

STAFF REPORT

THE CORPORATION OF THE TOWN OF COBOURG



Report to:	Mayor and Council Members	Priority:	<input type="checkbox"/> High <input checked="" type="checkbox"/> Low
Submitted by:	Laurie Wills Director, Public Works lwills@cobourg.ca	Meeting Type: Open Session <input checked="" type="checkbox"/> Closed Session <input type="checkbox"/>	
Meeting Date:	September 13, 2021		
Report No.:	Public Works-039-21		
Submit comments to Council			

Subject/Title: Sidewalk Snow Clearing Expansion Options

RECOMMENDATION:

THAT Council select a preferred option to expand the sidewalk clearing program as outlined or choose to maintain existing operations.

1. STRATEGIC PLAN

Pillar: Programs Action Item #4: Explore enhanced sidewalk snow clearing including the clearing of arterial bike lanes and multi-use paths

2. PUBLIC ENGAGEMENT

In consideration of the potential budget implications, public consultation has not yet been incorporated into the decision-making process.

3. PURPOSE

To understand the costs associated with any expansion of the Public Work's sidewalk plowing program.

4. ORIGIN AND LEGISLATION

The Town of Cobourg Council's 2019-2022 Strategic Plan.

5. BACKGROUND

The Town of Cobourg is responsible for winter maintenance activities on all sidewalks within the municipal road allowance. Currently, the sidewalk clearing program includes those sidewalks which are along the frontage of Town owned properties such as parks and buildings as well as routes that service transit stops. The current program is good practice and is aligned with the Town's winter sidewalk clearing policy which requires property owners to clear snow and ice from the sidewalks along the frontage of their own property. This ensures fairness among residents and business owners so that the Town is not subsidizing some property owners and not others.

As part of Council's strategic plan for 2019-2022, Council directed Staff to investigate costs associated with increasing sidewalk plowing levels of service.

Winter maintenance on sidewalks is shared between the Public Works Department and the Parks Department. The Town has made an effort to improve the level of service on the sidewalks in recent years by starting earlier in the season and has also made additional efforts to track these activities to better understand the time and costs associated with the current program. The goal for clearing of the sidewalks is to have them cleared within 24 to 48 hours of the conclusion of a snowfall event. Although Public Works responds to snowfall events, no matter the day or time, as a general rule, winter maintenance activities on sidewalks are only performed during regular operating hours and not on overtime hours.

The Parks Department, also only performs winter maintenance during regular working hours however the primary difference being that they have staff scheduled to work 7 days per week in order to facilitate the operations of the Outdoor Skating Rink. As a result, there are Parks staff available more often to clear the parks routes, as time permits during their shifts. Any weekend sidewalk clearing is performed with the intention of opening a walkway, meaning only one pass to move the majority of snow, with the routes being revisited on the next regular workday to finish clearing the sidewalks to the normal standard in which they are kept.

The Town's sidewalk clearing standard is to clear the snow and ice down to bare concrete which is above the minimum standard of clearing to less than 6" (150mm). Public Works and Parks are responsible for a different route each and there is little crossover in work performed. The Parks department clears some multi-use trails within parklands and are not considered within this report. A separate evaluation of resource availability within the parks department would be required in order to increase the amount of multi-use paths within parklands. Multi-use paths that are located outside of a municipal road allowance and are not subject to the Minimum Maintenance Standards of the Municipal Act.

During 2020 budget deliberations, a commitment was made for sidewalk plowing to commence as soon as shifts begin as a priority over everything else except road plowing and emergency work. In the 2019/2020 season, both sidewalk machines were out earlier (by 7:30am) and more often than they have been in past years.

In the 2019/2020 season, Public Works performed winter maintenance activities on sidewalks on 43 separate days between November 12 and March 2 totaling approximately 382 hours of work and covering 2528 km, of which 733 km was traveled with the plow down. Therefore, in order to fully clear sidewalks to bare concrete by doing multiple passes, the route takes 9 hours to fully complete on an average per snowfall event or 4.5 hours split between two machine operators.

It is somewhat more difficult to isolate the exact amount of time the Parks Department spent on maintaining sidewalks, because their equipment serves multiple purposes by also plowing parking lots along the waterfront, transporting the outdoor rink Zamboni, and other general uses. Parks performed winter maintenance on sidewalks on at least 47 days with equipment primarily used for sidewalks (2 machines), totaling approximately 245 hours and plowing for 445 km. There are four other machines that are used for sidewalk maintenance to varying degrees. Typically, the parks equipment used for winter maintenance are much slower and not as powerful for the removal of heavy snow and ice.

Taken together, the Town of Cobourg spent over 627 hours working on sidewalks and plowed over 1178 km, covering a far greater distance to do so.

Sub-Contracting Work and the Collective Agreement

Municipal sidewalk clearing is not typically contracted out to private businesses. Locally, Staff are not aware of businesses that would have the small but powerful equipment necessary or the resources to meet the strict timelines required by the MMS.

Also, in accordance with Article 41 of the CUPE Local 25 Collective Agreement, the Town cannot lay off employees by reason of contracting out work that would normally be performed within the bargaining unit.

6. ANALYSIS

The Public Works sidewalk machines can travel at 10km/hr when plowing and up to 25km/hr when driving with the plow up. Keeping in mind that the routes are often plowed several times to get to bare concrete, based only on the Public Works data which is more reliable, the machines are plowing at an average of 2.5km/hr which is the value that will be used for estimating the time required for each additional kilometer added to the sidewalk plowing routes in future.

To estimate a few scenarios for additional sidewalk clearing options, we can use the current plowing routes that are considered arterial loops and collector blocks for the Town's snowplows (Refer to map). Currently, Public Works plows 13.5 kms of sidewalks combined including some on Elgin Street which is a County Road. There is an estimated total of 56 kms of sidewalk on both sides of all loops and blocks (excluding King and Elgin Street). Block 5 has been excluded as it is known to not have any sidewalks.

This calculation indicates that in order to plow all the sidewalks on our road plowing loops and collector blocks, the resources required would triple. Seven scenarios have been developed and costed for an understanding of the resources and equipment needed to expand the sidewalk plowing program.

Table 1: Proposed Sidewalk Clearing Scenarios

Proposed Plowing Scenario #	Description	Existing Sidewalk (Km)	Currently plowed by PW (Km)	Unplowed (Km)
1	Arterial (One Side)	22.8	6.1	16.6
2	Arterial (Two Sides)	37.3	10.5	26.8
3	Collectors (One Side)	15.2	2.4	12.8
4	Collectors (Two Sides)	19.3	3.0	16.3
5	Arterial/Collector (One Side)	37.9	3.0	34.6
6	Arterial/Collector (Two Sides)	56.6	6.7	48.3
7	One Side Collector/Two Side Arterial	52.5	7.2	44.7

Operating Expenses: Labour Resources

For each scenario, another consideration was the expected time to complete the proposed sidewalk clearing routes. The current level of service for sidewalks is 48 hours after the snow

event has stopped. Each of the proposed scenarios considered a 24 hour and 48 hour level of service to clear the sidewalks down to bare concrete after a snowfall event has elapsed.

An operator of a Commercial Motorized Vehicle is required to maintain a Commercial Vehicle Operator's Registration certificate and must log all their on-duty, off-duty and driving time in accordance with the Ministry of Transportation's requirements. Drivers are only allowed to operate vehicles for a certain number of hours before being required to have a designated amount of hours off duty.

With limited staff resources, if there is a long snowfall event, there is a risk of running out of driving hours. By implementing additional sidewalk plowing, driver hours will be stretched that much further, and it will not be possible to maintain the expected level of service. For any additional sidewalk plowing implemented, additional staff will be required and the costs associated with staffing has been considered in two ways:

1. the costs associated with the actual plowing time; and,
2. the costs associated with hiring a full-time employee for the whole year.

Unfortunately it is not possible to only consider the costs associated with plowing time however it is important to understand what the plowing time actually costs in comparison to the annual costs associated with additional hires and equipment capital costs.

Increasing the workforce to accommodate additional winter services would be in addition to the requirements noted in the Staff report presented to Council dated November 18, 2019 which indicated the need for an additional General Utility Worker in 2020, 2021 and 2022 in order to 'catch up' to current maintenance needs. Additional employees for the purpose of increasing winter maintenance service levels would not go unutilized in the summer months. One example where resources could be reorganized is where currently the Parks department staff mow the grass within the municipal road allowances and around stormwater management ponds as time permits. Activities such as this could be transitioned back to Public Works and relieve the Parks department resources to be better utilized for parks and recreational facilities. Roadside and storm pond maintenance service levels could then be increased to satisfactory levels rather than an inadequate 'as time permits' or complaint basis service level.

Table 2 illustrates the comparison of operating costs between staff resources needed for additional sidewalk clearing only as well as what the total annual costs will be to add those additional staff resources to the operating budget. Both costs are compared for a 24 hour and 48 hour level of service.

Table 2: Estimated Annual Labour Expenses

Proposed Plowing Scenario #	Description	Annual Labour Costs (sidewalk plowing only)		Annual FTE Costs	
		24 hr Response	48 hr Response	24 hr Response	48 hr Response
1	Arterial (One Side)	\$12,885.27	\$6,442.64	\$190,000.00	\$95,000.00
2	Arterial (Two Sides)	\$20,744.66	\$10,372.33	\$190,000.00	\$95,000.00
3	Collectors (One Side)	\$9,894.39	\$4,947.20	\$95,000.00	\$95,000.00
4	Collectors (Two Sides)	\$12,653.47	\$6,326.74	\$190,000.00	\$95,000.00
5	Arterial/Collector (One Side)	\$26,810.91	\$13,405.46	\$285,000.00	\$190,000.00

6	Arterial/Collector (Two Sides)	\$37,429.38	\$18,714.69	\$380,000.00	\$190,000.00
7	One Side Collector /Two Side Arterial	\$34,670.30	\$17,335.15	\$285,000.00	\$190,000.00

Operating Expenses: Equipment Resources

Public Works utilizes two (2) Trackless articulating sidewalk machines as shown in Photo 1.

Photo 1: Town of Cobourg Trackless Sidewalk Machine



The Trackless unit is the most common sidewalk machine operated by municipalities as it leads the market in technological design, efficiency, safety features, operator comfort and overall performance. These units have many options for attachments that can be utilized in the summer such as mowing decks and boom flail mowers for shoulders/ditches, broom sweepers for roads and trails, turf aerator for parks, cold planer for grinding sidewalks, and they can either tow or be equipped with water tanks and watering arm attachments.

Newer versions of these machines are being programmed with an anti-idle shutdown which only allows the tractor to sit and idle for a short period of time once it has reached operating temperatures and once it has remained stationary for a set period of time. This feature is expected to reduce fuel consumption by 40%-50%. The new machines also have an automatic feature that shuts off the sand/salt spreader when the machine stops for any reason or is shifted into reverse to reduce material waste. This feature is estimated to reduce material costs by up to 40%. By the time the Town replaces or purchases new Trackless sidewalk machines, they will be required to have Tier 4 final diesel engines in accordance with the Environmental Protection Act (EPA) making it the lowest producer of emissions of its kind.

In addition to the actual plowing equipment, Staff utilize a one tonne pickup truck to deliver sand or salt to the plow units. For the purpose of estimating the operating costs of additional sidewalk clearing, it has been assumed that for every two additional Trackless sidewalk machines purchased, an additional one tonne pickup truck will also be purchased. The one tonne pickups are also highly utilized all year long for equipment and material transportation around town.

Useful Life and Depreciation

In accordance with By-law 078-2014 Vehicle and Equipment Reserve Fund Policy, in order to properly plan for the replacement of these expensive vehicles, a linear depreciation value is required to be applied and contributed to the vehicle reserve (pseudo code 3010911) annually. The depreciation value is the capital cost divided by its useful life in years. A Trackless sidewalk machine and one tonne pickup truck have a useful life of 12 years and 9 years, respectively. The contribution to reserves for future replacement of these vehicles has been included in the estimate of operating costs.

Table 3 illustrates the comparison of operating costs between equipment needed for additional sidewalk clearing only as well as what the total annual costs will be to add those additional equipment resources to the operating budget. Both costs are compared for a 24 hour and 48 hour level of service. Note that capital costs associated with these machines are not included in annual operating costs.

Table 3: Estimated Annual Equipment Expenses

Proposed Plowing Scenario #	Description	Annual Equipment Costs (sidewalk plowing only)		Annual Equipment Costs	
		24 hr Response	48 hr Response	24 hr Response	48 hr Response
1	Arterial (One Side)	\$21,628.30	\$8,948.54	\$51,520.42	\$21,282.75
2	Arterial (Two Sides)	\$21,628.30	\$8,948.54	\$51,520.42	\$21,282.75
3	Collectors (One Side)	\$8,948.54	\$8,948.54	\$21,282.75	\$21,282.75
4	Collectors (Two Sides)	\$21,628.30	\$8,948.54	\$51,520.42	\$21,282.75
5	Arterial/Collector (One Side)	\$30,576.84	\$21,628.30	\$72,803.17	\$51,520.42
6	Arterial/Collector (Two Sides)	\$43,256.60	\$21,628.30	\$103,040.83	\$51,520.42
7	One Side Collector /Two Side Arterial	\$30,576.84	\$21,628.30	\$72,803.17	\$51,520.42

Capital Expenses: Equipment Resources

The capital cost of a Trackless sidewalk machine is \$180,000 and a one tonne pickup truck is \$75,000. As noted earlier, for each additional employee required there will be one additional sidewalk machine purchased and for every two sidewalk machines purchased there will be one (1) one tonne pickup truck purchased.

Table 4 illustrates the comparison of capital costs between equipment needed for additional sidewalk clearing only as well as what the total annual costs will be to add those additional equipment resources to the capital budget. Both costs are compared for a 24 hour and 48 hour level of service.

Table 4: Estimated Capital Expenses

Proposed Plowing Scenario #	Description	Capital Costs (sidewalk plowing only)		Total Capital Costs	
		24 hr Response	48 hr Response	24 hr Response	48 hr Response
1	Arterial (One Side)	\$181,250.00	\$75,000.00	\$435,000.00	\$180,000.00
2	Arterial (Two Sides)	\$181,250.00	\$75,000.00	\$435,000.00	\$180,000.00
3	Collectors (One Side)	\$75,000.00	\$75,000.00	\$180,000.00	\$180,000.00
4	Collectors (Two Sides)	\$181,250.00	\$75,000.00	\$435,000.00	\$180,000.00

7. FINANCIAL IMPLICATIONS/BUDGET IMPACTS					
5	Arterial/Collector (One Side)				0.00
6	Arterial/Collector (Two Sides)	\$362,500.00	\$181,250.00	\$870,000.00	\$435,000.00
7	One Side Collector /Two Side Arterial	\$256,250.00	\$181,250.00	\$615,000.00	\$435,000.00

The final two tables illustrate a summary of the capital and operating costs associated with each of the seven proposed scenarios. Table 5 shows the actual full addition of expenses to the Public Works operating and capital budgets whereas Table 6 shows the portion of costs associated with the additional winter maintenance of sidewalks added to the current clearing program. As noted previously, the costs associated in Table 5 are what are being considered as the impact to the budget. Table 6 figures are for information purposes to assist in understanding the direct costs related to the expansion of the sidewalk clearing operations only.

Table 5: Estimated Total Capital and Annual Operating Expenses per Scenario

Annual Operating	Capital	Available Options	Scenario #
\$ 120,000.00	\$ 180,000.00	24 hour response	
		Collectors One Side	3
		48 hour response	
		Arterial (One Side)	1
		Arterial (Two Sides)	2
\$ 245,000.00	\$ 435,000.00	Collectors One Side	3
		Collectors (Two Sides)	4
		24 hour response	
		Arterial (One Side)	1
		Arterial (Two Sides)	2
\$ 360,000.00	\$ 615,000.00	Collectors (Two Sides)	4
		48 hour response	
		Art/Clct (One Side)	5
		Art/Clct (Two Sides)	6
		One Side (Clct)/Two Side (Art)	7
\$ 490,000.00	\$ 870,000.00	24 hour response	
		Art/Clct (Two Sides)	6

In consideration of the full cost of expanding the sidewalk clearing program, the annual operating cost per additional kilometer plowed ranges from \$4,400 to \$14,800 plus capital expenses.

Table 6: Estimated Total Capital and Annual Operating Expenses for Sidewalk Plowing Only

Annual Operating	Capital	Available Options	Scenario #
\$ 20,000.00	\$ 75,000.00	24 hour response:	
		Collectors One Side	3
		48 hour response:	

		Arterial (One Side)	1
		Arterial (Two Sides)	2
		Collectors (One Side)	3
		Collectors (Two Sides)	4
\$35,000-\$45,000	\$ 185,000	<i>24 hour response:</i>	
		Arterial (One Side)	1
		Arterial (Two Sides)	2
		Collectors (Two Sides)	4
		<i>48 hour response:</i>	
		Art/Clct (One Side)	5
		Art/Clct (Two Sides)	6
\$60,000-\$65,000	\$ 260,000.00	One Side (Clct)/Two Side (Art)	7
		<i>24 hour response:</i>	
		Art/Clct (One Side)	5
\$ 85,000.00	\$ 365,000.00	One Side (Clct)/Two Side (Art)	7
		<i>24 hour response:</i>	
		Art/Clct (Two Sides)	6

In consideration of just the operating costs associated with the expansion of winter maintenance on sidewalks, the annual operating cost per additional kilometer plowed ranges from \$725 to \$2,100 plus capital expenses.

8. CONCLUSION

Expanding the sidewalk snow plowing program is a significant undertaking for the Town and if we are to proceed with implementation it will take time to develop an appropriate driving route based on the preferred alternative to ensure the most efficient use of resources.

Marketing of the changes will also be important so that residents and businesses will be made aware of the new routes and expectations of their own snow clearing responsibilities. Currently, many businesses and some residents have snow clearing contracts that will no longer be required.

As noted previously, Council should be aware that currently there are minimal private property frontages that are plowed by the Town and any expansion of the sidewalk plowing program will increase the number of privately owned property frontages who will be receiving an increase in service above other property owners who will not. Understandably, the main intent of an expansion is to provide better service and mobility options for pedestrians and not all municipally subsidized programs can be perfectly equal and fair.

The timing for implementing any increase in service levels will be impacted by the the following timing considerations. Following Council approval of the required budget, hiring of full-time staff can take upwards of 3 months depending on the quantity and quality of applicants. Depending on the level of experience of a new operator, there may also be a period of training required before new hires are considered to be fully efficient.

Large equipment procurement over \$50,000 requires a formal public RFP process which can take upwards of 3-4 months to prepare, advertise, receive and review bids for completeness and reporting back to Council for award after which time it may take up to another year before a machine can be delivered for use depending on availability and market demand.

Should an increase in service be the desire of Council, the implementation of the new programming will be impacted by the considerations noted above as it pertains to staffing and

equipment availability. The goal would be to commence in the fall/winter of 2022/2023 however that may be optimistic based on typical equipment procurement and delivery timelines.

Report Approval Details

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This report and all of its attachments were approved and signed as outlined below:

Tracey Vaughan, Chief Administrative Officer - Sep 23, 2021 - 3:47 PM