



CITY OF SOMERVILLE, MASSACHUSETTS
JOSEPH A. CURTATONE
MAYOR

To: Honorable Members of the City Council

From: The Department of Public Works

Date: November 16, 2021

Re: Agenda Item [212569](#) That the Commissioner of Public Works update this Council with details on the sidewalk snow-shoveling pilot which was included in the FY2022 budget.

Memorandum

Snow Shoveling Pilot Overview

In response to City Council Order [211134](#), which asks for a detailed financial analysis of removing snow from sidewalks in business districts and major thoroughfares, and as a result of conversations stemming from that order, we propose a pilot to help us understand the costs and operational challenges of sidewalk snow removal in Somerville. This pilot will also assist us in determining the limitations and extent to which the City can feasibly conduct sidewalk snow removal.

The pilot is a two-pronged approach of clearing snow where violations exist in the pilot area, in addition to expanding proactive snow removal from ramps, sidewalks, and bus stops in the pilot area. The pilot area consists of the entirety of School Street and Broadway in Somerville. This area includes approximately 8.5 sidewalk miles, 350 ramps, 200 crosswalks, and 70 bus stops.

Some questions we hope to have answered by the pilot are:

- What is the feasibility of hiring contractors to clear city sidewalks?
- What are the costs associated with clearing sidewalks (labor and equipment)?
- What sorts of equipment can contractors use to remove snow from sidewalks?
- How much time does it take ISD inspectors to complete enforcement on specific streets?
- How many additional violations will we encounter while completing proactive inspections vs. regular complaint-driven inspections?
- Is this effort feasible for a broader set of streets?

The pilot will take place during snow emergencies in fiscal year 2022.



Pilot Area Selection and Equity Considerations:

School Street and Broadway were selected because they are crosstown routes, intersecting all seven city wards. These streets cover many neighborhoods, including some neighborhoods with less access to high frequency public transit¹. These streets connect major administrative and educational facilities, as well as two future green line stations. In addition, of the 42 Environmental Justice (EJ) block groups in the City, 18 EJ block groups border School Street or Broadway. A block group is considered an EJ population by the state if it meets one of the following criteria²:

- the annual median household income is not more than 65 per cent of the statewide annual median household income;
- minorities comprise 40 per cent or more of the population;
- 25 per cent or more of households lack English language proficiency; or
- minorities comprise 25 per cent or more of the population and the annual median household income of the municipality in which the neighborhood is located does not exceed 150 per cent of the statewide annual median household income.

Broadway is a wider sidewalk which may be easier to shovel, while School Street contains significant sidewalk shoveling challenges. This combination of streets will allow us to learn about the broad range of challenges we might face in implementing this on a wider scale and will help inform our decision to expand this program.

Pilot Details: Ticket and Clean with Proactive Clearing

When there is a declared snow emergency, DPW will coordinate sidewalk clearing on Broadway and School Street as ISD tickets the uncleared sidewalks. ISD will enforce the sidewalk snow removal ordinance within the pilot area six daylight hours after the snow has stopped falling in line with the following list of enforcement priorities:

1. Assisted care facilities and hospitals
2. Known daycares and elementary schools
3. Middle and high school areas
4. Areas around other City buildings
5. Pilot area (change from current procedure)
6. Complaints

¹ Somerville Zoning Atlas: Transit Area Map pg 21, November 2019 <https://3pb8cv933tuz26rfz3u13x17-wpengine.netdna-ssl.com/wp-content/uploads/sites/2/2019/12/20191212-Somerville-Zoning-Atlas.pdf#page=21>

² Environmental Justice Populations in Massachusetts, <https://www.mass.gov/info-details/environmental-justice-populations-in-massachusetts>





ISD will issue violations and leave the brightly colored door hangers on residents' doors notifying them of the violation. Ticket amounts will remain the same for now (see Appendix II, Table 2 for fee schedule).

DPW contractors will follow ISD inspectors and will clear the sidewalks shortly after the violations are issued. The contractor will use the door hangers and general communication from ISD to identify which sidewalks to clear. The contractors will clear a path of at least 42 inches or as wide as the sidewalks allow at addresses where there is not a 42-inch path already cleared. In addition, DPW contractors will proactively remove snow in the following scenarios within the pilot area:

- Ramps, sidewalks, bus stops
- Where there are any large piles of snow adjacent to the ramps and the sidewalks

If there are complaints of uncleared sidewalks in the pilot area after the City has cleared the sidewalks, they will be addressed through regular ISD processes.

Anticipated advantages of the approach of this pilot include:

- Comprehensive enforcement encourages better compliance over time and allows our funds to go further.
- Resolves potential future complaints in advance, as areas that may be reported in the days following the storm would be cleared earlier.

Anticipated challenges of the approach of this pilot include:

- Does not clear the sidewalks until six or more hours after the storm.
- Waiting until the six hour mark may allow snow to become packed down in some areas making it harder to remove.

Financial and Operational Impacts:

Given the variability of snow storms and winter weather, it is not feasible to project pilot costs exactly. Using a contractor cost estimate and averaging prior year data, however, it is possible to estimate a cost scenario for fiscal year 2022 in the pilot area. The expected cost of a contractor and small snowblower is \$250 per hour. Given the number of ramps, bus stops, and average number of snow removal violations in the pilot area, as well as the expected time to clear each feature and number of snow emergencies per year, the pilot cost estimate for fiscal year 2022 could range between approximately \$33,000 and \$131,000. Actual costs are subject to contract prices, snow conditions, and actual number of violations per storm. For reference, details on the calculations for this estimate are included in Appendix I.





DPW's primary responsibility in snow removal will always be to ensure that emergency vehicles can safely navigate the streets. Secondary priorities include pedestrian, cyclist, and other vehicle mobility. The pilot sidewalk removal operations will be conducted by contractors, and thus should not impact DPW's frontline snow removal efforts. There are, however, additional administrative resources required for managing and coordinating sidewalk snow removal operations. The Highway Superintendent will coordinate with ISD to ensure that removal does not occur before ticketing occurs and make sure that all sidewalks are cleared.

The inclusion of the pilot area into ISD's enforcement prioritization list may cause a delay in ISD response to complaints, snow related and other. However, without knowing how many additional violations ISD inspectors will find in the pilot area, it is difficult to estimate the additional time required for proactive inspecting. For reference, additional information on DPW and ISD's standard operating procedures on snow sidewalk removal is included in Appendix II.





Appendix I: Cost estimates

The cost estimates for this pilot take into account the following variables:

- **Cost of contractor and equipment:** The estimated cost for contractor and equipment for sidewalk snow clearing is \$250 per hour.
- **Number of snow emergencies:** In the last five years, the number of snow emergencies has ranged from one to four per year.
- **Pilot area bus stop and ramps:** The number and the estimated time to clear snow from them (see Table 1 below).
- **Pilot area violations:** The estimated number of violations per snow emergency in the pilot area based on prior year data and the estimated time to clear snow from them (see Table 1 below) and an estimated increase of 25% in violations with increased enforcement.

Table 1: Pilot area features and cost variables		
Feature	Number in Pilot Area	Estimated Number of Hours of Shoveling per Feature
Ramps	350	0.25
Bus stops	70	0.5
Sidewalk snow removal violations per snow emergency	7 (average) (low: 2; high: 20)	1

Hours of shoveling estimate per snow emergency:

$$\begin{aligned}
 & \text{(Number of Ramps } \times \text{ Time to Clear a Ramp)} \\
 & \quad \text{(350 Ramps } \times \text{ 0.25 Hour)} \\
 & \quad + \\
 & \text{(Number of Bus Stops } \times \text{ Time to Clear a Bus Stop)} \\
 & \quad \text{(70 Bus Stops } \times \text{ 0.5 Hour)} \\
 & \quad + \\
 & \text{(Average Number of Sidewalk Violations } \times \text{ Estimated Change in Violations } \times \text{ Time to Clear a} \\
 & \quad \text{Violation)} \\
 & \quad \text{(7 Violations } \times \text{ 1.25 Increase } \times \text{ 1 Hour)} \\
 & \quad = \\
 & \text{Hours of Shoveling per Snow Emergency} \\
 & \quad 131.25
 \end{aligned}$$





Cost estimate per snow emergency:

$$\begin{aligned} & \text{Estimated hours of shoveling per snow emergency} \times \text{Estimated contractor price per hour} \\ & 131.25 \times \$250 \\ & = \\ & \text{Cost Estimate per Snow Emergency} \\ & \$32,812.50 \end{aligned}$$

Cost estimate range per year:

$$\begin{aligned} & \text{Cost Estimate per Snow Emergency} \times \text{Number of Snow Emergencies} \\ & \text{Low end: } \$32,812.50 \times 1 \text{ Snow Emergency} \\ & \text{High End: } \$32,812.50 \times 4 \text{ Snow Emergencies} \\ & \text{Range: } \$32,812.50 - \$131,250 \end{aligned}$$

Appendix II: Existing Snow Sidewalk Removal and Ticketing Procedures

This pilot will be in addition to the existing procedures below.

DPW:

- Limited sidewalk removal currently
- DPW removes snow outside of the roadways in the following circumstances:
 - Public bus stops (281 stops, divided into 4 routes), ramps, and bridges
 - City squares including traffic islands
 - Public sidewalks abutting municipal property including schools
 - Public sidewalks and crosswalks abutting bus stops
 - Public sidewalks abutting private properties in extreme circumstances
 - State assets not typically maintained by the city, in extreme circumstances

ISD:

- Determine official end of storm and set end of permissible clearing time
 - Communicate end of clearing period to 311 and inspectors (six daylight hours after end of storm)
- When the permissible clearing time ends, inspectors begin routine compliance checks for required clearing. Locations are inspected in the following priority:
 - Assisted care facilities and hospitals
 - Known daycares and elementary schools
 - Middle and high school areas
 - Areas around other City buildings
 - Complaints





- If violations are observed:
 - The inspector will take a picture to document the violation
 - A door knocker pamphlet will be placed on the violating property's door to inform the residents of the violation
 - Tickets are written and mailed during the inspector's next shift.
- If multiple complaints are received for the same violation a new ticket will be issued each subsequent day that the violation persists and is observed.
- Current Violation Fee Structure:

Table 2: City of Somerville Sidewalk Snow Violation Fee Schedule			
Type of Violation	First Offense	Second Offense	Third Offense
Residential Snow/ice uncleared sidewalk (1, 2 and 3 units)	\$100	\$200	\$300
Residential Snow/ice into street (1, 2 and 3 units)	\$100	\$200	\$300
Commercial snow/ice uncleared sidewalk (4+ units and commercial)	\$150	\$300	\$300
Commercial snow/ice into street (4+ units and commercial)	\$150	\$300	\$300

