

City of Toronto Sidewalk Snow Clearing Trial & Study

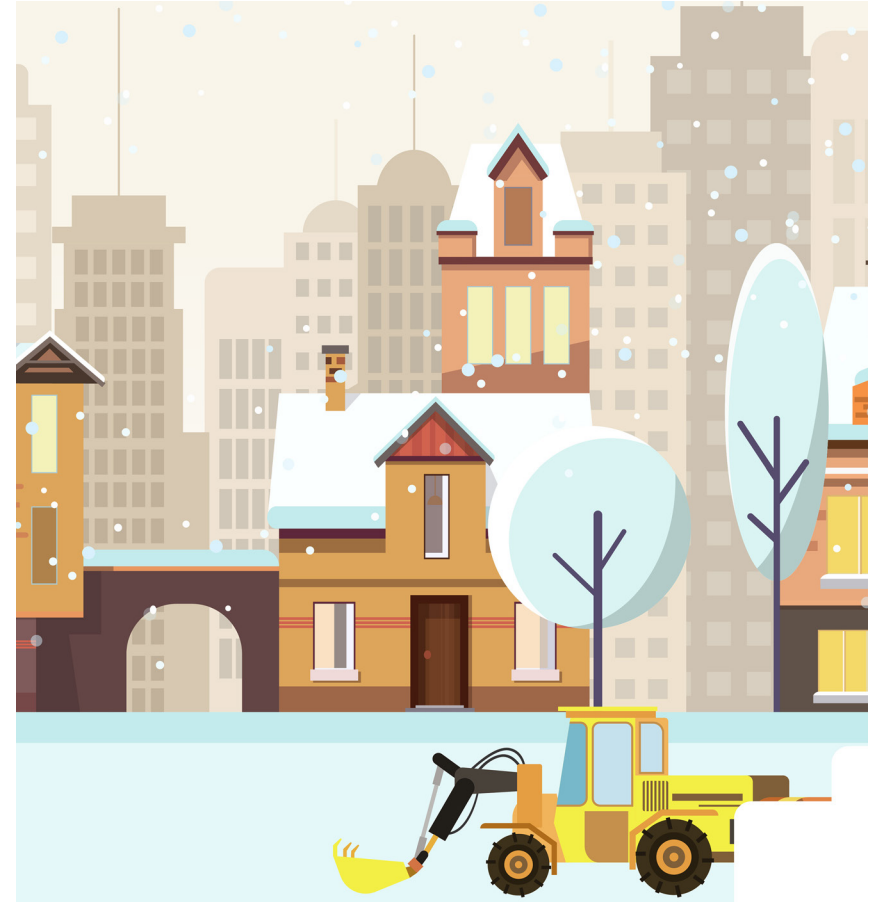
Public Information Events

May 2021



Winter Maintenance Program

- The City's Winter Maintenance Program involves a comprehensive and highly coordinated plan for clearing snow and ice.
- **Safety, equity of service delivery and accessibility** are important priorities for the City's winter services.
- Long-term weather patterns and winter contract commitments are also key factors in the delivery of winter services.
- The City has clearly defined **levels of service** for snow clearing and salting on expressways, roads, sidewalks and bike lanes.



Mechanical Sidewalk Snow Clearing

Toronto has approximately 7,300 km of sidewalk.

- The City clears snow from sidewalks in **most areas of the City**, where it is physically possible to clear snow mechanically.
- Sidewalk plowing takes place when there is **2 cm of snow accumulation** and the snow has stopped falling, or when icy conditions dictate.
- Sidewalk clearing after a snowfall **takes approximately 13 hours to complete** and, depending on the storm severity, may occur more than once.
- Sidewalk clearing can **continue up to 72 hours** after the snow has stopped falling.



Sidewalk snow plow

Mechanical Sidewalk Snow Clearing



6,070 km

1,230 km

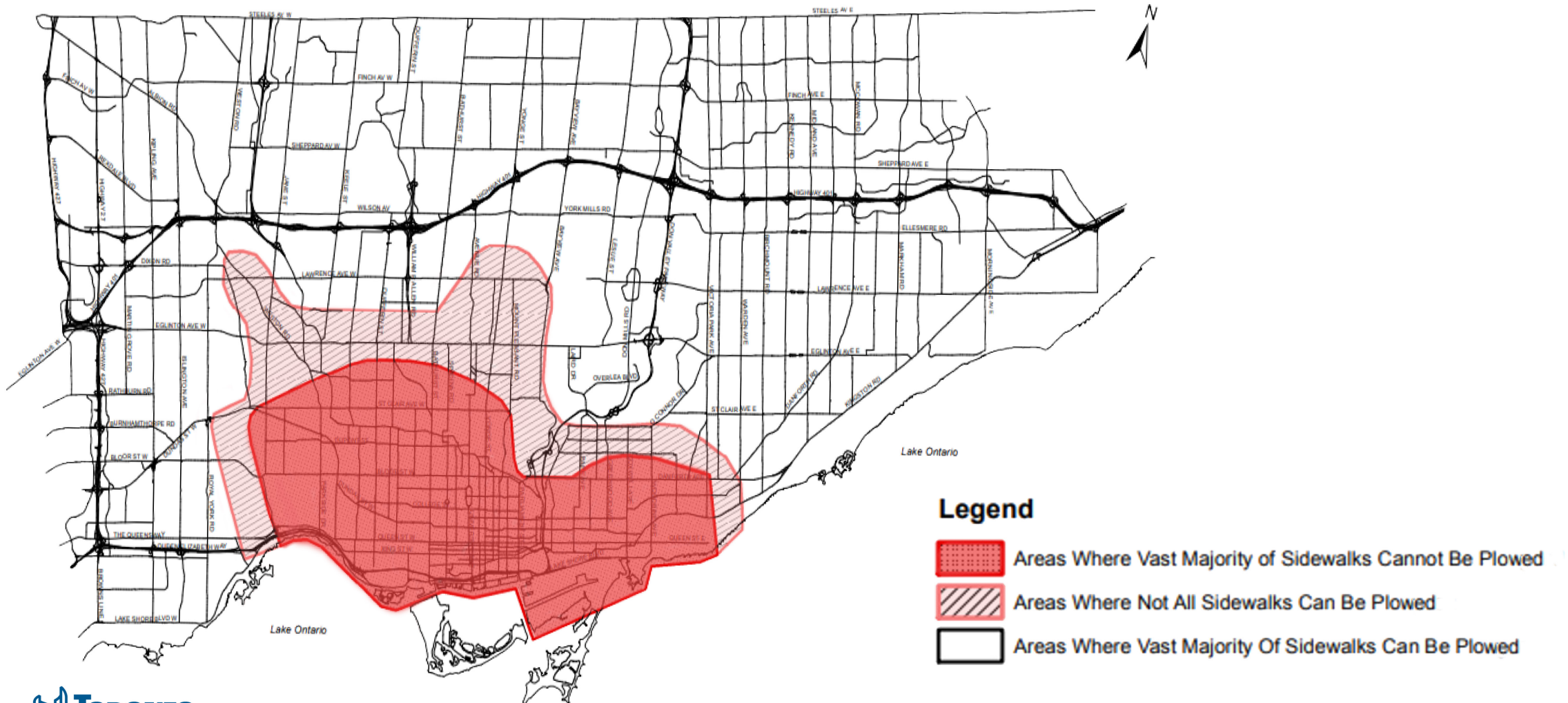
Currently cleared by mechanical plows (80% of sidewalks):

- many residential neighbourhoods in the former municipalities of Scarborough, East York, North York and York.
- sidewalks on major roadways and in most commercial areas
- plowed by 15 contracted service providers at a cost of approximately \$24 million annually

Currently not cleared by mechanical plows (20% of sidewalks):

- where sidewalks are too narrow for the City's existing sidewalk clearing machines
- where there is limited space to store snow cleared from the sidewalk.
- where obstacles or encroachments that prevent machines from passing

Mechanical Sidewalk Clearing Areas



Sidewalk Clearing Program for Seniors & People with Disabilities

In areas where mechanical sidewalk clearing is not provided, seniors and people with disabilities can apply to have the snow and ice in front of their home cleared manually by the City.

Eligibility requirements:

Relationship to House	Relatives Residing at Address	Age of Applicant
<ul style="list-style-type: none">✓ Resident owner of one or two family dwelling OR✓ Tenant/occupant of one or two family dwelling	<ul style="list-style-type: none">✓ No relatives under age of 65 residing at address OR✓ Relatives under age of 65 residing at address but have a physical disability	<ul style="list-style-type: none">✓ Over 65: proof of age required✓ Under 65 and have a physical disability: proof of disability required



8,157 houses are currently served by the program

What We've Heard

Clearing our streets and sidewalks makes economic sense. It would reduce liability payouts, and would help people shop and get to work safely and on time.

Universal sidewalk clearing will reduce the stress on currently overburdened hospitals.

So many residents don't shovel their walks. In fact, they often just throw down piles of salt and wait for it to melt the snow.

We pay taxes just like other property owners, so why are we getting inferior service?

Especially during the COVID-19 pandemic, keeping our streets accessible for seniors, parents with children, and people with accessibility needs is even more critical.

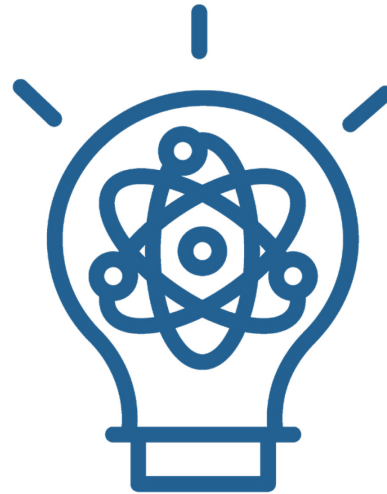
Winter Trial Program



Trial Program Background



A 2019 review of the City's winter maintenance program **identified the opportunity** to run a trial using new machines.



New technology has recently enabled production of smaller plows.



The trial program was initiated to **determine the feasibility of expanding sidewalk snow clearing** to areas of the city that do not receive the service.

Trial Program Objectives

1. **Test performance of the new equipment** and identify limitations and potential risks to property and to City staff
2. **Identify situations where snow cannot be cleared** by smaller machines
3. **Determine capital and operating costs** for program expansion



One of nine new snow plows used for the trial

Trial Program Overview

- Initiated in February 2020
- Nine new plows dedicated to the trial:
 - 1.3 m wide with adjustable blade
 - Used only during daylight hours to ensure visibility of obstacles
 - Slower rate of accomplishment than existing (larger) plows
- Trial continued through **two winter seasons** in order to test equipment and gather observations in a wide range of snow conditions and situations unique to Toronto.



New snow plow with 1.3 m adjustable blade.

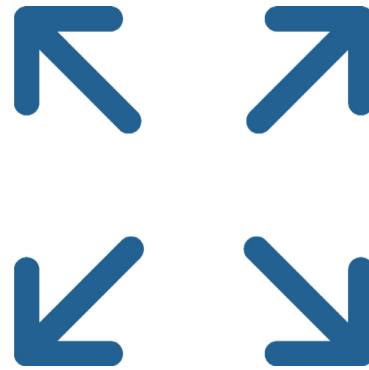
Trial Program Route Selection

Three key factors were considered in the selection and design of routes:



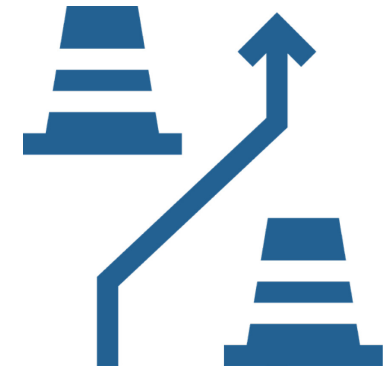
Number of houses enrolled in the City's Sidewalk Clearing Program for Seniors & People with Disabilities

- Areas with a high concentration of participants were prioritized.



Capacity of machines

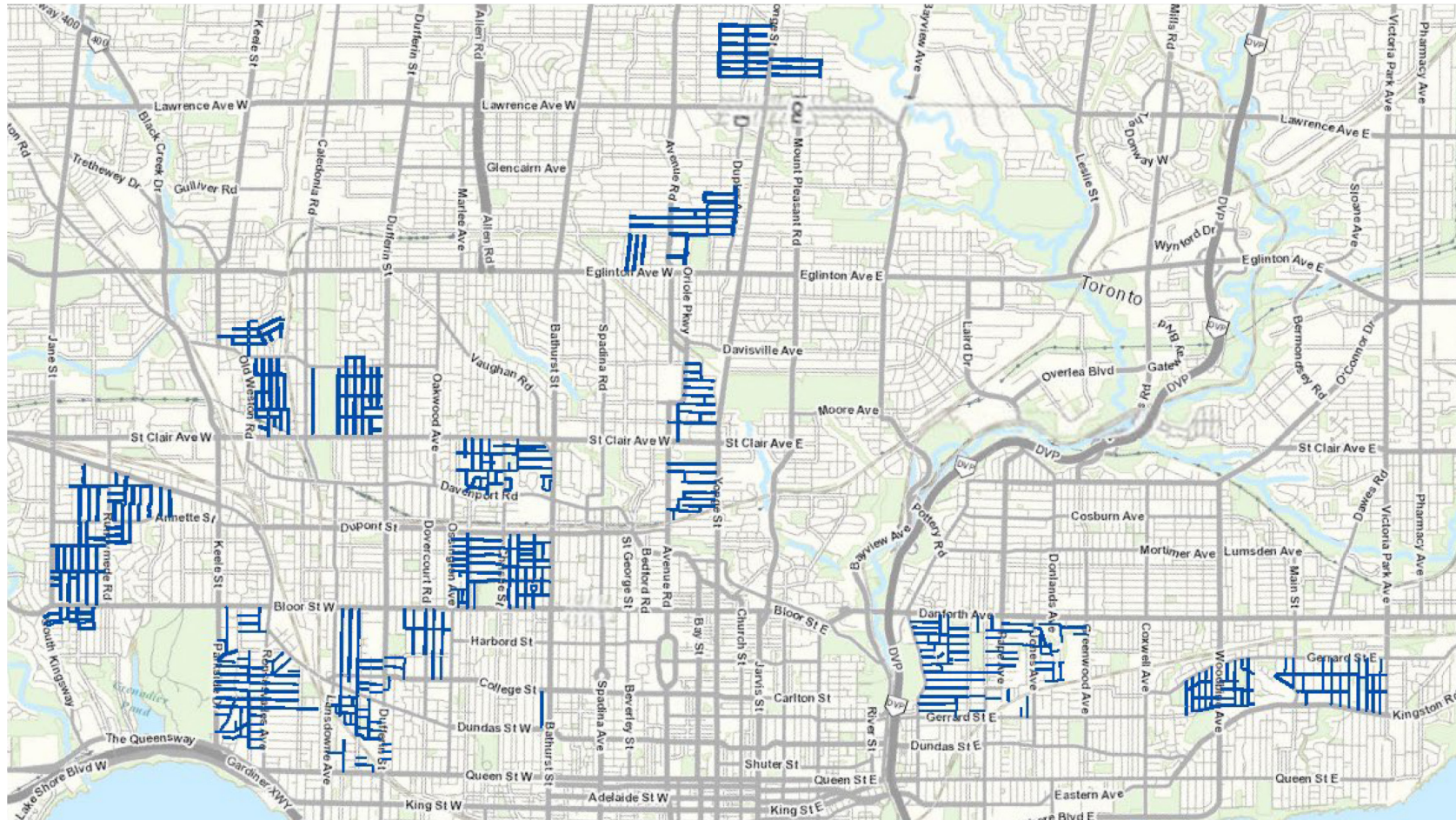
- Each route to be completed over two days (9 km to 15 km cleared by each plow per day).
- The operators were directed to clear the full length of sidewalk on each street.



Sidewalk conditions

- Similar to other areas of the city that do not have mechanical clearing.
- Sections of sidewalk were included that had perceived obstacles (e.g. hydro poles) to test the feasibility of machines passing the object or progressing on a continuous path.

Trial Program Routes



9 Routes

were chosen for the trial.

Trial Program Delivery



9 routes

=



**231 km
of sidewalk**

not previously cleared
by mechanical plows

+



1,731 houses

enrolled in sidewalk clearing
program for seniors and
people with disabilities

Trial Results: Performance of New Equipment

90% 

of sidewalks on
the trial routes

could be cleared effectively
and consistently by the
smaller machines.



Equipment Concerns & Issues

- Hydraulics seizing
- Overheating
- Sticky gas pedal
- Flat tires
- Loose snowblade bolts
- Salt spreader spinner not working
- Traction issues

Trial Results: Where Snow Could Not Be Cleared

- Obstructions preventing plow access
 - Objects in the sidewalk (e.g. hydro poles)
 - Private encroachments in the public right-of-way (e.g. fences, landscaping)
 - Pinch points (e.g. vehicle side view mirrors)
 - Risk of damage to objects and plows
- Too little space for snow storage



Some of these issues could be resolved or corrected through education and enforcement to allow for more effective snow clearing.



An example of where snow could not be cleared: On a narrow sidewalk with street parking, there is risk of damaging vehicles' side view mirrors.

Snow Plows in Action

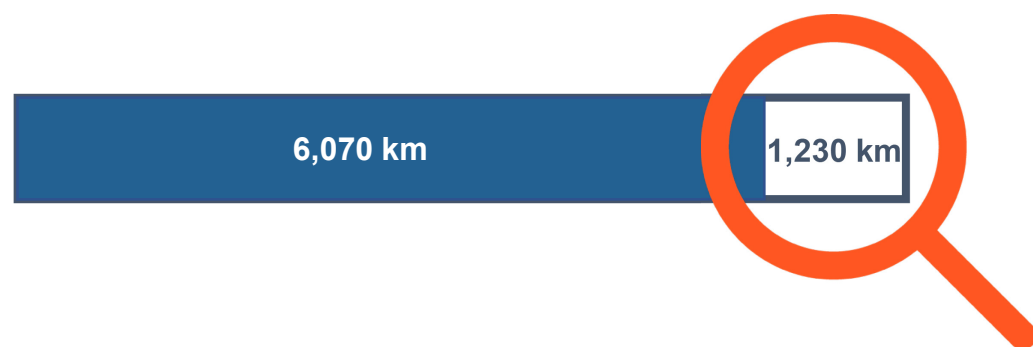


Sidewalk Inventory Study



Sidewalk Inventory Study

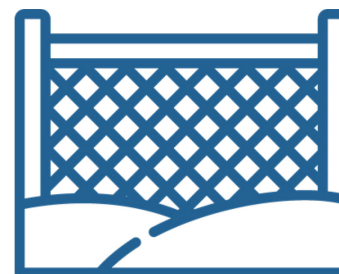
In Summer 2020, the City created an inventory of all sidewalks in areas not currently cleared as part of the City's winter maintenance program.



Objectives of the study:



Assess the feasibility of using new smaller plows to clear sidewalks in areas not included in the winter trial



Identify specific obstacles and encroachments that would prevent the new smaller sidewalk equipment from passing safely

Study Results

1,119 km of 1,230 km of sidewalk could be cleared

91% of sidewalk reviewed though the study could feasibly receive mechanical clearing.

Obstacles and encroachments would prevent plows from safely clearing the other 111 km.



Possible alternatives to mechanical plowing will need to be considered for sidewalk that cannot be cleared by smaller plows.



A retaining wall with shrubs overhangs the sidewalk on a segment with street parking, creating an obstruction for plows.

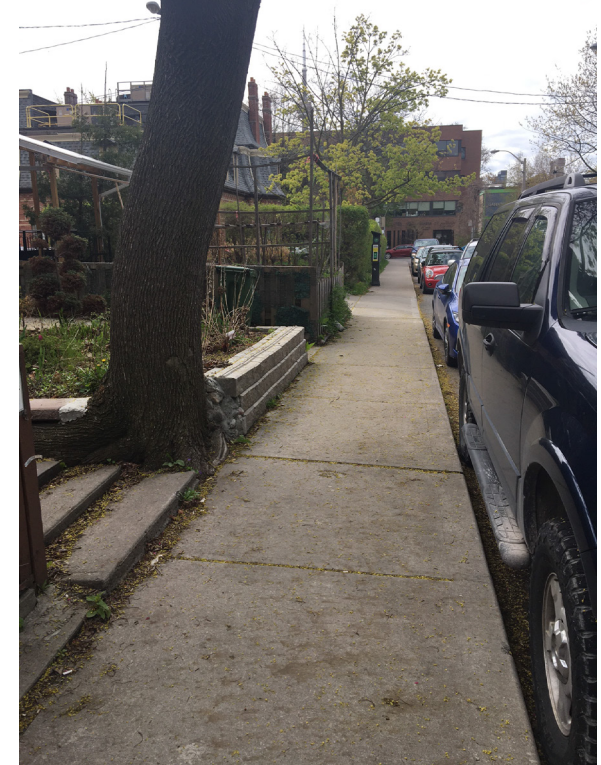
Study Results: Sidewalk Obstructions



A large tree encroaching on a sidewalk.



A sidewalk with a utility pole.



A sidewalk with a large tree, a retaining wall, and street parking.

Expanding Sidewalk Clearing

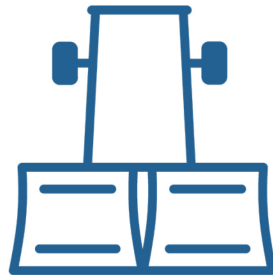
Trial and study results indicate that **it is technically feasible to expand the sidewalk clearing program to all areas of the city** with the use of smaller plows.

Key factors to be considered:



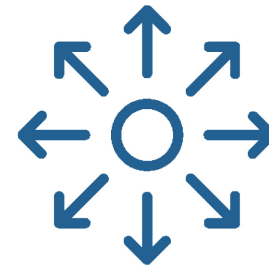
Cost

New, permanent funding would need to be allocated through the City's annual budget process for equipment, staff hours and public education.



Equipment

Estimated number of plows needed to provide service on sidewalks not currently cleared, to be purchased through City's procurement process.



Versatility

Smaller plows could be used to sweep during the spring or summer.

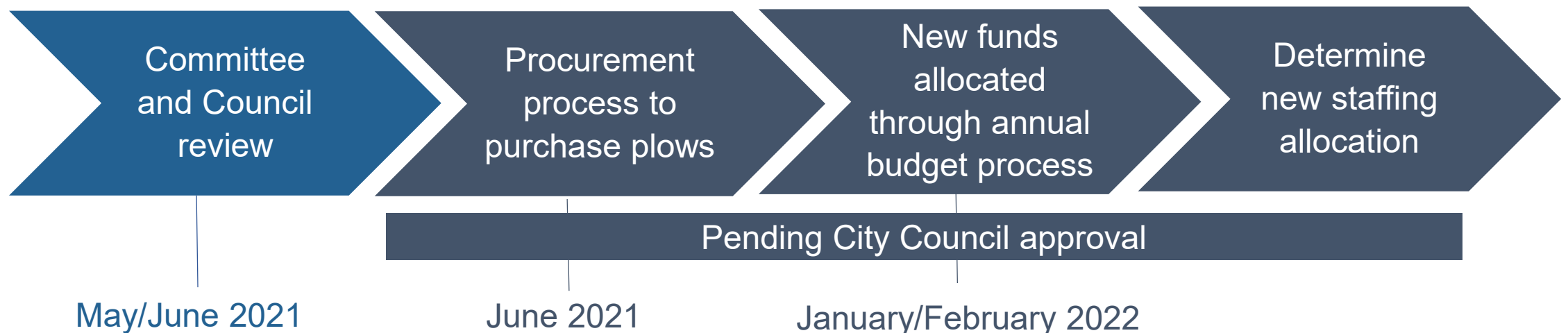


Limitations

Some sections of sidewalk would continue to be excluded because of obstructions or risks.

Next Steps: Estimated Timeline

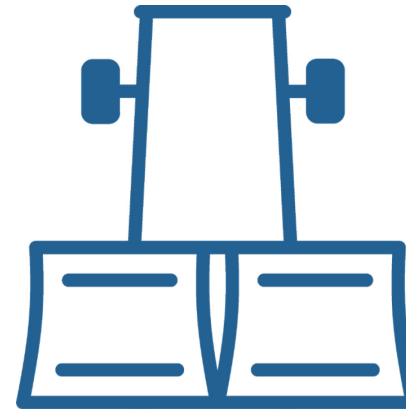
- Transportation Services will report back to the [Infrastructure & Environment Committee](#) of City Council on May 25 to present the results of the trial and recommendations for consideration. A staff report will be posted one week before the committee meeting.
- If expansion of the program is approved by committee, the matter will go to City Council.
- Pending Council approval, additional funding would be allocated through the annual budget process.



Next Winter Season: 2022



Houses enrolled in the program for seniors and people with disabilities:
The City will continue to clear snow manually or mechanically.



Existing trial routes:
The City will continue to clear the existing trial routes and may expand service delivery, pending Council approval.



Questions or comments?

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toronto.ca/SidewalkTrial