

Changes to Yard Waste Program to Support Employee Health and Safety

Date: June 16, 2021

To: Infrastructure and Environment

From: General Manager, Solid Waste Management Services

Wards: All

SUMMARY

This report proposes amendments to the Toronto Municipal Code Chapter 844, Waste Collection, Residential Properties (MC 844). Specifically, the proposed changes to MC 844 would require residential properties that receive curbside collection services to set out yard waste in kraft paper bags only as of January 1, 2023. The amendment to MC 844 is intended to reduce risk of employee injury related to yard waste collection from rigid open containers and enhance operational efficiencies. As a result of the proposed amendment to MC 844, this report also seeks to amend Toronto Municipal Code Chapter 441, Fees and Charges (MC 441) by deleting the fee to purchase yard waste bins.

Solid Waste Management Services has identified operational inefficiencies and employee health and safety concerns associated with the collection of yard waste from different types and sizes of rigid open containers. These health and safety concerns were initially identified by the City of Toronto's Ergonomics Unit as part of a Yard Waste Collection Ergonomics Risk Assessment report prepared specifically for Solid Waste Management Services in 2018. To help address ergonomic issues and find a potential solution to reduce the risk for employee injuries, Solid Waste Management Services staff conducted a Yard Waste Collection Container Pilot (the Pilot) to observe resident participation and set out behaviour. The Pilot also piloted the automated collection of yard waste from standardized City of Toronto-issued bins in select areas. Participant feedback was gathered as part of the Pilot to help inform staff recommendations on changes to the yard waste collection program.

The Pilot findings showed that although the participating households preferred City of Toronto-issued standardized bins over rigid open containers and kraft paper bags, most households still required additional kraft paper bags to accommodate the amount of yard waste set out for collection. As both rigid open containers and kraft paper bags were being set out for collection, the use of an automated collection vehicle was not operationally efficient and staff were still required to manually lift additional yard waste

in kraft paper bags into the vehicle. In addition, the design of the automated vehicle impeded staff's access to manually lift kraft paper bags into the hopper which did not allow staff to maintain proper lifting posture.

The amendment to MC844 to set out yard waste in kraft paper bags only will be supported with a communication plan to educate residents and property owners on the new collection requirements for yard waste. Solid Waste Management Services will also work with 311 Toronto to ensure consistent messaging of program participation requirements and Municipal, Licensing and Standards to enforce proper program participation.

RECOMMENDATIONS

The General Manager, Solid Waste Management Services, recommends that:

1. City Council amend § 844-12 of City of Toronto Municipal Code Chapter 844, Waste Collection, Residential Properties, by deleting the option for owners of single family residential properties and multi-residential properties to use rigid open containers for setting out yard waste.
2. City Council authorize the City Solicitor and the General Manager, Solid Waste Management Services to make such technical and stylistic amendments to the City of Toronto Municipal Code Chapter 844, Waste Collection, Residential Properties, as required and to introduce the necessary bills to delete the option for owners of single family residential properties and multi-residential properties to use rigid open containers for setting out yard waste.
3. City Council direct that the amendment to City of Toronto Municipal Code Chapter 844, Waste Collection, Residential Properties, deleting the option for owners of single family residential properties and multi-residential properties to use rigid open containers for setting out yard waste come into effect on January 1, 2023.
4. City Council amend City of Toronto Municipal Code Chapter 441, Fees and Charges to delete the fee to purchase a yard waste bin.
5. City Council authorize the City Solicitor and the General Manager, Solid Waste Management Services to make such technical and stylistic amendments to the City of Toronto Municipal Code Chapter 441, Fees and Charges, as required and to introduce the necessary bills to delete the fee to purchase a yard waste bin.
6. City Council direct that the change to City of Toronto Municipal Code Chapter 441, Fees and Charges, to delete the fee to purchase a yard waste bin, come into force on January 1, 2022.

FINANCIAL IMPACT

The report recommends changes to yard waste collection requirements and as such, a promotion and education campaign will be implemented to communicate the change to impacted residents. The estimated cost to implement and communicate this program change is approximately \$205,000. Further details of the anticipated implementation costs are outlined in the following Table 1.

Table 1: Estimated Cost to Implement a Kraft Paper Bag Only Promotion and Education Campaign

Categories	Approximate Costs
Promotion and Education (contingent on final approved tactics). Direct mail to all single family homes (printing and mailing based on 450,000 homes)	\$140,000*
Multi-lingual advertising	\$40,000.
Stickers for non-compliance (based on 150,000 stickers)	\$25,000.
Total	\$205,000**

*Strategic Communications has recommended a direct mail tactic for this change.

** Additional budget may be required for flyers, additional stickers, translation and Accessibility for Ontarians with Disabilities Act remediation.

To communicate the program change, Solid Waste Management Services will increase the operating budget, specifically adding additional funds to Cost Centre SW0665, in the amount of \$205,000 as part the Division's 2022 budget report for City Council's consideration.

The Chief Financial Officer and Treasurer has reviewed this report and agrees with the financial impact information.

DECISION HISTORY

At its meeting on April 29 and 30, 2009, City Council adopted Item PW23.4, entitled "Amendments to Solid Waste Collection By-laws," which amends Chapter 844, Waste Collection, Residential Properties, Section 844-12.A (1) (b) by adding the words "with the exception of blue and grey boxes previously used for recycling".

The City Council Decision document can be viewed at:
<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2009.PW23.4>

COMMENTS

Current Yard Waste Collection Program

The City of Toronto (City) collects yard waste every other week from residential properties that receive curbside collection on designated garbage collection days from mid-March to mid-December, as well as Christmas trees in January. Also, residents can bring yard waste to one of the City's seven Drop-Off Depots year-round. The yard waste that is collected is turned into compost, some of which is offered back to the public at Community Environment Days and seasonally at Drop-off Depots. The City's yard waste program diverts approximately 90,000 tonnes of yard waste from landfill each year.

Presently, under § 844-12 of the City of Toronto Municipal Code 844, Waste Collection, Residential Properties, residential properties have two options for yard waste set out: rigid open containers and kraft paper bags.¹

Employee Health and Safety Concerns with Container Collection

As stated in the City's Musculoskeletal Disorder Prevention Policy, the City is committed to minimizing the risk and incidence of Musculoskeletal Disorder by taking every precaution reasonable, under the circumstance, to protect employees.² Solid Waste Management Services continually works with the City's ergonomic consultant to identify opportunities to improve ergonomic procedures and equipment used in all solid waste operations including in the collection of yard waste. Solid Waste Management Services is committed and engaged with all aspects of continuous improvement in health and safety with the goal to reduce injuries in the workplace while improving the overall wellbeing of its employees.

A Yard Waste Collection Ergonomics Risk Assessment report, completed by the City's ergonomist consultant in 2018, noted that from 2013 to 2017, Solid Waste Management Services incurred approximately \$626,000 in direct Worker Safety and Insurance Board costs attributable to musculoskeletal injuries.

The 2018 Yard Waste Collection Ergonomics Risk Assessment report indicated that in 2017, the most common musculoskeletal injury for Solid Waste Management Services employees was caused by manual handling of containers (31 per cent). In 2017, the

¹ Chapter 844, Waste Collection, Residential Properties, https://www.toronto.ca/legdocs/municode/1184_844.pdf

² The City's Musculoskeletal Disorder (MSD) Prevention Policy, <https://www.toronto.ca/city-government/accountability-operations-customer-service/city-administration/corporate-policies/people-equity-policies/musculoskeletal-disorder-msd-prevention/>

report also noted that 54 formal Joint Health and Safety Committee reports of worker injuries were submitted for Solid Waste Collection Operators musculoskeletal injuries. Approximately 9.3 per cent of these worker injuries reports specifically mention yard waste duties as the immediate cause. Based on the 2018 ergonomics risk assessment, the manual collection of yard waste from varying types of rigid open containers was identified as a root cause contributing to work related injuries including musculoskeletal disorders.

As stated in MC 844, Waste Collection, Residential Properties, residents are required to use rigid open container in good working order:

- With a capacity of not less than 20 litres nor more than 125 litres;
- With an external height no less than 55 centimetres and no greater than 95 centimeters, with the exception of blue and grey boxes previously used for recycling;
- With an internal width or diameter no greater than 60 centimeters;
- That is capable of supporting 20 kilograms when lifted; and
- With handles set above the midpoint of the container³.

Operationally, it has been consistently observed that residents are setting out yard waste in rigid open containers that are not compliant with the rigid open container specifications listed in MC 844.

As a result, the manual collection of varying containers types and sizes exposes Solid Waste Collection Operators to higher-risk ergonomic factors such as:

- Awkward postures of the shoulders, arms and hands;
- Highly repetitive work of the hands and arms; and
- Heavy and repetitive lifting of varying container types and sizes.

Examples of varying types of rigid open yard waste containers are included in Attachment 1.

In early 2018, the City's ergonomic consultant conducted time motion studies⁴ comparing the collection of yard waste in kraft paper bags versus rigid open containers. It was observed that it takes on average eight seconds longer to collect rigid open containers than kraft paper bags. The time difference is due to unloading materials from a container versus manually placing the entire kraft paper bag into the collection

³ Chapter 844, Waste Collection, Residential Properties, https://www.toronto.ca/legdocs/municode/1184_844.pdf

⁴ Yard Waste Collection Duties – Ergonomics Risk Assessment City Wide Collection (D3 & D4), Occupational Health, Safety & Workers' Compensation Unit, 2018, pp.10-14

vehicle. Staff may also have to take additional measures to release stuck materials from the rigid open container and additional time is required to place the empty containers back on the property.

From an ergonomics perspective, there is greater potential to mitigate the risk of injury if the amount of time spent manually handling the yard waste load or weight can be reduced. The following are some additional key ergonomic comparisons of rigid open containers to kraft paper bags:

- Additional measures taken by staff to loosen the material from rigid open containers, such as shaking or knocking the container, leads to longer collection times. The collection of rigid open containers was found to take on average three times longer to collect than kraft paper bags. The collection of rigid open containers resulted in the highest risk lifting conditions based on the risk assessment on account of staff requiring to adjust lifting postures to accommodate the varying types and sizes of containers.
- The time motion observations suggests that manual collection of yard waste in kraft paper bags will help to reduce the variability of awkward lifting postures associated with collecting from different types and sizes of open rigid containers, and therefore help to mitigate injuries.
- For the reasons noted above, the City's ergonomic consultant recommends eliminating the collection of materials from varying types and sizes of rigid open containers as staff must continuously adjust lifting postures based on the type and size of container, which could increase the risk of injury.

Yard Waste Container Collection Pilot

Between fall of 2018 and fall of 2019, City staff conducted a Yard Waste Container Collection Pilot (the Pilot) to better understand participation and set out behaviour, test the feasibility of automated collection of yard waste from City-issued standardized bins, and to gather resident feedback.

The Pilot was conducted in two of the City's four Collection Areas, District 3 and District 4. In District 3, 407 participating households received a 120 litre medium sized bin each. In District 4, 558 participating households received a 240 litre large sized bin each. The large sized bin was deployed in District 4 as the residential dwellings had, on average, larger lot sizes and therefore the potential for larger amounts of yard waste. In total, there were 965 participating households in the Pilot.

Residents were instructed to set out their yard waste in the City-issued bin provided and not to use any other rigid open containers. If residents had additional capacity needs, they were instructed to use kraft paper bags designed for yard waste.

The scope of the Pilot included the following three tasks:

- Task 1: Monitoring the participation of the sample group of households including contamination levels and use of the standardized City-issued bins and any additionally set out kraft paper bags during peak and off-peak yard waste seasons.
- Task 2: Reviewing any operational impacts, efficiencies and employee health and safety aspects of using automated standardized City-issued bins for the collection of yard waste in the pilot areas.
- Task 3: Gathering participant feedback to better understand resident experiences with the City-issued bins used in the Pilot.

Summary of Pilot Findings

This section summarizes key findings from the Pilot. Detailed Pilot results are outlined in Attachment 1.

Key findings from Task 1

Participation rate and the set out of yard waste in the City-issued bins was over 90 per cent in both Districts.

Contamination was found in 2.9 per cent of the City-issued bins, and although not directly compared, it is assumed that this is not in excess to what would be anticipated to be found amongst kraft paper bags.

One (1) City-issued bin per household did not meet yard waste capacity needs as additional kraft paper bags were set out in both Districts.

Key findings from Task 2

Since households set out both a City-issued bin and kraft paper bags for overflow material, staff were still required to manually collect and lift kraft paper bags into the hopper of the automated collection vehicle.

The design of the automated collection vehicle and bin lifter equipment partially blocked and impeded staff access to the hopper. This made it difficult to maintain proper lifting posture when manually loading kraft paper bags into the hopper.

Key findings from Task 3

On average, of 87 per cent of residents indicated that they preferred the City-issued bin over kraft paper bags or other containers.

One (1) City-issued bin did not meet capacity needs as residents indicated that they would require additional capacity during both peak and off-peak yard waste season.

Recommendations for Yard Waste Collection Containers

For the reasons listed in the key findings from Task 1 to Task 3, the implementation of a fully automated collection system for yard waste is not recommended. Pilot findings showed that the participating households preferred the City-issued standardized bin over kraft paper bags and other rigid open containers. However, results from Task 1 showed that one (1) standardized City-issued bin did not meet capacity needs and households still set out multiple kraft paper bags for overflow yard waste, including households that were provided with the larger 240 litre City-issued bin. As such, households would likely require more than one (1) City-issued bin to meet their yard waste capacity needs if the program were to become fully automated. However, based on operational experience and resident feedback received during the roll-out of the cart-based collection of garbage and recycling materials, it is likely that most households do not have the space to accommodate multiple yard waste bins in addition to their garbage, recycling and organic waste bins.

As observed under Task 1, and supported with resident feedback on capacity needs that was gathered as a part of Task 3, it is likely that a household will set out both a City-issued yard waste bin and multiple kraft paper bags, especially during peak yard waste season. If automated collection were to be implemented to service a City-issued bin, staff would still be required to manually lift overflow yard waste in kraft paper bags into the hopper of the automated collection vehicle. Pilot findings from Task 2 found that collecting yard waste from two different types of containers (as in automated collection from a standardized bin and manual collection of kraft paper bags) using an automated side loader presents operational challenges, loss of efficiency and did not mitigate ergonomic issues.

A detailed cost analysis was not undertaken as the Pilot findings do not support a recommendation to move to fully automated collection of yard waste. However, at a minimum, the cost of a City-issued yard waste bin is approximately \$66.00 (including delivery). With approximately 450,000 single family households, the range of cost to purchase and deliver one (1) bin is approximately \$15 million to \$21 million, based on a 50 per cent to 70 per cent of single-family households accepting a City-issued yard waste bin if the program was implemented on an opt-in basis.

Based on the financial considerations and findings from the Pilot staff recommend amending MC 844 to only allow the use of kraft paper bags for yard waste to support employee health and safety and achieve anticipated operational efficiencies.

Considerations of potential economic impact to residents

Although the proposed amendments will require residents to purchase kraft paper bags, additional costs to households are not expected to be significant. Kraft paper bags are currently available at local hardware stores and retail for approximately \$11.98 for 25

bags, or \$0.48 per bag. Staff have observed that the majority of households that use rigid open containers are currently setting out overflow yard waste in kraft paper bags.

Amendments to Municipal Code Chapter 844 – Waste Collection, Residential Properties and Municipal Code Chapter 441, Fees and Charges, and Implementation Approaches

This report recommends that the proposed bylaw changes to amend Municipal Code Chapter 844 – Waste Collection, Residential Properties and Municipal Code Chapter 441, Fees and Charges come into effect starting January 1, 2023.

To support the communication of the bylaw amendments to residents, Solid Waste Management Services will work with Strategic Communications to develop a comprehensive communication plan to effectively promote and educate residents on changes to yard waste collection participation requirements. Communication of changes is planned to begin in the fourth quarter of 2022 and continue leading up to the yard waste season in 2023. Various promotion and education tactics and tools will be utilized, including but not limited to news releases, social media, website and set out collection schedule information updates, City Councillor communications, newsletters, and multi-lingual advertising.

Staff will work with internal City Divisions, including Municipal Licensing and Standards and 311 Toronto, and will provide updated program information and key messages. Work with Municipal Licensing and Standards will include planning the enforcement approach which will be shared with Councillors as part of program implementation communications and only undertaken after comprehensive education to households.

During the initial program changes in 2023 Solid Waste Management Services staff will monitor the set out of yard waste materials for compliance with the newly amended by-law. If yard waste is set out in any container other than a kraft paper bag, an education first approach will be used to communicate why the yard waste was not collected and will include an information notice on proper yard waste set out requirements. The notice will also include contact information to provide residents with the opportunity to ask questions and obtain information on proper participation requirements.

Should City Council approve the amendment to MC 844, removing the ability for owners of single family residential and multi-residential properties to use rigid open containers for setting out yard waste, then this report recommends the deletion the fee to purchase yard waste bins from Toronto Municipal Code 441, Fees and Charges, since the sale of yard waste bins would no longer be required by the City.

Next Steps

Upon adoption of the amendments to 844-12 of MC 844, Waste Collection, Residential Properties and MC 441, Fees and Charges, Solid Waste Management Services staff will initiate the development of the change management and communications plan with

anticipated messaging to residents planned for the fourth quarter of 2022. Any additional budget required to promote and education residents and property owners on changes to yard waste collection requirements will be brought forward as part of 2022 Budget considerations.

CONTACT

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SIGNATURE

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ATTACHMENT

Attachment 1 – Yard Waste Collection Container Pilot Results