



## Winter Maintenance Workshop



**Special General Committee**

**June 19, 2023**

**Alice Lam, Director, Operations**

**Steven Dollmaier, Senior Manager, Roads & Fleet**

**David Plant, Senior Manager, Parks, Horticulture & Forestry**



# Agenda

1. Purpose
2. Background and History
3. Current Service Level
  - Road Network
  - Windrow Removal Program
  - Pathway / Sidewalk
4. Challenges Impacting Service Level
  - Climate Change
  - Build Form
  - Communication
  - Education
5. Discussion



## Purpose

- At General Committee Meeting on April 25, 2023, Council received a Residents' Petition requesting City wide windrow removal program
- Staff review winter maintenance service levels with Council approximately every four (4) years unless requested otherwise by Council



## Markham Network

- Roads - over 2,000 km of major City owned roads, equivalent to travelling from Toronto to Montreal four (4) times
- Sidewalks - over 1,100 km of sidewalk, equivalent to travelling from Toronto to Montreal two (2) times
- Pathways - over 45 km of pathways
- Parking Lots - over 50 municipal facilities
- Skating rinks - 5 outdoor natural rinks



# CITY OF MARKHAM POPULATION YEAR 2022 – 364,000





## Background and History

- The City has undertaken a review of its winter maintenance program commencing in 1997 to present, at approximately 2 to 4 years intervals
- The chronology of the historical review is summarized in the attached Briefing Notes – Historic Overview of Winter Maintenance
  - Council awarded new winter maintenance contract with existing winter service level and enhancement to the Senior Windrow Assistance Program to be completed in four (4) hours starting November 16, 2024 (2022)
  - Park Pathways added to winter maintenance program along with five (5) outdoor natural ice skating rinks (2021)
  - Resident who is approved in the windrow assistance program will automatically be renewed (2018)
  - Explore windrow rebate pilot program (2016)



# IPSOS Winter Maintenance Survey - 2019

## Executive Summary

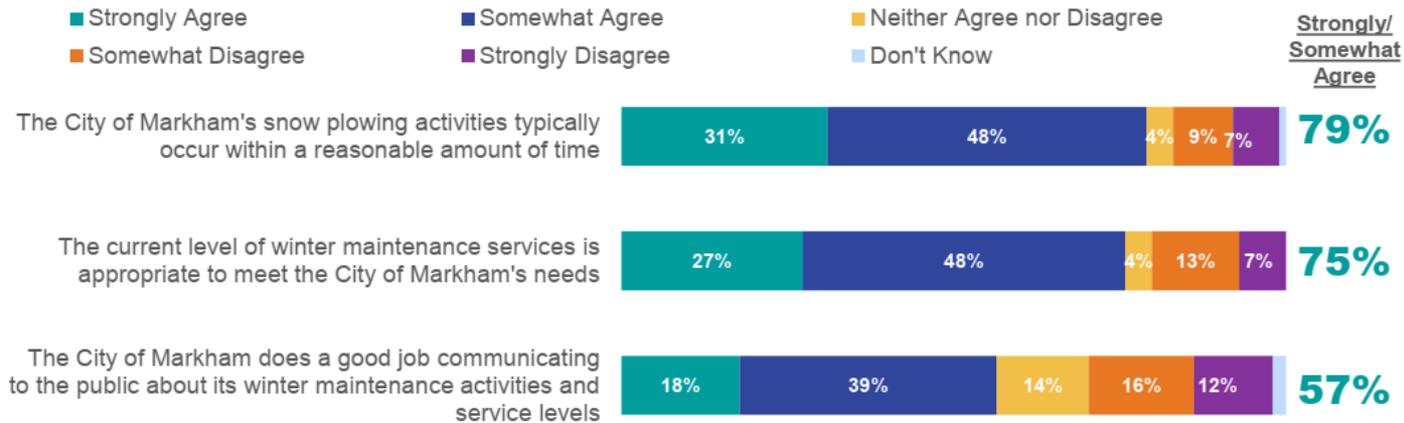
- ❖ Three quarters of Markham residents (76%) state they are *very/somewhat* satisfied with overall winter maintenance provided by the City.
- ❖ Similarly, eight in ten (79%) residents *strongly/somewhat* agree that the City's snow plowing activities occur within a reasonable amount of time, and three quarters (75%) *strongly/somewhat* agree that the current level of winter maintenance is appropriate for the City's needs.
- ❖ Three quarters of Markham residents (73%) are *very/somewhat* satisfied with salting and snowplowing of sidewalks and walkways. About seven in ten (68%) are satisfied with the salting and plowing of local and residential roads, and two-thirds of residents (65%) are satisfied with plowing of artery roads.
- ❖ One in ten Markham residents mention that they contacted the City this past winter to report a concern about winter maintenance and snow plowing. The most prevalent method of contact was a contact centre with more than half (54%) of Markham residents voicing their concerns this way.
  - Within the 12% of respondents who contacted the City, the most frequent issue reported was snow piled at the end of the driveway (24%) and delays in plowing (21%) as well as sidewalks not being cleared on time (21%).
- ❖ Six in ten (62%) of Markham residents state that they want no change to current snow plowing activities, while 32% of respondents would be willing to pay \$27 in tax increases to have local roads plowed more often when 5cm snow accumulates. Only 4% of respondents would pay \$100 in tax increases to have local roads plowed as often as major roads.
- ❖ Slightly fewer than half (44%) of Markham residents *strongly* or *somewhat* support expanding the current windrow clearing program to cover all Markham residents.
- ❖ More than half (58%) of residents would support a proposal for pathway plowing.
- ❖ About a third (37%) of residents would prefer to be communicated about winter maintenance through the City of Markham's website, while three in ten would prefer email newsletters, and digital signage or portable roadside signage.



# IPSOS Winter Maintenance Survey - 2019

## Overall Satisfaction

Eight in ten Markham residents agree that the City's snow plowing activities occur within a reasonable amount of time, and three quarters *agree* that the current level of winter maintenance is appropriate for the City's needs. Slightly more than half of residents agree that the City does a good job communicating about winter maintenance activities.



Values <3% not shown



# IPSOS Winter Maintenance Survey - 2019

## Satisfaction with Salting and Snow Plowing

Almost three quarters of Markham respondents state they are *very/somewhat* satisfied with salting and snowplowing of sidewalks and walkways. Seven in ten are satisfied with the salting and plowing of local and residential roads, while two-thirds are satisfied with plowing of artery roads. Less than half of residents indicate they are satisfied with the salting and plowing of bicycle lands and routes. Respondents who bike regularly/sometimes are significantly more likely to be dissatisfied (%somewhat/very dissatisfied) (23% vs. 11% drivers) with the salting and snow plowing of bicycle lanes.

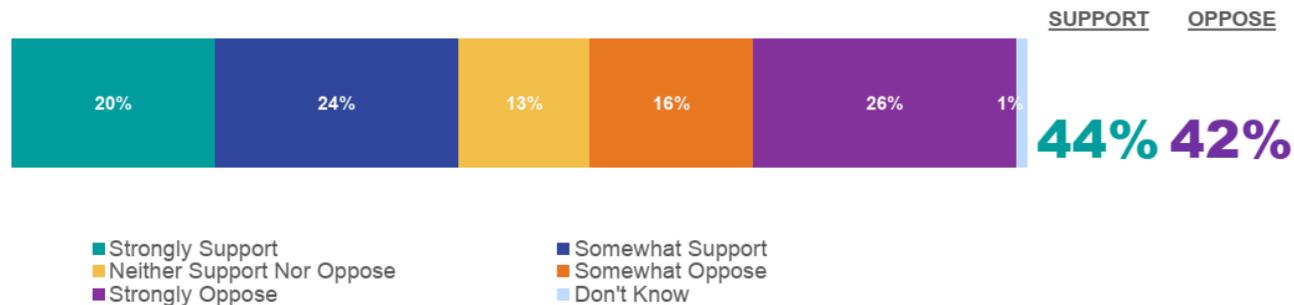




# IPSOS Winter Maintenance Survey - 2019

## Support for Windrow Clearing

Support for expanding the windrow clearing program to all residents is divided with 44% of Markham residents *strongly* or *somewhat* supporting the proposal, while 42% *somewhat* or *strongly* oppose.





# IPSOS Winter Maintenance Survey - 2019

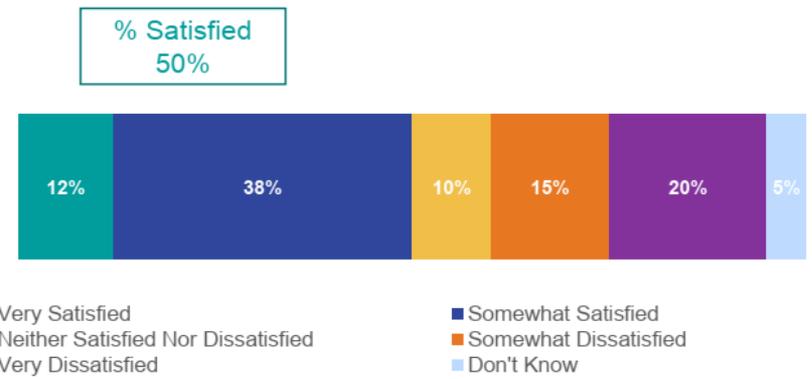
## Participation in Windrow Assistance Program

Six percent of Markham residents claim to currently participate in the City's Windrow Assistance program. Among those residents who participate, half (50%) indicate that they are satisfied with the program, while 35% are dissatisfied.

### Currently participate in the City's Windrow Assistance Program



### Satisfaction with Windrow Assistance Program





## Statistic by Wards

- The City-wide road network includes 877km (39.6%) of Primary, 160km (7.2%) of Secondary and 1,175km (53.2%) of Local Roads and Rear Lanes

Ward	CITY STREETS (LANE KM)	REAR LANEWAYS (LANE KM)	SIDEWALK & MUP KM (ON CITY STREETS)	SIDEWALK & MUP KM (ON REGION & TORONTO ROADS)	SENIOR WINDROW (APRIL 2023)
1	251.29	0	74.47	24.50	1398
2	277.11	15.66	126.45	28.75	853
3	224.91	9.04	95.35	26.67	877
4	281.17	2.44	115.64	22.18	1357
5	262.63	79.05	159.17	5.75	268
6	239.25	27.29	125.10	11.79	496
7	249.89	1.26	113.92	23.26	687
8	304.19	1.89	140.29	43.15	988
<b>Total</b>	<b>2090.44</b>	<b>136.62</b>	<b>950.40</b>	<b>186.05</b>	<b>6924</b>



## Current Service Level - Legislations

- Code of Practices by Environment Canada (Federal) – Recommend all government agencies to have a Salt Management Plan
  - sets out policy and procedural framework for continuous improvement of the management of salt in winter operations;
  - manages the salt use to reduce the environmental impacts; and
  - aligns to the Federal code without compromising road safety ensuring compliance to Ontario's Minimum Maintenance Standards for winter maintenance, Ontario Reg. 239/02.
- Minimum Maintenance Standards, Ontario Reg. 239/02 (Provincial)
  - sets out minimum winter maintenance service levels for municipalities;
  - provides a standard guideline for municipalities in Ontario to related to winter maintenance; and
  - City of Markham's service level exceeds Ontario legislation.



## Primary Road



High volume road  
Salted and/or plowed to achieve a bare surface condition 24/7



## Secondary Road



Roads connect to primary  
Salted and/or plowed to achieve a centre bare surface 7am – 6pm



## Local Road / Rear Lane

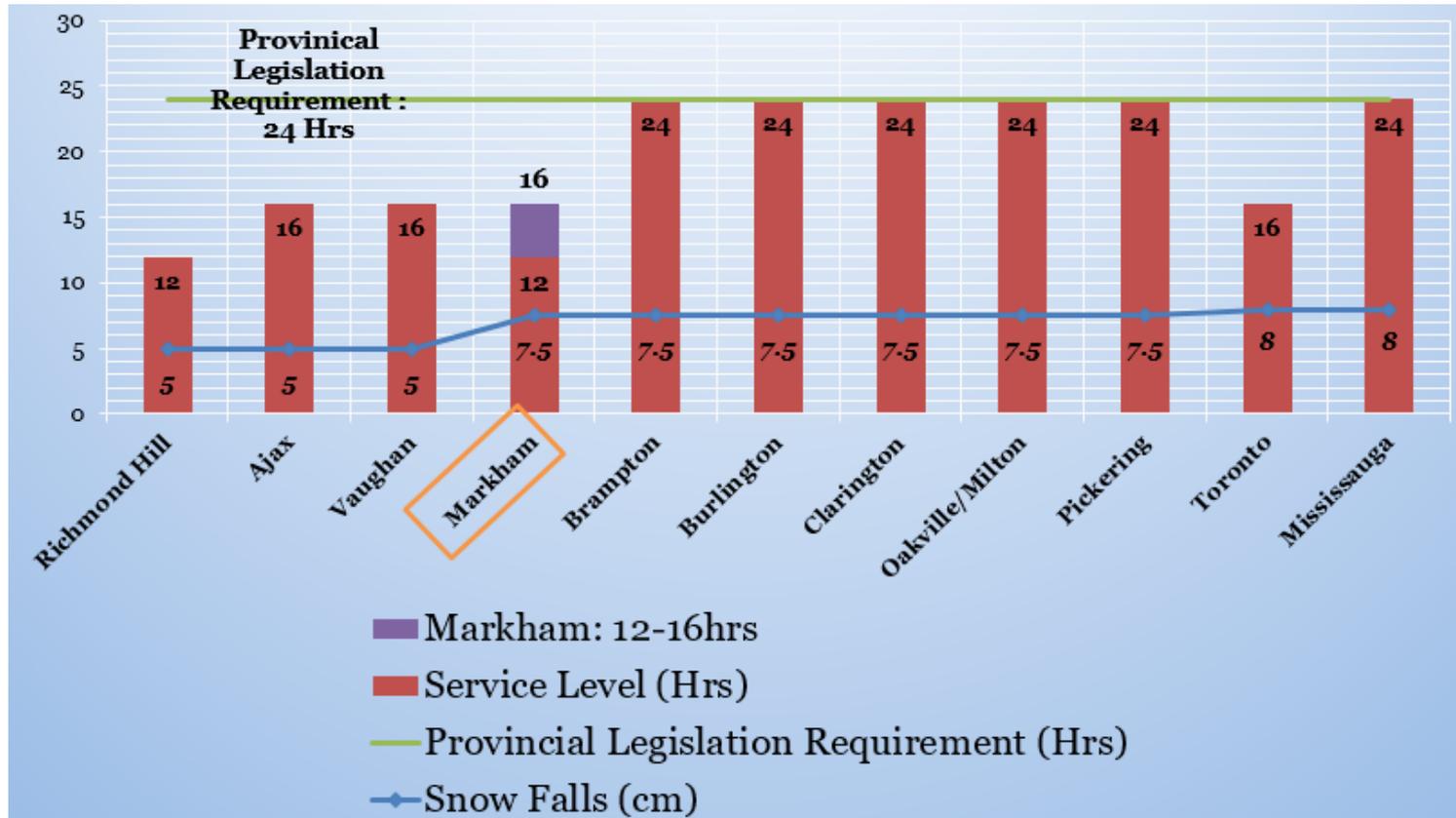


Low volume roads – acceptable snow packed  
Salted and/or plowed when snow reaches/exceeds 7.5cm  
at the end of snow fall



## Current Service Level – Local Roads

- Plowing when snow reaches or exceeds 7.5 cm
- If snowfall continues, plowing begins once snowfall ceases
- Normal plowing operation will take approximately 16 hours which exceeds O.Reg. 239/02 Minimum Maintenance Standards requirement





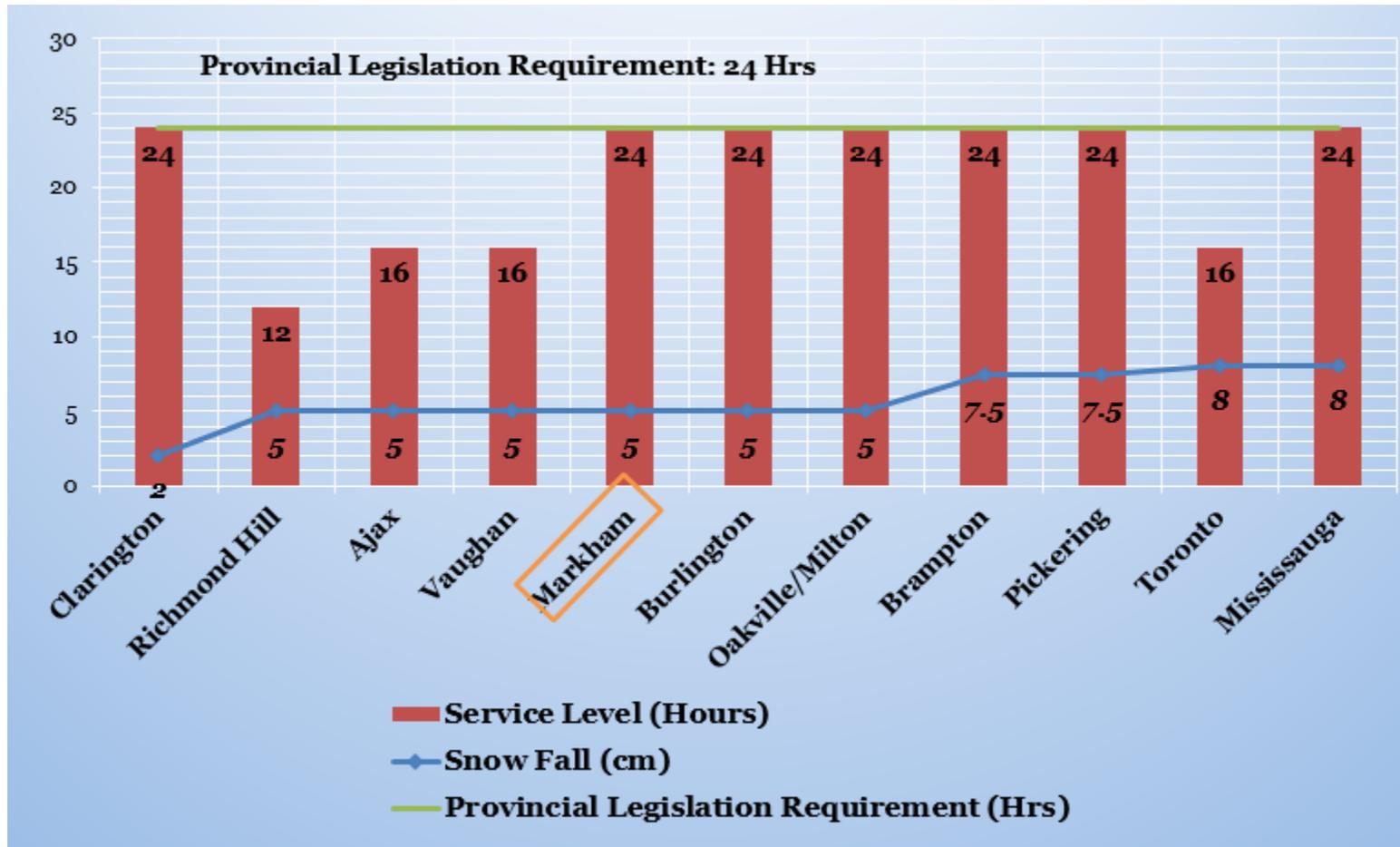
## Pathways, Sidewalks & MUP



Pathways, Sidewalks and MUP on both Regional and City Roads  
Plow and apply material when snow reaches/exceeds 5cm



## Current Service Level – Sidewalks





## Current Service Level – Pathways

- Pathways are different than sidewalks in terms of use and method of construction
- Pathways are intended for recreational usage while sidewalks are part of the transportation network
- Current practice is to plow concrete surface pathways that connect street to street, except where the grade is too severe or not properly illuminated to provide safe pedestrian passage
- Service levels for sidewalks are mandated by O. Reg. 239/02
- No legislated service level for pathways
- City maintains over 95 concrete and asphalt pathways that meet criteria while the pathways in valley lands and those connecting the road network to unmaintained surfaces or private property (such as a school) are currently posted with “No Winter Maintenance” signs



## Current Service Level - Windrow Removal Program

Windrows are unavoidable during plowing as snow is plowed from the center of the road outward to the curb

- All residents in the household must be over 60 or have a disability
- Windrow removal clears one car width at the base of the driveway, after 7.5cm snowfall
- Clearing within 8 hours of the front facing street has been plowed; enhance to within 4 hours starting 2024 winter season
- Does not include sidewalk windrow
- City windrow program began in 1996
- Reduced eligibility from 65 to 60 in 2008
- Currently **6924** approved residences (*as of April 1, 2023*)
- In 2022/2023, average 1.6% (108) of windrows were missed per storm out of 6,942 addresses, many of which were related to parked cars and winter condition



## Review - Windrow Benchmarking

- 11 municipalities were surveyed and only 3 provide windrow clearing for all residents. Vaughan & Richmond Hill provide this service to all and only in eligible areas of Toronto (ie., North York, Scarborough and Etobicoke)
- Based on 2021 census, approximately 39% of the City of Toronto's population do not receive a windrow removal
- Richmond Hill recently approved city-wide windrow removal on March 25, 2019. Driveways located on regional roads, commercial, industrial, institutional, high-rise, private road and rear lanes will not be included. The cost estimates for 55,000 driveways is \$4.38M (in house services) not including snow load and haul
- Despite the new East Yard, Markham does not have the capacity to store all hired equipment, and does not have enough snow dumps to provide this service



## Review - Windrow Survey

Municipality	City-wide Removal	Enhanced Windrow
Ajax		X
Brampton		X
Burlington		X
Mississauga		X
Oakville		X
Oshawa		X
Pickering		X
Richmond Hill	X	
Toronto	X	
Vaughan	X	
Whitby		X
Markham		X

### Important notes

- City of Toronto only does windrows when it reaches 25cm
- Many of the municipalities have completed review of the windrow programs this year and the latest resolution is to continue with status quo versus providing city wide windrow removal program



## City of Vaughan Video





## Review - City-Wide Windrow Removal

- Windrows cannot be avoided during plowing operations
- Based on the results of tender 011-T-22 Winter Road Maintenance Service, the annual cost to the City is **\$3.979M (2.4% tax rate increase)**
- Not included: salt impacts, snow dump location, land acquisition, infrastructure

Customer Expectations and Operational Impacts	Implications
Fast/before they leave their house	Equipment moves much slower than road plow
Full driveway width including sidewalk windrow	One car width and sidewalk windrow not possible
Full roadway from curb to curb	Snow spill off lead to narrow roadway
Private Property (borders, driveways, landscape)	Often damage resulted in increased ACRs
Built form impact	Condos and rear lanes will not receive this service
Works Yard / Snow Dump capacity	Existing yards not able to meet service adjustment
Customer Complaints /Contact Centre	Increase in complaints – timeline, damage, sidewalk



## Recommendation from General Committee

- At General Committee Meeting on September 6, 2023
  - Council approves plowing all local roads at 7.5cm and Senior Windrow to be completed in four (4) hours, be awarded for twelve (12) winter seasons (November 16, 2024 – April 15, 2036) in the estimated annual amount of \$7,802,885.98 (inclusive of HST)



# Winter Road Maintenance Services Award, Council Resolution #8.3.2.7 Overall Cost

Option	Description	Total Cost	Status Quo	Incremental Impact Above Status Quo	Tax Impact - comparing to 2022 WM budget
1	Status Quo (Plowing at 7.5cm + 8 hours Senior Windrow)	\$ 7,397,779.42	\$ 7,397,779.42	\$0	0.95%
<b>3</b>	<b>Plowing at 7.5cm + 4 hours Senior Windrow</b>	<b>\$ 7,802,885.98</b>	<b>\$ 7,397,779.42</b>	<b>\$405,107</b>	<b>1.19%</b>
4	Plowing at 7.5cm + 8 hours Citywide Windrow	\$ 10,514,539.45	\$ 7,397,779.42	\$3,116,760	2.79%
5	Plowing at 5cm + 8 hours Senior Windrow	\$ 10,588,512.77	\$ 7,397,779.42	\$3,190,733	2.83%
6	Plowing at 5cm + 4 hours Senior Windrow	\$ 11,062,307.33	\$ 7,397,779.42	\$3,664,528	3.11%
7	Plowing at 5cm + 8 hours Citywide Windrow	\$ 14,638,248.44	\$ 7,397,779.42	\$7,240,469	5.22%
CI1	Everything Primary + 8 hours Senior Windrow	\$ 14,372,641.10	\$ 7,397,779.42	\$6,974,861	5.07%
CI2	Everything Primary + 4 hours Senior Windrow	\$ 14,879,063.99	\$ 7,397,779.42	\$7,481,284	5.36%
CI3	Everything Primary + 8 hours Citywide Windrow	\$ 20,196,198.62	\$ 7,397,779.42	\$12,798,418	8.50%
CI4	Plowing at 5cm (inc no SW) & Plowing at 7.5cm (with SW) + 8 hour Sr Windrow	\$ 9,619,280.12	\$ 7,397,779.42	\$2,221,500	2.26%



## Opt 3 - Plowing at 7.5cm + 4 hours Senior Windrow

- Plowing
  - \$3,956,835.84
- Windrows
  - \$1,268,133.12
- Loaders (Back Lanes & Cul-de-sac)
  - \$2,577,917.02

**Total Cost = \$7,802,885.98**

- ❖ *There is no extra cost or salt added to this option*





## Challenges

- New Built Form



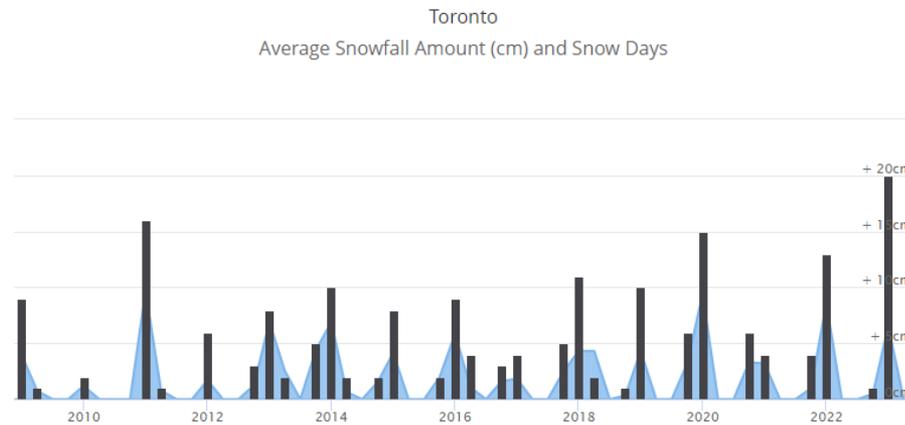
- Parking on Road
- Communication
- Education to residents





## Impacts to Service Delivery

- Climate Change & Fluctuating Weather Patterns
  - Increased frequency of ice and mixed precipitation
  - May recognize increased frequency of equipment breakdown
  - Requires longer clean up time



- Residents' expectations and disruptions to our plowing operations - four (4) incidents last winter season in stopping our operations
- Labour shortages
- Vehicle limitation/shortage



## Contact Centre Statistics on Calls

- Overall impact on the Contact Centre re winter maintenance represents between 9 -12% (3 year average) of daily calls 3 days post storm.

Date Range	Winter Maintenance ACR	Total ACR City Wide	Percentage
2021/2022 (November – April)	1,877	16,535	11.3 %
2020/2021 (November – April)	1,084	12,260	8.8 %
2019/2020 (November – April)	1,418	15,365	9.2 %

- Winter Maintenance calls are heavily related to each storm event, such as 2018 April ice storm, 2019 January consecutive ice/snow storm, 2022 January storm and 2023 consecutive snow storm.

	2022/2023 (November – April)	2021/2022 (November – April)	2020/2021 (November – April)	2019/2020 (November – April)
Less than 7.5 cm	34	44	42	42
7.5 cm or Greater	6	3	4	6



## Recommendation

- That the presentation entitled “Winter Maintenance Workshop” be received; and,
- That the current winter maintenance service levels be maintained and Senior Windrows to be completed in four (4) hours; and,
- That staff be authorized and directed to do all things necessary to give effect to this resolution



# Questions