

Winter Sidewalk Maintenance Service Standards

Presented To:	Operations Committee
Meeting Date:	September 20, 2021
Type:	Correspondence for Information Only
Prepared by:	Brittany Hallam Linear Infrastructure Services
Recommended by:	General Manager of Growth and Infrastructure

Report Summary

This report provides information regarding winter sidewalk maintenance service standards and a summary of community consultation.

Relationship to the Strategic Plan, Health Impact Assessment and Community Energy & Emissions Plan (CEEP)

This report supports the 2019-2027 City of Greater Sudbury Strategic Plan under the pillar “Create a Healthier Community” by providing recommendations that align to effect change within the community to improve health and social outcomes for all citizens and Goal #8 of the Community Energy & Emissions Plan (CEEP) which is to achieve 35% active mobility transportation mode share by 2050 by encouraging sidewalk use as a form of active transportation.

Financial Implications

There are no financial implications associated with this report.

Background

Linear Infrastructure Services maintains 350 kilometers of sidewalks across Greater Sudbury each winter. Winter sidewalk maintenance involves plowing and sanding sidewalks to reduce slip hazards and provide a smooth surface for sidewalk users. As the City strives toward their on-going commitment to becoming a more pedestrian friendly community in line with the City of Greater Sudbury Strategic Plan pillar to “Create a Healthier Community” and CEEP Goal #8 to encourage active transportation and reduce vehicle use, the importance of clearing sidewalks in the winter to help residents maintain healthy, active lifestyles and to provide access to work, school, shopping, and GOVA Transit services is recognized.

Sidewalk winter maintenance practices within the City have evolved over a number of years. The policies and guidelines that currently determine the delivery of this important service are the City’s Active Transportation Winter Maintenance Policy and the Province of Ontario’s Minimum Maintenance Standards for Municipal Highways (O.Reg. 239/02).

On February 16, 2021, the Finance and Administration Committee passed resolution FA2021-06 requesting

that staff prepare a study of service standards and service delivery models for winter sidewalk maintenance with recommended service level options for potential consideration as a possible business case for the 2022 budget deliberations including but not limited to reviewing: snow accumulation to initiate operations; continuous plowing practices; priorities for the sidewalk network; service models and best practices in other cities; and alignment with the active transportation policies and goals of the Community Energy and Emissions Plan (CEEP).

Upon review, it was determined that a complete and all-encompassing study of winter sidewalk maintenance service standards and service delivery models would be a large undertaking that would require a considerable amount of research, analysis, and citizen engagement which could not be appropriately completed prior to the 2022 budget submission. As such, this report is the first of multiple reports to Committee which will serve to keep Committee updated and engaged and facilitate feedback prior to staff providing formal recommendations.

This report focuses on outlining existing service levels for winter sidewalk maintenance as well as analyzing resident needs based on citizen engagement and 3-1-1 citizen service request data. Multiple community groups have a vested interest in winter sidewalk maintenance throughout the City. Upon seeing the above noted resolution (FA2021-06), the Greater Sudbury Safer Sidewalks (GSSS) community group initiated a public survey to provide context to what they believe are the notable issues and concerns relating to winter sidewalk maintenance. Staff have since reviewed this survey and met with the group to discuss the survey results and plans to study service levels moving forward. As well, the City of Greater Sudbury conducted their own survey on the City's "Over to You" page which helped to provide further context to resident priorities and concerns.

Analysis

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

The City of Greater Sudbury endeavors to adhere to or exceed the minimum maintenance standards for municipal highways (MMS) as set out in O.Reg 239/02. These standards speak to requirements for road and sidewalk maintenance as well as requirements for patrolling of both to monitor conditions.

As it relates to snow accumulation on sidewalks, the MMS states two requirements to be followed after the snow accumulation has ended. The first is to reduce the snow depth to less than or equal to 8 centimeters within 48 hours. The second is to provide a minimum sidewalk width of 1 meter. The MMS further states that if the snow depth is less than 8 centimeters, the sidewalk is deemed to be in a state of repair and if the snow depth exceeds 8 centimeters while snow continues to accumulate, the sidewalk is deemed to be in a state of repair until 48 hours after the snow accumulation ends.

The MMS also speaks to ice formation on sidewalks and notes that if ice forms on a sidewalk the sidewalk is deemed to be in a state of repair until 48 hours after the municipality first becomes aware that the sidewalk is icy. The municipality must treat the sidewalk within that 48 hours and the sidewalk is deemed to be in a state of repair for 48 hours after that treatment. As it relates to the City of Greater Sudbury, treating a sidewalk means applying sand.

Finally, the MMS sets out requirements for patrolling sidewalks which consists of visually observing the sidewalk by driving on the adjacent roadway or driving or walking on the sidewalk. The standard for patrolling sidewalks is to patrol sidewalks that the municipality selects as representative of its sidewalks at intervals the municipality deems necessary.

Current Winter Sidewalk Maintenance Service Levels

There are twenty-two (22) sidewalk plow routes throughout the City of Greater Sudbury. Generally, these routes were designed to be completed by one sidewalk plow during the course of one shift (8 to 13 hours) however some may take longer based on the route and weather conditions. During a winter event, sidewalk plowing begins on all routes once 8 centimeters of snow accumulation occurs or icy conditions are detected. The City has four (4) to twenty-four (24) hours after a snow event has ended to complete this service standard during typical winter weather events. Snow accumulation on sidewalks is generally cleared with a single pass. The Collective Bargaining Agreement (CBA) allows for sidewalk plow operators to work on a “first eight (8) in twenty-four (24)” schedule which means that staff may start at any time of day within a twenty-four (24) hour period based on operational need. A typical shift is eight (8) hours but may be extended up to thirteen (13) hours on overtime with staff concurrence. This service is staffed for only one shift which means that when the previously mentioned shift has ended, all staff are entitled to a mandatory rest period of at least 11 hours prior to returning to work. During this period of time, there is no staff available to continue clearing sidewalks. If the storm ends in the middle of a shift, and staff cannot complete the work before the end of said shift, any sidewalks that are not completed will be left until the following shift commences.

The downtown area of Sudbury is unique as it has been listed as a priority area. As such, the routes associated with downtown Sudbury are serviced every week day from midnight to 8 a.m. regardless of snow accumulation.

During periods of non-snow/ice events, sidewalk plow operators are utilized to complete all required winter maintenance tasks such as pothole patching, snow removal, and winter ditching as needed. Sidewalks outside of downtown Sudbury are patrolled on regular intervals as set-out in the MMS and are spot plowed and/or sanded as necessary to ensure the sidewalk is passable for users.

Citizen Survey – GSSS Community Group

The GSSS community group compiled an independent public survey to garner feedback on the City’s sidewalk conditions during the winter months. This survey had 428 responses from every Ward in the City according to their report which can be found in Appendix A.

A clear theme emerged from the results of this survey which was that residents found it difficult to navigate winter sidewalks which, in turn, was impacting their ability to travel for work, school or leisure in the winter. A summary of GSSS’ recommendations are as follows:

- Address Slippery and Bumpy Conditions
- Address Snow Blocking Sidewalks
- Ensure accessibility with plowing commencing sooner and continuing more frequently

Another notable recommendation was to improve communication, access to information, and education. The report provides examples such as providing more information to the public, encouraging 3-1-1 use, and increasing by-law enforcement as it relates to private residents and companies moving snow onto sidewalks.

Citizen Survey – City of Greater Sudbury

The City of Greater Sudbury released a citizen survey on its “Over to You” page during the month of August in the hopes of engaging a broader spectrum of residents and building upon the results of the GSSS survey in order to gain more perspective on how to improve service to residents. This survey garnered 1,254

responses and the “Over to You” page had 2,400 visitors from all Wards and a variety of demographics. A report on the survey results can be found in Appendix B.

The survey began by trying to gain context on how people use these sidewalks and whether this use varies in the winter. The survey found that a large majority of respondents utilize sidewalks for leisure/general neighbourhood walkability while approximately one-third to one-half of that number utilize sidewalks to go to work or school. Of other note, the number of residents who utilize sidewalks in the winter as opposed to the summer for leisure/general neighbourhood walkability declines by less than 10%. With that said, 60% of respondents did note that they utilize sidewalks less in the winter and of those, a majority noted the condition of sidewalks between storms being the cause.

66% of respondents noted that they experienced the most difficult sidewalk conditions in between snow events. When asked to rank the most difficult conditions, slippery conditions/icy patches was number one with uneven surfaces, snow piled at intersections, and deep snow ranking fairly equally behind that. The detailed breakdown can be seen in Figure 1.

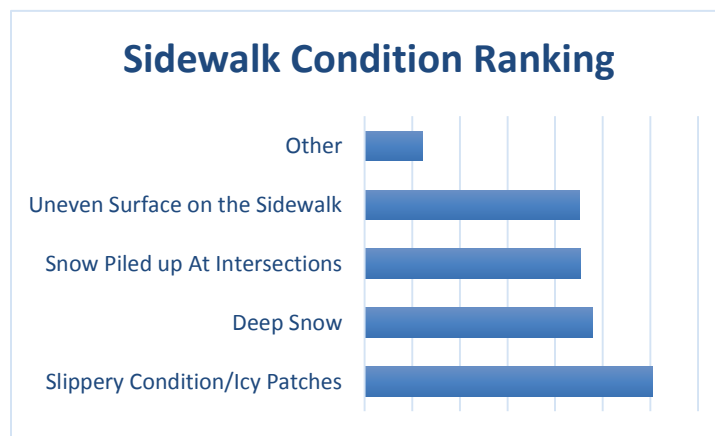
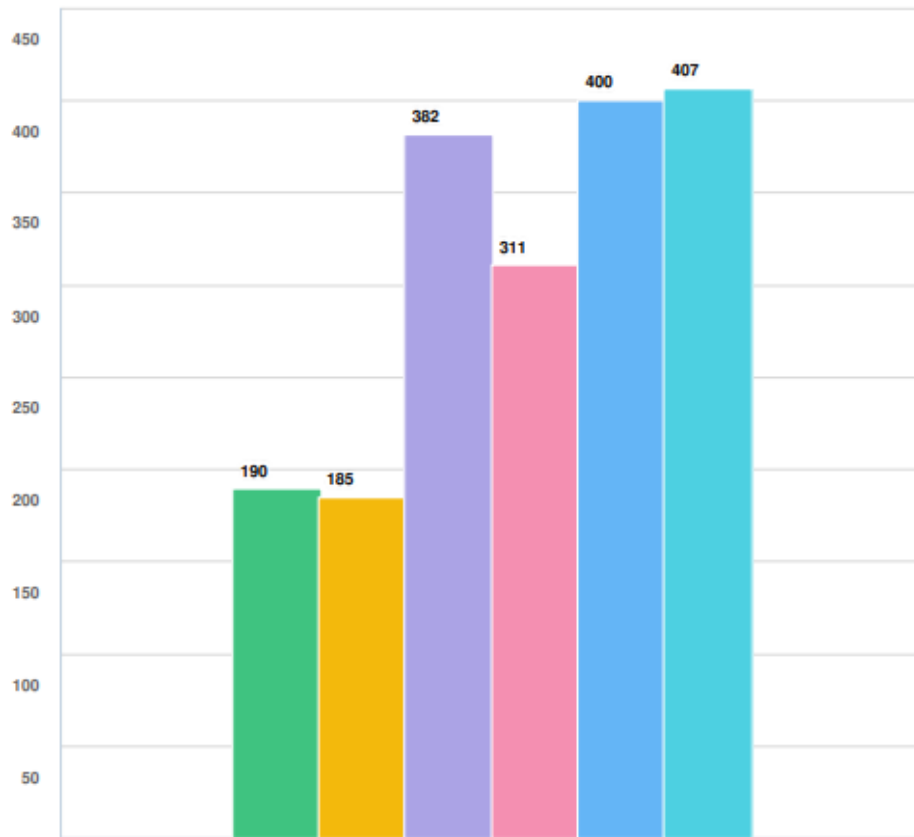


Figure 1: Sidewalk Condition Ranking

In order to gauge how receptive residents would be to a service level change, the survey asked respondents to select options for service level change that they would consider palatable. Residents were able to select all that they would deem acceptable to be considered. 32% of respondents selected “None of the above”, 32% noted that they would consider businesses being responsible for clearing snow in front of their own property to allow for an increased level of service at other priority locations, and 30% noted that they would consider clearing snow on arterial and collector road sidewalks sooner and more frequently during a storm while not plowing local road sidewalks until a storm has ended. The results can be seen in Figure 2 below.

When it comes to increasing sidewalk service levels, which of the following would you be willing to consider? Check all that apply.



Question options

- Increasing taxes to enhance the current level of service for all sidewalks.
- Decreasing the level of service on some sidewalks in order to increase the level of service on others. (for example, increasing sanding on specific routes for the duration of a storm, which means it would take longer to do one pass on some other routes)
- Clearing snow on arterial and collector road sidewalks sooner and more frequently during a storm, but not plowing sidewalks on local roads until after the storm has ended.
- Residents being responsible for clearing the sidewalks in front of their own property to allow for an increased level of service at other priority locations.
- Businesses being responsible for clearing the snow in front of their own property to allow for an increased level of service at other priority locations.
- None of the above.

Figure 2: Service Level Options

Finally, the survey asked whether residents were aware of the City of Greater Sudbury’s Active Transportation Winter Maintenance Policy to which 70% of respondents said no while 89% stated that they did not know that they could request a sidewalk be reviewed for potential winter maintenance.

3-1-1 Customer Service Requests

Staff undertook a cursory review of historical citizen service requests for winter sidewalk maintenance from 2017 to 2021. These requests are broken down into two categories in the system as it relates to sidewalk plowing, “Plowing Sidewalks/Stairs” and “Slippery/Icy Sidewalks/Stairs”. On average, 70% of requests are within the category “Plowing Sidewalk/Stairs” and 30% of requests are within the category “Slippery/Icy Sidewalks/Stairs” in a given winter season.

When analyzed, “Slippery/Icy Sidewalks/Stairs” generally related to the same types of general icy and slippery conditions concerns on sidewalks but “Plowing Sidewalks/Stairs” encompassed a number of different concerns relating to such items as, intersections and cross-walks, placement of snow by the sidewalk plow, sidewalks locations which are or are not plowed, snow plows filling in sidewalks, and general sidewalk plowing requests and concerns. It should also be noted that some requests relating to slippery sidewalks would also be encompassed within this category. Figure 3 below shows an average breakdown of these requests per winter season.

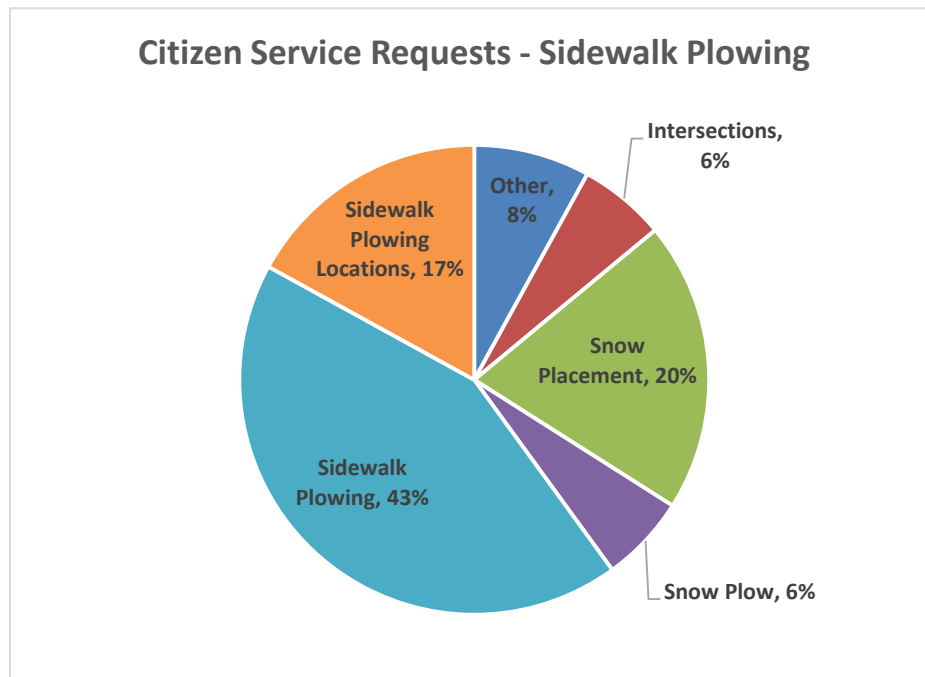


Figure 3: Citizen Service Requests – Sidewalk Plowing

The majority of requests were within the general sidewalk plowing category with 43% of the calls in a season relating to such. These requests were all either requesting sidewalk plowing, noting that a plow had not been on a certain sidewalk yet and/or asking when the sidewalk plow would be there, or concerns about plowing which was already completed. Further analysis as to when these calls were taking place (ie. During a winter event or in between events) was desired but that information is not logged within the system and would have been a significant undertaking to compile for the purposes of this report.

Calls relating to snow placement were the next most common with 20% relating to such. Typically, calls relating to snow placement were categorized by concerns relating to driveway access and/or windrows in driveways, concerns relating to snow placement on properties and/or near fences, houses, lawns, and finally, general access and placement concerns. Figure 4 below shows an average breakdown of these calls during a typical winter season with 65% of the calls relating to driveway access and 31% of the calls relating to property concerns.

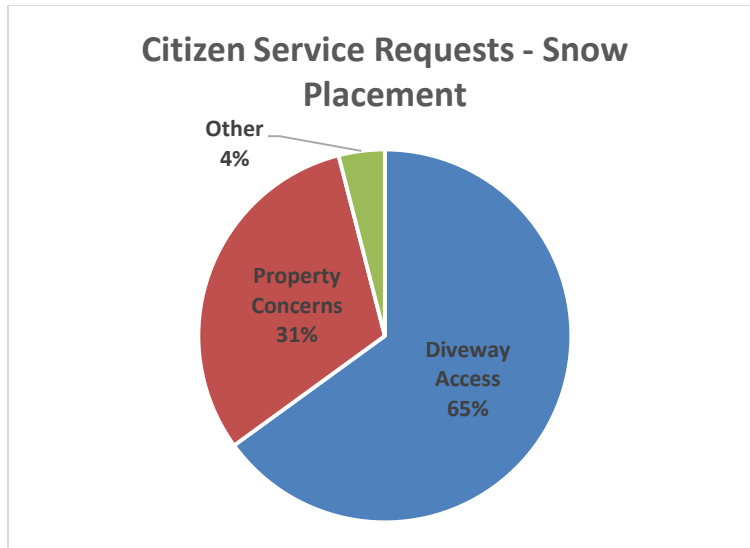


Figure 4: Citizen Service Requests – Snow Placement

Calls relating to sidewalk plowing locations were the next most common at 17%. Upon reviewing citizen request for sidewalk plowing locations there were typically three types of requests, general inquiries as to how locations are chosen, requests to add sidewalks to the plowing list, and requests to remove sidewalks from the plowing list. Figure 5 below shows an average breakdown of these requests in a typical winter season with 54% of residents requesting a sidewalk be added to the list and 27% of residents requesting a sidewalk be removed from the list.

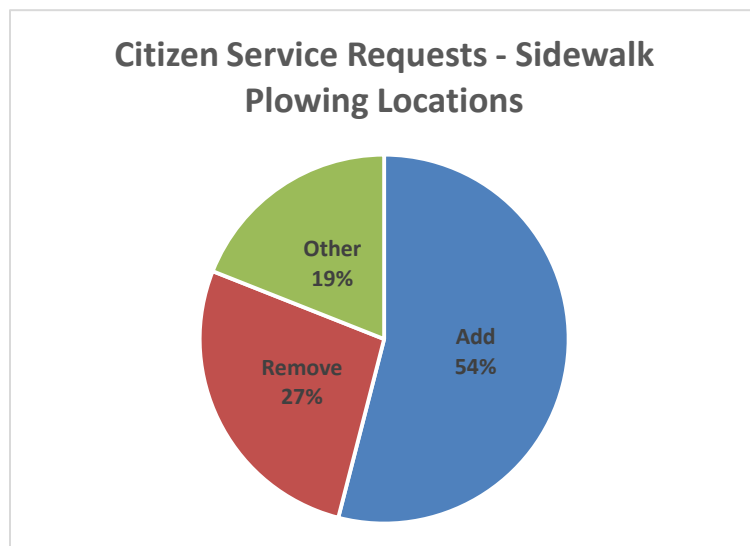


Figure 5: Citizen Service Requests – Sidewalk Plowing Locations

Service Level Review

As part of resolution FA2021-06, staff were asked to review a number of items. Below is a high level preliminary overview of these items with some options requiring more fulsome analysis to inform formal recommendations.

Level of Snow Accumulation Which Triggers Commencement of Plowing Operations

Both the Finance and Administration Committee as well as the GSSS group suggested that the amount of snow accumulation that occurs prior to commencing sidewalk plowing operations be reviewed and potentially lowered. As noted above, typically, the City initiates sidewalk plowing at 8 centimeters of accumulation or when icy conditions are detected which is in alignment with the MMS. However, Managers currently use discretion as to the most appropriate time to begin a sidewalk plowing shift in order to align best with winter weather events.

As previously noted, the City's current budgeted service level only allows for staffing on one shift (8 to 13 hours) prior to a minimum eleven (11) hour rest period. If plowing operations were to commence sooner with existing staff and budget levels, it is likely that more incomplete routes would be realized at the end of each shift. As well, depending on the nature of the storm, this change could lead to an increase in the number of passes required by the sidewalk plow which would likely see that residents experience an increased need to clear their driveway. It is more than likely that an increase in snow plows filling in already plowed sidewalks would also be realized.

Deploying sidewalk plows earlier in a winter event may decrease resident concerns relating to sidewalk plows not being out soon enough and/or not attending a sidewalk early enough in a given storm but it can be foreseen that this would be balanced by an increase in concerns relating to sidewalks being incomplete at the end of the shift. As well, based on the City's survey results, most respondents were more concerned about slippery/icy sidewalk conditions in between snow storms, therefore, this adjustment would not necessarily address the majority of resident's concerns.

Continuous Plowing Practices

As noted above, the current budgeted service level only allows for staffing on one shift prior to an eleven (11) hour rest period. In order to facilitate continuous plowing practices throughout a storm, staffing levels would be required to be doubled from 22 existing operators to 44 which would then allow for equipment to be operated sixteen (16) hours a day (twenty-four (24) hours with overtime). This staffing increase could be done utilizing either casual or temporary staff.

Utilizing casual part-time staff for continuous plowing operations only during a winter event would be the most cost effective method to implement this service level change but it would not address sidewalk conditions between winter events. As well, casual staff are not required to attend a call-out, therefore, there would be a risk that continuous plowing of all beats would not be realized in any given winter weather event.

If it was determined that full-time temporary staff should be hired for the winter season to facilitate continuous plowing practices, it would be foreseen that the additional employees could be utilized to increase sidewalk plowing and/or spot sanding in between winter events as well.

Continuous plowing would cause more wear and tear on equipment which would increase equipment maintenance costs and may require the addition of spare units to allow for downtime. As well, review of citizen service requests showed that 20% of sidewalk plowing calls were related to dissatisfaction with driveway windrows and snow placement on properties. This option would increase the need for residents to clear their driveway as a sidewalk plow would pass their house twice as often during and after a snow event.

Priorities for the Sidewalk Network

The City of Greater Sudbury has adopted a Sidewalk Priority Index and guidelines which were utilized to develop the City's Active Transportation Winter Maintenance Policy. These guiding documents could help to

inform further analysis on prioritizing sidewalk plowing. However, this would require the design of new routes which would be time consuming to implement. As well, this may be very inefficient and impractical as it would likely see significant dead heading (the practice of driving a piece of equipment without performing work) to get to these priority locations. A sidewalk plow operator will have to pass significant lengths of unmaintained sidewalk to get to the higher priority areas. This would also result in the second pass being inefficient as the operator goes back to maintain the lower priority areas, this will inevitably result in passing areas that have already been maintained. This change alone will also not address the majority of residents concerns with sidewalk conditions between snow events.

30% of respondents to the City of Greater Sudbury's survey stated that they would consider prioritizing arterial road sidewalks while in turn accepting a lower service level on local road sidewalks during a storm. With that said, upon review of the entirety of the survey data as well as 3-1-1 citizen service requests, a large majority of residents rely upon local sidewalks for general walkability, getting to school and/or work, and to attend a bus stop. This could also greatly impact the ability for residents with mobility issues to leave their homes during a winter weather event. Additional community engagement would be required to be undertaken to complete a full analysis of this option prior to providing any recommendations.

Next Steps

It is clear that the City of Greater Sudbury has diverse needs and uses for sidewalks in the winter and a strong desire for a change in the way that this service is delivered to encourage more active transportation by way of sidewalk usage. Further review is required in order to determine the most cost effective way to continue this service while meeting residents needs.

Staff are currently reviewing service models and best practices in other cities. As part of this review, staff met with the City of Ottawa to discuss their recent survey which is part of a larger winter maintenance quality standards review being undertaken by them. A full analysis of service models and best practices in other municipalities will be completed. It is foreseen that such items as, equipment and material, plowing routes, prioritization of sidewalks, and individual city service levels (such as response time and onus on private properties to clear sidewalks) will be analyzed.

Current plowing practices will be reviewed in detail to determine whether any efficiencies can be found within existing service levels and practices. Such analysis is contemplated to include evaluating sidewalk plow routes to ensure efficiency, reviewing best practices with staff, and potentially enhancing sidewalk patrol if deemed necessary.

Upon completion of the above, staff will undertake more comprehensive community engagement to garner feedback on potential service model changes. This is also foreseen to be the commencement of enhanced public education and communication relating to current service level standards and delivery models as that was a clear takeaway from both surveys.

As the results of both the of the surveys showed that residents were seemingly most dissatisfied with icy/slippery/rutted sidewalks in between snow storms, it is clear that continuation of the mechanical ice breaker pilot project is a crucial piece to this service model review. Results of the continuation of the pilot during the 2021/2022 winter maintenance season will inform a portion of this study.

As the above steps are undertaken, staff will return to Committee to provide regular updates and to garner feedback to help to inform recommendations and next steps.

Resources Cited

1. City of Greater Sudbury, City Council Resolution No. FA2021-06, February 16, 2021: [LINK](#)
2. Ontario Regulation 239/02, Minimum Maintenance Standards – [O. Reg. 239/02: MINIMUM MAINTENANCE STANDARDS FOR MUNICIPAL HIGHWAYS \(ontario.ca\)](#)
3. City of Greater Sudbury, Mechanical Ice Breaker Pilot Project Update Report – <https://pub-greatersudbury.escibemeetings.com/filestream.ashx?DocumentId=40416>
4. City of Greater Sudbury, Active Transportation Winter Maintenance Policy – <https://pub-greatersudbury.escibemeetings.com/filestream.ashx?documentid=2492>
5. City of Greater Sudbury, Sidewalk Priority Index - [Sidewalk Priority Index](#)