to be removed off-site. Snow clearing and removal will be the responsibility of the Site Owner and the Winter Maintenance Contractor.

4.3 Use of Alternative Products

There are several proprietary ice control and winter maintenance products currently available that do not rely on chloride dissolution to melt ice. These products typically function by inhibiting the bonding of ice and snow to asphalt surfaces through ionization. However, such products are generally more expensive to purchase and apply compared to traditional chloride-based salts. In addition, their overall effectiveness remains limited under certain conditions.

It is recommended that the Site Owner and Winter Maintenance Contractor trial a variety of these alternative products and monitor their performance over time to determine the most suitable option for the site, based on observed weather patterns and operational needs. The use of salt alternatives should be subject to periodic review by both parties, considering their cost implications and effectiveness.

4.4 Engineered Measures

As shown on the grading plan, the site has been designed to direct all surface runoff and snowmelt toward the proposed catchbasins and area drains. Effective site grading will ensure that meltwater is conveyed to the storm sewer network, helping to minimize the risk of ice formation on paved surfaces. In areas with permeable pavers, water infiltration will further reduce surface water accumulation, contributing to the prevention of ice buildup.

Roof drainage will be managed through roof leaders, which will direct flow to the proposed storm sewer network and/or adjacent landscaped areas. Routing roof leaders underground to the internal storm system or to landscaped areas will help reduce the volume of runoff and snowmelt reaching hardscaped surfaces, thereby decreasing the potential for ice formation.

In addition to these engineered measures, it is recommended that all high-traffic concrete sidewalks be constructed using slip-resistant materials to enhance public safety during winter conditions.

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4.5 Operation Measures and Monitoring

To minimize excessive chloride salt usage on the property, the primary winter maintenance strategy will focus on the timely removal of snow and ice from the parking lot, entrance, and sidewalks. When ice control products are used on-site, preference should be given to alternative de-icing products that do not contain chloride salts whenever possible. However, chloride salt may be applied at the site entrance and in areas surrounding the accessible parking spaces to ensure safe pedestrian and vehicular access.

Chloride salt is most effective within a temperature range of approximately +4°C to -10°C. Applications outside of this range should be avoided to prevent excessive chloride concentrations in the environment. Salt application equipment should be calibrated to distribute chloride evenly and at appropriate rates, avoiding over-application. Typical application rates for parking lots range between 50 to 100 grams per square metre, depending on temperature, and these rates should not be exceeded.

Private developments are recognized as significant contributors to chloride runoff during winter and spring months, often due to over-application of salt. To mitigate this impact, the Site Owner and Winter Maintenance Contractor are encouraged to follow the recommendations outlined in this plan as well as those detailed in the Transportation Association of Canada TAC – Syntheses of Best Management Practices for Road Salt Management. It is essential that the Site Owner retain a Winter Maintenance Contractor who is familiar with this plan, salt reduction strategies, and industry best practices in salt management.

4.6 Spill Prevention and Response

If winter maintenance products are stored on-site, they should be kept in a lockable container protected from the elements. The contact information for the Spills Action Centre 1-800-268-6060 should be prominently displayed in a clearly visible and easily accessible location for staff. In the event of a spill involving winter maintenance products, the Spills Action Centre must be contacted immediately.

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5.0 Conclusion

In conclusion, this Winter Maintenance Plan aims to reduce chloride salt usage on the site while maintaining public safety as the top priority. In extreme situations, the Site Owner and Winter Maintenance Contractor may exercise their best judgment in performing winter maintenance activities.

Both the Site Owner and Winter Maintenance Contractor should be fully familiar with this plan and various salt management best practices. This plan is adaptive, and ongoing implementation of best management practices is essential to ensure long-term chloride reduction at the site.

This Winter Maintenance Plan has been developed specifically for the property based on our understanding of the proposed development. Please contact our office if you have any questions or require further consultation.

Van Harten Surveying Inc.

Brett Pond, P. Eng.
Project Manager

Encl. Figure 1 – Winter Maintenance Plan
Encl. Figure 2 – Wellhead Protection Area Mapping

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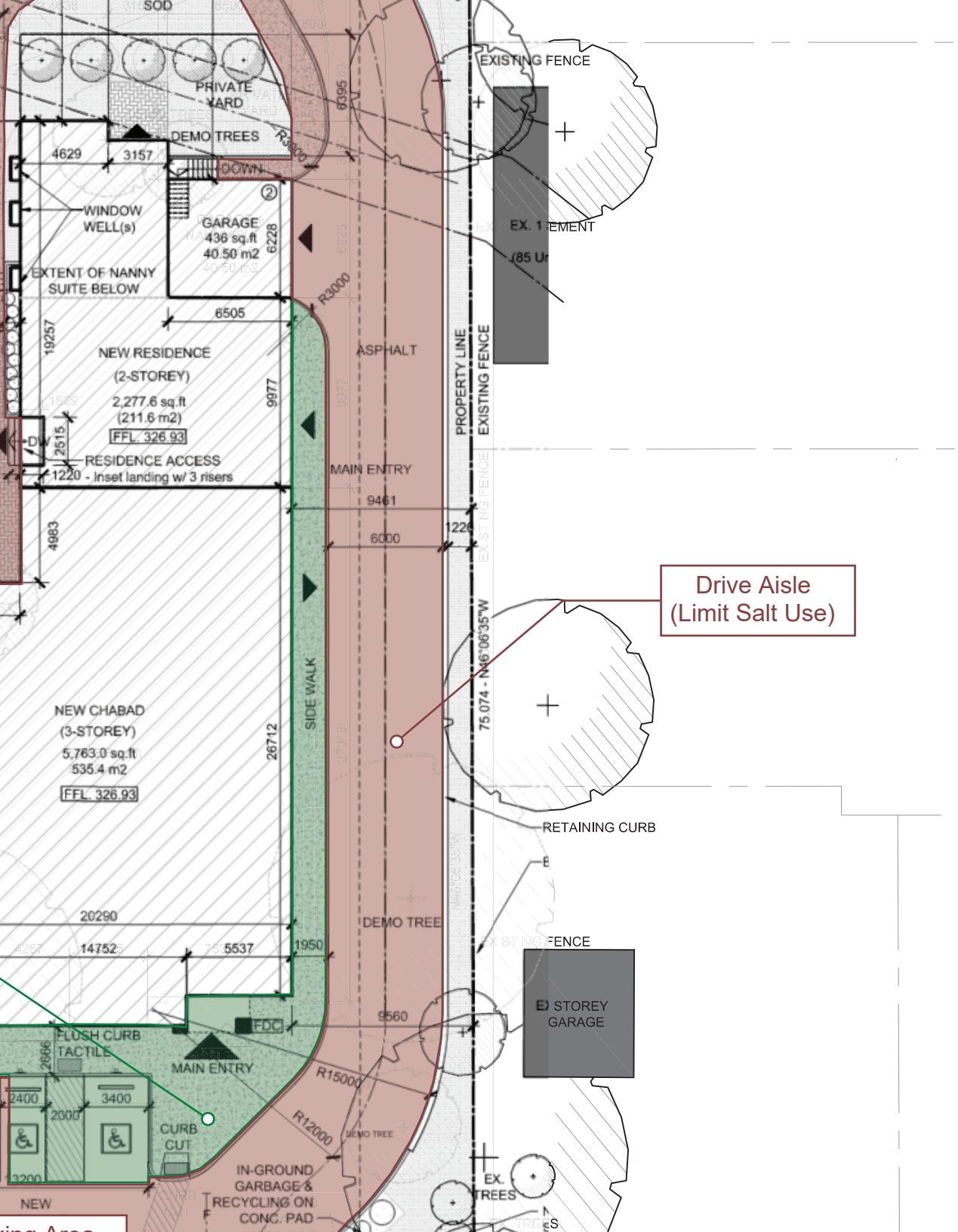
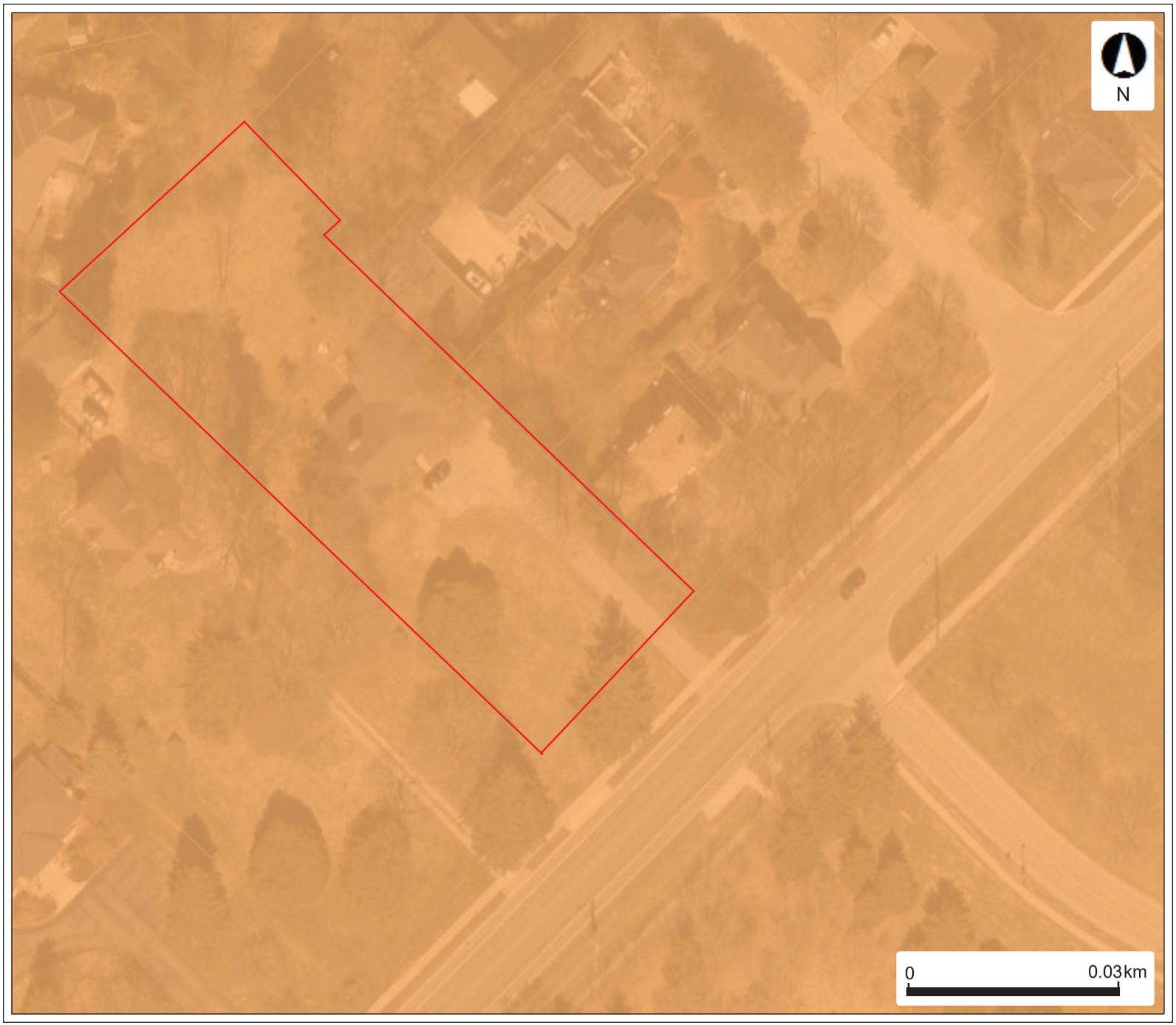


NOTES:

- EXCESS SNOW TO BE REM
OWNER AND/OR WINTER MA
CONTRACTOR

- SITE OWNER AND WINTER
CONTRACTOR TO USE BEST
APPLYING CHLORIDE SALT F

Wellhead Protection Area



Legend

Wellhead Protection Area

- A
- B
- C
- C1
- D
- F

Assessment Parcel

This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Environment, Conservation and Parks (MECP) shall not be liable in any way for the use or any information on this map. of, or reliance upon, this map.

Ontario

Map Created: 2/21/2025

Map Center: 43.52833 N, -80.23832 W

Intake Protection Zone

Legend

- Issue Contributing Areas
- Intake Protection Zone 1
- Assessment Parcel

This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Environment, Conservation and Parks (MECP) shall not be liable in any way for the use or any information on this map. of, or reliance upon, this map.

Ontario

Map Created: 3/11/2025
Map Center: 43.52833 N, -80.23829 W