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Date October 5, 2021 **Report No.** 2021-555

To Chair and Members
Committee of the Whole – Operations & Administration

From Inderjit Hans, P. Eng., PMP
General Manager, Public Works Commission

1.0 Type of Report

Consent Item	<input checked="" type="checkbox"/>
Item For Consideration	<input type="checkbox"/>

2.0 Topic Winter Maintenance Update – 2021-2022 [Financial Impact - None]

3.0 Recommendation

- A. THAT Report No. 2021- 555 regarding "Winter Maintenance Update 2021-2022" BE RECEIVED; and
- B. THAT staff BE DIRECTED to continue compliance with the Ontario Minimum Maintenance Standards, Reg. 239/02 of the Municipal Act, as amended on May 3, 2018; and
- C. THAT the 2021-2022 "Winter Operations Planning Document for The Corporation of the City of Brantford" BE APPROVED.

4.0 Executive Summary

The information contained in this report provides City Council with an update on the 2021-2022 Winter Maintenance program as coordinated and delivered by the Operational Services Department.

This Winter Operations Planning Document attached as Appendix “B” sets out a policy and procedural framework for ensuring that The City of Brantford continuously improves on the safe and sustainable delivery of winter maintenance services and the effective and efficient management of road salt used in winter maintenance operations.

In addition, Staff recommends continuing with the Snow Windrow Removal Program for Seniors that aids those that are aged sixty-five (65) and older, and Persons with Disabilities or a Medical Condition to clear the windrow left behind during plowing operations.

5.0 Purpose and Overview

The purpose of this report is to ensure City Council and residents that winter operations is in keeping with applicable provincial legislation and accepted standards while minimizing impacts to the environment. The winter program is delivered in an efficient and cost effective manner and monitored and reviewed on annual basis.

6.0 Background

Winter Maintenance Program

This report provides an overview of the procedures followed by Operational Services in the delivery of winter control services to the City of Brantford.

The service levels delivered for road maintenance conform to the parameters set out in the [Minimum Maintenance Standards \(MMS\) for Municipal Highways, Regulation 239/02 \(as amended by O. Reg. 47/13\) of the Ontario Municipal Act](#) which can be found in Appendix “A”

This report includes the 2021 – 2022 version of the Winter Operations Planning Document. This document, contained in Appendix “B” to this report, is the principle supporting document for the City of Brantford’s annual Winter Maintenance Plan.

Snow Windrow Removal Program

At its meeting held December 16, 2008, City Council approved the implementation of the Snow Windrow Removal Program for Seniors, aged sixty-five (65) and older, and Persons with Disabilities or a Medical Condition that restricts them from clearing the windrow on their own, effective January 1, 2009.

A windrow is the pile of snow that is left at the bottom of a driveway after the snow plow has cleared the road. When the windrows exceed ten (10cm) centimeters, or if the Director of Operational Services determines the need to remove the windrows, the contractor is dispatched once the road-ways are cleared.

At its meeting held November 26, 2019, City Council approved a list of opportunities for improved efficiency and effectiveness for the delivery of City services through the KMPG City of Brantford Service Review Final Report. From the list of opportunities, City Council is to consider, “#86 review winter control operations & services levels, including eliminating the winter control windrow program.” Details are provided in Section 9.0 of this report as to why staff do not recommend eliminating the windrow program and to maintain established service levels during winter operations.

7.0 Corporate Policy Context

City of Brantford Council Priorities, 2021-2022, #3

A safe, efficient transportation system connects the community across neighborhood's, with neighboring communities and provincial transportation networks.

City of Brantford KPMG Opportunities and Prioritization

#86 Review winter control operations & service levels, including eliminating the winter control windrow program

8.0 Input From Other Sources

Input to the Winter Maintenance Program update was provided by internal departments to the Public Works Commission and the Finance Department.

Staff conducted a municipal survey of the following municipalities with regards to Snow Windrow Removal Programs: County of Brant, City of Kitchener, City of Cambridge, City of Burlington, City of Hamilton, City of Woodstock, and City of Guelph.

9.0 Analysis

9.1 Minimum Maintenance Standards - Winter Maintenance

The Ontario Minimum Maintenance Standard is a regulation of the Ontario Municipal Act of 2001, specifically identified as Ontario Regulation 239/02, and amended by Ontario Regulation 47/13. Revisions to the regulation became effective on May 3rd, 2018. The 2018 updated MMS Reg.239/02 is provided in Appendix “A”. Revisions to the Regulation are scheduled to occur on a 5 year cycle, resulting in the expectation of further revisions in 2023.

The ‘Minimum Maintenance Standard’ outlines Winter Maintenance activities and the responsibility of the municipality in regards to keeping assets in a state of good repair. Operational Services continues to provide Winter Maintenance activities that meet or exceed the standards as set out in the ‘Minimum Maintenance Standard’.

If the Minimum Maintenance Standards are revised and as the City expands in development lands, the ability to maintain the current levels of service with existing resources will be difficult to achieve. The City utilizes four (4) contractors to supplement City staff with winter operations. Contractor duties include; plowing and salting, snow removal, sidewalk clearing, and snow windrow removal. The contracts are based on maintaining the Minimum Maintenance Standards (2018). Any changes to the level of service to the various road classes in the City may require additional staff or a contract change and increased cost to the program.

9.2 Activation for Winter Maintenance Response

Staff currently maintains roadways that are identified in the Regulation as Road Classes 2, 3, 4, 5, and 6, based on annual traffic volume and posted speeds.

These roadways have been divided into the following Winter Plow Routes:

Red Routes – First priority for response
Blue Routes – Second priority for response
Green Routes – Third priority for response

Staff also maintain sidewalks fronting City owned properties and bicycle lanes. These assets are divided into eleven (11) snow clearing routes.

A copy of the winter operation route maps will be posted on the City’s website prior to the 2021/2022 winter season.

9.3 Record Keeping

Operational Services utilizes the OGRA (Ontario Good Roads Association) Winter Web Application, ESRI/GIS mapping system and an Automatic Vehicle

Locating system. In addition, records of staff power, equipment, weather and material usage are retained.

9.4 2021-2022 Program Overview

9.4.1 Winter Maintenance

- Maintain approximately 1250 lane kilometers, 80 kilometers of sidewalks and over 40 kilometers of bicycle lanes.
- Continued analysis of route systems to improve deployment of combined plowing and salting operations to control operating costs.
- Increase mobilization of anti-icing (liquid material) applications in advance of winter events to reduce or eliminate the need for salt application during plowing operations.
- Implementation of a technology based Road Patrol program that complies with the Minimum Maintenance Standards.
- COVID – 19 contingency planning included modified back-up plans based on various degrees of resource loss.
- Estimated 360 lane kilometers or 30% increase over the next 20 years

Future Considerations

Program considerations to be reviewed and planned for in the near future include:

- Implementing no parking on City streets during snow storms in accordance with opportunity #80 of the KPMG Service Review
- The City will be issuing a solicitation for a new AVL/GPS system on City Vehicles in 2022. The technology will enhance plow tracking capability.

9.4.2 Snow Windrow Removal Program

The Snow Windrow Removal Program helps City of Brantford residents, aged sixty-five (65) and older, and Persons with Disabilities or a Medical Condition clear their windrow. Residents register on-line through the [City's Website](#)¹ from October through November. The snow windrow is removed from the bottom of their driveway when accumulation has reached 10cm. Winter Operations runs from November through April.

The number of registrants over the past five (5) winter seasons is outlined in Table 1 below.

¹ Residents register on-line through by going to the City's Website at <https://form.brantford.ca/Transportation/Snow-Windrow-Removal-Application>

Table 1 Snow Windrow Removal Program – Number of Registrants per Winter Season

2016/2017	2017/2018	2018/2019	2019/2020	2020/2021
1084	1017	1319	1274	1367

The cost for the Snow Windrow Removal program is outlined in Table 2 below, and remains dependent on the severity of the winter season with the highest cost over the last five (5) years recorded in 2020 at \$78,548. Staff budget to remove the windrows ten (10) times per winter season. The approved budget for the Windrow Snow Removal program in 2021 is \$85,800.00.

Table 2 Snow Windrow Removal Program – Cost per Year

2017	2018	2019	2020	2021
\$41,270	\$35,162	\$56,203	\$78,548	\$15,067*

*This cost is based on January through April of 2021. The cost may increase based on the number of snow events in November and December.

A municipal scan conducted in 2021 shows two (2) surrounding municipalities that offer a snow windrow removal program for residents as outlined in Table 3 below.

Table 3 Snow Windrow Removal Program – Municipal Scan

Municipality	Windrow Program	Scope of Work	Program Funding	Program Budget	Residents in Program
City of Brantford	Yes	Windrows	Operating Budget	\$85,500.00	1367
City of Burlington	Yes	Windrows	Registration Fees	\$10,000.00	175
City of Kitchener	Yes	Sidewalks and Windrows	Operating Budget	\$145,000.00	250
County of Brant	No	N/A	N/A	N/A	N/A
City of Cambridge	No	N/A	N/A	N/A	N/A
City of Guelph	No	N/A	N/A	N/A	N/A
City of Hamilton	No	N/A	N/A	N/A	N/A
City of Woodstock	No	N/A	N/A	N/A	N/A

Staff recommend the City continue with the snow windrow removal program for seniors, aged sixty-five (65) and older, and residents with a disability or medical condition that are unable to clear the windrow. The snow windrow removal program and the Snow Buddies program are different in that the windrow program only removes the windrow where the Snow Buddies provides assistance for private and public property snow clearing (driveway, sidewalk, porch, etc.). Snow Buddies is a recommendation within the “The City of Brantford Age-Friendly Strategy” as approved by City Council at its meeting held March 27, 2018 and the windrow program, although not explicitly mentioned in the Age-Friendly Strategy, is an important program to help those in need for a reasonable cost.


10.0 Financial Implications

Winter maintenance activities are funded through the Operational Services, tax-based operating budget. The 2021 approved operating budget for Winter Maintenance is \$4.76 M, which includes a current budget amount of \$85,000.00 for the Windrow Snow Removal program.

11.0 Conclusion

This report presents an overview of the winter control services to be provided by the City of Brantford for the 2021-2022 winter season. The program mandate is to achieve and maintain safe mobility for motorists, pedestrians and cyclists, and to strive for due diligence in compliance with the Minimum Maintenance Standards set out by the Province of Ontario.

The snow windrow removal program for seniors, aged sixty-five (65) and older, and those with disabilities and medical conditions continues to grow and has proven to be successful for those who qualify.



Inderjit Hans, P. Eng., PMP
General Manager, Public Works Commission

Prepared By:

Mark Jacklyn, Director of Operational Services

Attachments (if applicable)

Appendix "A" – [Minimum Maintenance Standard for Municipal Highways, Regulation 239/02²](#)

Appendix "B" - Winter Operations Planning Document 2021/2022

In adopting this report, is a by-law or agreement required? If so, it should be referenced in the recommendation section.

By-law required ☐ yes ☒ no

Agreement(s) or other documents to be signed by Mayor and/or City Clerk ☐ yes ☒ no

Is the necessary by-law or agreement being sent concurrently to Council? ☐ yes ☒ no

² To access the Minimum Maintenance Standards (MMS) for Municipal Highways, Regulation 239/02 (as amended by O. Reg. 47/13) of the Ontario Municipal Act go to <https://www.ontario.ca/laws/regulation/020239>

APPENDIX B



Winter Operations

City of Brantford

Winter Season 2021-2022

Approved by Council: ()

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1.0 Purpose

This winter operations plan sets out a policy and procedural framework for ensuring that The City of Brantford continuously improves on the safe and sustainable delivery of winter maintenance services and the effective and efficient management of road salt used in winter maintenance operations.

This plan supersedes all previous plans for the City of Brantford. The plan is meant to be dynamic, to allow the municipality to evaluate and phase-in any changes, new approaches and technologies in winter maintenance activities in a fiscally sound manner. At the same time, any modifications to municipal winter maintenance activities must ensure that roadway safety is not compromised.

2.0 Definitions

2.1 Anti-icing

Anti-icing means the application of liquid deicers directly to the road surface to delay the formation of ice for a certain period of time, or prevent adhesion of ice to make mechanical removal easier.

2.2 Bicycle Facility

Infrastructure to accommodate or encourage bicycling, including parking, storage facilities and shared roadways, specifically designated for bicycle use, as per Book 18 of the Ontario Traffic Manual.

2.3 Bicycle Lane

Bicycle Lane means, a portion of a roadway that has been designated by striping, pavement markings and/or signage for the preferential or exclusive use of cyclists,

Conventional Bike Lanes – This is a lane that runs curbside where no parking is present, adjacent to parked cars typically on the right-hand side of the street.

2.4 De-icing

De-icing is the process of removing snow, ice or frost from the surface of the roadway through the application of solids, liquids, pre-treated material during a winter event.

2.5 Highway

Highway means a common and public highway, street, avenue, parkway, driveway, square, place, bridge, viaduct or trestle, any part of which is intended for, or used by, the general public for the passage of vehicles and includes the area between the lateral property lines thereof.

2.6 Minimum Maintenance Standard (MMS) O. Reg. 239/02

Maintenance Standards for municipal highways in Ontario, to assist municipalities with managing the risk associated with the maintenance of roads and as a defense from claims citing negligence.

2.7 Pre-treat

Pre-treat means the application of liquids (such as but not limited to sodium chloride, calcium chloride, magnesium chloride etc.) to dry salt or sand prior to being loaded for storage or applied to the road surface.

2.8 Pre-wetting

Pre-wetting means the application of liquids (such as but not limited to; sodium chloride, calcium chloride, magnesium chloride etc.) which is applied onto solid winter materials (salt, sand) at the auger or spinner of the truck just prior to the application onto the road surface.

2.9 Salt Route

Salt Route is the road segments identified as per the Winter Level of Service and how it collates with the Maintenance Standards. During a winter storm this road segment shall receive a material application in the form of salt. Under certain circumstances (i.e. extremely cold pavement temperatures) sand may be applied to such routes to provide a temporary increase in grip.

2.10 Winter Event

Winter Event is a weather condition affecting roads such as snowfall, windblown snow, freezing rain, frost or ice to which a winter event response is required.

2.11 Winter Event Response(s)

Winter Event Response is a series of winter control activities performed in response to a winter event.

3.0 Objective of Winter Operations Management

The City of Brantford Public Works staff is committed to improving winter maintenance operations, insofar as reasonably practicable, to provide safe winter road conditions for vehicular, pedestrian, and cycling traffic as set out in the level of service policies, MMS and within the resources established by the Council of the City of Brantford.

4.0 Policy Statement

The City of Brantford shall provide efficient and cost effective winter maintenance to ensure, insofar as reasonably practicable, the safety of users of the municipal road network in keeping with applicable provincial legislation and accepted standards while striving to minimize adverse impacts to the environment. These commitments shall be met by:

- Adhering to the procedures contained within the Winter Operations Plan;
- Reviewing and updating the Winter Operations Plan on an annual basis to incorporate new technologies and new developments;
- Committing to ongoing winter maintenance staff training and education; and
- Monitoring on an annual basis, the present conditions of the winter maintenance program.

5.0 Quick Overview of the City of Brantford

Table 1 Brantford Operational Services Information

Type of Organization	Municipal
Structural Level	City
Estimated Population (Canada 2016 Census)	98,179
Total Area	72,470.0 Kilometers Squared
Street Address	Operational Services, 10 Earl Ave, Brantford, Ontario N3S 5C6, Canada
Telephone	519-759-4150
Website	www.brantford.ca
Director of Operational Services	Mark Jacklyn 519-759-4150, ext. 5804

City of Brantford Police	Contact Person: Administration Primary Phone (Non-Emergency): 519-756-0113 or 519-756-7050
Contact for other Departments such as: Waste Parks By-Law Transit	Contact - Call Center Monday to Friday 07:00 to 15:00 Primary Phone: 519-759-4150 *This primary number is active via a dispatch service for after hours as well

6.0 Winter Maintenance Program

6.1.1 The System Maintained

The major activities related to winter maintenance are:

- Anti-icing
- Snow plowing
- Winter material application
- Snow removal
- De-icing
- City owned Sidewalk winter maintenance

The City of Brantford is responsible for winter maintenance on:

Table 2 Road Service Classification

Road Category	Pavement Type and Area Type	Number of Plow Routes	Total Length (Lane Kilometers)
Red	Paved - Urban	12	543.3
Blue	Paved - Urban	13	248.80
Green	Paved, Resurface, Unpaved –Urban/Rural	34	344.1

Asset Category	Description	Number of Routes	Total
Sidewalk	Fronting City-owned property	10	79.1 Lane kilometers
Bicycle Lanes	On road network	1	42.03 kilometers

7.0 Level of Service

The City of Brantford provides the following level of service during the winter maintenance season. The winter maintenance season commences on November 1st, 2021 and is completed April 15, 2022. These dates are subject to change depending on weather impacts. The maintenance standards in response to a winter event are outlined in the excerpts from the Minimum Maintenance Standards O. Reg. 239/02.

7.1.1 Snow Accumulation on Roadways

Based on specifications outlined in MMS O. Reg. 239/02, s.4

Table 3 Snow Accumulation - Roadways

Class of Roadway	Route	Depth	Time
2	Red	2.5 cm	4 hours
3	Blue	8 cm	12 hours
4	Green	8 cm	16 hours
5 & 6	Green	10 cm	24 hours

7.1.2 Ice Formation on Roadways

These regulations are identified in MMS O. Reg. 239/02, s.5

Table 4 Ice Formation Prevention

Class of Roadway	Route	Time
2	Red	6 hours
3	Blue	16 hours
4	Green	24 hours
5 & 6	Green	24 hours

7.1.3 Snow Accumulation, Bicycle Lanes

These regulations are identified in MMS O. Reg. 239/02, s.4.2

Table 5 Snow Accumulation - Bicycle Lanes

Class of Highway or Adjacent Highway	Route	Depth	Time
2	Red	2.5	8 hours
3	Blue	8 cm	24 hours
4	Green	8 cm	24 hours
5 & 6	Green	10 cm	24 hours

7.1.4 Snow Accumulation on Sidewalks

These regulations are identified in MMS O. Reg. 239/02, s.16.3

7.1.5 Ice Formation on Sidewalks and Icy Sidewalks

These regulations are identified in MMS O. Reg. 239/02, s.16.5

7.1.6 Winter Sidewalk Patrol

These regulations are identified in MMS O. Reg. 239/02, s.16.7

Designated sidewalks that represent a cross section of the entire sidewalk network receive visual observations and documentation of sidewalk and weather conditions within the City of Brantford to determine if a winter event response is required.

7.1.7 Declaration of Significant Weather Event

These regulations are identified in MMS O. Reg. 239/02, s.16.9

In the event that the Director of Operational Services or a delegate declares a significant weather event, the standards in regards to snow accumulation on roadways, sidewalks and bike lanes, and ice formation on roadways, sidewalks and bike lanes, are deemed to be in a state of repair as long as the municipality is,

-
- a) Monitoring the weather in accordance with MMS O. Reg. 239/02 section 3.1; and
 - b) If deemed practicable by the municipality, to deploy resources to address identified standards starting from the time that the municipality deems appropriate to do so.

If the municipality complies with a and b above all roadway sidewalks, and on road bike lanes are deemed to be in a state of repair, until 48 hours following the declaration of the end of the significant weather event by the municipality.

7.1.8 Resident/Property Owner Sidewalk Responsibility

In accordance with City of Brantford Municipal Code, Chapter 614, Article 8, property owners and occupiers are responsible to clear snow and ice on their property or adjacent to their property within 24 hours after the completion of a snow event. Every property owner has a responsibility to keep the sidewalks clear and safe for pedestrians.

7.1.9 Non Compliance Sidewalk Clearing

If property owners or occupiers have failed to clear the snow and ice 24 hours after the storm and a concern is received by Operational Services with regards to slippery or snow covered sidewalk, or staff inspections indicate non-compliance with the Municipal Code, a "Sidewalk Clearing Notice" is issued to the address. The "Sidewalk Clearing Notice" identifies applicable articles of the Municipal Code and identifies that charges to the owner may apply. It also identifies that the property owner or occupiers have 24 hours to comply.

For the 2021-2022 winter season, Road Patrol through Operational Services Compliance shall inspect City sidewalks for non-compliance under related articles of the Municipal Code.

After 24 hours, Operational Services staff will provide a follow up inspection of the location(s). Staff and equipment are dispatched to clear the area of snow or ice in cases of non-compliance, and property owners are invoiced for services rendered.

7.1.10 Weather Monitoring

In order to determine an effective winter event response and allocate the appropriate resources, the City of Brantford supplements their general observations with weather information from various sources, which includes:

- Weather Tracker Application (OGRA Winter Web App)
- Intellicast Meteorological Services (supplementary service)
- Weather Network (supplementary service)
- Environment Canada (supplementary service)
- Infrared thermometers truck mounted units
- Observations from municipal staff, and communication with staff of adjacent municipalities;

The City of Brantford monitors the weather from January 1st to December 31st, in accordance with the standard (O. Reg. 239/02). Weather monitoring, of both current and forecast to occur in the next 24 hours, is performed a minimum of once every shift or three times per calendar day during winter operations.

8.0 Winter Preparations

In the months prior to the start of the winter maintenance season, as identified in 7.0, the City of Brantford undertakes the following tasks to prepare for the upcoming winter season.

8.1.1 Winter Season Preparation

- Prepare/review and update tender documentation for materials, weather, equipment, contracts etc.
- Conduct training session for both in house staff and contractors
- Train Road Patrollers for winter operations
- Inspect equipment. Schedule any and all equipment repairs.
- Measure and arrange for the delivery of materials
- Post the winter shift schedule
- Calibrate material application equipment.
- Allow operators (staff and contract) time to familiarize themselves with any new equipment, material application rates, material application equipment and their route
- Assign staff to monitor and record weather forecasts on a daily basis.
- Have 5% of the fleet ready to respond to a winter event.
- Have sufficient staff available to operate the fleet if conditions warrant a winter event response.

8.1.2 Two Weeks Prior to the Winter Season

- Begin regularly scheduled night patrol of representative roads

-
- Have 50% of the fleet ready to respond to a winter event
 - Have staff available to operate the required complement of the fleet if conditions warrant a winter event response

8.1.3 Start of the Winter Season

- Implement the winter shift schedule
- Begin patrolling representative roads and sidewalks in all areas that the City of Brantford is responsible for
- Respond to winter events as per the Winter Operations Plan

8.1.4 End of the Winter Season

After the winter season identified in 7.0 expires, the City of Brantford undertakes the following tasks to decommission winter operations:

8.1.5 Two Weeks After the Winter Season Ends

- Continue patrolling, monitoring, and recording weather forecasts
- Extend night patrol shift if forecast indicates an overnight winter event is probable
- Post inspection completed of 70% of the winter equipment
- Check winter components and clean all equipment
- Schedule equipment for repairs
- Have repairs made and dismantle winter control attachments
- Check and perform maintenance to winter storage facilities
- Review winter related service requests and schedule repairs

8.1.6 One Month after the Winter Season Ends

- Review and confirm weather forecasts
- Cease all winter highway maintenance operations
- Post inspection and change over the remainder of the equipment to be able to provide summer maintenance activities
- Perform various Spring clean-up activities, sweeping, bridge washing
- Post meetings with all levels, review issues/concern, best practices and program improvement needs, etc.

8.1.7 Training

The City of Brantford provides winter operations training for all staff involved in the delivery of winter services. In the year prior to the start of winter, internal staff, listed in the following positions, have received winter related training:

-
- Managers
 - Supervisors
 - Lead Hands
 - Operators
 - Crossovers
 - Patrollers

It is compulsory for the organization's in-house staff to be trained for Winter Control Operations. Staff, shall verify that the training was received by signing the "Record of Training". The training course material shall be attached to the "Record of Training". Training records are maintained to ensure training is up to date and that all staff are working safely.

8.1.8 The in-house staff are trained as follows:

- By experienced City of Brantford Operational Services Staff
- Through third-party training services (Canada Heavy Equipment College, Ground force, Association of Ontario Road Supervisors)

8.1.9 Winter operations training for in-house staff includes:

- Requirements of the Provincial Minimum Maintenance Standards
- Equipment Circle Check – Pre-trip inspection
- Equipment Calibration
- Record Keeping
- Health and Safety
- Level of Service – policies, practices and procedures
- Identification of Plow Routes – including variations from year to year and issues identified along the route
- De-icing chemicals – application procedures, rates, storage and handling
- Identification of vulnerable areas
- Yard and equipment maintenance
- Plowing do's and don'ts
- Highway Traffic Act
- Hours of Service
- Accident/Incident reporting

9.0 Operations

9.1.1 Yard Facilities

The City of Brantford provides winter maintenance services from the Operational Services Yard listed below.

9.1.2 Operational Services Yard

Facility Type: Operations Yard, 10 Earl Ave, Brantford, Ontario, N3S 5C6

9.1.3 Staffing and Hours of Work

The City of Brantford adheres to the hours of service as dictated by the Highway Traffic Safety Act, Reg. 555/06 (Ontario, Canada).

Staff Complement:

Table 6 Staff Complement

Positions	Number of Staff
Supervisors	4
Lead hand	8
Front Line	53
Road Patroller	4

Operational Services works three shifts during winter operations from Monday through Sunday, providing 24/7 coverage.

9.1.4 Contractors

Operational Services Contractors are available 24/7, response required within 1 hour of call.

Table 7 Contractor Responsibilities

Responsibilities	Type	Contractors	No of Equipment
Plow & Salt	Tandem Style Truck and Plow combination	Clean Shot Environmental Services	10
Snow Windrow Removal	Tractors/Pick-ups/Skid Steer	McLellan Group Snow Services	7

Roster Assignment – Corporate Contractors

Respond when available, and as required.

- JB Landscape Construction Ltd – Snow Removal/Salting
- Bell-Air Excavating and Grading – Snow Removal
- KG Services – Snow Removal
- McMillan Excavating Ltd – Snow Removal
- R.L. Lancaster Construction Inc. – Snow Removal/Salting
- Rain Drain Restoration Inc. – Snow Removal

9.1.5 Winter Material Used Annually

Table 8 Winter Material Tracking

Primary Solid Material	Brand Name or Supplier	Expected Quantity of Material this Season	Rationale to Increase/Decrease	Material Composition
Sand	Lafarge	100 Tonnes	No variance	Screened Aggregate (90%) - Salt (10%)
Pretreated Salt	Clearing Green, Cargill	2,000 Tonnes	Lower than normal freezing temperatures allows to apply below -21C	Magnesium Chloride (MgCl ₂) 20% - Salt (NaCl) 80%
Salt (NaCl)	Salt - Cargill	9,000 Tonnes	Increase resulting from increasing freeze thaw events.	Sodium Chloride (NaCl) 100%
Magnesium Chloride (MgCl ₂)	Promelt Mag 22%, Innovative	150,000 liters	Increase Anti-icing program, increase in pre-wet reducing usage of rock salt for single applications	Magnesium Chloride (MgCl ₂) 22% - Water (H ₂ O) 78%

9.1.6 Equipment – Winter Maintenance Fleet

The City of Brantford provides winter maintenance services on 99 individual routes with the equipment listed in below.

Table 9 Winter Maintenance Vehicles

Unit Type	Application	Number of units
Anti-ice	Anti-ice	2 designated units + 4 additional
Combo Units Single/Tandem Dump Trucks	Plow/Sand	17 designated units + 4 additional
Tractors	Roadway clearing	4 units
Trackless	Sidewalk clearing	8 units
Loader	Snow removal, material handling/loading	4 units

9.1.7 Material Storage Details

There are three (3) solid material storage facilities on site:

- Salt Dome A – 4,177 Tonnes storage capacity
- Salt Dome B – 3,866 Tonnes storage capacity
- Material Storage Shed – 67 Tonnes storage capacity

There is a liquid storage facility inside the Storage Garage:

- Liquid Material Tanks - 76,000 liter capacity

9.1.8 Equipment Storage and Washing Details

There is an indoor equipment storage facility where the majority of Winter Control equipment is stored

All equipment is washed inside the storage facility. Run-off from the equipment washing drains through an oil-grit separator.

The oil-grit separator is plumbed into the City of Brantford sanitary sewer system which collects salt contaminated wash water.

9.1.9 Snow Storage Facility

The snow dump located at 10 Earl Ave

- Controlled runoff: Yes
- Drainage from the site is collected in a sanitary sewer system
- Design capacity: (57, 697.84 m3)
- Snow disposed of entirely on a compacted granular surface: 100 %
- The City of Brantford does not currently use snow melters.
- Meltwater is not channeled or directed into a watercourse.
- Snow storage facility is utilized by City Operations only.

9.1.10 Salt Vulnerable Areas

Certain locations within the area of responsibility of the City of Brantford have been identified as being potentially vulnerable to the over-application of road salt. These areas are shown on route maps provided to staff. Accordingly, salt storage, snow disposal, and material application in these areas shall be monitored and in some cases may be restricted. Salt usage is limited to a Maximum 110kg Per Lane Km rate of application.

9.1.11 Winter Patrol

During the winter maintenance season, the City of Brantford conducts a winter patrol on a route of representative roads, cycling lanes, and sidewalks, at least once per day, 7 days a week.

The purpose of the patrol is to monitor and document/record weather, road/cycling lanes, sidewalk conditions, and mobilize winter maintenance operators and equipment, should a winter event response be required.

On the approach of a winter event or during a winter event, the route of representative roads may be modified, insofar as reasonably practicable, depending on the type and severity of the winter event or the direction from which the storm approaches.

The patrol person shall be familiar with local conditions in their patrol area, and prepare a condition log of road/cycling lane, sidewalk and weather conditions as well as any actions taken during the shift.

9.1.12 Callout Procedures

Winter Control response decisions shall be made by the "Supervisor on call" or designate with the aid of available forecasting, Level of Service policy, and patrolling information. It should be emphasized that decisions shall be subjective

and external input acts as an aid in determining if a call out of staff and equipment in response to a winter event is warranted.

The “Supervisor on call” shall record the prevalent conditions and relevant information when he/she makes a decision. The patrol person shall inform the “Supervisor on call” of changing road/cycling lane, sidewalk and weather conditions observed in the field. When a winter event response is required, the “Supervisor on call” shall contact staff as per the shift schedule. In the absence of the “Supervisor on call” the patrol person or Lead Hand shall be the designate and initiate a call out in response to a winter event.

9.1.13 Communications and Customer Service

Maintaining reliable internal communications is a critical component of winter operations. The City of Brantford employs the following methods:

- Operational Services Equipment – All winter maintenance vehicles are equipped with, or have, portable two way communications systems in the cab of the equipment
- Smart Phone Communication Devices (cell phone, email)

CRM – Customer Contact Centre:

- Serves as the main hub for customer service management;
- Customer service dispatch is available 24/7 all year round.

The municipality provides external communication with the general public via:

- Media press releases
- Information posted on the City’s web site
- Social Media

General Winter Maintenance Concerns - Every effort shall be made to address concerns through the City of Brantford Customer Contact Centre process. If issues require further investigation, the Director of Operational Services, or designate, shall determine the appropriate follow-up response to citizen inquiries.

9.1.14 Record Keeping

Full and accurate completion of all documentation, according to applicable procedures, is practiced to ensure that the City is managing risk and liability. Some of the records include but are not limited to;

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- Winter control mapping
 - Pre-trip equipment inspections
 - Weather documentation
 - Call out sheets
 - Calibration records

In order to help improve decision-making for maintenance activities, the City of Brantford:

- Retains records of material application rates;
- Retains records of equipment deployment;
- Has Automatic Vehicle Location (AVL) systems installed on the majority of fleet units;
- Uses a chart for application rates adapted to road or weather conditions.

10.0 Services

10.1.1 Snow Removal and Disposal

The municipality removes and hauls snow for storage at the City of Brantford Snow Disposal Site when the accumulation of piled snow impedes safe traffic flow on roadways or, for the clearing of sight lines at intersections. The decision to initiate the hauling operation shall be dependent upon the current depth and accumulation of snow as well as potential for further accumulation resulting from forecasted events. Snow shall only be removed from intersections where a public street intersects with another public street and line of site is compromised. Under normal circumstances, hauling of the snow shall be conducted during normal working hours. Snow removal from within the right-of-way for access to private property driveways (driveway windrows) shall be the responsibility of the adjacent private property owner*.

* In accordance with the City of Brantford, Municipal Code – Chapter 614.

10.1.2 Windrow Removal Program

In December 2008, City Council approved the snow Windrow Removal Program for seniors and persons with a disability or medical condition.

Windrows are the accumulation of snow that is created by the snow plow when the roadway is plowed following a snow event.

The windrow removal program shall be activated when snow windrows are ten centimeters (four inches) in height or greater. Removal may be activated at different times when heights are less than indicated, at the discretion of the Director of Operational Services or designate.

Registration guidelines for the program are advertised in the Brantford Expositor in October and November with a registration deadline of December 1, 2021. Notices are also posted on the main page of the City's website. Further information can be obtained by calling the Customer Contact Centre at (519) 759-4150.

10.1.3 Road Plow, Sidewalk Clearing, and Anti-ice Routes

Salt and plow routes, and anti-icing routes.

Table 10 Salt/Plow and Anti-icing Routes

Type	Winter Class	# of Routes	Description (examples)
Plow/Salt Route	Red	12	Main arterials including transit routes, such as: Colborne St, Wayne Gretzky Pkwy, Dunsdon St, Fairview Dr, William St, Henry St
Plow/Salt Route	Blue	13	Collector roads, such as: Glenwood Dr, Blackfriar Lane, Sandra St., Syndenham St, Birkett Lane
Plow/Salt Route	Green	34	Mainly residential non transit routes, such as: Royal Oak Dr, Maplecrest Lane, Eddy Ave, Spring St.
Bicycle Lane Routes	Linked to Road Class	1	Bicycle Routes are serviced in conjunction with the Classification of the adjacent roadway.
Anti-icing	City Wide	1 main, 2 bridge routes	Bridge decks, specific hills, curves and shaded areas

Table 11 Sidewalk and Walkway Routes

Type	Length	Route Total	Description (examples)
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Downtown Sidewalk Clearing	16.4 Km	1	Clear sidewalks in Downtown core
Shovel Routes	3 Km	3	Various locations throughout City
Walks Routes	59.7 Km	6	Various locations throughout City Includes, reverse frontage, City owned properties

10.1.4 Road Closure and Procedures

In the event a road must be closed due to a severe winter storm, City of Brantford Police shall initiate the closure.

10.1.4 Towing Illegally Parked Vehicles – Declaration

A snow emergency parking ban may be requested by the Director of Operational Services, or their designate. The City of Brantford Police shall initiate the parking ban. The local media shall be notified to advise the public.

11.0 Monitoring and Updating

Safe and sustainable winter operations includes, as one of its fundamental tenets, the continuous monitoring and updating of winter operations plans, policies, practices and procedures of the City of Brantford. To that end, the following continuous improvement cycle is used to define the annual process.



At the end of the winter season, a meeting to review winter operations shall be held each year (with all winter operations staff), to itemize issues that arose during the winter season and discuss how these issues may be resolved. Prior to the start of the next winter season, and with sufficient lead time to implement any changes, the City of Brantford shall train staff on the changes to equipment and/or winter maintenance policies, practices, and procedures.

The winter season of 2017/18 is the benchmark year. Year over year achievement using the performance measures listed below shall be measured against the benchmark year. Performance measures shall be used to determine whether or not the objectives of the Winter Operations Plan and/or winter maintenance policies, practices, and procedures have been met.

12.0 Plan Improvements

The current winter maintenance policies, practices and procedures form the baseline upon which improvements can be made to improve winter operations and/or the use and management of road salt. Based upon the need to maintain continual service throughout the season, and previous experience obtaining critical supplies and equipment at the height of the season, over the next ten years the City of Brantford plans to undertake the improvements listed below. This list shall be reviewed and updated annually.

13.0 Distribution of This Plan

This Plan shall be distributed to the following:

- Mayor and City Council
- Chief Administrative Officer
- General Manager, Public Works
- Director, Operational Services
- Manager, Operational Services
- Manager, Fleet
- Supervisor(s), Operational Services
- City Solicitor / Director, Legal and Real Estate Services
- City Clerk's Department

14.0 Disclaimer

This Planner may be affected by at least one or more of the following events which could delay or alter winter control response by the City of Brantford:

- Equipment breakdown
- Vehicles disabled due to extreme snow accumulations
- Severe weather event, safety of all personnel
- Unforeseen conditions and emergencies
- Significant medical related emergencies