

Sidewalk Winter Maintenance

Proposed Expanded Winter Maintenance Plan

October 18, 2021

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Director of Public Works





Purpose of Today's Presentation

- Provide a summary of the Proposed Expanded Sidewalk Winter Maintenance Plan
- Provide Estimated Costs and an Implementation Plan for expanding the Town's Sidewalk Winter Maintenance Program
- Review Next Steps





Alignment to Council's Strategic Priorities

- **Connected Community**
 - ✓ Integrated mobility and active transportation
- **Resilient Community**
 - ✓ Promote a healthy and safe community
- **Vibrant Community**
 - ✓ Drive economic potential and community well-being
- **Welcoming Community**
 - ✓ Improve social and economic inclusion





Background

- In March 2021 staff advised council that a review of the Town's current Sidewalk Winter Maintenance Program was planned
 - ✓ to examine the feasibility of expanding the program to include **all** Town owned sidewalks
 - ✓ it was recommended that a working group be created with representatives from the Active Transportation and the Age Friendly Citizen Advisory Committees to provide input into the review process





Existing Sidewalk Winter Maintenance Program

Currently the Town's Sidewalk Winter Maintenance Program includes:

- ✓ Town facility sidewalks
- ✓ Sidewalks adjacent to Town owned properties i.e., parks, cemeteries, etc.
- ✓ Sidewalks adjacent to Regional roads
- ✓ High use Sidewalks i.e., School Zones, Senior's areas, Downtown areas
- ✓ Municipal walkways i.e., between streets or linking key sidewalk connections
- ✓ By-Law Exempt sidewalks, open to homeowners who have applied for exemption under the terms of the Sidewalk Clearing By-Law





Existing Sidewalk Winter Maintenance Program

- For all other remaining municipally owned sidewalks across the Town, it is the property owner's responsibility to maintain the sidewalk along their property frontages
 - This bylaw has been in place since the 1970's
- The working group has undertaken a review of the current program with the goal of developing a Winter Maintenance Plan that would make all municipal sidewalk snow removal the responsibility of the Town
- Staff have also consulted with other municipalities



Proposed Expanded Plan Development

Development of this plan has involved several key steps

➤ **Data Gathering**

- Weather data
- Sidewalk inventory
- Future network additions (growth)

➤ **Review of the Level of Service**

- Consultation with Working group
- Resident engagement
- Past feedback from the Town's current program



Proposed Expanded Plan Development

➤ Industry Consultation

- Review of Plans from other municipalities
- Reaching out to other municipalities for information

➤ Final Program Development

- Detailed Route Planning
- Mapping of Sidewalk Assets
- Budgeting Projections
- Future Planning Anticipating Growth





Municipal Sidewalk Network Makeup Categories

- **Sidewalk:** Located within the road right of way and separated from vehicles.
- **Walkway:** Walkways are technically sidewalks however they are not located within a road right of way, rather they are often used to provide links to other sidewalks. These have many different names (Cat Walks, Pathways, etc.)
- **Trails:** Trails or Multi-Use trails (MUT) or trails are typically considered a recreation asset which allow all types of non-motorized forms of transportation. When considering winter maintenance, trails or MUT can be considered redundant when there are nearby other alternate sidewalks or walkways routes available for use.





Town's Sidewalk Asset Inventory Categories

At this time staff recommends that trails/MUT not be maintained in the winter season

- ✓ When another nearby alternate sidewalk/walkway route option exists for the user
- ✓ Environmental impacts to sensitive areas from salt/sand material
- ✓ Often older trails are constructed with winter maintenance in mind (narrow widths, tight corners, steep hills, poor drainage, etc.)
- ✓ To help reduce overall program costs

Infrastructure Type	Length (km)
Sidewalk within Town Road Right of Way	50.7
Sidewalk Within Region Road Right of Way	18.7
Walkways	2.2
Multi – Use Trails	4.1
Total	75.6





Proposed Program – Expand to all Town Sidewalks

- The Proposed Expanded Plan will:
 - ✓ Add the remainder of the Town owned sidewalks
 - ✓ Provide a framework for adding additional sidewalks & walkways in the future as they are constructed

Infrastructure Type	Current Program (km)	Expanded Program (km)	Change
Sidewalk within Town Road Right of Way	6.1	50.7	44.6
Sidewalk Within Region Road Right of Way	18.7	18.7	0
Walkways	2.2	2.2	0
Total	27	71.6	44.6



Levels of Service Review

- The working group played an important role to help assess and formalize the Town's current level of service considering the key guiding principles.
- ✓ Community Importance
 - Understanding how the community is using the network is the most important part of prioritizing the level of service. For example, high traffic sidewalks around commercial districts, schools, seniors' centers, etc., need to receive a higher level of service in comparison to other lower volume sidewalk locations.
- ✓ Environmental Stewardship
 - It is important that the program does not establish service levels that are damaging to the community long term. For example, implementing a high service level where it is not necessarily required can have environmental impacts, shorten the life of our infrastructure, and be cost prohibitive as our network expands.



Levels of Service Review

➤ **Primary Sidewalk Classification**

- ✓ Highest priority sidewalks with higher volumes of users, located in downtown commercial areas, school routes, along high volume roads, etc.
- ✓ Primary sidewalks are cleared first and throughout the snowfall event

➤ **Secondary Sidewalk Classification**

- ✓ Used for sidewalks on local lower volume roads, lower usage in comparison to primary sidewalks
- ✓ Secondary sidewalks are cleared after primary sidewalks and after an event of that has resulted in accumulation exceeding 7cm



Route Planning – Expanded Program

Route planning is key in delivering a successful program to the community and includes:

➤ Level of Service

- Routes are planned to provide the desired level of service in the most efficient way possible

➤ The Weather

- The weather conditions control how long it will take to reach the level of service desired
- To properly plan, there needs to be an understanding of the anticipated weather conditions
- Weather conditions affect the speed that the equipment operates by the amount of snow that needs to be cleared



Weather Patterns and Data Trending

- A key factor to consider in all Winter Maintenance planning and budgeting is the weather
- A comprehensive review of weather data trends has been undertaken as part of developing the expanded program

➤ **Events**

- An event is any time that the weather conditions would have required a response based on our level of service and the number, precipitation type and severity are all important factors

➤ **Freeze-Thaw Cycle**

- The number of days in a year that the temperature passed zero when there was snow on the ground.
- This number helps us estimate the number of times we may need to dispatch equipment to deal with melt water refreezing

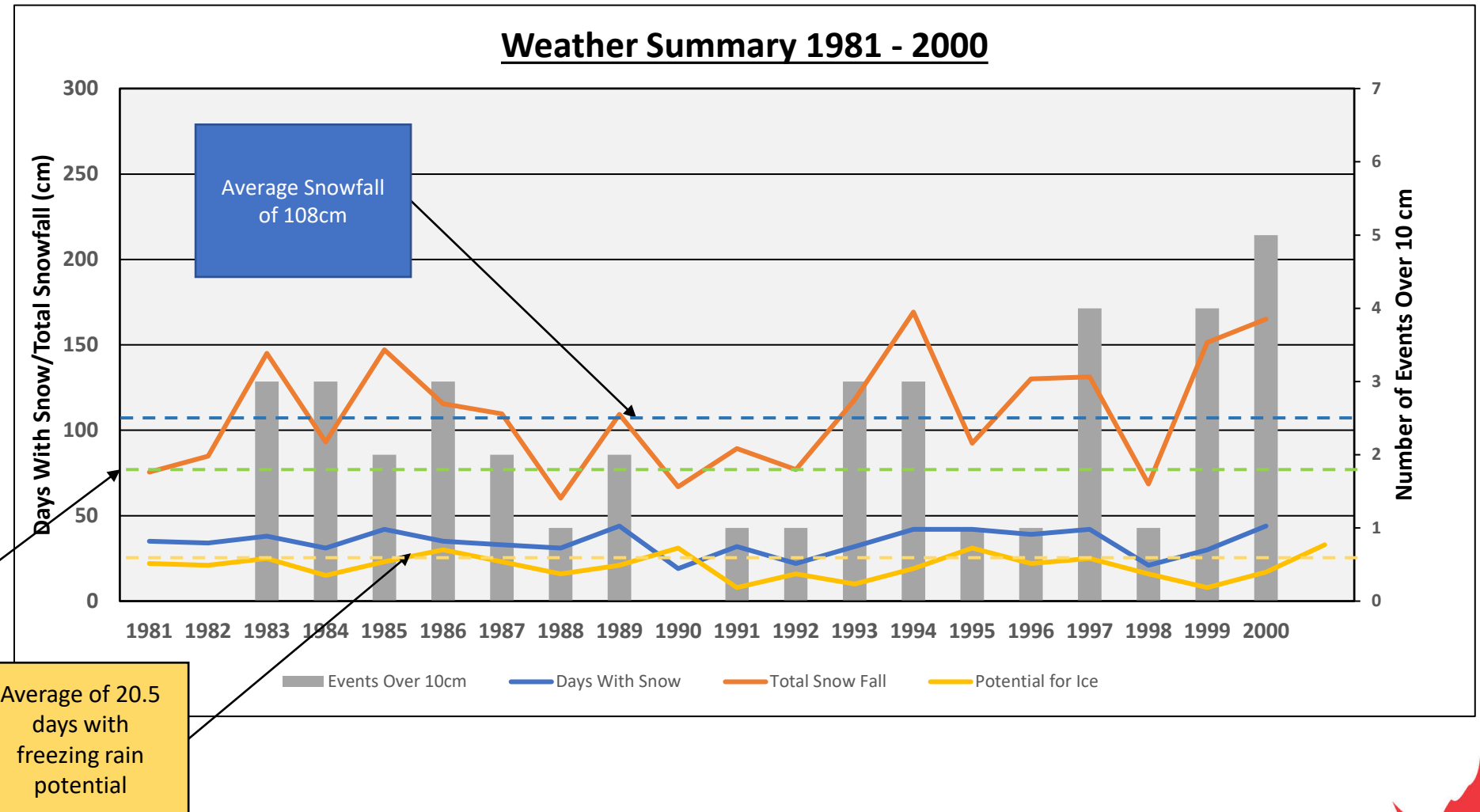
➤ **Freezing Rain Potential**

- The number of days in a year that the temperature passed zero when there was rain recorded which helps us estimate the number of days that we may need to treat the sidewalks for an ice event



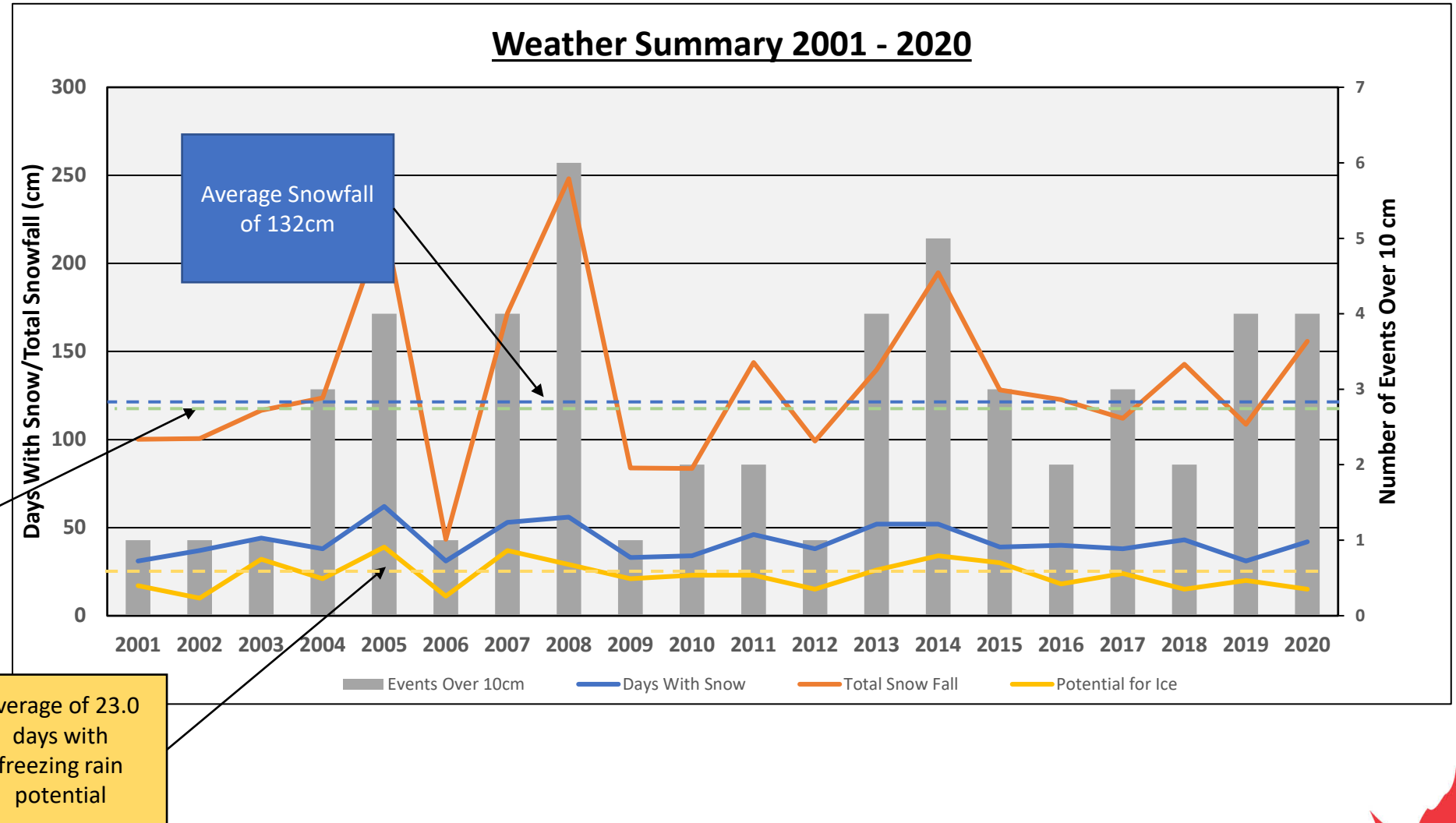
Weather Patterns and Data Trending

The Winter weather from 1981 to 2000 was fairly calm in general. Near the end of the Twenty year period there is an increase in the number of larger events.



Weather Patterns and Data Trending

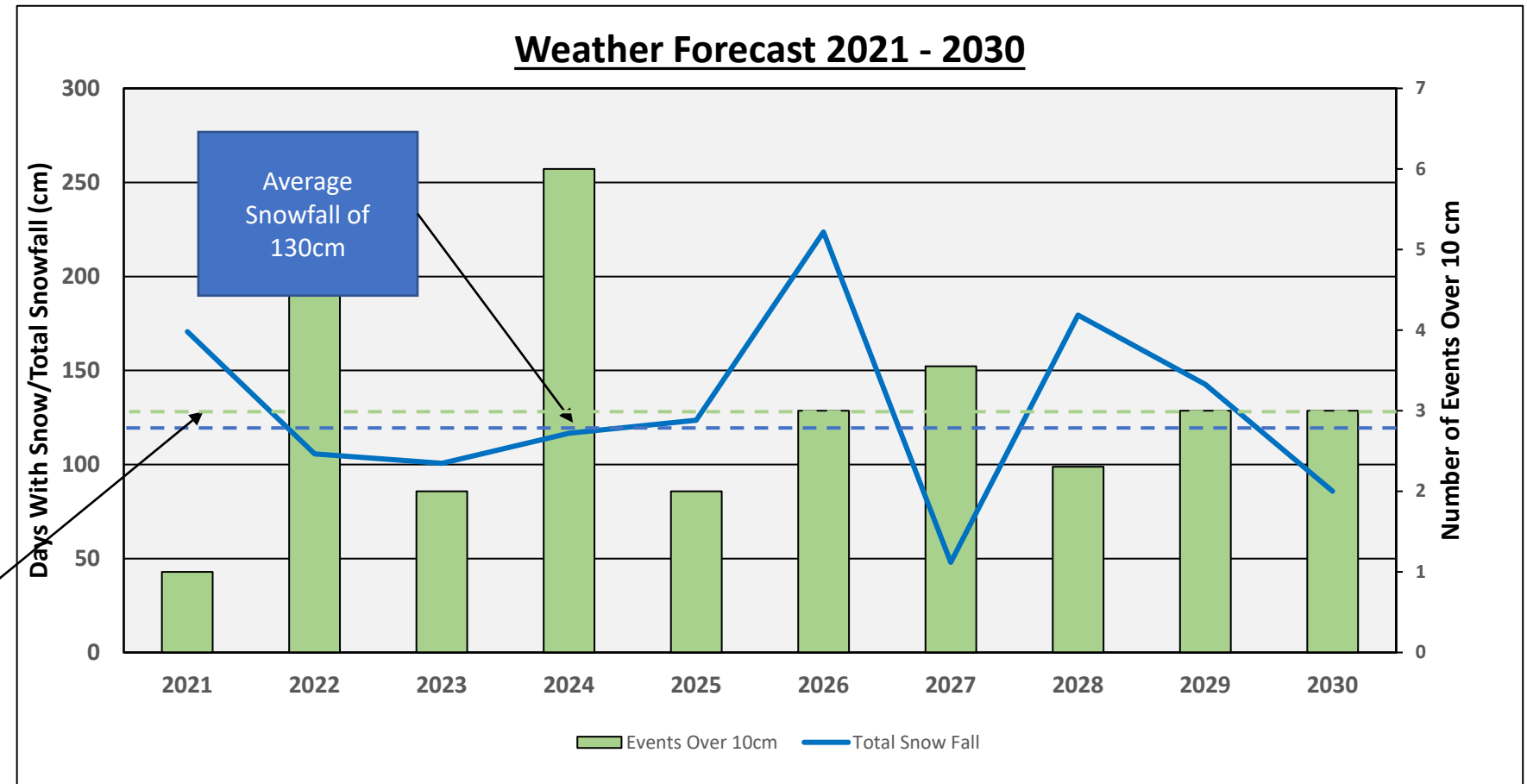
In the next 20 year period the number of larger events increases significantly, as does the average annual snowfall. The challenging part is the variability year to year in the severity of the winters.



Weather Patterns and Data Trending

To provide the best budget forecast, it is necessary to try and predict what the future winters could look like. Using the data from the last twenty years, a statistical projection was done. The event frequency and severity from this projection was used in the planning process.

Average of 3 Events Exceeding 10cm



Route Planning – Machine Speed

- The plan has also considered machine speed with heavier accumulation events to ensure the Town's level of service timing can be achieved with the expanded program.
- Sidewalk snow removal equipment must be compact and powerful, however in larger events or wet heavy snow, plowing and even snow blowing can slow down cleaning operations.



Expanded Program Costs

- The expanded program proposes to provide winter maintenance to **all Town sidewalks**
- This would be a **new service** for the residents of Lincoln requiring additional funding delivery
- To help minimize budget impacts staff are suggesting that the program costs be phased in
- It is also recommended that a winter reserve fund be used to fund the expanded program
 - ✓ Budget surplus from light winters would help offset budget pressures in heavy winters

Item	2021 Existing Service	2022 Expanded Service in Q4 (Nov to Jan)	2023 Expanded Service	2024 Expanded Service (<u>projected</u> growth)
Total Estimated Program Cost	\$140,000	\$262,800	\$385,600	\$436,000
Increase From Previous	---	\$122,800	\$122,800	\$50,400
Effect on Levy	---	+ 0.6%	+ 0.6%	+ 0.3%



Expanded Program – Future Growth Cost Projections

- Future growth and related costs have been considered when looking at expanding this service
- The Town's sidewalk network is expected to growth in the future
 - ✓ Future road reconstruction projects incorporating AT elements
 - ✓ Future development (ie; Prudhommes) adding new sidewalk infrastructure

	2023	2024	2025	2030
Length Cleared (km)	72	81	84	90
Total Budget	\$390,600	\$453,000	\$455,000	\$523,000



Next Steps - Proposed Expanded Program

- Consider proposed funding for consideration in the 2022 Budget deliberations based on a phased in approach

Nov 2021 to April 2022 – continue with the current sidewalk winter maintenance program

- ✓ Include additional funding in the 2022 budget for program start in Nov 2022 to Dec 31 2022

Nov 2022 to April 2023 – transition to the expanded program (cleaning all Town sidewalks)

- ✓ Include additional funding in the 2023 budget for full program transition Jan 2023 to Nov 2023

- Continue to promote the Proposed Expanded Program on the Town's Sidewalk Winter Maintenance Speak Up Lincoln Page engagement residents for their feedback on this new service proposal



Thank you

Questions/Comments?

