

Enhanced Service Level Options for Snow Grading and Removal

ISSUE

This report provides options for enhancing the level of service for winter maintenance on streets and bicycle facilities.

BACKGROUND

City-wide snow grading and removal on local streets is not included in the current service level for snow and ice management but was undertaken after the November 2020 snowstorm due to the severity and volume of snow on local streets. Some residents provided positive feedback and suggested the City consider enhanced levels of service to include snow grading and removal on local streets. The financial information and experience gained with the snow grading and removal completed in the winter of 2020-21 has provided information to complete an empirical review and develop informed options for consideration of enhanced levels of service for snow and ice management.

One of the recommendations of the Active Transportation Plan (AT Plan) is to review and update current snow removal requirements and operating procedures for bicycle facilities. Bicycle facilities include protected bike lanes, cycle tracks, multi-use pathways, and bicycle boulevards.

Current Service Level for Snow and Ice Management (approved in 2017)

The Snow and Ice Management Service Level document defines the scope and frequency of snow grading and removal in a typical winter season (Appendix 1).

The current service level includes snow grading and removal on priority streets. There is not a specific timeline required for completion of snow removal or a commitment to undertake snow removal on all priority streets every winter. The service level includes removal of stored snow from priority streets when capacity is reached to make room for future snowfalls. Based on current resources available in the Roadways section, it takes approximately nine weeks to remove snow from priority streets in residential neighbourhoods.

The approved service level includes snow grading on local streets when there is severe rutting or prior to snowmelt when there is an average snowpack of 15 cm. Snow grading after every snow event or removal of snow from local streets is not included in the current service level.

The service level does not include snow grading on protected bike lanes, cycle tracks, or streets designated as bike boulevards. Although not in the current service level document, the current practice for snow clearing of bicycle facilities is as outlined below:

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- protected bike lanes have snow graded within 24 hours of snowfall ending;
- cycle tracks have snow graded within 48 hours of snowfall ending; and,
- bike boulevards have snow graded based on the service level for that street.

Bike boulevards are streets designated for cyclists' use where the cyclists travel on the streets with motorized vehicles. Currently, the only designated bike boulevard in Saskatoon is 23rd Street West.

The level of service for pathways is included in the current service level document and requires that pathways be graded within 48 hours of snowfall ending.

Active Transportation Plan (AT Plan)

As part of the AT Plan approved by City Council in 2016, the following action items were recommended under the theme of maintenance and accessibility:

- review and update current bicycle facility snow removal requirements, and
- review and update current operating procedures for snow removal, and refine, if warranted.

DISCUSSION/ANALYSIS

Enhancement options for current Snow and Ice Management Service Level include:

- snow grading and removal on local streets in all residential neighbourhoods;
- accelerated removal of snow from priority streets in residential neighbourhoods; and,
- snow grading on the protected bike lanes, cycle tracks, and streets designated as bike boulevards.

Any changes to the current service level require City Council approval and updating of the Service Level for Snow and Ice Management document.

	Enhanced Level of Service	Incremental Cost ¹	Incremental Resources (FTEs)
A	<u>Local streets in residential neighbourhoods:</u> Snow graded after every snow event within eight (8) days of snowfall ending; snow is stored on boulevards and in parking lanes. No snow removal.	\$9 million (3.5% increase in mill rate)	4.0
B	<u>Local streets in residential neighbourhoods:</u> Snow simultaneously graded and removed once per year within a six (6) week period.	\$10 million (3.89% increase in property taxes rate)	11.0
C	<u>Local streets in residential neighbourhoods:</u> Snow graded after every snow event within eight (8) days and stored on boulevards and in parking lanes. Snow removed once per year within a six (6) week period.	\$18 million (7.0% increase in mill rate)	15.0

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D	<u>Priority streets in residential neighbourhoods:</u> Snow removed once per year within a six (6) week period.	\$2.5 million (0.97% increase in mill rate)	7.5
E	<u>Protected Bike Lanes:</u> Snow graded after every snow event on bike lanes within 24 hours of snowfall ending. <u>Raised Cycle Tracks:</u> Snow graded after every snow event within 48 hours of snowfall ending.	\$100,000	0
F	<u>Bike Boulevards:</u> Snow graded after every snow event within 72 hours of snowfall ending.	\$50,000	0
G	<u>Bike Boulevards:</u> Snow graded after every snow event within 36 hours of snowfall ending.	\$60,000	0

1. Costs based on six snow events per year and average annual total snow accumulation. In 2022, a 1% property tax increase is approximately \$2.57 million.

Local Streets in Residential Neighbourhoods (Options A, B and C)

Snow grading along local streets in residential neighbourhoods improves safety and mobility for all road users in the winter months. In early spring, it prevents the development of snow ruts that have the potential to damage vehicles.

Snow is typically stored on boulevards and in the parking lanes. The stored snow reduces parking availability along the street and can narrow driving lanes and impact sight lines at driveways and pedestrian crossings. Removal of snow makes all parking available, prevents impact to sight lines, and reduces the number of frozen catch basins that can result in spring flooding.

Removal of snow from local streets substantially increases the amount of snow hauled to snow management facilities. Administration is currently completing planning work for new snow management sites to mitigate environmental impacts at the existing non-engineered sites. If approved, snow removal from local streets will increase the size of the future snow storage sites.

Additional resources (FTEs) are required to deliver an increased service level. While contractors will be hired to deliver most of the work, FTEs are required to reduce reliance on overtime resources, plan and schedule additional work, supervise the work, communicate with residents, and close out the contractor's work.

Actual costs for these options will vary depending on the number of snow events and total annual snow accumulation. Estimated costs are based on six snow events and an average total annual snow accumulation.

The options for service levels on local streets are higher than service levels currently offered at other municipalities such as Red Deer, Calgary, Edmonton, and Regina. Winnipeg has a higher level of service than the options included in this report. They can

provide this service in a cost-effective way as their streets and sidewalks are configured in a way that allows for snow storage on adjacent properties. Further details are provided in Appendix 2.

Accelerated Removal of Snow from Priority Streets (Option D)

This option is an enhancement to the current service level as the work includes a timeline and commitment to remove snow stored in medians, boulevards, and parking lanes on priority streets in all residential neighbourhoods once per year.

Snow removal along these streets will typically start in January but could be adjusted depending on snowfall accumulation and progress on other higher priority snow removal locations. Higher priority snow removal locations include streets in Business Improvement Districts with paid parking, ramping on Circle Drive adjacent to traffic barriers, ramping on bridge barriers, school zones and Priority 1 streets where snow removal is required to prevent narrowing of driving lanes and obstruction of sight lines.

This option includes hiring additional contractor resources to increase the current capacity for snow removal, and internal resources (FTEs) for project planning and contract management.

Bicycle Facilities (Options E, F & G)

Having an established level of service allows cyclists to know when they can expect snow to be cleared from their route, and which cycling routes will be cleared so they can plan their trip accordingly. It also reduces key barriers to choosing cycling in the winter, such as snow filled streets, and provides more options for getting around Saskatoon, encouraging people to continue to ride their bike year-round.

Option E includes grading of snow for protected bike lanes within 24 hours of snowfall ending and grading of snow for cycle tracks within 48 hours of snowfall ending. This option is consistent with current practice.

Option F includes grading of snow for bike boulevards within 72 hours of the end of snowfall which is the same as current Priority 3 streets.

Option G includes grading of snow for bike boulevards within 36 hours of the end of snowfall which is the same as current Priority 2 streets.

Residents living on local streets with bike boulevards will experience a change in level of service with snow grading on bike boulevards. The primary advantage of snow grading and application of salt and sand is better traction for both vehicles and cyclists on these streets which improves safety and mobility. The primary disadvantages are snow piles in parking lanes, medians and boulevards and noise disruption.

The options for bicycle facilities are consistent with current services provided. Snow clearing on the protected bike lanes in Downtown is given priority due to higher cycling traffic.

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Additional details on best practices and service level options in other jurisdictions for winter maintenance of bicycle facilities can be found in Appendix 3.

Appendix 4 contains photographs illustrating a sample of the typical work methods and resulting street and bicycle facilities conditions of the enhanced service level options for snow grading and removal considered in this report.

FINANCIAL IMPLICATIONS

The 2021 budget for the Snow and Ice Service Line is \$13.74 million. The annual cost to deliver the Snow and Service Line fluctuates with the number of snow events and weather experienced in the winter season. Incremental costs of each option are identified in the table above.

OTHER IMPLICATIONS

There are no privacy, legal, social, or environmental implications identified.

NEXT STEPS

If directed by City Council, the Administration will arrange for public engagement and a Triple Bottom Line assessment on any options.

APPENDICES

1. Service Level for Snow and Ice Management approved in 2017
2. Jurisdictional Review for Winter Maintenance on Residential Streets
3. Snow Clearing Best Practices and Jurisdictional Review for Bicycle Facilities
4. Photos – Enhanced Service Level Options for Snow Grading and Removal

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