



Roads Operation Division
Operations and Infrastructure Department



2021-2022

Winter Control Reference Guide

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Contact information

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Announcements, maps,
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Section 1: Introduction

1.0 Introduction

This document outlines the Town of Georgina — Roads Operations Division's operating practices used throughout the winter season. These practices include how and where we perform winter maintenance, what happens when the Town is impacted by winter weather, and other items relating to the above operations including material handling/storage, fleet maintenance and resident concerns.

Section 2: Town Standards

2.0 The Town Standards

The Town of Georgina must follow the Municipal Act at all times, including Ontario Regulation 239/02 'Minimum Maintenance Standards for Municipal Highways', which defines classifications of road segments and standard of care required for 14 services delivered within the defined classifications. Among other things, these defined standards for services include both winter and summer road maintenance activities. It is the intent of the regulation to provide a defence of due diligence when the standards are adhered to and properly documented.

The Town strives to meet or exceed the Town standard for winter maintenance in all circumstances, however it may become necessary to depart from the standard due to unusual circumstances and severe winter storm events.

2.1 Applying the Town Standards

As outlined above, the Minimum Maintenance Standards are the minimum a municipality must do to be compliant and prove due diligence. As municipalities have many different working environments, including urban, semi-urban and rural, the standards are applied based on road classification.

Road classifications in the Town standard are defined by road segment based on the speed limit and the Average Annual Daily Traffic (AADT) count within the road segment. The Town of Georgina is comprised of four out of six possible road classifications (numbered 3 through 6) outlined within Ontario Regulation 239/02 due to the unique mix of urban and rural roadside environments, and a variety of speeds and volumes. A Class 1 highway is designated the highest level of service, where a Class 6 highway is designated the lowest level of service. The majority of the Town's roads are in the Class 4 and 5 levels, as outlined in the appended maps and the table below:

Table 2.1: Km Lengths per Classification

Road Classification	Lane KM
3	14.1
4	108.24
5	507.47
6	35.64



2.2 Level of Service

The level of service provided to the Town of Georgina Road Operations Division is entirely defined by Ontario Regulation 239/02; also known as the Minimum Maintenance Standard. This standard defines how often the Town will patrol the roadways and walkways; the frequency of plowing, salting and snow removal within walkways, roadways and parking lots based on accumulated snow depth and time; and how the Town will manage these activities. A brief summary of the level of service based on road classification is outlined below:

Table 2.2: Level of Service—Winter Control

Road Classification	Accumulated Depth	Service Time at accumulated depth	Patrol frequency
1	2.5 cm	4 hours	3 times / 7 days
2	5 cm	6 hours	2 times / 7 days
3	8 cm	12 hours	1 time / 7 days
4	8 cm	16 hours	1 time / 14 days
5	10 cm	24 hours	1 time / 30 days
6	-	-	-

* Patrolling is at heightened intervals deemed necessary during a high probability of weather

** Patrolling can be completed by use of 'Representative Highways' defined in O/Reg 239/02

In addition to the Town's robust winter control plan, key elements will be reviewed throughout the winter including staffing requirements, fleet allocation, route coverage, operational procedures and standards, and material usage to ensure best practices and levels of service are being met.

The service time in column three represents the maximum time allowed to clear snow to below the depths in column two. The Town will dispatch plowing resources once snow depths surpass 5 cm of snow, or where slippery conditions may occur, to provide at least one road treatment. The Town will dispatch spreading resources anytime slippery conditions may occur to provide at least one treatment. The Town is proud to have adequate resources of labour and equipment so that most Town roads will be treated once within 10 hours during an event, and cleared within six hours following an event. This exceeds the required standard where most roads are serviced in one-quarter of the allowable time.

2.3 Winter Operation Period

The winter maintenance period is a 22-week period from Nov. 15 to April 15 of each year.

Section 3: Work Planning

3.0 Pre-Season

A pre-season review will be performed on all fleet, materials, routes, and facilities before the beginning of the winter season to ensure proper preparedness for any event. Fleet preparations are in line with the Fleet Management Policy and ensure winter readiness. Materials and planning takes place throughout the summer to allow adequate time for deliveries and changes to mapping. Facilities are also reviewed and include HVAC services, garage door services, and a fulsome health and safety review prior to winter.

3.1 Route Planning

Routes are created using a variety of tools and priorities within the industry including Ontario Regulation 239/02 road classifications, emergency routes, optimized re-fill locations (proximity to depot locations), overall length, and road surface type. Generally, once a route is created, it is plowed, salted and/or sanded based on the road priority as defined in the route maps.

Priority roads within the routes were determined by emergency vehicle routes and fire stations, traffic volumes, steep hills, common gathering locations, connectivity of road network, and staff knowledge on difficult maintenance areas. Once these priority roads have been cleared, secondary road segments within each route will follow. It is the intent and expectation that all road segments are maintained to exceed the level of service in Table 2.2. However, in some cases including evenings, weekends and extreme events, decisions will be made to maintain priority roads at a higher standard than secondary roads.

3.2 Work Location

The Town of Georgina maintains roads, sidewalks and parking lots throughout its diverse communities. The maintained road network consists of 332.7 two-lane kilometres of road (665.48 single-lane kilometres). A breakdown of roadside environment is outlined below:

Roadside environment	Total lane km (2-lane)
Urban	60.7
Semi-urban	158.7
Rural	113.3

*Urban: Curb, Gutter, Storm Sewer

**Semi Urban: Built-up areas, no Curb/Gutter/Storm Sewer

***Rural: Open ditch, Culvert drainage, outside built up areas.

A total of 7.3 two-lane kilometres (2.2 per cent) are gravel.

The Town's sidewalk network includes approximately 130 linear-kilometres within three unique urban areas. Of the 130 kilometres, 112 kilometres are maintained and 18 kilometres are posted and not maintained. Although there is no formally adopted Town standard outlining the minimum level of service requirement for winter control of sidewalks, the Town tries to clear all sidewalks within 24 hours after a winter event.

The maintained parking lots are located throughout the communities of Keswick, Sutton, Pefferlaw and Port Bolster as listed in the appendices. Parking lots are maintained according to their respective uses and are typically cleared prior to the opening of the facility.

3.3 Materials

The Town of Georgina uses both sand and salt for snow and ice control throughout the Town during the winter period. Winter sand is a mixture of nine parts screened sand to one part Thawrox treated Salt (a 9:1 mixture prepared during stockpiling). Salt is procured through the York Region Purchasing Co-operative from Compass Materials and sand is procured through a public competitive process according to the Town's Procurement Policy.

The location, route, road classification and roadside environment all factor into whether sand or salt is the primary material for that route. In general, salt will be used in all urban and semi-urban environments. A 9:1 mixture will be used in rural environments and is used on most sidewalks within Georgina.

This material selection is based upon the success of the Winter Material Trials in 2020-2021, whereby salt (unmixed) was the primary material used in a selected urban environment of a period of time and number of winter events, and qualitative and quantitative assessment was done on its effectiveness.

Through a report to Council in July of 2021, the endorsement to expand the trial through this winter was received. It is expected to see similar results, that being a reduction in operating cost, efficiency in operations and reduced sand management in the spring (sweeping and catch basin cleaning). Similarly, the expansion is being conducted as a best management practice within industry to mimic comparator municipalities and to fall inline with conservation based studies (Lake Simcoe Region Conservation Authority) concerned with sediment (sand) in waterways.

The Town has also opted to use Thawrox treated salt in place of regular highway rock salt. The treated salt has a lower eutectic temperature – the temperature at which a product no longer activates (melts) when in contact with snow and ice. By having a lower eutectic temperature, the Town can apply the material in a wider range of winter events throughout the winter period.

3.4 Road Depots

Belhaven:

The Belhaven depot is located at 25291 Warden Ave., in Keswick. Two winter material storage structures have capacities of 4,500 tonnes each.

The Belhaven depot supports our contracted winter maintenance services and acts as a re-loading point for a few Town vehicles.

Egypt:

The Egypt Depot is located at 25765 Park Rd. in Sutton. This depot has a winter material capacity of approximately 4,500 tonnes.

The Egypt Depot maintains a mixture of urban, semi-urban and rural roads by Town staff throughout the municipality.



Section 4: Operating Procedures

4.0 Procedures for Winter Events

Based on local and provincial weather monitoring, paired with the winter patrol required as part of the Minimum Maintenance Standards, the on-shift patroller, lead-hand or supervisor will determine the need for winter maintenance activities to begin. Winter maintenance activities can include preventative maintenance, pre-treating of roads, plowing, salting, sanding, cleanup, removal or spot treatments where drifting occurs.

4.1 Hours of Work Limitations

The Town of Georgina is a commercial operator and therefore must abide by Ontario Regulation 555/06 'Hours of Service'.

In summary, the regulation outlines responsibilities for both operators and employees:

After having been off duty for at least eight consecutive hours, a driver shall not accumulate more than 13 hours driving time.

A driver shall take at least 10 hours of off-duty time in a day (eight must be consecutive).

As soon as a driver has accumulated 13 hours driving time, they shall go off duty for at least eight consecutive hours before driving again.

As soon as a driver has accumulated 14 hours on duty time, they shall go off duty for at least eight consecutive hours before driving again.

A driver shall not drive unless the driver has taken at least 24 consecutive hours of off-duty time in the preceding 14 days, once 70 hours has been exceeded.

An operator may end a driver's seven-day cycle and designate a new seven-day cycle for the driver if the driver takes at least 36 consecutive hours of off-duty time before starting the new cycle

As a note, in extreme cases, exemptions to the hours of service regulation are allowable in situations that 'constitutes an imminent danger, though not one of major proportions to life, property or the environment, whether caused by forces of nature, an accident, an intentional act or otherwise.'



4.2 Hours of Work

The Town operates a variety of shifts in order to provide adequate winter maintenance coverage, as outlined below:

Morning Shift (Roads/Sidewalks): The morning shift will begin at 3 a.m. and work until 11:30 a.m., Monday through Friday. During an event, operators will be dispatched to their respective routes to perform winter maintenance, focusing on priority routes first. Operators will work within the limitations outlined in Section 4.1 'Hours of Work Limitations'.

Delayed-Day Shift (Roads): The delayed-day shift will work 8:30 a.m. until 5 p.m., Monday through Friday. This shift provides additional operational delivery hours throughout the afternoon and into the evening. During an event, this shift will take over from the morning shift to provide continuous winter operations.

Overnight Shift (Patrol/Roads): The overnight shift works between the hours of 7 p.m. and 5 a.m., seven days a week. This shift provides winter patrol overnight, keeping a close eye on forecast and current conditions, and light maintenance for problem areas. During an event, this shift will ensure priority road segments are maintained and that adequate resources are dispatched at the right times.

Seasonal/On-Call (Roads): The seasonal and on-call staff are available 24/7 to support operations in the event regular staff have exceeded their allowable operating hours. These same employees will assist to ensure weekend coverage is maintained.

In general, winter operations continue until all roads have had, as a minimum, one winter maintenance pass or as many passes as may be needed to provide a safe travelling surface (minimum level of service as described in Table 2.2). This use of unique shifts allows the Town of Georgina to adequately maintain the road network, while maintaining safe operating

practices, providing a healthy work/life balance for operators, and being compliant with provincial law.

Regardless of shift, operators will not continue to operate equipment once they have reached their maximum hours of operations as per Section 4.1 Hours of Work Limitations. Other roads staff are also available during regular office hours, Monday to Friday, 7:30 a.m. to 4 p.m., to perform other regular road operations.

4.3 Routine Patrols

Routine patrols are performed based on best practice to meet the Minimum Maintenance Standard. This patrol maintains the level of service for patrolling as outlined in Table 2.2. Winter patrol uses representative roads as the “regular patrol” in order to adequately reach each corner of the municipality within due time. Representative roads are selected by taking into account wind direction, historical storm directions, hills, curves, shaded locations, surface condition (asphalt, gravel, surface treated), sub surface conditions (bridges, culverts, underground utilities), and road classifications. Roads adjacent to a representative road are deemed to be in a similar condition as the representative section, per the regulation. These representative roads are then patrolled to check for conditions that provide the patroller the necessary information for deploying of resources to deal with the event. The patrol route is mapped, and distributed to staff at the pre-season staff meeting. Winter patrol is extremely important and is a daily exercise that includes forecasting, field review and experience to determine best treatment methods and deployment times.

4.4 Winter Operations Specifics

Route maps for each unit described below can be found in the appendices. Priority road segments are cleared first, followed by secondary road segments. Every attempt will be made to ensure the minimum level of service as described in Table 2.2 is met. Sidewalk routes prioritize high-traffic (urban) sections and school zones, followed by residential sections.

Belhaven Depot:

- 5 Tandem Axle Contractor Plows
- 3 Sidewalk Machines (Contractor)

Egypt Depot:

- 5 Tandem Axle Units
- 2 Single Axle Units
- 1 Tractor
- 1 Grader
- 2 5T Spreader/Plows
- 2 Loaders
- 2 Sidewalk Machines

4.5 Snow Removal and Storage

Removal of snow banks in the downtown cores (Business Improvement Areas), cul-de-sacs and parking lots is carried out when snow storage space is limited and potentially will become a hazard to the public. Typically, snow removal is scheduled once snow banks can no longer

store snow and either the roadway, sidewalk or parking stalls are affected. These operations are usually completed at the beginning of the morning shift or nearing the end of the afternoon shift to reduce traffic impacts. Snow is stored at Town-owned snow storage locations, as outlined below and mapped in the appendices.

Table 4.1 – Snow Storage Locations

Community	Location
Keswick	Belhaven Depot The ROC McCowan Road End
Sutton	Egypt Depot

Section 5: Winter Operation Impacts

5.0 Grass and Boulevard Reinstatement

The grass and boulevard reinstatement is a level of service that the Town provides to vegetative areas adjacent to the roads and sidewalks that have been damaged as a result of winter maintenance activities.

Definitions

Boulevard: The area of grass between the curb and property line within the Town right-of-way.

Damage: Grass that has been physically damaged (moved or rolled) by a sidewalk machine or snowplow that expose the underlying soil.

Winter Kill: Areas of grass that have been affected by cold weather and the application of sand and salt.

Restoration Works: Areas of the boulevard that have been physically damaged during winter maintenance activities are to be reinstated using topsoil and seed, or Hydroseed, and are to be supplied and placed by the Town. The abutting property owner is requested to maintain and care for the boulevard to allow the grass to establish.

In areas where the boulevard has been impacted by winter kill, this maintenance is carried out by the Town. Abutting property owners may, at their discretion take steps to maintain the grass within the boulevard as well.

Where there is other maintenance work required other than those listed above, the decision with respect to what reinstatement is to be completed will be made by the Manager of Road Operations, or their designate, taking into account the original condition of the boulevard and the available resources.

5.1 Mailboxes in the Right of Way

During winter maintenance operations, mailboxes in the right of way are prone to damage, due to their proximity to the traveled portion of the road. Operations makes every effort to not damage these items.

If a call is received concerning a mailbox, customer service will refer the location, name and

contact information regarding the damage complaint to the roads supervisor for investigation. The Supervisor will assess and attempt to determine if plow impact occurred and the type of repair or replacement to be conducted.

In general, if a mailbox and/or post is damaged by snow or the impact of the snow load from plowing operations, or improper mailbox location, the Town is not negligent and therefore not responsible for the repair/replacement. However, if the Town's equipment (plow or wing) impacts the mailbox and/or post, the Town will assume responsibility. If the mailbox can be repaired, the Town will repair the mailbox. If the mailbox is not repairable then the mailbox will be replaced with a standard mailbox.



Section 6: Weather Monitoring

6.0 Weather Monitoring

Weather monitoring is conducted through a multi-layered weather monitoring practice. The monitoring practice is reviewed annually with supervisory, senior staff, patrollers, and night operators as part of the pre-season checklist.

Supervisory, senior staff and patrollers routinely monitor the available forecast information including current conditions and extreme weather warnings. Access to the web-based forecast sites is provided to staff through desktop computers and laptop computers carried in road patrol vehicles. The forecast is posted at the respective depot to communicate the weather information to operational staff. The forecast information is again reviewed prior to the end of each regular shift and posted at the respective depot. The weather information is passed on to the on-shift patroller to aid in determining the appropriate time-frame to conduct a road patrol should the forecast warrant.

The weather is monitored with use of the following forecast tools:

Wood Weather PLC

Wood Weather is the provinces leading provider of meteorological information and forecasting, and is used by most municipalities and the Ministry of Transportation for winter forecasting. The Town of Georgina subscribes to Wood PLC for a three-times-daily forecast for two local areas Sutton and Keswick, which act as good representative areas for the municipality with their proximity to Lake Simcoe. Wood uses a variety of Road and Weather information Systems (RWIS) within proximity to the Town in order to prepare accurate forecasts. The Town also receives Severe Weather Alerts which provide a broader view of impact and severity of larger, well-forecasted systems.

Weather Network Website

The website provides hourly forecasting for future 24 hour periods. In addition to forecast information, the website provides historical precipitation and temperature for different regions throughout the Town.

Environment Canada

The forecast information from the website provides general weather information. The site is utilized as a secondary source for information. The King City forecast (radar) station is the direct source for the Town of Georgina, which provides precipitation forecast for approximately five hours.

York Region

The Town has executed a data-sharing agreement with the Regional Municipality of York in order to leverage the system of RWIS stations they maintain. Two of these stations are within the Town's boundaries and serve as a great resource to supplement the other resources above.

In addition to the above, the Town's patrol vehicles are equipped with data-enabled computers to forecast conditions, check public service requests, and monitor Town and contractor vehicles using AVLGPS while the patroller is safely parked while on-route. All staff are equipped with smartphones to maintain contact and all equipment with radios for operational contact.



Section 7: Communication

7.0 Track your Snowplow

The Town will run a trial of track your snowplow service this winter with access provided to residents who sign up. More information will be posted on the Town website and social media when it is live.

Track your snowplow provides residents with information during a winter event. The map will show the current status of operations, including whether the service levels for each road segment have been met. This is represented by green (has met), yellow (has not met, but still within time-frame), or red (has not met, outside of time frame).

This service, when live, is available 24/7 and updates automatically to provide residents with up-to-date information. We encourage residents to review this information on a regular basis.

7.1 Contact Information

Customer service will be happy to answer any questions. Contact us at:

Monday to Friday

8:30 a.m. to 4:30 p.m.

905-476-4301

After hours answering service

905-476-4301

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