



Committee of the Whole Report

Report Number RD2020-001

Meeting Date: November 3, 2020

Title: Street Sweepings Characterization and Potential for Reuse

Description: Summary of annual testing of Spring Sweeping Materials between 2016 to 2020

Ward Number: All

Author and Title: Richard Monaghan, Senior Engineering Technician

Recommendation(s):

That Report RD2020-001, **Street Sweepings Characterization and Potential for Reuse**, be received;

That Staff be directed to explore practicality and implement increased diversion of street sweepings from the City's landfills where cost beneficial through use during other road maintenance activities; and

That this recommendation be brought forward to Council for consideration at the next Regular Council meeting.

Department Head:_____

Financial/Legal/HR/Other:_____

Chief Administrative Officer:_____

Background:

At the Council Meeting of October 13, 2015, Council adopted the following resolution:

CR2015-1058

Moved by Councillor Strangway, seconded by Councillor Martin, RESOLVED THAT Report PW2015-006, **Core Services Review: Street Sweeping**, be received;
THAT the street sweeping services be maintained;
THAT staff be directed to develop a Level of Service Policy to capture our existing service provided;
THAT staff review and update the Level of Service Policy every two years; and
THAT staff conduct sampling and testing on Spring Sweeping Materials from various locations throughout the City, as a Pilot Program, on an annual basis commencing in 2016 and completing in 2020.

This report addresses the last direction within the above noted Council Resolution.

Rationale:

The Public Works – Roads Department performs street sweeping activities throughout the year. The main focus for spring sweeping is the collection of deleterious material from roadways. Removal of this material greatly reduces nuisance dust from vehicular traffic and minimizes winter sand and debris ingress into the storm sewer system.

The spring street sweeping program produces varying quantities of sandy material, typically between 1800 and 2200 tonnes per year. This material is then delivered to one of the City's landfills for use as alternative daily cover. This is a mutually beneficial process as it provides Roads with a no cost solution to dispose of the material while providing Solid Waste a no cost material to use for alternative daily cover.

The Waste Management Department began using steel plates to offset the need for alternative daily cover material, but the material is still required in locations where plate use isn't practical.

Between 2016 and 2020, the Public Works – Roads Department commissioned WSP and Cambium to perform physical and chemical testing on Street Sweeping stockpiles from various operating areas to determine possible reuse options to divert some of this material away from landfills.

The sampled street sweepings stockpiles were compared to Table 1 and Table 2 Site Condition Standards (SCS) of the Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (MOE, 2011). Table 1 SCS represent typical background concentrations encountered in Ontario and are the most stringent criteria available for comparison. Such soil is generally considering to be clean fill. Soil that exceeds Table 2 SCS is generally considered contaminated and required to be disposed of at a licensed facility (e.g. landfill).

Results from the annual sampling and testing of street sweepings stockpiles show that the material does not meet Table 1 SCS but does meet Table 2 SCS. This means that the sweeping material cannot be considered clean fill. However, there are still many options to reuse street sweeping material that can divert some material from the City's landfills.

Some practical uses for this material include use as backfill material against exterior building foundations or culverts, as fill material to obtain higher subgrade on roads prior to placement of cover material such as Granular A, and as sand backfill around catch basins and manholes. In addition, after being screened, the material could be mixed into the City's winter sand during stockpiling operations.

By further implementing the reuse of street sweepings, this will reduce the City's reliance on virgin aggregate supplies. This will provide a cost savings to the PW-Roads Department, however will increase how much daily alternative cover the PW- Waste Management Department is required to buy.

Other Alternatives Considered:

No other alternatives have been considered as the recommendations within this report align with the attached Annual Street Sweeping Characterization Reports.

Financial/Operation Impacts:

Cost savings can be realized by reusing street sweepings for other purposes than as alternative daily cover at one of the City's landfills.

Waste Management currently spends an average of \$7.41 / tonne for alternative daily cover. Cost varies by location and is as low as \$5.68 / tonne at the Fenelon Landfill and as high as \$10.00 / tonne at the Somerville Landfill.

The most practical and operationally feasible reuse option is to mix with the City's winter sand stockpiles. The City's currently pays an average of \$11.47 / tonne for Winter Sand. Cost varies by location and is low as \$10.15 / tonne at the Fenelon PW Depot and as high as \$14.90 at the Carden PW Depot.

An average \$4.06 / tonne savings can be found by mixing street sweepings with winter sand stockpiles. Average of \$11.47 / tonne cost avoidance on purchase of virgin winter sand, while an average of \$7.41 / tonne of alternative daily cover material required to be purchased to offset.

If PW – Roads mixed 100% (average 2000 tonnes) of street sweeping material into winter sand stockpiles, annual savings of approximately \$8,120.00 would be realized by the City based on the average cost of daily cover and road sand. Continued annual testing of the street sweeping material will confirm how much of this material is viable for this use.

Relationship of Recommendation(s) To The 2016-2019 Strategic Plan:

This report directly applies to Goal 3 – A Healthy Environment under action 3.1.9 – Manage Aggregate Resources. By reusing street sweepings for road maintenance activities or inclusion during winter sand stockpiling, the City is directly reducing its reliance on internal or external aggregate production facilities.

Consultations:

Supervisor, Waste Management Operations
Manager, Roads Operations
Supervisor, Roads Operations

Attachments:

Appendix A – 2016 Street Sweeping Characterization Results



Appendix A - 2016
Street Sweeping Ch:

Appendix B – 2018 Street Sweeping Characterization Results



Appendix B - 2018
Street Sweeping Ch:

Appendix C – 2019 Street Sweeping Characterization Results



Appendix C - 2019
Street Sweeping Ch:

Appendix D – 2020 Street Sweeping Characterization Results



Appendix D - 2020
Street Sweeping Ch

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