



City of Moose Jaw

COMMUNICATION # CC-2019-0241

TITLE: Solid Waste Utility – Material Crushing and Recycling

TO: City Council

FROM: Department of Engineering Services

DATE: November 27, 2019

PUBLIC: PUBLIC DOCUMENT

RECOMMENDATION

That the City proceed with a tender to crush the diverted asphalt and concrete stockpiles at an estimated cost of \$179,200 funded from inventory cash flow accounts.

That the City sell all but two years' worth of the by-products to industry with profits offsetting capital requirements in the Water Utility.

TOPIC AND PURPOSE

The purpose of this report is to obtain Council's permission on a new initiative for the City of Moose Jaw. Construction and demolition waste (asphalt and concrete) has been diverted from the landfill for the last 3-1/2 years. This material can be crushed and repurposed to the City's benefit.

BACKGROUND

The City of Moose Jaw began diverting most construction and demolition waste (asphalt and concrete) from the landfill in 2016 beginning with the demolition of the Union Hospital. This practice has continued as part of normal operations in the Solid Waste Utility. The current landfill site does not have adequate storage for these materials, so space was made for contractors to deposit this material south of the City's aggregate materials storage compound on High Street West. This area is nearing full capacity for storage and the material should now be processed for re-use by the City or others.

DISCUSSION

There is an estimated 18,000 cubic meters (9,200 tonnes) of concrete and 8,000 cubic meters (3,600 tonnes) of asphalt based upon a drone survey completed in May 2019.

This is a recycling initiative that will have a positive environmental impact, diverting material from the landfill through the recycling of a non-renewable resource (aggregate material). This volume represents diversion of 4 months of landfill waste over a 3-1/2-year timespan or 10% of the total waste stream diverted. This practice helps prolong the life of the landfill, stretching out capital investment requirements

Asphalt reclaim and concrete have material value if processed through a crushing operation to render the material into useable aggregate. The asphalt reclaim can be crushed into 3/4-inch aggregate suitable for limited applications in back lanes and gravel roads. The concrete can also be crushed into 7/8-inch crushed aggregate, which the City uses in wet excavations such as water main breaks, service leaks and some hydrant and valve repairs. Both materials have broader applications for use within private industry. The City has obtained an estimate to crush this material at a cost of approximately \$14.00 per tonne. The estimated cost to crush all the material is **\$179,200**.

The approximate open market values for 7/8-inch crushed aggregate and 3/4-inch crushed asphalt is \$45.00 and \$35.00 respectively. The potential value of the material recovered by the City is **\$540,000**. Current uses for this material at the City indicate a feedstock inventory of 18 years for the 7/8-inch crushed aggregate and 7 years for the 3/4-inch crushed asphalt reclaim.

Funding to crush this material can come from the City's inventory cash flow accounts with no requirement for a tax increase or rate charge to the citizens of Moose Jaw. It is recommended that the internal use of this material be charged out at cost recovery, an estimated \$14.00/tonne. Due to the volume of material previously indicated, it is recommended that the City retain 2 years' worth of inventory and sell the rest at a slight discount to open market rates and re-direct those proceeds into offsetting Capital needs in the Water Utility. The potential maximum value of material sold is \$308,800. Once this material is processed, the City can begin to measure and quantify annual diversion and incorporate these practices into normal business activities.

OPTIONS TO RECOMMENDATION

1. Start to landfill concrete and asphalt reclaim as current storage is near capacity.
2. Find a new location and continue stockpiling diverted concrete and asphalt.

FINANCIAL IMPLICATIONS

\$179,200 to be funded from inventory.

PUBLIC NOTICE

Public Notice pursuant to the Public Notice Policy as incorporated into the City Administration Bylaw No. 5175 of 2016 is not required.

PRESENTATION

VERBAL: Mr. Josh Mickleborough, Director of Engineering, will provide a brief overview of this report.

REPORT APPROVAL

Written by: Darrin Stephanson, Manager of Utilities
Reviewed by: Josh Mickleborough, Director of Engineering Services
Tracy Wittke, Assistant City Clerk
Approved by: Jim Puffalt, City Manager
Approved by: Fraser Tolmie, Mayor

CITY MANAGER COMMENTS

This is a great opportunity for the City to recycle and divert materials from the Waste Management Facility and then be able to crush the product into useable aggregate that would reduce our costs substantially and finally create the potential to generate revenue.

To be completed by the Clerk's Department only.

Presented to Regular Council or Executive Committee on _____.

No. _____ Resolution No. _____

Report Approval Details

Document Title:	Solid Waste Utility - Material Crushing - CC-2019-0241.docx
Attachments:	
Final Approval Date:	Nov 27, 2019

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



Josh Mickleborough



Tracy Wittke



Jim Puffalt



Fraser Tolmie