

# Phase 2 Snow and Ice Control Information Update

## Executive Summary

Phase 2 of the Snow and Ice Control Service Level Changes were implemented in the winter season of 2023/2024. The overall feedback of the project indicated good communication and realized operational efficiencies.

The following project goals were achieved:

- Administration gained a better understanding about the cost difference between plowing and removal. Implementing the Phase 2 changes showed for every snow event it is 25 times cheaper to plow snow to the right than to remove it.
- Snow routes were activated five times due to a significant snow event during the season.
- The proactive messaging through various media was successful. Parking courtesy reminders were distributed for awareness.
- Adjustments were made to operations and communication thanks to resident and stakeholder feedback.
- Feedback also showed that windrows along driveways and curbs are still considered a key issue for residents living on snow routes. and the main challenges cited were manual shoveling, access to driveways and parking lane accessibility.
- Feedback from the school authorities, school busing authority, Fire & EMS, Lethbridge Police Service and Transit continues to be incorporated into operations.

To mitigate the key issues and challenges raised by residents and stakeholders, Administration is providing additional program options for Council's review and discussion.

## Background

The City of Lethbridge Snow and Ice Control policy [CC-34](#) establishes priorities, standards, and service levels of the snow and ice control program. The goal of the policy is to have the city function under normal winter weather conditions, reduce snow and ice hazards, and provide the public with adequate mobility on City controlled roadways, sidewalks and pathways. Transportation Operations is responsible for maintaining 850 km of paved roads, 220 km of lanes, and 65 km of regional trails.

It is important to note, snow and ice control is split into two main functions: **Plowing** and **Removal**.

The Snow and Ice Control policy also establishes service levels for roadways based on a priority route system.

**Plowing** priority routes:

- Priority 1 plowing – assigned arterial roadways which are to be completed within 24 hours of the snowfall ending. Currently, 131 kms are Priority 1 roads. Eg. Whoop-Up Drive, Mayor Magrath Drive.
- Priority 2 plowing – assigned remaining arterials and collectors which are to be completed within 48 hours of the snowfall ending. Currently, 45 road kms are Priority 2 roads. Eg. Stafford Drive N, McMaster Boulevard West.
- Priority 3 plowing – assigned remaining collectors, controlled intersections and bus routes which are to be completed within 72 hours of the snowfall ending. Currently, 29 kms are Priority 3 roads. Eg. 36 Street North, Parkside Drive South.
- Priority 4 plowing – all other city-controlled roads and laneways. Priority 4 service level assures that these roadways are passable for emergency services and the general public.
- Sand and salt are applied while plowing and added at intersections, hills and curves.

#### **Removal** priority routes:

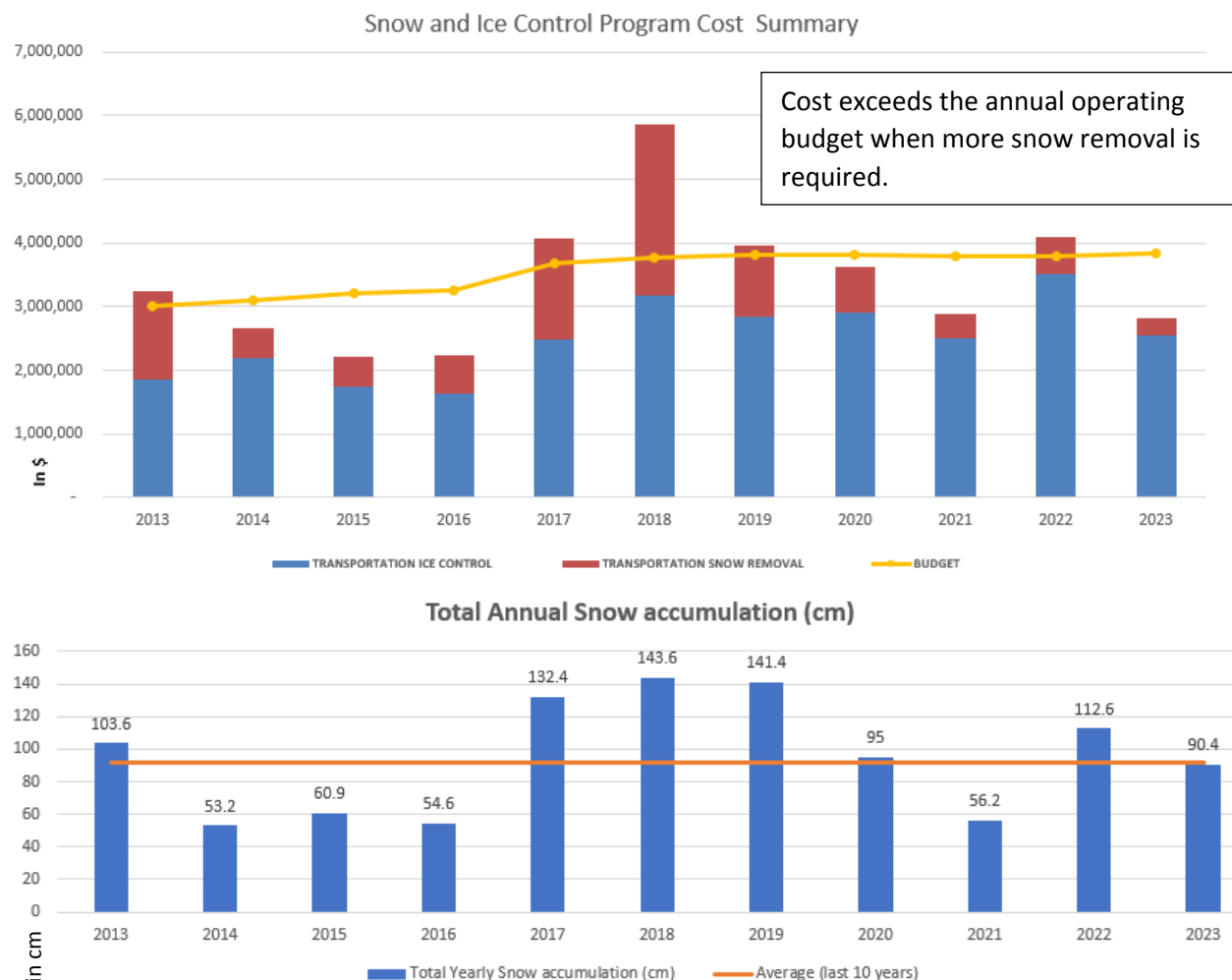
- Priority 1 removal – The current snow removal focuses on the downtown area and the hospital area. During an average winter, snow is removed two- four times along these roads. The new service level adjusted those kilometers from 30 to 18 km for the 2023/24 season. Eg. Downtown core, Hospital area.
- Priority 2 removal – Snow removal focuses around school zones and transit routes in areas that drift in easily. Historically, snow removal occurred in these areas every 5 years. Historically, 35 road kms were Priority 2 roads. The service level change adjusted those kilometers to 10 km for the 2023/24 season focusing primarily on school zones. Eg. Nicholas Sheran School (Laval Boulevard West).
- Priority 3 removal – Snow removal focusses on additional transit routes that become often impassable. Historically, 53 kms were Priority 3 roads and snow removal occurred in these areas every 5 years. The service level change abolished priority 3 snow removal designations. Eg. Heritage Boulevard West.
- Priority 4 removal - Priority 4 roadways are residential roads where snow removal only commences in emergency situations.

## **Financial Considerations**

The program budget of \$4.62 Million in 2023 is shared by Transportation, Parks, and Transit, with Transportation utilizing the majority of operating dollars spent.

Weather plays the most critical role in determining the health of the budget. Years with significant snow events result in budget deficits such as in 2017, 2018 and 2019 (see graph below and table

in Appendix A). In years with less harsh winter conditions, surpluses are achieved and are returned to the Municipal Revenue Stabilization Reserve (MRSR). Historically, the allocated operating budget has been appropriate to meet service levels during average winters. Currently, the cumulative variance of the SNIC program is \$5.3 million. The MRSR backstops the SNIC program.



## Timeline of events

### Why are we changing snow and ice controls?

In June 2022, Council approved modifications to snow and ice control services, in a phased approach, focusing on more plowing. This decision followed recommendations from:

- 2020 Klynveld Peat Marwick Goerdeler (KPMG) report; Recommendation stated the City modify service levels for both Snow and Ice Control and Street Sweeping. The goal was to align with practices seen in other municipalities, to realize financial and operational efficiencies. KPMG proposed to look at increasing snow plowing activities and decreasing

snow removal activities.

- March 4, 2021, Transportation presented to the Civic Works Standing Policy Committee several suggested service level modifications for both Snow and Ice Control and Street Sweeping. Administration recommended engaging with the public to get their feedback on possible service level modifications as per City Council policy CC-60.
- In 2021, Argyle Consulting was hired to complete public engagement about snow and ice control and sweeping service level options and to report on the outcomes. Administration used this feedback to determine recommendations for service level modifications to Council. Generally, the public was satisfied with sweeping service levels but would like to see more plowing and parking enforcement for both programs.
- In June 2022 Council approved a three-year trial of service level changes in a phased approach. Phase 1 commenced November 1, 2022, with changes to plowing practices along approximately 25 km of road network and the declaration of parking bans along those routes and enforcement.

Administration reported to Assets and Infrastructure SPC on October 5, 2023 about the feedback and operational results achieved during Phase 1. Council directed Administration to proceed with Phase 2 during the October 17, 2023 Council meeting. Phase 2 comprises of 81 km of road network.

## **Legal Implications**

As part of this change in service level and to operations there may be changes to the City's liability exposure. This may or may not result in an increase in claims. Administration will monitor this through the trial and the results will form part of the report back to Council in the spring of 2026.

## **Phase 2 Report and Overview**

### **Goals**

- Implement plowing to the right in Phase 2 areas and monitor operations and cost;
- Activate snow routes when a significant snow event was triggered;
- Enforce parking bans while limiting the time they are in effect, keeping in mind to not inconvenience residents for too long;
- Apply learnings from Phase 1 to mitigate issues in Phase 2; and
- Collect feedback from residents and stakeholders to consider for 2024/2025 winter season.

### **Operations**

Snow plowing or snow removal are both common practices to address snow accumulation. If snow plowing is performed in a timely manner snow doesn't create a bond to the pavement and

less sand and salt needs to be applied. Snow plowing is the more common practice across Canada because it is significantly less expensive and easier to resource than snow removal. In Phase 1 there were two significant events, but both were under 15 cm of snow accumulation. During Phase 2 the city experienced heavy snow events paired with extreme cold.

During the significant snow events in January, February and March 2024 the City:

- plowed the priority 1, 2 and 3 plowing routes;
- activated and plowed 81 km of snow routes;
- initiated priority 1 snow removal (Jan 16-18 and Feb 3-4 event) and priority 1 and 2 snow removal (March 21-25 event).

Due to the large amount of snow and internal resource constraints during the March event, contractor graders were mobilized to assist with plowing along the 81 km of snow routes.

The table below provides an overview of all the Phase 2 2023/24 events.

| Phase 2 - 2023/24 Snow Events        | Oct 23-27 | Jan 6-8 | Jan 10-14 | Jan 16-22 | Feb 4-6 | Feb 9-10 | Feb 26-27 | Mar 21-27 |
|--------------------------------------|-----------|---------|-----------|-----------|---------|----------|-----------|-----------|
| Snow accum. in cm                    | 16        | 3       | 8         | 19        | 12      | 4        | 4         | 41        |
| Temp. (Mean of Min/Max)/average      | -7.5      | -9      | -29       | -16       | -6      | -6       | -9        | -7        |
| Snow Routes Declared (Y/N)           |           | Y       | Y         | Y         | Y       |          |           | Y         |
| Snow Removal Priority 1 (18 km)      |           |         |           | Y         | Y       |          |           | Y         |
| Snow Removal Priority 2 (10 km)      |           |         |           |           |         |          |           | Y         |
| Parking ban in effect (hours)        |           | 32      | 32        | 49        | 54      |          |           | 24        |
| Courtesy Parking tickets distributed |           | 531     | 97        | 284       | 751     |          |           | 0         |
| 311 complaints recorded              |           | 5       | 8         | 255       | 33      |          |           | 37        |
| Council complaints recorded          |           | 1       | 1         | 24        | 7       |          |           | 1         |
| 311 complaints requesting action     |           | 3       | 3         | 19        | 11      |          |           | 5         |

Significant events

## Direct operating cost comparison

The January 16–22, February 4–6, and March 21-25 events were significant enough that snow routes were activated as well as snow removal on priority 1 routes.

The table below showcases real direct cost specific to the three significant events of the season:

|                                                | Jan 16 <sup>th</sup> – 22 <sup>nd</sup><br>event cost | Feb 4 <sup>th</sup> – 6 <sup>th</sup><br>event cost | March 21 <sup>st</sup> –<br>25 <sup>th</sup> event<br>cost | Average cost |
|------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------|------------------------------------------------------------|--------------|
| <b>Snow plowing<br/>Phase 2 (81 km)</b>        | \$20,000                                              | \$16,900                                            | \$25,800                                                   | \$20,900     |
|                                                |                                                       |                                                     |                                                            | \$258/ km    |
| <b>Snow removal<br/>priority 1 (18<br/>km)</b> | \$136,400                                             | \$86,700                                            | \$142,400                                                  | \$121,800    |
|                                                |                                                       |                                                     |                                                            | \$6,766/ km  |

The snow removal operational cost per km are **25 times more expensive** than the plowing operation. On a cost/km basis the same storm event would cost an additional \$500,000 if snow removal was to be applied.

### Notifying residents of snow route activation

Phase 1 residents indicated they prefer to hear about snow route declarations through custom reminders. City staff followed a declaration process using all tools to inform residents (Lethbridge Loop App, social media, PSA's, media, and website) with a focus on building notification subscriptions.

- Snow route notifications reached more than 18,500 subscribers by the end of the 2023/24 season.

### Engagement with residents and stakeholders

During Phase 1 and 2, the City identified different target audiences and stakeholders to understand their needs, preferences, and feedback on the project. Engagement opportunities offered in Phase 2 include:

- In-person public engagements; Community Conversations events on October 23, 2023 and April 25, 2024, the LSCO Lethbridge Loop education booth on November 9, 2023 and the LSCO Survey and Mighty Neighbour campaign promotion and discussion on April 17, 2024;
- key stakeholder engagement via direct email, phone calls, presentations and one-on-one meetings;
- ongoing short survey/open comment form for resident feedback collection;
- an end-of-season resident and stakeholder online survey which ran from March 18-April 28, 2024.

### Communication with residents and stakeholders

General information about the project was promoted and available to the public through all standard City communication channels, during both phases. Affected residents received custom, targeted information to inform them of the changes, including outlining ways to stay informed and give feedback, in addition to notifications when snow routes were activated.

Communication materials and tactics in Phase 2 included:

- prior to first snowfall, ~6,000 residents and businesses along snow routes received an informational postcard or letter;
- Snow route signage with parking restriction information installed along Phase 2 routes;
- project-specific webpage and public engagement website page;
- interactive map and live snowplow tracker;
- courtesy reminders instead of parking tickets to help transition parking enforcement;
- 311 customer service;
- one-on-one phone discussions with residents to understand complex challenges;
- media events to launch the phase 2 program with news releases;
- every time snow routes were activated a public service announcement (with accompanying media interviews), website banner alert, social media posts, Lethbridge Loop alert and roadside digital signage were sent out;
- a wider public advertising campaign was delivered through radio advertising, broadcast television commercials, local newspaper, printed and digital billboards, transit vehicle signage, google ads, and social media advertising; and
- centralized web location for all tools and links developed in Phase 1: [lethbridge.ca/snow](http://lethbridge.ca/snow).

So far, Phase 1 and 2 outreach, advertisement and communication cost \$257,000. \$125,000 of that was allocated to update the snow route sign network.

Results are presented in more detail [“What we heard report”](#).

In summary, the impact of the significant snowfall and the new plowing practices caught some community members off-guard. Concerns included difficulties shoveling snow from end of driveways, difficulties parking and navigating windrows at the curb, pedestrian safety at crosswalks, stormwater drainage, and side street/alley access. Community members concerns about access for emergency services and overall mobility were issues that became prominent during Phase 2. Addressing these concerns involved monitoring and mitigating through operations and communication or through direct coordination with key stakeholders. Supplementary options and program extensions were researched for consideration.

### **Learnings, Key Issues and Mitigation**

The impact of the significant snowfall and new plowing practices caught some community members off-guard. As with any change, most people don't notice or pay attention until the change is happening. Concerns included difficulties shoveling snow from end of driveways, difficulties parking and navigating windrows at the curb, pedestrian safety at crosswalks, stormwater drainage, and side street/alley access. Community members concerns about access for emergency services and overall mobility were issues that became prominent during Phase 2.

Addressing these concerns involved monitoring and mitigating through operations and communication or through direct coordination with key stakeholders. Supplementary options and program extensions were researched for consideration.

## **Learnings**

### **Internal Stakeholders**

No complaints regarding emergency access issues were received from Lethbridge Police Service, Fire & EMS or Transit. A follow-up meeting with these departments was held March 7, 2024. City department representatives were engaged in discussions about snow routes to identify opportunities to collaborate.

### **Schools**

School zones are excluded from the snow routes, remaining as part of the snow removal network to maintain safe drop off and high pedestrian movement. The areas around schools are part of the new snow routes. Representatives from the school authorities and the school bussing provider were identified as key stakeholders and contacted directly in Phase 1 and 2. Majority of school representatives report no complaints regarding snow route changes. However, this initiated opportunities to identify other issues related to snow removal priority 2 in school zones.

### **Accessibility**

The Mobility and Accessibility Master Plan identified winter conditions as a challenge when accessing any Transit services, pathways and parks for all users. Feedback indicated that Transit users experience difficulties when getting to and from bus stops, usually due to snow and ice cover, and that bus stops are often not properly cleared due to the logistical challenges of aligning snow removal priorities. Residents also expressed frustration when trying to navigate snow covered sidewalks in residential areas.

## **Key issues**

### **Community Issue: Windrows**

The Transportation department recognizes the unique challenges and frustration snow route residents experienced with managing windrows, particularly during the large snow events. Vehicles that were parked along the roads were plowed in and residents complained about the large effort of shoveling windrows away from their blocked driveways.

Plowed in windrows at the end of residents' driveways and plowed windrows beside the curb creating a barrier to access sidewalks when on street parking were most mentioned issues by residents during Phase 1 which was confirmed in Phase 2 feedback.

## **Community Issue: Accessibility**

During discussions with residents and stakeholders, staff identified the following key points related to accessibility:

- Access-a-ride vehicles (City or private transport) can't get ramps down and maneuver around windrows
- Home care workers using private vehicles (equipped or unequipped) can't get over driveway windrows or get close enough to the curb for manually loading persons with mobility challenges
- People with mobility challenges having a difficult time to shovel the windrows
- Residents voiced concerns about liability and safety when shoveling windrows and potentially getting hurt as well as emergency crew access
- Bussing providers for students with complex learning needs reported that several students were affected by significant snowfall events on snow routes and in other areas of the city (ex. Deep snow in cul-de-sac)
- Bussing service providers prefer no plowing to the right within loading zones
- Schools requesting more frequent sanding around schools when possible

## **Mitigation**

### **Operational Windrow Mitigation**

- The high accumulation of snow along snow routes when plowed created high windrows along the curb during the January 16<sup>th</sup> event and the March 21<sup>st</sup> -25<sup>th</sup> event. Windrows were not as significant during the February 4<sup>th</sup> event.
- The windrows blocked intersections and alley access points. A clean-up pass was necessary with a grader with grader gates.
- When 311 complaints were made resources were available to assess if windrow clearing support by Transportation Operations was needed.
- Catch basins were proactively monitored by operations staff and no specific issues were recorded.
- Emergency services had a direct on-shift Transportation contact for coordination if needed.
- Fire/EMS has created a policy describing a protocol for emergency crew access when windrows are present.
- Transportation Operations, Parks, and Transit collaborate to develop a consistent, efficient and appropriate method of snow clearing.
- Transportation Operations is coordinating in more detail the locations for bus access points and drop off zones as follows:
  - Plow operators will straight blade.
  - Markers for pull in bus stops for plow operation will be installed next season.
  - Issues will be prioritized through a dedicated service request inbox.
  - Bus stop contractor coordination considering plow cycles.

### **Communication and Awareness effort for Windrow Impact Mitigation**

- Blue snowflake parking restriction signage is installed along all snow routes to create parking awareness.
- Parking courtesy tickets were issued as an information and awareness tactic to encourage parking lane users to use notification tools needed to know when to move their vehicles.
- The City developed material to promote neighbours helping neighbours in a Mighty Neighbour campaign that was launched in February. From February to April 2024 we had over 70 nominations for good neighbours. Those were predominantly focusing on neighbours helping neighbours with snow shoveling.
- When possible, give residents an indication of when to expect windrows so shoveling resources can be arranged ahead of time (ex. Directing residents to Automated Vehicle Locator (AVL) live plowing map to keep an eye on plowing in their neighbourhood or in the case where snow route plowing is completed by a specific time)
- The Lethbridge LoopApp is a key tool in notifying residents and has seen great update and utilization during both project phases. A dedicated advertising campaign to increase awareness and downloads of the app was part of the overall Snow and Ice Control communication strategy.

### **Summary of [“What we heard report”](#)**

Operational and communication adjustments were made according to the feedback collected from residents and stakeholders. The spring online survey results showed that the overall project sentiment was quite negative (>65%). Windrows along driveways and curbs are still considered a key issue. Residents and community members cite manual shoveling, access to driveways and parking lane accessibility as the main challenges. There is a basic understanding of efficiencies and cost benefits of the new plowing practices present within residents. However, residents rated their safety and convenience more important than the cost savings that the changes in plowing practices created.

### **Additional Windrow Mitigation Program Options**

Research of other communities has shown there are a variety of approaches for mitigating the windrows along curbs and driveways (Appendix B). Some communities make the windrow clearing the full responsibility of the homeowner, others provide a service to all impacted households opening the windrows once resources allow, and others provide a subscription service. There, residents can subscribe before the winter season starts so resources are allocated to create access along driveways when a pre-defined size of windrow is created by plow operations.

The following table provides an overview of options for snow route plowing services and how they would impact the budget and the community in 2024/2025:

| Options                             | Current service level –<br>plow to the right                                                                                                              | Option 1 – plow to the<br>right with subscription<br>openings                                                                                                                                                         | Option 2 – plow to the right<br>with opening all 3,165<br>driveways                                                                                                                                          |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Service Level</b>                | Plowing: 205 km<br>Plowing snow routes:<br>81 km<br><br>Significant event snow<br>removal:<br>Priority 1: 18 km<br>Priority 2: 10 km                      | Plowing: 205 km<br>Plowing snow routes:<br>81 km<br>Access point opening:<br>~1,500 HH<br><br>Significant event snow<br>removal:<br>Priority 1: 18 km<br>Priority 2: 10 km                                            | Plowing: 205 km<br>Plowing snow routes: 81 km<br>Windrow opening: ~3,165 HH<br><br>Significant event snow<br>removal:<br>Priority 1: 18 km<br>Priority 2: 10 km                                              |
| <b>Financial<br/>considerations</b> | Small \$ variability<br>Average cost per<br>winter lower                                                                                                  | Small to medium \$<br>variability<br>Average cost per<br>winter lower with<br>added cost of access<br>point opening<br>Estimated cost per<br>household for windrow<br>opening \$50-\$70 (will<br>need to be tendered) | Medium \$ variability<br>Average cost per winter<br>lower with added cost of<br>driveway windrow opening<br>Estimated cost per household<br>for driveway opening \$40-<br>\$60 (will need to be<br>tendered) |
| <b>People<br/>considerations</b>    | Windrows along the<br>curb and driveways to<br>be managed by<br>resident<br>Parking ban in place<br>for ~1.5 days<br>More residential roads<br>are plowed | Provides help for<br>residents that cannot<br>clear windrows<br>Parking ban in place for<br>~3 days<br>Managing service level<br>expectations<br>More residential roads<br>are plowed                                 | Provides service for all<br>households with driveways<br>along snow routes<br>Parking ban in place for ~3<br>days<br>Managing service level<br>expectations<br>More residential roads are<br>plowed          |

### Summary Actions/ Lessons Learned

- Administration gained a better understanding about the cost difference between plowing and removal. Implementing the Phase 2 changes showed for every snow event it is 25 times cheaper to plow snow to the right than to remove it. Plowing services can be provided more frequently than the traditional snow removal services.
- Snow routes were activated five times due to a significant snow event during the season. The proactive messaging through various media was successful. Parking courtesy reminders were distributed for awareness but parking enforcement will strengthen compliance.

- The timing of snowfall greatly affected the likelihood that public will consume or engage with snow related communications. The Lethbridge Loop notifications are the most used and preferred communication tool.
- Adjustments were made to operations and communications thanks to resident and stakeholder feedback.
- Feedback also showed that windrows along driveways and curbs are still considered a key issue for residents living on snow routes, and the main challenge cited were manual shoveling, access to driveways and parking lane accessibility
- Residents rated their safety and convenience more important than the cost savings that the changes in plowing practices created.
- Feedback from school authorities, school busing authority, Fire & EMS, Lethbridge Police Service and Transit continues to be incorporated into operations.

To mitigate the key issues and challenges raised by residents and stakeholders, Administration is providing supplementary program options for Council's review and discussion. Administration recommends implementing a 2024/25 winter season trial for Phase 2 areas with a subscription based access point opening program. This will allow to test if support with windrow management outweighs the inconvenience of longer parking bans and if residents expectations for the service level can be met. Additionally, it will allow Administration to understand these supplementary program cost better.

## Appendices

Appendix A – Budget

Appendix B – Other community windrow program scan

Appendix C – [What we heard report](#) (on "Get Involved project webpage")

Appendix D – Project overview graphics

## Appendix A

### **Cumulative Surplus (Deficit) TRANSPORTATION & PARKS**

|      | Budget    | Actual    | Surplus /<br>(Deficit) | Cumulative |
|------|-----------|-----------|------------------------|------------|
| 2008 | 1,196,500 | 2,154,280 | -957,780               | -957,780   |
| 2009 | 1,887,500 | 5,089,160 | -3,201,660             | -4,159,440 |
| 2010 | 1,906,200 | 3,455,197 | -1,548,997             | -5,708,437 |
| 2011 | 1,946,800 | 4,320,009 | -2,373,209             | -8,081,646 |
| 2012 | 3,584,252 | 2,561,212 | 1,023,040              | -7,058,606 |
| 2013 | 3,608,020 | 3,861,524 | -253,504               | -7,312,110 |
| 2014 | 3,720,432 | 3,225,231 | 495,201                | -6,816,909 |
| 2015 | 3,858,600 | 2,694,993 | 1,163,607              | -5,653,302 |
| 2016 | 3,938,587 | 2,850,517 | 1,088,070              | -4,565,232 |
| 2017 | 4,376,127 | 4,927,687 | -551,560               | -5,116,792 |
| 2018 | 4,482,167 | 6,550,114 | -2,067,947             | -7,184,739 |
| 2019 | 4,566,572 | 4,929,877 | -363,305               | -7,548,044 |
| 2020 | 4,555,701 | 4,307,688 | 195,013                | -7,353,031 |
| 2021 | 4,547,773 | 3,528,472 | 1,019,301              | -6,333,730 |
| 2022 | 4,560,726 | 4,848,586 | -287,860               | -6,621,590 |
| 2023 | 4,622,616 | 3,309,260 | 1,278,399              | -5,343,192 |
|      |           |           | -5,343,192             |            |

## Appendix B

### Overview other community windrow programs:

| Municipality     | Program description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Cost                   |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Calgary          | <ul style="list-style-type: none"> <li>The clearing of windrows in front of driveways left by snow plowing equipment is the responsibility of the adjacent property owner, much like sidewalk shoveling. Plow operators make every attempt to keep driveways clear and keep windrows as small as possible. If issues arise, operations is investigating them and allocating resources if help is needed.</li> </ul>                                                                                                                                                                                                                                                                            |                        |
| City of Waterloo | <ul style="list-style-type: none"> <li>Pilot in 2023/24 with 50 HH</li> <li>Offering free snow removal for eligible seniors and people with disabilities. Snow removal services include sidewalks, driveway apron and windrows</li> <li>Eligibility criteria is 65+ or an adult with a disability below \$46,000 income and no one in the household can clear snow</li> <li>Resident has to agree to waive claims against the City for damages arising from the service</li> <li>Contracted service</li> </ul>                                                                                                                                                                                 | Small budget           |
| Kitchener        | <ul style="list-style-type: none"> <li>The service starts following a snowfall of more than 2.5 cm (1") and consists of snow removal from city sidewalks fronting onto houses, sidewalks beside corner lots and driveway windrows (i.e. the pile of snow at the bottom of the driveway that is left after a snow plow clears the street).</li> <li>Eligible residents must be age 65 years or older OR have a disability which prevents snow removal with total gross income of less than \$46,000<br/>Have no person living in the same dwelling unit who is physically capable of snow removal.</li> <li>Agree to a waiver of claims against the City with respect to any damages</li> </ul> |                        |
| Toronto          | <ul style="list-style-type: none"> <li>Plows with special blades clear the openings of about 262,000 driveways within about two hours of residential street plowing being completed. Areas where there is no on street parking. The windrow must be at least 25 cm high.</li> <li>Plowing of residential streets begins at 8 cm of snow accumulation and has to be completed 14 hours after the snow stops falling.</li> <li>Windrow plows are to open a three meter wide opening</li> </ul>                                                                                                                                                                                                   | \$16 Million (\$60/HH) |

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                      |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|
| Edmonton                     | <ul style="list-style-type: none"> <li>• Residential roads are cleared when snow pack exceeds 10 cm</li> <li>• After clearing residential roads, if windrows consistently exceed 30 cm or more when blocking driveways, the City mobilizes contractor resources to open windrows.</li> <li>• The policy states openings only have to be 3.5 meters wide but due to high expectations by residents the whole driveway is opened. Snow is placed on the property where space permits.</li> <li>• This is needed 2-3 times per year. It costs \$1 Million per event.</li> <li>• Resource issues persist because contractors have retainers in place for other client's winter work.</li> <li>• Issues with managing residents expectations regarding the height of windrows, issues with ice, City is not opening windrows fast enough, damage claims and complaints.</li> </ul> | Cost are rolled into budget, per event ~1 \$ Million |
| Municipality of Wood Buffalo | <ul style="list-style-type: none"> <li>• ~ 14,200 HH</li> <li>• Residential areas are split into 4 zones and receive during snow events scheduled service every two weeks</li> <li>• Once a service day approaches, residents are asked to not park on the street from 6 am - 7 pm so that snow can be plowed to the right and operators can open driveways when windrows are higher than 15 cm</li> <li>• All residential areas are covered every two weeks, no special service calls are made</li> </ul>                                                                                                                                                                                                                                                                                                                                                                    | Cost are rolled into base winter operation budget    |