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Item No. 15.1
Environment and Sustainability Standing Committee
September 5, 2019

TO: Chair and Members of Environment and Sustainability Standing Committee

SUBMITTED BY: ORIGINAL SIGNED
Taso Koutroulakis, Acting Director, Transportation and Public Works

ORIGINAL SIGNED
Jane Fraser, A/Chief Administrative Officer

DATE: August 7, 2019

SUBJECT: Pet Waste Recycling

ORIGIN

At the February 7, 2019, meeting of the Environment and Sustainability Standing Committee it was requested that staff prepare a report on options for disposal of pet waste, to include an examination of green bins as pet waste disposal receptacles.

LEGISLATIVE AUTHORITY

Subsection 79A(1) of the Halifax Regional Municipality Charter provides that “Subject to subsections (2) to (4) the Municipality may only spend money for municipal purposes if (a) the expenditure is included in the Municipality’s operating budget or capital budget or is otherwise authorized by the Municipality; (b) the expenditure is in respect of an emergency under the Emergency Management Act; or (c) the expenditure is legally required to be paid.”

Subsection 335 (e) of the Halifax Regional Municipality Charter provides that “Council may make by-laws respecting solid waste, including, but not limited to prescribing the materials that may or may not be deposited at solid-waste management facilities of the Municipality or in where the municipality participates.”

RECOMMENDATION

It is recommended that the Environment and Sustainability Standing Committee (ESSC), through Halifax Regional Council, direct the CAO to consider a pilot project for the collection of dog waste in select parks as part of the business and budget planning process for implementation in 2020/21.

BACKGROUND

Pet waste includes items such as kitty litter, dog feces, feathers and pet bedding. Based on findings of recent waste audits, pet waste represents 8-12% (weight basis) of residential waste arriving for landfill disposal¹. Upwards of 50% of pet waste consists of kitty litter, a non-biodegradable clay material. All pet waste is acceptable for landfill disposal. Most public attention has focussed on dog and cat pet waste, including proper management of fecal matter to prevent contamination of waterways that can ultimately impact ecological and human health. Currently, there are two options for managing pet waste in HRM: acceptable in the garbage or flushed down the toilet.

Some municipal solid waste systems include pet waste as part of organics management programs (similar to HRM's green cart program) and divert pet waste from landfill disposal. In those jurisdictions, there are two organics processing systems used to manage organics, including pet waste:

- (1) composting; and
- (2) anaerobic digestion (AD).

Composting requires oxygen and micro organisms to naturally break down materials and is the primary process used in Nova Scotia to manage organics generated from municipal solid waste programs. The process generates a compost end product which is typically used as a soil amendment or fertilizer.

The AD process operates in the absence of oxygen; bacteria decompose the organic matter to produce a biogas (methane and CO₂) captured to produce energy and digestate solid typically used as a soil amendment or fertilizer.

Several jurisdictions in Nova Scotia are accepting kitty litter in their green cart program including Cumberland County, Colchester County (including Truro and Stewiacke), Pictou County (including the towns), East Hants and Valley Waste municipalities. These municipalities are serviced by composting facilities operated by Colchester County and Fundy Compost (Stewiacke). In some instances, un-bagged dog feces are also acceptable (e.g., Colchester County).

Currently, HRM operates two composting facilities that are nearing the end of their useful life. Halifax Regional Council (Council) approved the Organics Management Consultation and Strategy (2017 Strategy) on April 25, 2017. As part of the 2017 Strategy, HRM is currently in the process of developing a new 60,000 tonne per year organics processing facility allowing proponents to bid solutions involving both composting and AD technologies suitable to process HRM's organics. The new facility is likely to be commissioned in the fall of 2022.

DISCUSSION

Consideration for Pet Waste in HRM's Organics Management Program (Green Carts)

As part of the 2017 Strategy, staff considered the potential inclusion of several additional items to HRM's organics management program, including pet waste, compostable bags and grass clippings. Staff considered public feedback, as well as technical and financial aspects of adding materials to the Organics Management program. In a review commissioned by HRM, GHD consultants (January 18, 2017) reported that both composting and AD can effectively manage pet waste. Key considerations identified for acceptance of this material in the Organics Management program as part of the development of a new organics processing facility included:

- Facility design for accepting and processing pet waste;

¹ HRM waste audit by staff conducted Summer 2016, Fall 2016 and Spring 2017

- Increase in both the footprint and capacity of a new facility, as this material could add potentially approximately 3,000-6,000 tonnes of additional organics to manage;
- Consideration for inclusion of plastic or compostable bags (i.e., to collect dog feces) and associated equipment design to remove these materials (e.g., screening equipment);
- Though pet waste can be processed to remove all pathogens, consideration for optics around the safety of the end product is required;
- Odours associated with processing pet waste.

Pet waste was not contemplated for inclusion in HRM's organics management program when the program was rolled out initially in 1999. Public engagement findings collected in 2016 indicated that residents ranked the addition of pet waste as a lower importance as compared to other considerations that were ranked by residents as a higher priority such as odour management, proven track record of the organics processing system and minimizing the impact to the community. As such, the 2017 Strategy did not include a recommendation for adding pet waste to the Organics Management program.

Based on Council direction, staff has proceeded with a two-stage procurement process to retain a proponent to design, build, own, operate and finance a new organics processing facility over a 25-35 period. In 2018, a Request for Qualification (RFQ) was completed that pre-qualified four proponent teams. On July 31, 2018, Halifax Regional Council approved the key terms for the Organics Management Request for Proposal (RFP). On July 31, 2019, staff issued the RFP to the pre-qualified proponents. It is anticipated that staff will return to Council in the Spring of 2020 to award the Organics Management RFP.

As part of the RFP, based on the key terms approved by Council, in recognition of the evolving waste management industry and continuous improvement, proponents are required to identify how their proposed solutions could be adaptable to more stringent regulatory requirements (e.g., Ontario Compost Quality Standards) and acceptance of additional materials to HRM's organics management program (i.e., pet waste, compostable plastics and grass). Should HRM decide in the future to include pet waste as part of the organics management program, staff will need to negotiate with the successful proponent at that time for the contemplated change, which will likely result in an increase in the overall contract cost.

Dog Waste in Parks

There is public interest in diversion of dog waste in HRM parks. It is important to ensure there are effective and sustainable options for the treatment of the collected dog waste. The following discussion focuses on examples from other jurisdictions collection and treatment of dog waste. Where there are designated off-leash areas, HRM parks offers dog poop baggies dispensers. Parks have reported that the most frequent complaint is users not picking up after dogs

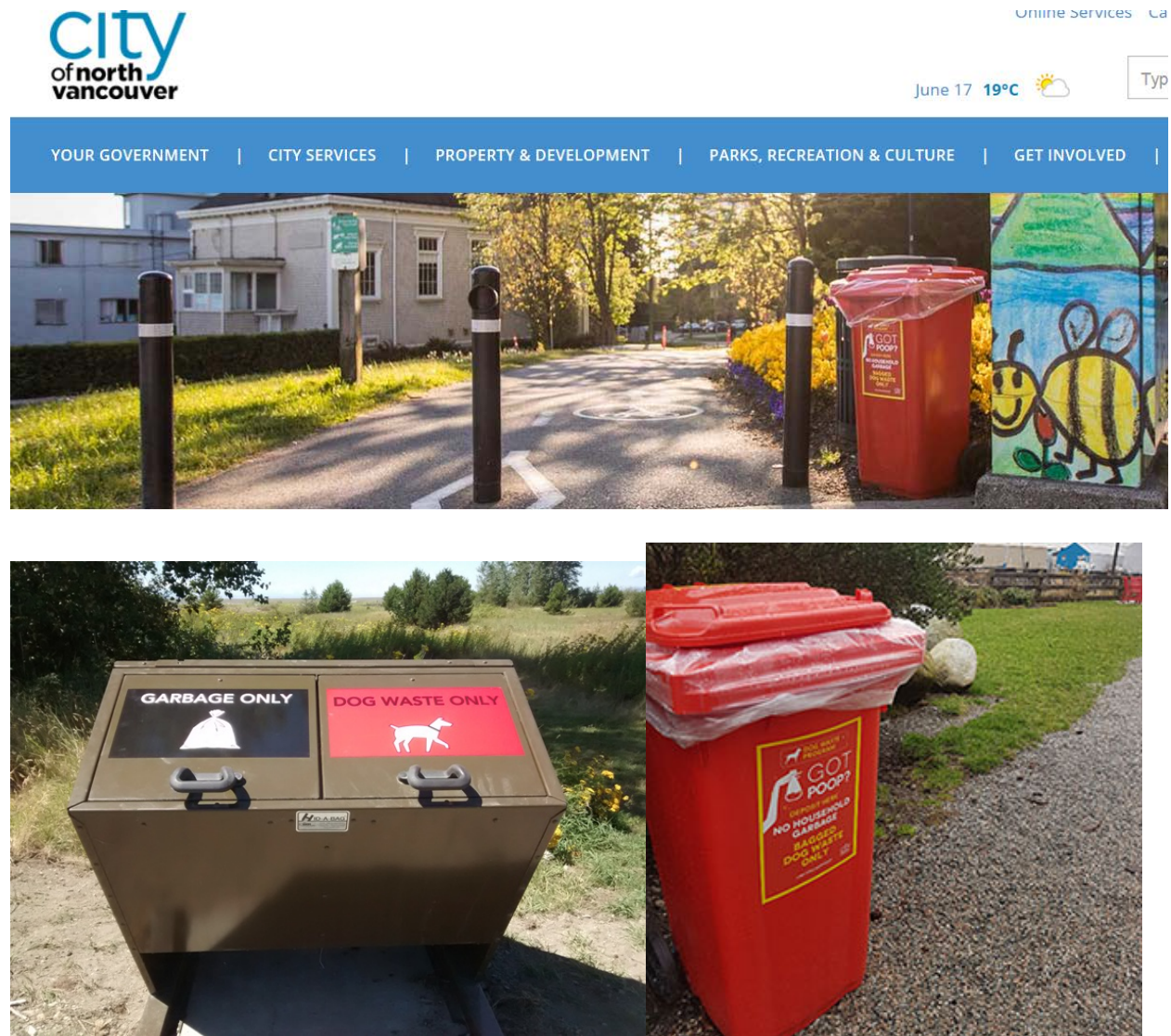
BC Municipalities

Metro Vancouver Solid Waste and Parks Departments have collaborated to undertake research and introduced a pilot program for the separate collection of dog waste generated in parks. The separate collection was initially motivated by landfill diversion and operational issues at the region's transfer station. The program is now established with 294 dog waste only bins established in designated park locations. Dog waste is being collected in red plastic totes or metal bins designated for dog waste. This waste is collected, debagged and taken to a Waste Water Treatment Plant (WWTP). In the WWTP process, solid/sludge residues are ultimately treated by AD.

The jurisdictions of Metro Vancouver, including the municipalities of Port Moody, Vancouver, West Vancouver, North Vancouver City, District of North Vancouver, Port Coquitlam and Langley Township have all installed dog waste collection bins in parks.

The region's municipalities are expanding the program and installing dog waste receptacles in additional public areas. In total, there have been 294 bins installed with approximately 150 tonnes of dog waste

collected over the past year. The region has plans to double this number to 600 bins installed in the next five years.



Ontario Municipalities

City of Toronto

Toronto is one of the few municipalities that accepts all pet waste in the green cart program, including dog feces and plastic bags. This waste is processed at one of two AD operations which includes pre-processing equipment for the removal of contaminants such as plastic bags. This AD process generates a digestate and biogas. The digestate is subsequently transferred to a composting operation for further processing (including pasteurization)²; while the biogas is currently flared (the city is currently planning to upgrade the biogas to renewable natural gas). Following a 2018 waste audit of park collection bins, the city introduced a pilot program for the separate collection of dog waste in off leash dog parks with the addition of green bin tooters.

² It is noted that City of Toronto AD system does not operate at temperatures that achieve pasteurization; any AD solution developed in Nova Scotia generally requires a pasteurization step as part of the overall process.

Green Bins in City of Toronto Off-Leash Dog

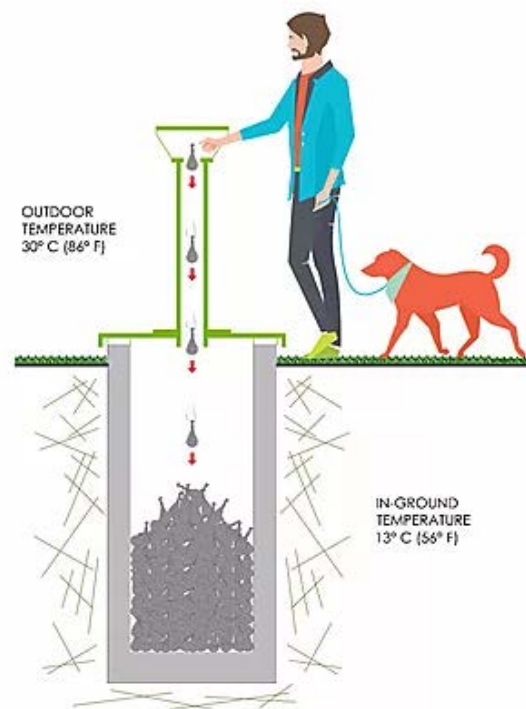


After a 2018 audit of Garbage and Blue Bins in 33 Toronto parks found that approximately 84% of waste in bins next to Dog Off-Leash Areas was organic waste (dog poop), The City of Toronto piloted Green Bins next to 21 Dog Off-Leash Areas.

Mississauga

The City of Mississauga introduced dog waste bins based on waste audit data and input from park's staff. There are currently 12 bins in place installed by park's staff. The city contracted with Sutera, a company that supplies a pet waste collection and containment system. The receptacles are comprised of an above ground bright green dog shaped opening to deposit bagged waste and below ground concrete chamber that can store the waste for up to 8 weeks. The base of the concrete chamber is located approximately 6 feet below grade and can hold approximately 0.75 cubic yards of dog waste.

Dog waste is removed from the receptacles using a vac truck and sent to a privately owned/operated AD plant located in Elmira. The AD plant processes organics to generate a biogas and digestate. The biogas is used for co-generation (heat/electricity), while the digestate is used for the production of a fertilizer. The city expects to collect 50-60 tonnes annually of the estimated 14,069 tonnes of dog waste generated annually.



The Sutera receptacles can also be setup with a large plastic sac placed in the concrete chamber that can be removed to transfer the contents. Sutera provides the receptacles and collection service for an all-inclusive fee ranging from \$235 - \$300/unit/month (including disposal). The company markets these receptacles as providing municipalities with cost savings due to the in-ground storage capacity thereby reducing the frequency of collection and associated costs (e.g., fuel costs).

Waterloo

The Region of Waterloo also started with a parks pilot program, installing 3 Sutera receptacles in 2017, and collected 8 tonnes of dog waste since the project launched in 2017. The project has expanded to more parks with a total of 5 receptacles in place. Dog owners can drop in any type of bag into the containers. After two weeks, the waste is then shipped to an AD plant in Elmira.

Summary of Jurisdictional Review

Table 1 below provides a summary of findings from jurisdictions contacted by staff with regards to dog waste management practices in municipal solid waste programs and parks.

Table 1 – Dog Waste Management Practices in Municipal Solid Waste Programs and Parks

Jurisdiction	Municipal Program	Dog Parks
Mississauga	Garbage <ul style="list-style-type: none"> Material goes to a landfill 	<ul style="list-style-type: none"> 12 Sutera receptacles installed Emptied every 6-8 weeks by vacuum truck \$200 per bin/per collection includes processing for 50-60 tonnes annually Waste is shipped to AD plant located in Elmira that is privately owned and operate by Bio-En Power
Waterloo	Green bin <ul style="list-style-type: none"> Must be contained in a bag Aerobic in-vessel compost facility in Guelph with capacity and screening equipment to manage bag removal Garbage <ul style="list-style-type: none"> Material goes to landfill Flush it – no bag Bury in backyard <ul style="list-style-type: none"> Promote using a backyard digester (similar to backyard composter) 	<ul style="list-style-type: none"> 5 Sutera receptacles installed Waste is shipped to AD plant located in Elmira that is privately owned and operate by Bio-En Power
Metro Vancouver	Garbage <ul style="list-style-type: none"> Small amounts double bagged pet waste Flush it – no bag Call a private collection service Build a dog waste composter <ul style="list-style-type: none"> Promoted backyard composting of dog waste Promote <u>not</u> using the compost on or near vegetable gardens 	<ul style="list-style-type: none"> Metro Vancouver Regional Parks 157 red plastic totes emptied weekly or bi-weekly by parks staff Contracted service provider collects material from central point and separates feces from the bags Dog feces delivered to WWTP, bags to the waste to energy facility \$90,000/year includes de-bagging and disposal
North Vancouver	Same as Metro Vancouver	<ul style="list-style-type: none"> 32 totes are collected weekly by a contracted service provider who also de-bags Feces are delivered to WWTP, bags to the waste to energy facility \$47,707 for collection and disposal 27 tonnes collected in 2019

Business Planning Considerations for Pilot Program

Staff from Parks and Recreation and Solid Waste departments are to collaborate to consider:

- Locations (i.e., off leash parks)
- Estimate of waste quantity
- Collection receptacle options (carts/totes, steel bins, underground storage)
- Collection methodology (HRM staffed versus contracted service)
- Disposal locations (composting or AD facilities)
- Cost
- Schedule for implementation
- Public Promotion & Communication
- Key Measurements for Pilot evaluation

FINANCIAL IMPLICATIONS

Preliminary cost projections are anticipated up to \$20,000 in year one fiscal 2020/21. This projection is based on including 3 parks in the pilot project, 1 bin in each park with monthly collection.

RISK CONSIDERATION

There is low risk moving forward with report recommendation. If a pilot is to move forward, it will be part of the annual business planning process for approval by Council in the 2020/21 business cycle.

COMMUNITY ENGAGEMENT

The community was engaged in the development of the 2017 Strategy. There was no community engagement in the undertaking in the completion of this report recommendation to further explore options and opportunities as part of the business planning cycle.

If the pilot is undertaken, staff will include feedback from park users and provide this in a future staff report on the results of the pilot project.

ENVIRONMENTAL IMPLICATIONS

This report focuses on diversion of dog waste from landfill, providing options for residents to collect and separate waste transformed into a resource with positive environmental implications.

ALTERNATIVES

ESSC can choose not to recommend support for exploring new options and opportunities to establish a pilot project.

ATTACHMENTS

N/A

A copy of this report can be obtained online at halifax.ca or by contacting the Office of the Municipal Clerk at 902.490.4210.

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