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Date **December 1, 2020** **Report No. 2020-541**

To Chair and Members
Committee of the Whole – Operations and 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 2020-2021 [Financial Impact – None

3.0 Recommendation

- A. THAT Report No. PW2020-541 regarding "Winter Maintenance Update 2020-2021" 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 Council APPROVE the 2020-21 "Winter Operations Planning Document for The Corporation of the City of Brantford", attached as Appendix "B".

4.0 Purpose and Overview

The purpose of this report is to provide Council with an update of Winter Maintenance Operations for the 2020-2021 winter season, as delivered by the Operational Services, Public Works Commission.

5.0 Background

This report provides an overview of the procedures followed by the 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](#)

¹ the link is provided in Appendix “A”.

This report includes the 2020 – 2021 version of the winter maintenance planning document. This document, contained in Appendix “B” of this report, is the principle supporting document for the City of Brantford’s annual Winter Maintenance Plan.

6.0 Corporate Policy Context

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

A safe, efficient transportation system connects the community across neighbourhoods, with neighbouring communities and provincial transportation networks.

7.0 Input From Other Sources

Input to the Winter Maintenance Update was provided by other departments in the Public Works Commission and the Finance Department.

8.0 Analysis

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

¹ 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>

amended by Ontario Regulation 47/13. Revisions to the regulation became effective on May 3rd, 2018. The purpose of this Regulation is to clarify the scope of the statutory defense available to a municipality by establishing maintenance standards.

The 'Minimum Maintenance Standard' outlines the following prescribed activities and response times required for:

- Weather Monitoring;
- Snow Accumulation;
- Ice Formation;
- Bicycle lane winter response;
- Patrolling of roadways; and
- Winter patrolling of sidewalks,

The 2018 amendments that directly impact winter control are as follows:

- The municipality being allowed to declare a significant weather event;
- Snow accumulation on Separated and Conventional Bicycle Lanes;
- Snow accumulation on sidewalks, roadways;
- Ice control for sidewalks and roadways; and
- Winter patrol on sidewalks.

These additional responsibilities apply the same principles for response as previously existed for roadways. The additional responsibilities now include weather monitoring, patrolling, and minimum response thresholds for sidewalks and on road bicycle lanes.

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.

Activation for Winter Maintenance Response

The City of Brantford 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. In general, classes 2, 3, and some class 4 roadways can be described as arterial or collector roadways. Class 5 roadways are generally described as local residential roads. Class 6 roadways in the City of Brantford are generally laneways that link two streets, normally beginning and ending at mid-block.

Generally, Arterials are designed to carry large volumes of traffic interconnecting with other road classes. Collectors (sometime includes lower volume arterials) are designed to carry moderate volumes of traffic which serve to move traffic

from residential streets to arterial roads. Local roads (residential) are designed to carry low traffic volumes from abutting properties to roads with higher functional classification.

The City's arterials are identified in the Winter Planning Document as Red Routes. These routes are a first priority for response during winter maintenance.

The City's collector roads are generally identified as Blue Routes in the Winter Planning Document and are responded to after all Red Routes have received winter control maintenance.

The City's local residential roads (Class 5 and 6 in the Regulation) are identified in the Winter Planning Document as Green Routes and are serviced for winter response after the Red and Blue Routes.

Record Keeping

Operational Services utilizes several sources of data to ensure accurate and comprehensive records of the activities performed during winter operations, key methods for activity tracking and record keeping utilized by the City are; the OGRA (Ontario Good Roads Association) Winter Web Application, ESRI/GIS mapping system, a Global Positioning System, and an Automatic Vehicle Locating system. In addition, records of manpower, equipment, and material usage are retained.

Details outlining winter operations planning for the 2020-2021 winter season are presented in the "Winter Operations Planning Document" for the City of Brantford are attached in Appendix "B".

2020-2021 Program Overviews

For the 2020-2021 winter season, the following oversight and improvement efforts are planned to be continued or initiated;

- Boundary Expansion Roads
 - On November 1st, 2020, the City of Brantford took over the winter control maintenance operations on the expansion roads previously maintained by the County of Brant.
 - This added an additional 96.1 Lane Kilometers to the 1,135.3 lane Kilometers currently maintained in the City of Brantford
- Continued analysis of route systems to improve deployment of combined plowing and salting operations to control operating costs. Focus to include;
 - Decreased travel time for equipment (fuel costs)

- Reduced wear and tear on equipment
 - Reduced duplication of travel in routes
 - Increase service response time
- Continued program development to implement compliance requirements identified in the 2018 revisions to the Minimum Maintenance Standards;
 - Sidewalk inspection
 - Bicycle lane level of service
 - Ice inspection and activation for road & sidewalk maintenance
 - Snow & ice activation levels
- Windrow Removal Program
 - Improved registration process for qualified applicants
 - 1265 residents registered as of November 23rd, 2020
 - \$57,000 was budgeted in 2019. The actual cost was \$78,000 and is expected to increase with severity of weather events and the aging population in the City of Brantford.
- Customer Service
 - One Call System - 24/7 live response available to dispatch urgent concerns
 - Continued review of messaging to ensure consistent and updated information is provided to callers
 - Development of on-line web based messaging to identify winter control status
- Winter material budget impact and material use improvements
 - Salt contract increase for rock salt per tonne has gone up from \$78 per ton in 2019 to \$91 per ton in 2020
 - Salt usage increases for boundary expansion areas and new development areas
 - Increase in winter events necessitating increased need for material application
 - Improve deployment activities in routes to reduce salt usage. Improve timing of plowing operations and apply material when suitable to optimize material consumption
 - 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.
- COVID – 19 Contingency Planning

-
- Develop modified back-up plans based on various degrees of resource loss
 - Pre-screening and quarantining
 - Health and Safety protocols

The purpose of these initiatives is to ensure, the safety of the City's pedestrian, cycling, and driving communities within the capacity of the resources currently available. This initiative also contributes to the efficient maintenance of the City's multi model transportation network, mitigates the effects of frequent severe weather events, and improves the active transportation opportunities and customer service experience for residents and visitors to the City.

The revised route designs will be posted on the [City's Website](#)² for the 2020-2021 winter season.

Future Considerations

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

- By-Law Enforcement Need
 - Winter sidewalk clearing By-law, to ensure safe travel over all sidewalks in the City
 - Streets By-law, to be able to provide a safe and environmentally responsible municipality
 - Implementing no parking on the streets during snow storms in accordance with opportunity Reference No. 80 of the KPMG Service Review
- 'Vision Zero' Initiative
 - Improve safety of road, cycling, and pedestrian networks
 - Provide public awareness

² To access the revised route designs, visit <https://www.brantford.ca/en/transportation/winter-maintenance.aspx>

- Asset Inventory Management (AIM): New Work Order Management System
 - Implementation to begin in 2020
 - Staff engagement, support, and change management
 - Improve data management, quality control, and introduce performance measurement
 - Customer service improvements

9.0 Financial Implications

Winter maintenance activities performed on roads (including bicycle lanes) and, sidewalks, is funded through the Public Works Commission - Operational Services, tax-based operating budget. The 2020 approved operating budget for Winter Maintenance was \$4.18 M. The 2021 budget is currently being prepared and will include an increase to the base budget of \$375,000 for the new winter control contract as approved by City Council in report #2020-251. Additional unavoidable estimated budget pressures that will be identified in the 2021 budget process are listed below:

- \$300,000 for salt supply contract
- \$10,000 for sidewalk clearing
- \$30,000 for the Windrow program


10.0 Conclusion

This report presents an overview of the winter control services to be provided by the City of Brantford for the 2020-2021 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 Winter Operations Planning Document is included with this report to provide details of winter maintenance operations and the services that Public Works provides.

In response to changes in legislation, growth related service demands, and increased frequency of severe weather events, the Operational Services will continue to identify program enhancements and additional resources required to address compliance standards and customer service.


Mark Jacklyn
Director, Operational Services


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

Attachments (if applicable)

Appendix "A" – [Minimum Maintenance Standard for Municipal Highways, Regulation 239/02³](#)

Appendix "B" - Winter Operations Planning Document 2020/2021

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

³ 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 Planning Document

for the

City of Brantford

Winter Season 2020-2021

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

The application of liquid de-icers 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 and provision to accommodate or encourage bicycling, including parking, storage facilities and shared roadways specifically designated for bicycle use “Book 18 of the Ontario Traffic Manual”.

2.3 Bicycle Lane

The 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

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

2.5 Highway

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

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

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

The road segments identified as per how it collates with the MMS. During a winter storm this road segment shall receive a material application in the form of salt and pre-wet. 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

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)

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 winter 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; and
- Reviewing and updating the Winter Operations Plan on an annual basis to incorporate new technologies and new developments; and
- 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)	97,496
Total Area	Over 72,470.0 Square meters
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:	Contact - Call Center
Waste	Monday to Friday
Parks	07:00 to 15:00
By-Law	Primary Phone: 519-759-4150
Transit	*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	450
Blue	Paved - Urban	11	292.4
Green	Paved, Resurface, Gravel, Unpaved – Urban/Rural	32	350 and growing

Asset Category	Description	Number of Routes	Total
Sidewalk	Fronting City-owned property	9	79.1 Lane kilometers
Bicycle Lanes	On road network	1	Over 30 kilometers

As of November 1st 2020, the City of Brantford will be performing Winter Control Operations and full year round maintenance on the Boundary Expansion roads. This has added two additional routes to the existing winter route network. One of which will cover the expanded boundary roads in the north of the City, and the other of which will cover the expanded roads in the south of the City. The City of Brantford and Brant County has entered a Boundary Road agreement which includes connecting and boundary roads. This area added another 2.7 km to City of Brantford's road network responsibilities.

Boundary Road Information	Lane Km
Boundary Expansion - County Rd #18	7.4
Boundary Expansion - North	52.9
Boundary Expansion - Tutela	24.5
King George Rd - Powerline to Governors (MTO)	8.6
Connecting Roads & Boundary Road Additions	2.7
Approx. Total	96.1 LKM

7.0 Winter Season

The winter maintenance season commences on November 1, 2020 and shall complete on April 15, 2021. 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 & 5	Green	8 cm	16 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 & 5	Green	24 hours

Table 5: Treatment of Icy Roadways

Class of Roadway	Route	Time
2	Red	3 hours

3	Blue	8 hours
4 & 5	Green	12 hours

7.1.3 Snow Accumulation, Bicycle Lanes

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

Table 6: 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 & 5	Green	8 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 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 to 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.

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)
- 7 Infrared Thermometers truck mounted units • Observations from municipal staff, and communication with staff of adjacent municipalities

The City of Brantford monitors the weather from October 1st to April 30th, in accordance with the standard (MMS O. Reg. 239/02). Weather monitoring, of both current and forecast to occur each day, and is performed a minimum of once every shift or three times per calendar day whichever is greater.

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 tender documentation for materials, weather, equipment, contracts etc.;
- Conduct mandatory training session for both in house staff and contractors;
- Train winter patrollers;
- Train new operators with winter equipment;
- Refresher training with all operators for winter maintenance;
- Inspect equipment. Schedule any and all equipment repairs;
- Arrange for the delivery of materials;
- Post the winter shift schedule;
- Calibrate material application equipment;
- Allow operators 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 a at least 10% 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 at least 30% 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 At 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 At the 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 at least 70% of the winter equipment.

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 and island 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

It is compulsory for the organization's in-house staff to be trained for Winter Control Operations. Training records are maintained to ensure training is up to date and that all staff work 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, IHSA,).

8.1.9 Winter operations training for in-house staff includes:

- Requirements of the Provincial Minimum Maintenance Standards;
- Equipment Circle Check – Pre-trip inspection;
- Record Keeping;
- Health and Safety;
- 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).

Table X - Staff Compliment

Positions	Number of Staff
Supervisors	4
Lead hand	7
Front Line	46

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

9.1.4 Contractors:

Operational Services Contractors

Available 24/7, response required within 1 hour of call.

New contract starting November 15th, 2020 with Clean Shot Environmental includes 10 tandem combo plow units. This is a 5 year with 3 year option. The Contractor will be responsible for specific routes in the City of Brantford and include some of the Boundary Expansion roads. The additional contracted support will assist in house staff with winter control and provide needed support due to the increase in development growth and Boundary Expansion lands.

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

Roster Assignment – Corporate Contractors

This contract expires in December 2020. New contract expected to be released in November 2020 with awarded contractors set up for December 2020.

9.1.5 Winter Material Used Annually

Table 7: Winter Material Tracking

Primary Solid Material	Brand Name or Supplier	Expected Quantity this Season vs. Actual	Rationale to Increase/Decrease	Material Composition
Sand	Lafarge	10 Tonnes vs. 10 Tonnes	No variance	Screened Aggregate (90%) - Salt (10%)
Pretreated Salt	Clearing Green, Cargill	800 Tonnes vs. 322 Tonnes	Lower than normal freezing temperatures allows to apply below -21C	Magnesium Chloride (MgCl ₂) 20% - Salt (NaCl) 80%
Salt (NaCl)	Salt - Cargill	10,000 Tonnes vs. 7750 Tonnes	Increase resulting from increasing freeze thaw events. New plowing contractor and equipment and additional Lkm of Boundary Expansion Roads	Sodium Chloride (NaCl) 100%
Magnesium Chloride (MgCl ₂)	Promelt Mag 22%, Innovative	200,000 liters vs. 154,100 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 and contracted services provides winter maintenance on 65 individual routes with the equipment listed below.

Table 8: Winter Maintenance Units

Unit Type	Application	Number of units
Anti-ice	Anti-ice	2 designated
Combo Units Single/Tandem Dump Trucks	Plow/Material Applications	17
Tractors	Roadway clearing	4
Trackless	Sidewalk clearing	8
Grader	Roadway clearing	2
Loader	Roadway clearing, Snow removal, Material handling/loading	4
Contracted Units Tandem Combo Units	Plow/Material Applications	10

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 the route maps located in the Appendices. Accordingly, salt storage, snow disposal, and material application in these areas shall be monitored and in some cases may be restricted.

North West Industrial

Facility Address: Multiple

Area Footprint: (Reference Appendix 1-1)

Additional Details: Salt usage is limited to a 100 kg 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, three times daily, 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 his/her designate with the aid of available forecasting, 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 his/her 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 One call service:

- 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

-
- Mail-outs with City Utility bills

Winter Sidewalk Concerns - There may be occurrences when plowing operations may deposit significant amounts of snow onto the sidewalks after the property owner has already removed the snow. When this occurs, the property owner may call Customer One Service at (519) 759-4150 to have the snow removed.

General Winter Maintenance Concerns - Every effort shall be made to address sidewalk snow and ice control issues through the City of Brantford Customer One 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 are but not limited to;

- Winter control mapping;
- Pre-trip equipment inspections;
- Weather documentation;
- Call out sheets;
- Calibration records;
- Salt/Plow Operator sheets.

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 Parking Lots

The City of Brantford, Operational Services Department **does not** provide winter maintenance services for **private parking lots**.

City owned parking lots are maintained for snow clearing operations by Operational Services through tendered contract(s).

10.1.2 Snow Removal and Disposal

Currently, municipal staff 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.

10.1.3 Windrow Removal Program

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

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 the deadline for registration is December 1, 2020. Notices are also posted on the main page of the City's website. **Further information can be obtained by calling the City at (519) 759-4150.**

Date:

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

Type	Winter Class	# of Routes	Description
Plow/Salt Route	Red	12	Main arterials including transit routes, such as: Colborne, Wayne Gretzky, King George.
Plow/Salt Route	Blue	11	Collector roads, such as: Section of Wellington St, Roy Blvd, Glenwood, Blackfriar lane, Sydenham, Birkette Lane.
Plow/Salt Route	Green	32	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.

Sidewalks, Walkways

Type	Length	Route Total	Description
Downtown Sidewalk Clearing	16.4 Km	1	Clear sidewalks in DT core
Shovel Routes	3 Km	3	Various locations throughout City
Walks Routes	59.9 Km	6	Various locations throughout City Includes, reverse frontage, City owned properties

10.1.5 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.

10.1.6 Towing Illegally Parked Vehicles – Declaration

Emergency Parking Ban

Cars parked on the streets during a snow removal effort may be ticketed and/or towed away. A snow emergency parking ban may be requested by 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.

12.1.1 Equipment

In 2019 Operational services received two (2) additional combination tandem units to the fleet to accommodate the Boundary Expansion. Additional staff complement will be required to operate said equipment as well as the increased maintenance requirements as outlined in the Maintenance Standards this shall be recommended in the 2021 budget needs.

For the 2020-2021 Season, equipment and staff adjustment to accommodate the Boundary Expansion will be incorporated into the winter control planning document as approved by Council. In addition, route mapping will include full winter services for the expansion area.

The City of Brantford Operational Services and Fleet Services Department will also review the additional routes that will be implemented in Nov 2020 and look at increases to equipment required for year round maintenance. Fleet shall also continue to conduct quantitative and qualitative condition assessments of fleet units based on a ten year capital plan and schedule units for replacement in accordance with the Fleet Capital Reserve.

12.1.2 Facilities

Considerations include an outdoor storage facility in the north east corner of the Operational Services Yard for either equipment or material storage.

A new Operational Services yard and building is planned in 2025-2026 as approved by Council.

12.1.3 Safe and Sustainable Salt Management

The Operational Services Department will continue to record and review salt and pre-treated salt usage.

An update to the Salt Management Plan will be requested in the 2021 Budget Process.

12.1.4 2020-2021: Season

- On-going monitoring and review of salt and pre-treated salt usage.
- Review and research new pre-treat liquid material for anti-icing and pre-wet and usage.
- Installation of Material Weigh Scale originally scheduled for 2019 has been deferred to the design phase of the 2022 Yard Reconstruction Plan.
- Salt Dome A Roofing Replacement is in the final phase and will be completed by November 2020.

12.1.6 Snow Disposal

The existing snow disposal site located at 10 Earl Ave., has limited capacity to accommodate the storage of snow removed from the streets during a winter with average snow accumulation levels.

The 2018 Yard Rationalization Study was conducted by the Facilities Department and future consideration for environmental improvements and additional needs to be assessed starting in 2021.

12.1.7 Vulnerable Areas

The City of Brantford Operational Services and Environmental Services Departments will continue to monitor vulnerable areas of the city. With the goal of an overall reduction in salt usage. The Operational Services Department will review:

- Salt usage;
- Pre-wet and treated salt applications;
- Additional identification and revisions to route maps;
- Continued education and awareness with staff.

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 Commission
- Director, Operational Services

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- Manager, Operational Services
 - Manager, Senior Program Manager
 - Supervisor, Sidewalks, Operational Services
 - Supervisor, Roads, Operational Services
 - Supervisor, Utility Restoration, Operational Services
 - Supervisor, Traffic, Operational Services
 - Supervisor, Parking and Parking Enforcement, Operational Services
 - City Attorney
 - Chief of Police
 - Director of Parks and Recreation
 - Fire Chief
 - City Clerk's Office
 - EMS Chief
 - Director, Transit and Fleet Services

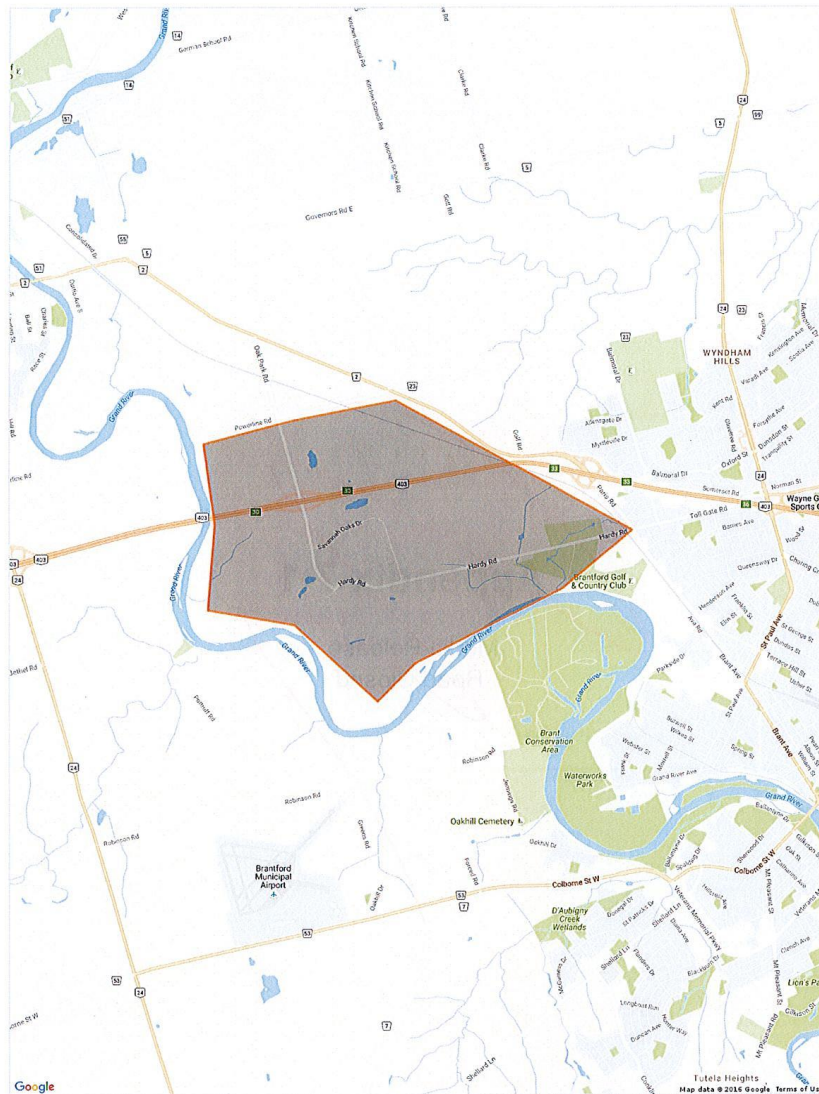
14.0 Disclaimer

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
- COVID-19 impacts

Appendix 1-1

15.0 Vulnerable Area (North West Industrial)



Appendix 2-1

16.0 Media Release Road Closed



Date _____ Time _____

Media Release

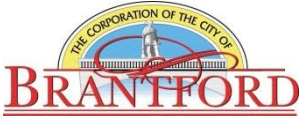
Due to a severe winter storm, City of Brantford Police advise that the following roads in the City of Brantford are impassible due to (reason, i.e. drifting and blowing snow) and have been closed to traffic.

Street Name	From	To

City of Brantford Police advise that these roads shall remain closed until the storm subsides and driving conditions improve.

Appendix 2-2

17.0 Media Release Severe Weather



The City of Brantford

Date: _____ Time: _____

Media Release

Due to a severe winter storm, City of Brantford Police advises that many roads in the City are impassible due to drifting and blowing snow. City of Brantford Police advise that you do not drive until the storm subsides and driving conditions improve.

*This public notice (or a notice of similar content), is used when the resources required for road closures are not available to physically place signs and barricades to indicate closure; or at times when an officer is not available to redirect traffic.