
Subject: Reprioritization of Capital Project Funds for Recycling Centre Facility Improvements

Report to: Public Works Committee

Report date: Tuesday, August 4, 2020

Recommendations

1. That a new capital project for a container line drum feeder in the amount of \$450,000 **BE APPROVED** and **BE FUNDED** from the Waste Management Capital Variance Project.

Key Facts

- The current Council approved capital budget for the 2020 Recycling Facility Improvement project (20001178) is \$834,900, which is funded 98% by Waste Management Capital Reserves (\$819,330) and 2% by Waste Management Development Charges (\$15,570). The project is an annual program for the replacement or upgrade of equipment at the Material Recycling Facility (MRF) to ensure the facility continues to operate efficiently and to improve the marketability of the recyclable products; it typically includes specific equipment requests. The 2020 approved capital budget included funds for the replacement of a baler horizontal feed conveyor, glass breaker screen and perforator and a commercial vehicle (Shred Truck).
- This report is asking for council approval to create a new project in 2020 to build, supply and install a container line drum feeder to improve the overall throughput of material through the MRF from reprioritized funds from project 20001178 in lieu of the glass breaker screen and perforator replacement not moving forward at this time.
- An amount of \$450,000 will be reduced from the capital budget of project 20001178 and returned to the Waste Management Capital Variance Project. This returned funding to the Waste Management Capital Variance Project will then be used to fund the new container line drum feeder capital project.
- The glass breaker screen and perforator replacement will not move forward this year as there has been an increase in the number of transparent bags (i.e. blue or clear bags) used by residents to contain recyclable material and this has further increased with the COVID-19 pandemic. In order for the glass breaker screen and perforator to

work efficiently and effectively, the recyclable material needs to be removed from the plastic bags.

- It is anticipated that a drum feeder on the container line will result in approximately \$100,000 more in revenue per year based on current market pricing, primarily due to higher recovery rates for plastics and aluminum beverage cans. The decrease in overtime (\$30,000) and residue (\$15,000) will result in a cost avoidance of approximately \$45,000 per year.
- Staff recognize that we are also going through a process to identify a potential new ownership structure for the Recycling Centre facility, however, in order to operate efficiently and ensure continued marketability of our recyclables, investments such as the one being recommended in this report are needed.
- The Budget Control by-law Section 6.3(b) permits an approval of an individual Capital Project if it is deemed a priority by Council in advance of the general Capital Budget by-law.

Financial Considerations

This report seeks approval of the creation of a new capital project for the design, build and install of a container line drum feeder at the MRF at an estimated cost of \$450,000.

The funding for this project will be returned from project 20001178 – 2020 Recycling Facility Improvements to the Waste Management Capital Variance Project in the amount of \$450,000. In turn, this \$450,000 returned to the Capital Variance Project will be used to fund this new container line drum feeder project. Project 20001178 was approved in the 2020 capital budget for a total gross cost of \$834,900 funded by Waste Management Capital Reserves (\$819,330) and Waste Management Development Charges (\$15,570). It is anticipated that a drum feeder on the container line will result in approximately \$100,000 more in revenue per year based on current market pricing, primarily due to higher recovery rates for plastics and aluminum beverage cans. The decrease in overtime (\$30,000) and residue (\$15,000) will result in a cost avoidance of approximately \$45,000 per year. By minimizing air space utilization at the landfill that would be attributed to MRF residue, there is potential to generate an additional \$34,500 in revenue through tip fee recovery. Payback is approximately 2.1 years. In the event that the MRF is sold as part of the MRF Opportunity Review which in the best case scenario would be in Fall 2021, the drum feeder would be sold as part of the MRF.

The impact of not making the facility improvements to the MRF would result in an anticipated budget shortfall in end market revenues for containers for the 2020 operating budget year of approximately \$473,000 as a result of higher residue rates and lower revenues due to the loss of marketable material. Provided that the container line drum feeder is installed by November 2020, it is estimated that the budget shortfall for 2020 can be reduced by approximately \$30,000.

Analysis

Background

The glass breaker screen and perforator replacement will not move forward this year as there has been an increase in the number of transparent bags (i.e. blue or clear bags) used by residents to contain recyclable material and this has further increased with the COVID-19 pandemic. Based on visual observations, it is estimated that the use of transparent bags has doubled since the start of the COVID-19 pandemic. In order for these to work efficiently and effectively, the recyclable material needs to be removed from the plastic bags. Niagara Region does not currently promote the use of clear plastic bags although does accept them if placed curbside. Currently plastic bags are being manually opened; however, due to the increased volume of bagged material, not all plastic bags can be opened.

The project funds requested to be reprioritized will be utilized to design, build and install a drum feeder at the front end of the MRF operations on the container side at a cost of approximately \$275,000 US excluding net HST.

If approved, staff will single source the procurement of the container line drum feeder to Van Dyk Recycling Solutions (VDRS) in accordance with the Procurement By-Law. Niagara Region issued two separate Request for Proposals (RFP) in December 2019 and March 2020 to install a drum feeder on the fibre line at the Recycling Centre. The first RFP was cancelled without award due to non-compliant bid submissions and the second closed without any bid submissions. As a result, the fibre line drum feeder was single sourced, in accordance with the Procurement By-Law, to VDRS as they were able to meet the required specifications and were also able to manufacture and install the equipment within the timeframe to meet operational needs. VDRS is a supplier of equipment to many MRF's across Canada and is familiar with all applicable Canadian rules and regulations such as ESA approvals. They will also be able to manufacture and supply the container line drum feeder by November 2020. The container line drum

feeder will have similar specifications as the fibre line drum feeder. By single sourcing this piece of equipment to the same manufacturer of the fibre line drum feeder, any third party maintenance required can be done at the same time, staff will be familiar with the software and operating specifications, the equipment can be integrated into the PLC (programmable logistics control) program, installation will be simplified as Van Dyk will have completed installation on one side already and they are very familiar with our MRF.

Facility Improvements – Container Line Drum Feeder

The installation of a drum feeder on the fibre line was approved in 2019 via PW 48-2019, (August 6, 2019) and at the time that this report was written was being procured. Similar to the rationale provided in PW 48-2019 for the fibre line drum feeder, a drum feeder on the container line will improve the metering of the container stream materials onto the processing line to allow for a more consistent flow of materials. In addition, the drum feeder is equipped with teeth that rip open bags. This will reduce the amount of operational downtime that is a direct result of material jamming due to material fluctuations on the container line and will increase the number of bags being opened. The drum feeder can eliminate “black belts” (where no material is on the processing line) as the loader can load more material into the drum feeder, than it can, by pushing material directly onto a conveyor.

Drum feeders have been successful in increasing throughput of material at MRFs by up to 20%. Higher throughput will reduce the amount of overtime hours worked per year to process material, improve the quality and volume of material being marketed.

With the new collection contract commencing in October 2020, the Region is anticipating an increase in recycling container volume of approximately 5-10% based on experience from Waterloo after switching to every other week collection. In order to minimize unloading delays for curbside collection vehicles at the MRF and to ensure vehicles can return to their routes in a timely fashion to complete their daily collection routes, the purchase of this drum feeder will assist in providing vehicles with more frequent access at both service doors to unload at the MRF. It is not uncommon for the MRF to have only one access door open for unloading due to material backlogs on the tipping floor. By having both access doors open, two vehicles can offload at once or one vehicle can offload during periods when third party material is being offloaded. In addition, at least one vehicle will be able to offload while the loader operator is loading material into the drum feeder instead of having to wait for the loader to finish loading material onto the line. This drum feeder will provide up to 20% higher throughput. The

end result will be more time spent by collection vehicles at the curb, resulting in better service delivery to the residents of Niagara.

Alternatives Reviewed

Alternatives reviewed were to add to the staff complement at the MRF to open the increased volume of plastic bags. Space within the pre-sort room to add more staff to open bags is limited due to the degree of sorting already taking place in this area. Adding two (2) more staff would cost approximately \$80,000 per year. However, this would not provide the key benefit of higher throughput. It takes each sorter 5 to 10 seconds to open one bag of containers. The drum feeder will open more than 50% of the bags prior to the pre-sort room. By eliminating the bag opening function performed by staff, it will reduce handling time by 50% as staff will only have to shake the contents of the open bags onto the line.

The other option reviewed is a policy change to no longer permit the use of clear plastic bags for the placement of material curbside by residents and businesses who utilize the Niagara Region's recycling collection services. Some residents prefer the use of clear plastic bags to contain material, in particular those in rural areas with longer driveways or in high wind areas. If bags were completely eliminated, the Region would see a financial benefit of well over \$179,500 due to other benefits such as labour savings, reduced equipment downtime and maintenance costs. It should be noted that a policy change, such as no longer permitting the use of clear plastic bags, would take time to properly implement and therefore the benefits would not be recognized immediately.

If the Region were to do nothing, there is the potential that the Region will be unable to process all of the container stream volumes during peak periods (i.e. January, May, June, July and August) and have to pay significant processing and freight fees to transport unprocessed material to other recycling facilities (MRF's) in Ontario. In order to prevent unloading delays for collection vehicles, the Region would have no alternative but to transfer material to other Ontario MRF's during peak periods on a regular basis or landfill if the Region is unable to find other MRF's to transport unprocessed material to due to limited capacity. Most recently in July, due to the increase of the container stream volume, the Region has had to transport unprocessed material to another MRF in Ontario in order to free up space on the tipping floor and continue to receive curbside collected material. Estimated costs for transporting and processing our surplus material can range from \$150/MT to \$180/MT and does not include the loss of revenue from marketable material. For those reasons, the aforementioned alternative reviewed is not being recommended.

Relationship to Council Strategic Priorities

This recommendation aligns with Council's strategic priority of Responsible Growth and Infrastructure Planning, specifically around Environmental Sustainability and Stewardship. By investing in the MRF, the Region will reduce downtime, increase throughput of recycling material, and allow the Region to improve quality of recyclable material, making it more desirable for the end markets.

Other Pertinent Reports

- WMPSC-C 15-2019
- WMPSC-C 23-2019
- PW 48-2019

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