

City of Mississauga
Corporate Report



<p>Date: November 30, 2020</p> <p>To: Chair and Members of General Committee</p>	<p>Originator's files:</p>
<p>From: Geoff Wright, P.Eng, MBA, Commissioner of Transportation and Works</p>	<p>Meeting date: December 2, 2020</p>

Subject

West Credit Avenue Temporary Storage Location

Recommendation

1. That the funding requirement in the 2021 Capital Budget for the West Credit Avenue Temporary Storage Location be reduced from \$3.5M to \$2.8M, as outlined in the report from the Commissioner of Transportation and Works, dated November 25, 2020 and entitled "*West Credit Avenue Temporary Storage Location*".
2. That staff proceed with tenders and proposals where required for the West Credit Temporary Storage Location (#TW008400) in advance of 2021 budget approval.
3. That funding be approved in the amount of \$1.5M so that the project may proceed in Q1 2021.

Report Highlights

- It was identified in 2005 that a fifth operations yard was required to be constructed within three years to meet the needs of the Engineering and Works Operations, and Recreation and Parks Divisions. To date, a fifth yard has not been constructed to accommodate this need.
- A Yard Master Plan and Modernization Study is ongoing with findings to be reported in the 2022 Business Plan and Budget Cycle.
- Works Operations has a deficit in capacity for snow storage of approximately 26,000 m³ (918,181 ft.³).
- The increased number of equipment arriving with new 2021-2029 Winter Maintenance Contract requires new space to store them due to capacity issues at existing yard locations.

- Staff have revised the proposed program at the West Credit Avenue site to reduce the capital cost from \$3.5M to \$2.8M.
- It is expected the West Credit Avenue site can be utilized for a minimum of 10 years, designed to last at least 15 years and approximately \$1.5M worth of the material can be reused or recycled.
- Expanding the West Credit Avenue site provides much needed space for material and equipment storage for both the Works Operations and Maintenance (WOM), and Parks, Forestry and Environment (PFE) Divisions.

Background

At its meeting of November 24, 2020, Budget Committee directed staff to report on the West Credit Avenue temporary storage location. The purpose of this report is to respond to Budget Committee's direction.

Comments

Introduction:

The Management Consulting section of the City Manager's Office completed a report, dated August 25, 2005 and entitled "*Fifth Operations Yard (South-East Area)*". The report indicated that in 2005 both the Director of Engineering and Works Operations, and Director of Recreation and Parks, jointly agreed that the new yard be built and operated within the next three years due to increasing difficulty in meeting desired service levels in the southeast area of the City. Operations yards house vehicles, equipment, staffing, and materials required to maintain roads, bridges and culverts, as well as provide snow storage.

The City of Mississauga has four yards. The Mavis yard was constructed in 1956 and is approximately 64 years old. The Clarkson and Malton yards were the next yards constructed in 1977 and are approximately 43 years old. The Meadowvale yard was the most recent yard constructed in 1996 and is 24 years old.

An additional fifth yard has not been added, as other budget priorities have taken precedence since 2005. This is understandable, given that yards are costly to construct and yards are not public facing like community centres and libraries. However, yard capacity is important to maintain Council-approved service levels for services like winter maintenance and vacuum leaf collection program (VLCP), to name a few.

The City of Mississauga retained consulting services in 2019 to conduct a Yard Master Plan and Modernization Study to recommend how best to modernize and optimize the yards operated by

the WOM and PFE Divisions. The Study is ongoing. The results of the Study will be reported to Council and will inform the 2022 Business Plan and Budget Process.

In recent years, the lack of yard space and capacity has become critical at all of the four yards. To create additional space to increase capacity, earlier this year land has been reclaimed by WOM from Enforcement on the Mavis North property. This land is being used to store winter maintenance vehicles and equipment, to ease congestion at the Mavis yard. In addition, formerly unusable land at the Meadowvale yard, a small hill at the property line, is being excavated and repurposed for Lisgar High Water Protocol pumps and other equipment storage. This is not enough. Snow storage is deficient now, and with the introduction of the new winter maintenance contract in November 2021, additional yard space is required to store additional winter maintenance equipment as an interim solution.

Snow Storage:

Snow in the City is moved to various City-owned lands for storage during the winter season, where the road allowance does not provide sufficient capacity for on-site snow storage. Snow removal is performed when snow can no longer be stored on walkways, at curbside, in Business Improvement Areas, on bridge decks and at major intersections.

These sites must be constructed in order to meet criteria set out by the province of Ontario. The sites must also be easy to access and have the capacity to hold the projected maximum amount of snow that might be placed there in any one season.

Snow hauled to snow storage sites contains salt, dirt, dust and airborne pollutants¹. Snow storage best practices seek to remove as many of the contaminants as possible by using properly selected land sites with impermeable surfaces (asphalt), oil grit separators and settling ponds.

There are four snow storage facilities located in the City of Mississauga: a small portion of the West Credit Avenue site, Mississauga Valley Community Centre, Dunton Athletic Fields parking lots and Clarkson yard.

It is fair to estimate that a facility with an asphalt surface of 1,000 m² (3,281 ft.²) can accommodate at least 1,500 m³ (52,972 ft.³) of snow².

¹ <https://www.tac-atc.ca/sites/tac-atc.ca/files/site/doc/resources/roadsalt-8.pdf>

² This is a conservative estimate.

	West Credit	Mississauga Valley Community Centre	Dunton Athletic Fields	Clarkson Yard	Total
Area		4,375 m ²	4,000 m ²	2400 m ²	14,775 m ²
(m²)	4,000 m ² (43,056 ft. ²)	(47,092 ft. ²)	(43,056 ft. ²)	(25,833 ft. ²)	(159,037 ft. ²)
Capacity	6,000 m ³	6,563 m ³	6,000 m ³	3600 m ³	22,163 m ³
(m³)	(211,888 ft. ³)	(19882 ft. ³)	(211,888 ft. ³)	(127,133 ft. ³)	(782,679 ft. ³)

A yearly average of approximately 40,000 linear metres (131,234 linear feet) of snow is removed and stored in the City (length of snow removed). In the past 80 years, an average of 1.213 metres (3.97 feet) of snow has fallen annually (depth of snow)³. Based on historical information regarding the length and depth of snow removed, this equates to a volume⁴ of approximately 48,400 m³ (1,709,230 ft.³) of snow storage required per season.

Using these conservative estimates, Works Operations has a deficit in capacity for snow storage by approximately 26,000 m³ (918,181 ft.³).

Preliminary results from Phase One of the Yard Master Plan and Modernization Study review confirm staff's current snow storage deficit and indicate the following:

"The City currently has a snow storage deficit of 26,000 m³. The introduction of the HuLRT, in 2024, will require storage space for an additional 50,820 m³ of snow as there will be no place to store the snow along the HuLRT corridor. This will increase the storage deficit to 76,820 m³ of snow;"

Vehicle and Equipment Storage for Winter Maintenance:

Preliminary results from Phase One of the Yard Master Plan and Modernization Study indicates the following for the shared yards:

³ Average snow calculated from 1939-2017 based on Environment Canada's Pearson International Airport Station.

⁴ Volume is calculated based on the minimal assumption that one meter of width by one meter of length of snow is plowed. This is a very conservative estimate of width. For comparison, a plow blade is approximately three metres wide, excluding the wing, and average road lane width ranges from 3.25 to 3.75 metres.

“At all of the Yards, there is insufficient outdoor space to store the vehicles, equipment and materials. For example, some contractor employees are forced to use one parking stall for both their private vehicle and their work vehicles. This requires additional time for parking and decreases contractor productivity;

At all of the Yards, there is insufficient outdoor space to manoeuvre the vehicles, equipment and materials safely and efficiently around the yard. This shortage of space increases the time required to park the vehicles, and increases the risk of vehicle and pedestrian accidents. It also increases the risk of work refusals;”

Attached as Appendices 1 and 2, respectively, are copies of the reports from the Commissioner of Transportation and Works, dated May 28, 2020 and entitled “2021 through 2029 Winter Maintenance Contract”; and, dated July 3, 2020 and entitled “Additional Information – 2021 through 2029 Winter Maintenance Contract”. These reports were considered by Council on July 22, 2020 where the following resolutions were approved:

“Resolution 0247-2020:

- 1. That the Purchasing Agent award contracts to the recommended bidders pursuant to Procurement No. PRC002049, in accordance with the Purchasing By-law #374-226, for the base contract, as outlined in the report from the Commissioner of Transportation and Works dated May 28, 2020 and entitled “2021 through 2029 Winter Maintenance Contract”, and that all necessary by-laws be enacted.*
- 2. That the new Winter Maintenance Contract include the improved service levels for pedestrian accessibility at bus stops and priority sidewalks, as outlined in the report from the Commissioner of Transportation and Works dated May 28, 2020 and entitled “2021 through 2029 Winter Maintenance Contract” and be funded from the Winter Maintenance Reserve for 2021.*
- 3. That the Winter Maintenance program for 2022 onwards be dealt with through the 2022 budget process.*

Resolution 0248-2020:

That the report from the Commissioner of Transportation and Works, dated June 26, 2020 and entitled “Additional Information – 2021 to 2029 Winter Maintenance Contract” be received for information.”

Key information from these reports, which supports the need for the West Credit Avenue Site temporary storage location for required additional vehicle and equipment storage with the introduction of the new winter maintenance contract, is shown below:

“Base Contract:

Staff have revised the type and number of pieces of equipment for the new base contract to be in line with what is required to perform the work in order to meet both Council approved levels of service as well as the MMS time limits for winter operations, including the new snow removal requirements for the LRT on Hurontario, which will be implemented during the course of this contract. The bids provided an opportunity to ensure the City has the right equipment to perform the work. Almost all of the equipment in this procurement has more than one function in the City’s winter maintenance program.

Further, in the existing Winter Maintenance Contract, there are 31 tractor and loader plow units, which using the same operator, are required to operate for more than 24 consecutive hours to complete their routes, which is outside MMS Regulation 239/02. To ensure the City is in compliance with the time limits around all applicable legislation for winter operations, including prescribed time limits that operators can work under the Hours of Service (HOS) requirements in the Highway Traffic Act, staff have replaced these 31 units with 55 units of single-axle and tandem axle vehicle plows, which are more appropriate for the intended work, and result in a net increase to the base contract of 24 units. The additional equipment will provide for a more effective removal of packed snow on the secondary roads, while applying road salt at the same time. This would be in keeping with best practices currently being performed by other GTA municipalities.

The City has developed and follows a Salt Management Plan in accordance with Environment Canada’s Code of Practice for the Environment Management of Road Salts. As the City uses an average of 60,000 tonnes annually of road salt for its operations, staff are continually moving to a more “the right amount in the right place at the right time” methodology in accordance with the Code. Industry best practices confirm that the most effective way to remove snow from the road is by plowing and the required additional equipment will assist in this regard. In summary, more effective plowing should reduce the amount of road salt required. Both Environment Canada and local conservation authorities are also monitoring the impact of road salts near environmentally sensitive areas, and the request for additional equipment will also assist in reducing salt use near these areas.”⁵

“As part of the 2021 Business Planning and Budget Process staff have brought forward a budget request to provide temporary required additional vehicle and snow storage space on existing City-owned property (West Credit Avenue site) at an estimated capital cost of \$3.5M and an estimated annual operating cost of \$50,000 commencing in 2022 to maintain the site. The existing yards do not have sufficient space for the vehicle and equipment storage requirements included in the base

⁵ Report from the Commissioner of Transportation and Works dated May 28, 2020 and entitled “2021 through 2029 Winter Maintenance Contract”, pages 5-6.

contract. In addition, the City does not have sufficient snow storage space now, which will only be exacerbated when the LRT is constructed.”⁶

“Base Winter Maintenance Contract:

Some of the City of Mississauga’s winter maintenance practices are outdated and not consistent with current industry best practices. For example, with respect to the existing contract the following provides more specific information:

- *front end loaders and farm style tractors are used to plow secondary roads followed by trucks to salt the roads, rather than using combination plow and salt trucks to do both activities at the same time;*
- *inadequate numbers of the above loaders and tractors combined with subsequent (and sometimes multiple) salting operations result in route completion times sometimes taking longer than approved City service levels and the Province’s MMS, rather than utilizing the appropriate number of combination plow and salt trucks; and,*
- *with the existing operations, more salt is required in attempting to break up the snow pack road surface as a result of vehicle traffic prior to plowing operations.*

In summary, the City’s outdated winter maintenance practices result in increased operational costs and additional salt use based on existing procedures. Winter maintenance service levels and the MMS are met, for the most part, given the City’s ability to “set the clock” with legislation recently introduced by the Province. Municipalities now have the ability to declare a Significant Weather Event to delay the start of the clock, subject to certain conditions as established by Environment Canada.”⁷

“The ability of WOM staff to continue to meet winter maintenance service levels and MMS is not sustainable given the status of the yards and related facilities, as well as the number and mix of vehicles and equipment included in the existing Winter Maintenance Contract.

As a result and as a first step, WOM staff prepared the new base Winter Maintenance Contract with a focus on ensuring operational efficiency and setting equipment levels based on established best service delivery and salt management practices with a view to

⁶ Report from the Commissioner of Transportation and Works dated May 28, 2020 and entitled “2021 through 2029 Winter Maintenance Contract”, page 6.

⁷ Report from the Commissioner of Transportation and Works, dated June 26, 2020 and entitled “Additional Information – 2021 to 2029 Winter Maintenance Contract”, page 4.

providing Council approved service levels and to meeting the MMS for winter operations under the Municipal Act 2001.

The new Winter Maintenance Contract also had to take into account the additional winter maintenance requirements of the Hurontario LRT targeted for implementation in 2024.

At its meeting on July 8, 2020 Council considered the report from the Commissioner of Transportation and Works entitled “The City of Mississauga’s Active Transportation COVID-19 Recovery Framework”. The Active Transportation COVID-19 Recovery Framework recommends adding 17.9 kilometres (11.1 miles) of new on-road bicycle lanes and separated bicycle lanes in locations across the City. The new Winter Maintenance Contract considers revisions to operations as the modes of transportation change as the City moves forward with both the Hurontario LRT and Active Transportation initiatives.”⁸

“Secondary (Residential) Roads:

The City’s service level for secondary roads varies between 24 hours to more than 36 hours after a winter event depending on the amount of snow accumulation.

The Province’s MMS service level for secondary roads is more specific for their treatment (salt or plow/salt) after a winter event:

- *within 24 hours for snow accumulation; and,*
- *within 16 hours for icy roadway conditions.*

The MMS service level, while voluntary to be adopted by municipalities, is deemed by the Province to be a reasonable standard in providing protection from legal claims regarding personal injury and property damage.

Currently, completion of secondary roads following a winter event generally meets the City’s 24 hour service level for snow accumulations of 15 cm or less. However, when subsequent salting operations are included due to extended winter events or back-to-back storms, then the 24 hour service level is usually exceeded on a number of routes.

As noted earlier in this report, one of the many focuses of the new Winter Maintenance Contract includes meeting the Province’s MMS. As both the City’s and MMS service

⁸ Report from the Commissioner of Transportation and Works, dated June 26, 2020 and entitled “Additional Information – 2021 to 2029 Winter Maintenance Contract”, pages 4-5.

levels are consistent regarding snow accumulation at 15 cm or less (24 hours), staff's efforts in procuring additional equipment is not an increase in service level but rather a diligent endeavour to meet both service levels with respect to plowing and salting by following industry best practice of utilizing combination plow and salter units.”⁹

Program – West Credit Temporary Storage Location:

The table below describes the scope of work required on the site and proposed costs:

Scope of Work: Asphalt, Concrete curb, Earthworks, Granular, Lighting & Security, Salt structure, Storm sewer and a Site Trailer	
Original Cost - \$3.5M 24,500 m2 area	Revised Cost - \$2.8M 22,500 m2 area
Of the material being used, approximately \$1.5M worth of the material can be reused or recycled.	

The revised cost includes a smaller area and revising the material being used to help lower the costs of the West Credit Avenue site expansion. It is expected that this site will be utilized for a minimum of 10 years and designed to last at least 15 years. Even though MiWay does not have formal design plans for this property, the proposed design will allow for reuse of the parking area or ability to reuse or recycle the material once they finalize their design.

The West Credit Avenue location is our best option at this time to assist in providing much needed space for our winter equipment and material. This area is already being used to store snow and construction material, and will have brine operation capability for this winter. The location allows for both Meadowvale and Malton yards to be able to deploy contractor equipment through our winter operations. Deploying contractor equipment from the West Credit Avenue site will free up some much needed space within both of these yards.

Other options such as contractors using their own property or using other vacant city property are not available at this time. Our contractors do not have property suitable within the city to deploy their equipment (although, this is currently an option available within our Winter Maintenance Contract for all of our contractors). The city does not have a site this large to be

⁹ Report from the Commissioner of Transportation and Works, dated June 26, 2020 and entitled “Additional Information – 2021 to 2029 Winter Maintenance Contract”, page 5.

able to accommodate the needs such as snow storage, material storage and equipment storage for our operations.

During this year's (2020) VLCP, the City encountered a backlog of stockpiled leaves at the Mavis, Clarkson and Meadowvale Yards. This was due to the extraordinary high volumes of leaves that fell in early November and overwhelmed the Region of Peel's ability to pick up the leaves and move them to their composting locations. Staff considered pausing the VLCP since leaf storage space at our yards was exceeding capacity. However, the West Credit Avenue property was made available as a backup location to store leaves that could not be accommodated at the three yards.

If the City is to continue with the VLCP and its growing tree inventory that meets the 35-year old criteria and the One Million Trees Program, it is essential that the West Credit Avenue property be developed for expanded leaf storage in addition to snow storage. The proposed expansion will also assist the PFE Division to expand their storage capacity by using this location to assist in meeting their needs.

The West Credit Avenue property also presents a unique opportunity for Transportation and Works to strategize a multi-use operations complex in partnership with WOM, PFE and MiWay. As the property was originally envisioned for transit use in the future, the initial development of the property for WOM can include for future storm water and utility infrastructure servicing for MiWay. Surface materials such as asphalt and the granular base can be reused or recycled for future construction use. A similar multi-use property currently exists in the City of Brampton where a Road and Parks Operations, and Fleet Services facility is located alongside a Brampton Transit facility with a shared entrance on Sandalwood Parkway.

The development of the West Credit property is critical to WOM's short and long-term strategy (in concert with the City's Yard Master Plan and Modernization Study) for more efficient servicing of the north half of the City. Currently the Meadowvale and Malton Yards are over capacity for equipment storage and deployment in the winter. Compounding these concerns is also the overcapacity stresses at the Mavis and Clarkson Yards in the south half. If and when any of these yards are redeveloped as part of the Yard Master Plan and Modernization Study, it is prudent that both the West Credit and Loreland properties be readied as alternative housing and deployment sites during construction.

Financial Impact

This report to General Committee is in response to Budget Committee direction to staff to provide further information on the West Credit Avenue site expansion.

Due to the lack of storage space at our yard facilities, there is a need to expand the temporary facility at the West Credit Avenue location until such time as the Yard Master Plan and

Modernization Study has been approved and implemented. This expansion is required to assist in accommodating the space needed for the extra pieces of winter equipment in our new Winter Maintenance Contract beginning in the Fall of 2021, as well as to address the current deficit for snow storage.

As such, we will require \$2.8M (reduced from \$3.5M) of capital funding to complete the work required at the West Credit Avenue location. It is estimated that approximately \$1.5M worth of the material being placed can be reused or recycled for future use at this location or other yard sites.

Conclusion

There is an immediate need for yard space to accommodate snow storage requirements and in November 2021 for increases in equipment for the 2021 to 2029 Winter Maintenance Contract. The West Credit Avenue site has been used for over six years as a material and snow storage site, and there is a need to expand the operations to meet the needs of the WOM and PFE Divisions. The expansion would allow for the construction of a temporary Operations Depot, including space for vehicle storage and parking, snow storage, small utility trailer and a salt storage structure to allow for winter operations to take place.

The West Credit Avenue site has the size and location to meet our immediate needs until the results of the Yard Master Plan and Modernization Study can be implemented.

Attachments

Appendix 1: Report from the Commissioner of Transportation and Works dated May 28, 2020 and entitled "*2021 through 2029 Winter Maintenance Contract*"

Appendix 2: Report from the Commissioner of Transportation and Works, dated June 26, 2020 and entitled "*Additional Information – 2021 to 2029 Winter Maintenance Contract*"



Geoff Wright, P.Eng, MBA, Commissioner of Transportation and Works

Prepared by: Scott Holmes, Senior Manager, Works Administration, Operations and Maintenance