



Town of Huntsville Staff Report

Meeting Date: September 27, 2023

To: General Committee

Report Number: OPS-2023-39

Confidential: No

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Subject: Winter Maintenance and Control Operations - Optimization Plan

Report Highlights

Report providing Committee with an overview and highlights of Winter Maintenance and Control Operations, including snow clearing, snow removal, and other maintenance activities for the 2023-2024 winter season (November 1 through April 30).

Recommendation

For Information Only.

Background

Winters in Muskoka vary significantly. Even weather data captured in Muskoka varies depending on where the data is captured. When looking at multiple weather data sources that include the 2022-2023 winter season, Huntsville receives an average of 53 days of snow, resulting in an average of 282.7 cm (111.3 inches) of snowfall. When this past winter season is removed from the data, the average snow days decreases to approximately 40 with just over 200 cm of snowfall.

Averages don't represent the winter weather event picture fully as we have many other types of precipitation, i.e., rain, freezing rain, ice pellets, and mixed precipitation, in addition to snow. There are also, typically, thaw cycles during the winter. Finally, winter storms may last several hours or even days, followed by stretches where there is no precipitation, i.e., significant snowfall/accumulation during a short period with little or no precipitation in the days or week to follow.

The Town of Huntsville performs winter maintenance and control activities on over 418 km of roadway as well as in Town owned/maintained parking lots. This work takes a significant amount of time and must be scheduled in such a way as to meet legal requirements for winter maintenance in addition to considering access to key locations around Town, i.e., fire services, paramedics, police, hospitals, schools, vulnerable people, main travel routes, etc.

For the purposes of Winter Maintenance and Control, the Town must meet, at minimum, *O. Reg. 239/02: Minimum Maintenance Standards for Municipal Highways (MMS)* made under the *Municipal Act, 2001, S.O. 2001, c. 25*. It is important to emphasize that these are minimum standards.

The MMS provide the minimum requirements for sanding, salting, and snow clearing and snow removal, each of which are distinct winter maintenance activities.

Sanding - sanding is adding grit for the purposes of helping to improve traction on snow covered, ice covered, or even cold asphalt surfaces. Sanding is done in conjunction with snow clearing operations and is optimally applied just after snow is cleared. Sanding can also be completed to assist when there is a light snowfall, or even prior to plowing, until plows can get to the roadways. In our Huntsville winter operations, sand is a mixture of sand with 5% salt added. Sand does not act to clear roadways to bare conditions.

Salting - salting is the use of salt to help clear roadways by melting snow and ice. Salt is used only within specific temperature ranges, i.e., temperature is too warm - ice and snow don't accumulate - when too cold, salt is ineffective or even counterproductive (melt freezes). Salt is also used in advance of and during ice storms.

Snow Clearing - this is the actual snow plowing activity itself. Using a combination of plow trucks and other heavy equipment (graders, excavator), snow is pushed out of the way of the travelled portion of the roadway and clears parking lots. This does not remove the snow. The result of snow clearing is roads and parking lots that can be safely used by vehicular and pedestrian traffic. The snow is temporarily stored as snow banks along the edges, off to the sides of the travelled portion of roadway or in banks at the end of cul-de-sacs.

Snow removal - this is the removal of the snow that is temporarily stored along roads/parking lots as snow banks. Heavy equipment (large blowers and excavators) are used to remove snow banks and fill dump trucks to move snow to a yard where it will eventually melt. This activity improves sightlines, increases parking capacity, and improves pedestrian walkability. It is also an important activity to prepare for subsequent snowfalls.

Winter operations are impacted by several factors:

- Vehicular and pedestrian traffic.
- Parked/stopped vehicles.
- Ability to recruit, select, train, and retain winter maintenance operators.
- Operator scheduling and contractual requirements related to scheduling.
- Operator availability.
- Storm track and timing.
- Climate change and changing weather patterns.
- Quality, timing, and regularity of roads patrols.

The timing of snow clearing is important in that snow removal that occurs effectively and efficiently at the right time of day will ensure that roads are ready for peak traffic volumes, i.e., commute times, including school buses and public transit.

Discussion

The changes outlined in this report are operating changes. The purpose of the change is to ensure that the Town continues to meet legislative requirements and consistently delivers the Council directed service levels.

Winter Maintenance and Control Operations Changes

Reason for Changes

The Town of Huntsville is making changes to its winter operations to optimize its winter maintenance activities delivery. The need for this change is based on:

- The essential/emergency nature of the work of winter maintenance
- Public feedback
- Changing weather patterns and climate change
- Current staff and equipment resourcing
- Alignment with other service delivery providers, e.g., school bus companies
- Increasing traffic volumes (vehicular and pedestrian)
- Consistently meeting the *Minimum Maintenance Standards for Municipal Highways*

The Town of Huntsville is also working with its District Municipality of Muskoka partner in coordinating snow clearing and snow removal efforts.

Summary of Changes

The changes being implemented for the 2023 – 2024 Winter Control season, as defined by *O. Reg. 239/02: Minimum Maintenance Standards for Municipal Highways* made under the *Municipal Act, 2001, S.O. 2001, c. 25* include:

1. Change in Operator Scheduling.
2. Implementation of four (4) maintenance zones.
3. Changes to plowing routes.
4. Implementation of technologies to support operations, including roads patrols.

Change Details

Operator Scheduling

The winter operator schedule is changing to a full twenty-four (24) hour per day, 5-day per week schedule with six (6) full-time and two (2) seasonal operators on each of the three (3) daily shifts.

Shift times are to be confirmed; however, based on the existing winter shift times, there will be three (3) eight (8) hour shifts beginning Monday morning and ending early Saturday morning in each week. The shift times (subject to change) will be:

- 04:00 to 12:00h
- 12:00 to 20:00h
- 20:00 to 04:00h

Additionally, all operator absences will now be backfilled to ensure full winter maintenance capacity on every shift.

Implementation of Four (4) Maintenance Zones

Roads Operations will be divided into four (4) zones for the purposes of maintenance. These new zones will be used year-round to budget, plan, route, and complete all regularly occurring roads-related activities. These do not include capital maintenance or capital works.

In the 2023-2024 operations year, there will be little impact other than identifying patrol and plow routes. Going forward, these zones will become the basis for planning all roads operations activities.

The four zones will be:

1. Stisted
2. Huntsville-Chaffey
3. Stephenson-Port Sydney
4. Brunel

Changes to Plowing Routes

The overall change in winter maintenance will include a renewed focus on only two priorities:

1. Snow Clearing; and,
2. Snow Removal.

All other work will be scheduled around these two priorities. Snow clearing and removal activities will continue, without exception, until all the snow is gone. This includes the addition of roads as the Town works together with its District Municipal partner and will include new agreements and arrangements relating to Downtown Main Street snow removal.

Plow routes will be based on the new maintenance zones (see above). There will be two (2) plow routes for each zone – a total of eight (8) routes. These zones will be developed using routing software (A.I.) and a series of criteria to determine the priority of these routes.

The goal of the new routes combined with the twenty-four (24) hour per day operation during the week, is to have the roads cleared, for morning and afternoon rush times, with an emphasis on keeping routes safe and open for emergency vehicles, school buses, movement of goods/services, and the commuting public.

In addition to all the other benefits related to these winter changes, reducing the number of plow routes reduces the stress on plowing equipment. It will allow for a better rotation of equipment that will facilitate regular and routine maintenance work to keep plowing/maintenance equipment on the roads. In the event of break-down, fewer plow routes will help ensure the availability of equipment for all routes.

Implementation of technologies to support operations, including roads patrols

The Town has already invested in several databases, electronic records keeping, and operations support software programs. The Town is also moving ahead with the acquisition of additional operations support. Finally, the Town is also looking to replace the existing GPS solution with a new, more robust GPS solution.

The Division leadership team is currently revamping the documentation system and associated workflows.

There are two primary goals of this work:

- Decrease workload of Operators while ensuring all required data is captured.
- Improve records associated with roads, roads maintenance, and road projects while aligning with Town records management systems and improving liability reduction efforts..

There will be the new GPS solution whose most significant feature is the tracking of the sand/salt delivery on to Town roads to support winter maintenance and control activities. The GPS is also a significant legal record demonstrating the Town’s compliance with all legislated requirements and helps reduce the Town’s liability relating to roads and roads maintenance.

The Town will be using the Town GIS/ESRI system for route development and route optimization for plow routes, road patrol routes, and even public transit routes.

There will be other adjustments and software solution implementations. The goal is to limit/eliminate the need for manual documentation while improving roads and roads services delivery. It will also provide additional public transparency and provide the opportunity to report publicly, through Council, on all the great work that our Roads department completes every day of every year.

Labour Relations

The Town is currently in discussions with the Union about this operational change. The discussion with the Union is part of the regular Labour Relations process.

Capital

There is no direct capital impact related to these operational changes.

There may be positive impact on capital equipment. There are 13 plow trucks. With only 8 routes and 8 operators per shift, this will allow for a rotation of plow trucks and ensure that spare plow trucks remain available. This rotation of equipment may lead to a decrease in wear, potentially helping increase the longevity of this capital equipment.

Operational

The change in operating hours results in the following weekly salary costs:

Former Winter Operations	M	T	W	T	F	Weekly Hours	Cost per week
4:00	88	88	88	88	88	440	\$ 13,059.20
12:00	88	88	88	88	88	440	\$ 13,059.20
20:00	16	16	16	16	16	80	\$ 2,374.40
						Total	\$ 28,492.80
New Winter Operations	M	T	W	T	F	Weekly Hours	Cost per Week
4:00	64	64	64	64	64	320	\$9,497.60
12:00	64	64	64	64	64	320	\$9,497.60
20:00	64	64	64	64	64	320	\$10,115.20
						Total	\$29,110.40

The salary cost, without benefits and overtime, will increase by \$617.60 per week (\$13,587.20 for the entire winter control season). This difference in salary between the previous schedule and the 2023-24 winter roads control schedule is that during the overnight shift, the collective agreement requires

that the Town pay operators at the lead hand rate. This is similar to paying a shift premium for working the overnight shift. The hourly difference between Operator 1 and Lead hand is \$1.48 to \$1.93 per hour, dependent on how long they have been with the organization.

Overtime is extremely variable year-to-year and is difficult to predict. Overtime is impacted by the timing of winter events and employee illness among other factors. There will be a slight increase in overtime to cover off absences. This increase will be offset by an anticipated savings in overtime for the same period as operators will not be called in during the overnight period. The weekend hours are slightly reduced as a result of the overnight shift (by 4 hours per weekend) and that will also help decrease overtime.

The anticipated net result is to come in at, or slightly below the overall cost of delivering winter maintenance operations over last year. The bottom line is that this change will be better winter control, drivability, and public safety planned to be at, or below, the previous cost of delivery.

Council Strategic Direction / Relevant Policies / Legislation / Resolutions

Strategic Direction

2.4 Roads and Infrastructure

2.4.1 Transportation

- a. Goal: RdInf 1.2 Collaborate with other municipal governments and province for potential shared planning, cost saving, and efficiencies related to roads

Legislation

The Municipal Act, 2001, S.O. 2001, c. 25

O. Reg. 239/02: Minimum Maintenance Standards for Municipal Highways

Consultations

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Manager Approval (if required): _____

Director Approval: Tarmo Uukkivi, Director - Operations and Protective Services

CAO Approval: Denise Corry, Chief Administrative Officer

