

Review of Single-Serve Coffee Pods in the City of Toronto's Waste Diversion Programs

Date: March 13, 2018

To: Public Works and Infrastructure Committee

From: General Manager, Solid Waste Management Services

Wards: All

SUMMARY

This report responds to direction from the Public Works and Infrastructure Committee to explore the impacts of including single-serve products, including coffee pods, in the City of Toronto's waste diversion programs, specifically the Blue Bin Recycling or Green Bin Organics Programs. The report also provides a jurisdictional scan of how other municipal waste management programs manage coffee pods; a legislative and policy review; and describes work undertaken on market research and a potential pilot test.

Based on the above, staff are not recommending the addition of coffee pods to the City's waste diversion programs at this time for the following reasons:

- Ongoing issues with Blue Bin contamination continues to result in increased processing costs and reduced revenues from the sale of recyclable materials. Adding coffee pods risks worsening this problem by further increasing contamination, further increasing processing costs and further reducing revenues;
- Early consultation on the Amended Blue Box Program Plan has indicated that Stewardship Ontario would not accept Coffee Pods in the Blue Bin under a future extended producer responsibility model citing additional contamination and financial concerns with the material;
- There is the potential for significant resident confusion around recycling and composting as a result of a lack of standardization in coffee pod material formats and inconsistency between various brand owners' instructions to recycle or compost used pods; and,
- There is a clear lack of evidence to suggest that coffee pod users will follow the multi-step process to properly manage the pod after use.

However, given that this type of packaging is constantly evolving and manufactures are working on new and innovative ways to further mitigate some of these concerns, Solid

Waste Management Services will continue to engage and work with industry stakeholders and the public on ways to evolve product and packaging policy and design to drive waste reduction and diversion.

RECOMMENDATIONS

The General Manager of Solid Waste Management Services recommends that:

1. The Public Works and Infrastructure Committee receive this report for information.

FINANCIAL IMPACT

There are no immediate financial implications resulting from this report.

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

DECISION HISTORY

At its meeting on October 18, 2016, the Public Works and Infrastructure Committee considered item "PW16.7 - Compostable Coffee Pods" and requested:

1. The General Manager, Solid Waste Management Services to consult with industry experts and the Ministry of the Environment and Climate Change and report back in the second quarter of 2017 on the implications and impacts of accepting single-serve or single-use products, including coffee pods, in the City's Waste Diversion Programs, such report to include, among other things:
 - a. A review of the anticipated processing operations and requirements for consumer education to distinguish between compostable and non-compostable products;
 - b. A jurisdictional scan of comparable municipalities with regard to compostable single-serve or single-use products, such as coffee pods; and
 - c. Options to research, pilot and support new markets for divertible materials under the Unit for Research, Innovation and a Circular Economy, as part of the Long Term Waste Management Strategy.

The Public Works and Infrastructure Committee Decision document can be viewed at: <http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2016.PW16.7>

COMMENTS

Management of Coffee Pods in the City's Waste Management System

The City of Toronto does not accept recyclable or compostable coffee pods in the Blue Bin Recycling or Green Bin Organics Programs. Residents and customers are currently required to dispose of coffee pods in the garbage.

This program requirement exists for several reasons, detailed below:

- Risk of Blue Bin recycling contamination - Residents must perform multiple tasks (remove lid, empty grounds, and clean container) to ensure the coffee pods can be properly processed in the Blue Bin recycling. Failure to execute each task will result in cross contamination and, as a result, increase contamination rates and reduce revenues from the sale of recyclables.
- No applicable "compostability" standard - There are no certification standards for these products in anaerobic digestion facilities such as those being used by the City;
- Unknown biogas and compost impacts - Processing Green Bin organics generates both biogas and compost. It is unknown what biogas potential exists in compostable plastic resins (which will always vary in their proprietary composition and from product to product). It is also unknown what compost and biogas qualities and values will result if coffee pods are included; and
- The coffee pod market is not standardized - Some product manufacturers make coffee pods using recyclable plastic outer containers, others make coffee pods from biodegradable or compostable plastic resins or organic products and some make them from a combination of these materials. This makes it challenging and costly to communicate how to manage these different products to residents resulting in increased program complexity and confusion.

In Toronto, residents can purchase coffee pods marketed as recyclable, fully or partially compostable or biodegradable, and that are neither recyclable nor compostable in our system. Manufacturers, brand owners and retailers of coffee pods often include waste management related language and product characteristics such as recyclability or compostability on packaging. A review of coffee pods sold in Toronto found the following examples of advertising used:

- "Certified 100 per cent compostable and eligible for collection in municipal programs where approved. These coffee pods may not be accepted for composting in the municipality where it was sold;"
- "One hundred per cent made from recyclable materials and recycle where recycling programs are available, check with local guidelines;" and

- "Ninety-nine per cent biodegradable based on weight, and can be commercially-composted once the filter is removed, however facilities may not exist in your area."

Typically, the advertising space allocated to the recyclability or the composability of the material is significantly more than the qualifying statements about acceptability in municipal programs. This advertising is misleading to residents, results in confusion, and ultimately is increasing the cost of waste management in the City because coffee pods are mistakenly placed in both the Blue Bin and Green Bin.

However, some manufacturers, brand owners and retailers of coffee pods are working to address environmental impacts of landfilling used coffee pods through other means. Some offer take-back programs that recycle the aluminium or plastic portion of the coffee pod and compost the organic fraction (i.e. grounds/leaves). Several companies have also created reusable pod products which eliminate the need for coffee pods but still offer consumers an on-demand hot drink option.

Estimated Quantities of Coffee Pods in the City's Waste Management System

The City regularly conducts residential (single-family and multi-residential) waste composition audits to inform and manage its integrated waste management system and waste diversion programs. Waste audit data from 2016/2017 indicates that approximately 1,300 tonnes of coffee pods are managed in the City's waste management system per year. It is important to note that these are estimated quantities only and actual quantities may be higher.

Processing Implications of Adding Coffee Pods

Even though Toronto residents and customers are required to dispose of coffee pods as garbage, approximately 14 per cent of the pods disposed of every year are found in the Blue Bin or the Green Bin (based on 2016-2017 waste audits). This contributes to the City's contamination rates since coffee pods are not accepted in either program.

Blue Bin Recycling Processing Implications

Plastic coffee pods incorrectly disposed of in Blue Bin recycling are considered contamination unless they have the grounds, liner, and lid removed, and are rinsed. Biodegradable or compostable coffee pods incorrectly disposed of in Blue Bin recycling are also contamination. In both cases, these products will directly impact the percentage of non-recyclable material determined by inbound composition audits and increases the cost per tonne to process the City's Blue Bin recyclables.

The City is currently experiencing high levels of contamination in the Blue Bin Recycling Program. There are a number of efforts taking place to address this issue including comprehensive promotion, education and direct mail campaigns, door to door Blue Bin monitoring, and ongoing inspections of Blue Bin recyclable loads received at the City's transfer stations. The addition of plastic coffee pods to the list of acceptable Blue Bin recyclables has the potential to add further contamination risk to this program should

residents not properly prepare plastic coffee pods for recycling (i.e. fully remove lid, liner and grounds/leaves and rinse) or if they add non-recyclable, biodegradable or compostable pods in error. Furthermore, any organic fraction of the coffee pod that is in the Blue Bin recycling will contaminate other marketable recyclable materials, for example, wet coffee grounds damage otherwise marketable paper fiber. Organics in the Blue Bin recycling decrease the value of the recyclables at end markets resulting in increased processing costs and lost revenue.

Green Bin Organics Processing Implications

The City's Green Bin Organics Program was established to divert food waste and other material (such as soiled napkins, pet waste and diapers) from landfill.

The City's organic processing facilities have been designed to anaerobically digest organic material and create both a biogas and marketable compost product. These facilities were designed to receive organic materials currently listed in the City's Municipal Code and to manage plastic materials by removing them as contamination.

The City has been asked in the past to consider the addition of compostable or biodegradable plastic resin products and packaging in the Green Bin Organics Program. These types of materials have not been added for the following reasons:

- There are no certification standards for these products in anaerobic digestion facilities, such as those being used by the City;
- The City's Green Bin organics pre-processing equipment has been designed to remove plastics (as well as material with similar physical characteristics as plastics, such as compostable or biodegradable plastic resins) prior to anaerobic digestion.

It is anticipated that any compostable or biodegradable plastic resins, along with the ring or cup portion of the pods, would be removed by the pre-processing equipment and landfilled. This is similar to how plastic bags are managed during processing. For example, although plastic bags may be compostable or biodegradable, they are removed by the pre-processing systems and managed as residue.

Green Bin organics management is currently one of the City's most expensive waste diversion programs. The costs of this program are fully borne by the City's residents and waste management rate customers since there is no extended producer funding as in the case of Blue Bin recyclables.

Communications and Education Considerations Related to Coffee Pods

The City's Strategic Communications Division strives to achieve clear and easy to understand communications on how residents and customers need to sort their waste materials. There is currently a major focus on decreasing the levels of contamination in Blue Bin recycling. High levels of contamination result in increased processing costs and lower recycling revenues, may cause workplace injuries, and can damage

equipment. Confusion or misunderstanding amongst residents of what materials belong in the Blue Bin, Green Bin, or garbage is a contributing factor to contamination.

Staff anticipate that even with extensive promotion and education (provided by the City or together with manufacturers, brand owners and retailers), many residents will be confused and not understand how to properly manage coffee pods. This is partly because there is no standardization in product composition and because management requirements will differ from brand to brand. Furthermore, the potential evolution of other types of convenience food products (e.g. soups, hot cereal, etc.) into a pod type packaging may result in greater resident confusion and increased contamination in the City's waste diversion streams should they be added.

Adding difficult to communicate new materials to the City's waste diversion programs will undermine the efforts underway to address contamination issues. From a consumer education and diversion behaviour standpoint, the lack of consistency in both the materials used to manufacture coffee pods, and the manner in which they are marketed poses significant challenges. Compostable and recyclable packaging is not consistently identifiable, and Toronto's experience shows that residents sort waste based on similarities in packaging types, rather than the component material. This raises concerns that consumers, who may have purchased pods for the sake of convenience, will not be able to effectively distinguish between acceptable compostable coffee pods that may be accepted in the Green Bin, plastic coffee pods that must be disassembled before being placed in Blue Bin recycling, and other coffee pod formats that may be accepted only through return to retail outlets or others that are simply garbage.

Additionally, the level of effort required to properly disassemble recyclable coffee pods and sort the component parts into the appropriate waste streams is onerous. For example, in British Columbia, where recyclable coffee pods are accepted in some Blue Bin Recycling Programs, consumers must remove the foil lid and place it in the garbage, empty coffee grounds into the organics stream, remove the liner/filter and place it in the organics stream or garbage (depending on material), and empty and rinse the plastic/metal cup and place it in the recycling stream. The complexity of this process raises concerns that residents may dispose of the non-separated coffee pods directly into the Blue Bin, where it could contaminate other Blue Bin recyclables.

Given the uniqueness of these products and the variety of coffee pods on the market, it would be extremely difficult to deliver effective promotion and education to guide resident disposal and diversion behaviours. Furthermore, with many diverse coffee pod products available to consumers, it would be impractical to promote the acceptance of a particular brand in the City of Toronto's waste diversion programs.

Jurisdictional Review of Post-Consumer Coffee Pod Management

In preparation for this report, staff conducted a jurisdictional review of municipal approaches to managing coffee pods in 15 jurisdictions. Attachment 1 summarizes the full results of the jurisdictional scan.

The following is a summary of the review:

- One of the 15 jurisdictions examined currently accepts compostable or biodegradable coffee pods in their Green Bin Organics Programs. It should be noted that the format of organics collection differs from municipality to municipality.
- Four out of 15 jurisdictions accept recyclable coffee pods in their Blue Bin Recycling Programs and require specific disassembly of the coffee pods prior to recycling (i.e. residents are required to disassemble the coffee pods prior to recycling. The lid must be peeled off and placed in the garbage, coffee grounds and paper liners must be removed and placed in the Green Bin, plastic liners must be placed in the garbage and the plastic or metal pod must be rinsed and placed in the Blue Bin).

The jurisdictional scan identified three non-municipally run programs that offer waste diversion options for coffee pod recycling and composting, including:

- Terracycle, a company that focuses on recycling typically hard-to-recycle materials, offers customers a "zero-waste box" for coffee pods which can be purchased online. Customers purchase the box (which accepts all types of coffee pods) and in return, receive shipping, recycling and composting of the used coffee pods.
- Nespresso, a coffee pod machine retailer and coffee pod producer, provides customers with return-to-retail options free of charge. Used pods can be returned through Nespresso's take-back program at 13 retail/boutique locations in the Greater Toronto Area. Alternatively, used pods can be returned using pre-paid Canada Post bags that Nespresso provides to customers. Overall, there are approximately 158 locations where machines are sold in the GTA.
- Gojava, a coffee pod retailer that has partnered with Terracycle, offers customers no charge pick up, recycling and composting of used coffee pods when a customer purchases coffee pods from them.

These types of programs may be more successful at recycling and composting coffee pods since they are returned in a dedicated product stream that is not mixed with Blue Bin recyclables or Green Bin organics.

Coffee Pod Pilot and Market Research Work in the City

The following work has been undertaken by City staff with respect to a coffee pod pilot and market research:

- Development of a pilot test methodology for compostable coffee pods at the City's organics processing facilities;

- Facilitation of two public consultation events targeted towards coffee pod stakeholders (held in July 18, 2017, and February 22, 2018);
- Participation as observers at a Keurig Green Mountain recyclable coffee pod test at Canada Fibers Ltd. in November 2017, and;
- Coordination to facilitate a potential compostable coffee pod pilot test through the City's Green Market Acceleration Program together with a compostable coffee pod manufacturer, Club Coffee LP.

Coordination of Pilot Testing Methodology Development for Compostable Coffee Pods

To better understand any potential impacts of the addition of compostable coffee pods to the City's waste diversion programs a methodology was developed to assess how compostable coffee pods would behave in a City organics processing facility.

Based on the pilot test methodology, a work plan and cost estimates to undertake the test was also developed. The testing costs include processing fees, estimates of staff overtime to perform and provide oversight of tests, estimated administration, field work oversight, and report review and third-party consultant costs (pilot test preparation services, field work, data analysis, report writing, and travel costs). The cost to conduct the test at the Disco Organics Processing Facility is estimated to be approximately \$50,000.

To avoid cost pressures to the City, Solid Waste Management Services stipulated that the pilot test will only be executed if external funding is secured. Coffee pod industry stakeholders were informed of this requirement and Club Coffee LP (Club Coffee) has agreed to pursue potential testing with the City and fund the test.

The anticipated completion of the test is no later than June 2018, the results of which will be made public.

Stakeholder Consultation

As directed by the Public Works and Infrastructure Committee, Solid Waste Management Services consulted with coffee pod industry stakeholders on July 19, 2017, and then again on February 22, 2018. Participants included coffee pod producers, and retailers, researchers and academics, industry associations, environmental organizations, waste processors, municipal organizations and environmental groups. The consultation sessions were designed to:

- Introduce the pilot test methodology and costs to determine any processing impacts of adding compostable coffee pods to the Green Bin Organics Program and document feedback from stakeholders (July 2017);
- Facilitate a discussion on any potential for industry standardization of coffee pods in order to facilitate waste diversion;

- Gather input on best practices, education, and communications to address waste from coffee pods in the future;
- Provide a status update and plans to move forward with a pilot test (March 2018);
- Allow for stakeholders to provide updates on their activities and innovations. Presentations were made by the Compost Council of Canada, Keurig Green Mountain Inc., and Nespresso; and;
- Present new draft policy conditions and considerations for a product or packaging to be added to the City's waste diversion program, and gather input and feedback.

Key themes were:

- Industry and retailers were not interested in standardizing products due to intellectual property and market competition factors; and
- There was general interest in the development of policy conditions and considerations for a product or packaging to be added to a waste diversion program.

Attachments 2 and 3 provide more detailed participant information as well as key themes from the discussions and presentations.

Legislative and Policy Review

For the purpose of this report, this legislation will be discussed as it applies to consideration of adding coffee pods to the City's Blue Bin Recycling Program and Green Bin Organics Program.

Blue Box Program Plan

Currently, the City receives partial compensation for the cost of operating the Blue Bin Program from Stewardship Ontario pursuant to the Blue Box Program Plan under the *Waste Diversion Transition Act, 2016*. In August 2017, the Minister of Environment and Climate Change (the Minister) issued a program request letter requesting that Stewardship Ontario and the Resource Productivity and Recovery Authority consult on, and develop, an amended Blue Box Program Plan (the Amended Plan) based on shared principles developed by the Municipal Resource Recovery and Research Collaborative (made up of the Association of Municipalities of Ontario, Municipal Waste Association, Regional Public Works Commissioners of Ontario and the City of Toronto) and Stewardship Ontario. The Minister's program request letter asked that the draft Amended Plan be submitted for his consideration by February 15, 2018.

Stewardship Ontario posted a draft Amended Plan for review and comment by December 19, 2017. The draft Amended Plan contains an initial list of paper products and packaging that would be targeted by Stewardship Ontario for collection during the transition to full producer responsibility. Stewardship Ontario confirmed that the draft Amended Plan does not include the collection of recyclable coffee pods. This means

there would be no financial compensation from Stewardship Ontario to the City should recyclable coffee pods be added to the City's Blue Bin Recycling Program during the transition period and they could be removed from the Blue Bin Recycling Program once the transition to full extended producer responsibility occurs.

The draft Amended Plan includes language indicating that compostable paper products and packaging that are not managed through the Blue Bin Recycling Program, but are managed through dedicated organics programs instead, could be considered eligible for financial compensation in the future. The wording does not detail any plan on how it would be actionable or translated into regulation.

The comment period with respect to the Amended Plan closed on January 15, 2018. Solid Waste Management Services staff responded on January 15, 2018, with comments to the Authority and Stewardship Ontario, raising serious concerns regarding the draft Amended Plan which are described in more detail in the report to Public Works and Infrastructure Committee, "State of Toronto's Blue Bin Recycling Program." As of the date of this report, the Resource Productivity and Recovery Authority and Stewardship Ontario have not submitted an Amended Plan to the Minister for consideration.

Food and Organic Waste Framework

The Ministry of Environment and Climate Change (the Ministry) posted their draft Food and Organic Waste Framework (the Framework) to the Environmental Registry on November 16, 2017, with a comment period ending January 15, 2018. The Framework includes a proposed Action Plan and a Provincial Policy Statement that provides direction on how Ontario will achieve greater diversion of organics from landfill. Future regulations issued under the *Environmental Protection Act, 1990*, and the *Waste Diversion Transition Act, 2016* or *Resource Recovery and Circular Economy Act, 2016* will be informed by the proposed Provincial Policy Statement and designed to implement the proposed Action Plan outlined in the Framework.

The proposed Policy Statement section of the Framework contains language which seeks to establish a universal definition for a compostable product or packaging. A regulated definition of "compostable packaging" could help standardize compostable paper products and packaging and lead to greater potential for the addition of compostable packaging, including coffee pods, to municipal organic waste processing facilities. The Framework provides consideration to extending diversion credits and financial reimbursement for any designated materials which are managed via municipal organics diversion programs, such as Toronto's Green Bin Organics Program. Although both the amended Blue Box Program Plan and Framework allow for the possibility of reimbursement for designated products managed in the Green Bin Organics Program, the details and mechanisms have not yet been described and would be provided in future regulations if this option is selected by the Minister.

Reducing Waste One Pod at a Time Act, 2017

On November 1, 2017, Parry Sound-Muskoka MPP Norm Miller introduced Bill 173, the *Reducing Waste One Pod at a Time Act, 2017*. The Bill seeks to keep plastic coffee

Pods out of landfill by prohibiting the sale of all retail single use beverage pods unless they are fully compostable, thereby making 100 per cent compostable pods the only legal way to sell coffee pods in Ontario. The Bill has passed second reading, however has not proceeded any further.

Next Steps

Solid Waste Management Services will continue to monitor and respond to legislative changes and will engage with retailers and manufacturers to develop a common understanding of how these products can be better managed in the future.

If any compostable coffee pod pilot test proceeds at the Disco Road Organics Processing Facility, Solid Waste Management Services will report back on the results.

CONTACT

Vincent Sferrazza, Director, Policy, Planning & Support. Solid Waste Management Services, Email: Vincent.Sferrazza@toronto.ca, Telephone: 416-392-9095, Fax: 416-392-4754

Annette Synowiec, Manager (Acting), Business Operations and Change Initiatives Manager, Unit for Research Innovation and a Circular Economy, Policy, Planning & Support, Solid Waste Management Services, Email: Annette.Synowiec@toronto.ca, Telephone: 416-392-7449, Fax: 416-392-4754

SIGNATURE

Jim McKay
General Manager
Solid Waste Management Services

ATTACHMENTS

Attachment 1: Jurisdictional Scan

Attachment 2: Stakeholder Consultation, July 19, 2017, Attendees and Responses

Attachment 3: Stakeholder Consultation, February 22, 2018, Attendees and Responses