



City of Richmond

Report to Committee

To: Public Works and Transportation Committee
From: Suzanne Bycraft
Director, Public Works Operations
Date: October 20, 2022
File: 10-6060-01/2022-Vol
01
Re: **Options for Snow Removal from Priority Pedestrian Corridors — Referral Response**

Staff Recommendation

That, as outlined in the staff report titled “Options for Snow Removal from Priority Pedestrian Corridors — Referral Response”, dated October 20, 2022, from the Director, Public Works Operations:

- a) The operational response practices relating to bus stops, wheelchair let downs and City facilities be endorsed; and
- b) Staff conduct pilot initiatives during the 2022/2023 winter season to undertake snow clearing from non-delineated bike routes and five kilometres of multi-use pathways along Railway Avenue and Alderbridge Way within 72 hours after the snowfall has ended for each snow event.

Suzanne Bycraft
Director, Public Works Operations
(604-233-3338)

Att. 1

REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Transportation	<input checked="" type="checkbox"/>	
Law	<input checked="" type="checkbox"/>	
Parks	<input checked="" type="checkbox"/>	
SENIOR STAFF REPORT REVIEW	INITIALS: 	APPROVED BY CAO

Staff Report

Origin

The following referral was made at the November 16, 2021 Public Works and Transportation Committee Meeting:

That staff report back to Committee with options to prioritize walk friendly snow removal routes to provide foot traffic access to key services.

This report responds to the referral.

This report supports Council's Strategic Plan 2018-2022 Strategy #1 A Safe and Resilient City:

Enhance and protect the safety and well-being of Richmond.

1.1 Enhance safety services and strategies to meet community needs.

1.3 Ensure Richmond is prepared for emergencies, both human-made and natural disasters.

Analysis

This Report outlines Richmond's current approach to winter snowfall events and makes a recommendation to build on and improve the approach as it relates to bike lanes. The City's approach to winter snowfall events has been formulated based on the frequency and nature of events over the years. Over the last 10 years, Richmond experienced an average seven days of snowfall annually totalling an annual average of approximately 30 centimetres of snow. The effects of climate change, however, appear to be periodically impacting the intensity and duration of events, as was experienced in late 2021/early 2022. During that event, Richmond received 49.4 centimetres of snow over 14 days, with an average overnight low temperature of -6.9 degrees Celsius.

Current Snow Removal Policy and Operational Practise

Arterial Roads: Council Policy 7013 "Roadways — Ice and Snow Removal" establishes the City's activation and response priorities for treatment of specified roadways to provide safe winter driving conditions during adverse weather. Clearing highly frequented roadways and providing the users a safe passage for their vehicles is paramount to mitigate risks of vehicular accidents due to hazardous conditions resulting from a snow event and to facilitate adequate operation of public transit as well as emergency vehicles providing fire, police and emergency medical services. The policy establishes the following response priorities:

- First priority is given to all major arterial, section line roads and bus routes (217 kilometres),
- Second priority includes all major collector roads (22 kilometres), and

- Third priority includes subdivision interior collector roads (77 kilometres), as resources allow.

Staff recommend that these priorities are suitable and appropriate to the weather conditions in the Lower Mainland and should be maintained as currently outlined in Policy 7013.

Bus Stops and Wheelchair Letdowns: As an operational practise during snow events, a total of 628 bus stops across the City, which are deemed priority locations to ensure adequate operation of public transit, are cleared along with wheelchair letdowns on arterial roads. The sidewalk immediately adjacent to these locations is cleared, but not the sidewalk leading to these areas since City resources are allocated to address the priorities under Policy 7013. Further, clearing these sidewalks of snow is the responsibility of the property owner under Bylaw 5870.

City Facilities: Additionally as an operational practise and as resources permit, the City also clears the entrances, wheelchair ramps, stairs, parking lots and walkways of all civic facilities, such as community centres, fire halls, etc., including the perimeter sidewalks, as part of snow clearing response. The City currently has the capability to outfit existing equipment for snow removal for this purpose as opposed to having an additional, dedicated inventory of purpose-built equipment.

Comparison to Other Cities: Other municipalities in the Lower Mainland including the Cities of Vancouver, Burnaby and Surrey have similar snow response priorities and practices to those of Richmond, with the first priority being high volume major arterial roads, emergency response routes and the major bus routes. The City of Vancouver includes priority bike routes and key pedestrian pathways that are designed to be travelled by multi-purpose vehicles including Robson Square, Coal Harbour Seawall, and False Creek Seawall among others, as a part of its second priority locations that are to be cleared within 72 hours after the snowfall has ended.

Removal of Snow from Sidewalks

As per Section 6.1 of the City's Traffic Bylaw (Bylaw 5870), the owner or occupier of any parcel of real property which is developed for, or used in whole or in part for, commercial, industrial, multi-family dwelling, or single-family dwelling use shall remove all snow and ice from any sidewalk adjacent to such parcel for a distance that coincides with the property line of the real property, not later than 10:00 a.m. of every day, including Sunday. As such, sidewalks fronting private property are currently not included in the scope of the City's snow response policy or operational practise.

Comparison to Other Cities: Similar to Richmond, the Cities of Vancouver, Burnaby and Surrey have bylaw provisions that require the owner or occupant of any parcel of property to clear the sidewalks adjacent to that parcel by 10:00 a.m. each day. Like Richmond, clearing the sidewalks adjacent to any City owned parcels are the responsibility of the municipality. Cities like Toronto and Calgary, which receive much greater amount of snows compared to Richmond, also have similar provisions in their bylaws. Staff note that the City of Burnaby also requires property owners to clear any multi-use pathways fronting their properties.

Snow Angels Program

The City recognizes that not all residents may be able to clear snow from the sidewalk and area around their homes. The “Snow Angels Program” connects volunteers with elderly citizens and residents with illnesses, disabilities, or mobility challenges. Snow Angels are community volunteers who are organized by the City to provide assistance with snow removal from driveways and pathways leading to front doors and sidewalks. The program is activated when three or more centimetres of snow has fallen. Residents can request the services of volunteer Snow Angels in several ways, including through the City’s website, by calling the Snow Angels Coordinator, or calling City’s 24-hour Dispatch Office.

Referral – Prioritized Walk Friendly Snow Removal Routes

In response to the Council referral motion, staff reviewed and identified approximately 40 kilometres of highly frequented pedestrian sidewalks across the City in order to establish an estimate of the required cost, effort and resources to facilitate this additional service level. These locations encompass the majority of the City Centre, Steveston Village area, Ironwood area, as well as the area around Cambie Mall. The identified routes provide access to some of the key services including the Richmond Hospital, Canada Line stations, community centres, libraries, shopping plazas, etc.

Staff assessed the resources required to prioritize snow removal from the identified pedestrian sidewalks, noting specialized equipment would be needed for sidewalks. A minimum of three new Kubota rough terrain vehicles (RTVs) with a full cab and climate control with accessory V-plow attachments and brine tanks would need to be acquired, stored and maintained to clear these sidewalks on three different route areas.

Additional staff would also be required to provide this level of service, inclusive of six staff resources per shift including two per route area. Completion of one pass for each section, including plowing and brining from beginning to end (a ‘pass’), is expected to take approximately eight hours. This time estimate does not take into consideration the potential wait time to accommodate for pedestrians using the sidewalks.

Based on an estimated three snow events per season and assuming fourteen passes per event, the capital cost for this added service level is estimated at \$165,000 plus the annual operating cost of \$337,800 for a total of \$502,800 as summarized in Attachment 1. Costs could range an order of magnitude higher or lower based on the number and duration of snow events per year, as well as whether the work is performed during regular or overtime hours.

Challenges

Snow removal from sidewalks is not currently identified under Council Policy 7013. With the exception of those adjacent to City-owned facilities, clearing of sidewalks is also not part of current operational practise during snow response. Available staff resources, which are at minimum levels during winter months associated with seasonal layoffs, are all fully allocated to established snow response priorities, inclusive of priority roadways and bus stops. Therefore, it would be impractical to rapidly increase staffing levels and conduct the required operational and

safety training required for these short term and sporadic events for pedestrian sidewalk clearing. The practise could also present a higher public safety risk as the water thaws and refreezes, creating the potential for black ice to form pending the next brining treatment or application. Additionally, and as per the City's Traffic Bylaw, the identified pedestrian sidewalks are the responsibility of the adjacent residents and business owners.

The V-plow attachments used on the equipment are effective in clearing a majority of the snow off the sidewalks, and brine is used to melt any of the remainder. The snow clearing process would create a windrow on either side of the walkway which may restrict access to private walkways, driveways and business access and could present a hazard for people accessing their cars parked adjacent to the sidewalks.

City-provided sidewalk snow clearing as an additional level of service would present concerns since it would provide direct benefit to only those property owners fronting the identified sidewalks and not others. This could create an equity issue and result in a cascading effect of service level expectations. The majority of the identified sidewalk locations are fronted by businesses which are responsible for snow removal independent of the City. Given the infrequent nature and typical short duration of these events, coupled with the additional cost and present sidewalk clearing requirements under Bylaw 5870, staff do not recommend expanding service to include snow removal from sidewalks adjacent to high use pedestrian sidewalks fronting residents and businesses. Staff are however considering recommending possible amendments to the Traffic Bylaw to further clarify the responsibilities of adjacent business and residents when it comes to clearing sidewalks.

Bike Lanes and Key Pedestrian Pathways

Bike lanes along major arterials typically become impassable not only during snow events, but also for a period of time after the event given snow ends up being pushed into these lanes as part of clearing the roads for vehicular travel. The accumulated quantities of snow take substantially longer to melt in order for the bike routes to be safely used again by cyclists.

Additionally, the City is continually expanding the construction of multi-use pathways (MUP) as part of encouraging environmentally-friendly travelling alternatives, including walking and cycling. To encourage and promote the safe return to these travelling modes at the earliest opportunity in key locations after snowfall events, staff have identified a suggested approach in the following section.

Proposed Approach

Bike Lanes: To clear bike lanes in a more expedient fashion, staff propose to conduct a pilot initiative in the 2022/2023 winter season to use existing equipment and resources to clear the snow from the bike lanes at suitable times after the conclusion of snowfall events. The process would involve the use of existing F-550 trucks with plow blades used in tandem with the larger snow response trucks. The snow would be moved back onto the roads by the F-550 trucks and subsequently crushed and dissipated by the larger snow response trucks. This process could only be done once conditions have warmed to the point where any safety concerns with moving the

snow back onto the arterial roads would be avoided and the practise is assured not to create hazards for either cyclists or vehicular travellers.

Delineated bike lanes would not be included at this time given they are too narrow for existing equipment to service. Staff are, however, evaluating opportunities to add plow capability as part of a new, narrower street sweeper being acquired for cleaning delineated bike lanes. Given acquisition process requirements and current supply chain challenges, the new mini sweeper is not expected to be in service for six to nine months.

Key Pedestrian Pathways: Pedestrian pathways are a City asset not captured by Bylaw 5870, nor do they generally abut residences or businesses. To facilitate clearing key pathway routes, staff propose to conduct a pilot initiative during the 2022/2023 winter season to clear snow and assess environmental impacts from the Railway Greenway MUP and the Alderbridge Way MUP. These pathways totalling five kilometres in length, see high pedestrian and cyclist traffic throughout the year and clearing them after a snow event will provide a safe passage for pedestrians and cyclists alike along this route.

A target timeline completion objective of 72 hours after the end of the snowfall event will be established for this pilot. A one-tonne (F-550) truck, which is already a part of the City's fleet inventory, outfitted with a plow and a brine unit will be used to provide this service. The results of this pilot can then be evaluated for functionality, accessibility, usage and environmental impacts as part of establishing any cost requirements for select application to additional pathways in the future.

Financial Impact

The pilot initiatives identified in this report are proposed to be funded from within existing funding levels. Any future funding requirements associated with formalizing or expanding this service level would be identified as part of standard budget approval processes.

Conclusion

This report provides an overview of the City's current priorities and operational response practices associated with winter snowfall events. The report addresses the November 16, 2021 referral from the Public Works and Transportation Committee meeting concerning priority pedestrian sidewalks to be considered for snow clearing by City forces. Staff do not recommend the City undertake clearing of pedestrian sidewalks where bylaw requirements currently already impose that responsibility onto residents and businesses, and to avoid service equity issues. There are also added costs and resource impacts to the City to provide this service.

To help cyclists and pedestrians return to these environmentally friendly travel modes in the most expedient fashion after snowfall events have ended, staff are proposing trial initiatives for clearing bike routes and the multi-use pathways along Railway Avenue and Alderbridge Way during the 2022/2023 winter season.

October 20, 2022

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A handwritten signature in black ink, appearing to read 'LF', is positioned above the printed name.

Larry Ford
Manager, Roads and Construction Services
(604-244-1209)

LF:rd

Att. 1: Pedestrian Sidewalks Snow Removal Costs Estimated for Three Snow Events

Pedestrian Sidewalks Snow Removal Costs Estimated for Three Snow Events

Table: High Use Pedestrian Sidewalks - Snow Removal Costs for Three Snow Events

Resource	Required Funding
One Time/Capital Cost:	
Equipment (3 Kubota RTVs and accessories at \$55,000 each)	\$165,000
Capital Total	\$165,000
Annual Operating Cost:	
Equipment Operation and Maintenance (\$12,500 each)	\$37,500
Staffing Resources (\$6,100 per snow event x estimated 14 passes per snow event x 3 events)	\$256,200
Truck and Trailer Rental (\$1,000 per event x 14 passes x 3 events)	\$42,000
Materials and Supplies (x 3 events)	\$2,100
Annual Operating Total	\$337,800
Total Funding Required	\$502,800