

STAFF REPORT: ENGINEERING AND PUBLIC WORKS DEPARTMENT

REPORT TO: Infrastructure and Recreation
 Committee
MEETING DATE: March 19, 2013
REPORT NO.: EPW.13.021
SUBJECT: Curbside Organics
 Implementation
PREPARED BY: Adam McMullin, Environmental
 Initiatives Coordinator

A. Recommendations

THAT Council receive Staff Report EPW.13.021 entitled "Curbside Organics Implementation" for their information.

B. Background**Purpose**

This report outlines the details of the implementation of curbside source separated organics (SSO) collection services for community. The focus of this report is to inform Council about the implementation schedule and the communications and outreach support to residents.

Council approved the following endorsement from Staff Report EPW.12.085 on October 29th, 2012;

THAT Council endorse in principal the establishment of a curbside source separate organics collection service commencing in 2014 for deliberation during the preparation of the 2013 budget.

Council passed the budget on February 11, 2013.

Significant Implementation Milestones

Table 1 summarizes the major milestones associated with implementing the SSO program.

Table 1: Major SSO Program Milestones

Item	Implementation Date
Complete and submit permit approvals	(March 2013)
Develop promotion and education materials	(October - November 2013)
Negotiate collection contract with waste hauler	(October – December 2013)
Procure green bins, kitchen catchers and indicator signage	(December 2013)
Initiate Public education and promotion program	(January 2014 – December 2015)
Procure compost material mixer and upgrade hydro at waste disposal site	(March 2014)
Implement phase one service	(May 2014)
Implement phase two service	(May 2015)
Update waste collection bylaw	(January 2017)

Background

Since 2006, there has been significant assessment and study completed relating to the Town’s waste management system. As part of this work the following reports and/or actions were completed:

- A summary of the existing waste management system (May 2007);
- Assessment of the Town’s current and future solid waste requirements (May 2007);
- Waste Diversion Plan (July 2008);
- Completion of a curbside organics collection and processing feasibility study (February 2010);
- Completion of organic diversion business case (June 2010);
- Complete an environmental screening report to the Ministry of the Environment to expand landfill capacity (2012).

The following conclusions are drawn from these projects:

- The waste disposal site has limited disposal capacity remaining;
- Organic waste diversion will extend the life of the waste disposal site and will reduce greenhouse gas emissions;
- To reach the goal of 60% waste diversion (proposed in the Waste Diversion Plan) a curbside source separated organics program must be implemented;
- The waste disposal site has the capacity to process and compost the quantities of household organic waste generated by the community without significant upgrades or site improvement;
- Residents are generally in favour of a curbside SSO program.

Curbside SSO Program Basics

Curbside SSO programs divert household organic waste from the garbage stream. Food waste is separated from the garbage and collected at curbside in a green bin. Residents can utilize a smaller kitchen catcher - a container usually located within the kitchen - to collect food scraps leftover during the day. These are then periodically emptied into a larger green bin, typically in a garage or other locations secure from animals, which is collected weekly.

Residents may use liners in either the kitchen catcher or greenbin to help keep the container clean. These liners must be either paper or certified as compostable. The green bins and kitchen catchers require periodic cleaning, by the resident.

The following table identifies acceptable and non-acceptable material within the greenbin program:

Table 2: List of accepted and non-accepted green bin materials

<p>Accepted Materials:</p> <ul style="list-style-type: none"> ✓ Fruits and vegetables ✓ Meat and Fish Products Includes bones, fat, skin and shellfish ✓ Grain Products Includes pasta, bread, rice and cereal ✓ Baked Goods or Baking Ingredients Includes cake, cookies, flour, sugar, spices, eggs and egg shells ✓ Dairy Products Includes milk, cheese and yogurt ✓ Other Food Products Includes candy and confectionary, coffee grounds, coffee filters and tea bags ✓ Paper Products Includes soiled paper towels, paper napkins. 	<p>Not Accepted:</p> <ul style="list-style-type: none"> ✗ Artificial Flowers & Plants ✗ Baby Wipes ✗ Candles ✗ Carpet & Rugs ✗ Cigarette Butts ✗ Clothing, Leather & Textiles ✗ Corks ✗ Cotton Balls, Ear Cleaners ✗ Dead Animals (not kitchen waste) ✗ Disposable Mop Sheets ✗ Dryer Sheets ✗ Foil ✗ Gum ✗ Milk Bags ✗ Styrofoam ✗ Tissue Paper for Gift Bags ✗ Plastic Wrap & Baggies ✗ Personal Hygiene Products, diapers ✗ Pet Waste / Litter ✗ Wood ✗ Toothpicks ✗ Vacuum Cleaner Bags & Contents
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Curbside organic material is collected in conjunction with regular garbage pick-up, using a split truck. The contractor will be required to conduct a visual inspection of the material to ensure it is not contaminated.

The split collection truck delivers the organics waste to the compost pad at the landfill. The processing of the collected SSO materials is integrated into the current landfill leaf and yard waste composting operations. The organic material is blended with woodchips and formed into a windrow where the composting process is initiated.

Program Roll-Out & Communication Strategy

A curbside SSO program requires residents to modify their waste management behaviours. A communications strategy has been developed will be employed to ensure the community is aware of the new service and to educate residents on the proper use of the green bin. The following summarizes the highlights of the strategy and the roll-out plan.

The service will be implemented in two phases;

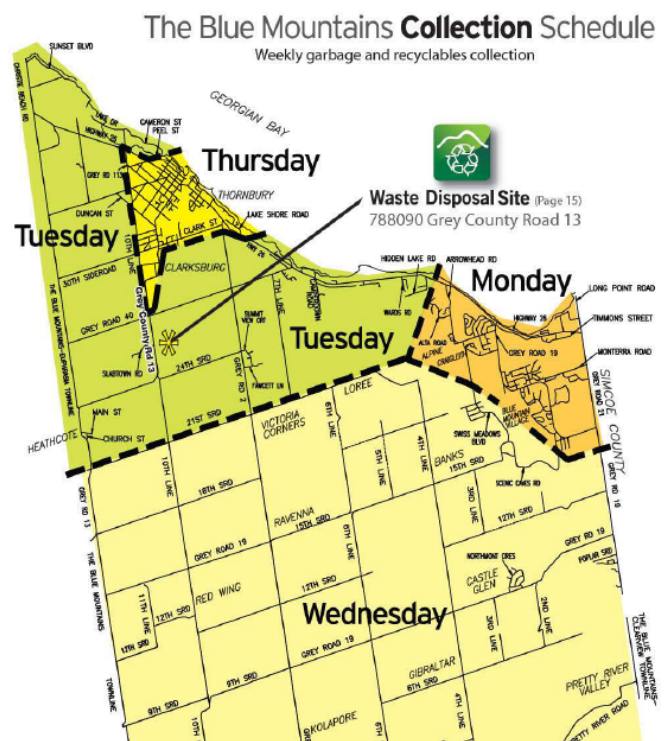
- 1) Phase I (May 2014) – Thornbury / Clarksburg & Craigeleith Collection Zones (Monday & Thursday Collection)
- 2) Phase II (May 2015) – Lora Bay / Wards Rd. & Rural Collection Zones (Tuesday & Wednesday Collection)

Residential Roll-Out (Detached Units)

Residents will be contacted about the program by letter. The letter will outline the expectations of the new service, the commencement date, tips on the use of the green bin, the benefits of diverting organic waste and an invitation to an information workshop. This communication will occur in collaboration with the community wide engagement program.

The program will commence in May of 2014. One to two weeks prior to the commencement of the program each household will be delivered a kit comprised of the following components:

- Roll-out green bin (46 litre capacity)
- Kitchen catcher waste bin (7 litre capacity)
- Program newsletter
- Town waste management brochure
- Green-bin start-up fact sheet/green bin sticker



The cart vendor will manage the delivery of the kits as part of the supply procurement. The delivery crews will place the kitchen catcher and promotional information into the green bin and deliver it to each household. The kits will be delivered to the door step of each residence. Phase one includes approximately 2,500 detached units (1200 multi-units), while phase two includes 1,950 detached units (100 multi-units).

Residential Roll-out (Multi-unit)

Multi-unit residences require a modified waste collection service compared to detached housing. Condominiums and apartment buildings utilize a centralized waste management area to house their recyclables and garbage for weekly collection. These areas are served by 95 litres tote recycling bins, for paper, glass and plastics. The garbage is typically housed in large garbage containers.

Staff plan to incorporate the SSO program into the centralized waste management system. This would involve providing larger green bins (approximately 65 litres) for each property compared to the curbside bins, to be housed in the waste management area with the garbage and recyclables bins. Residents will be required to empty their kitchen catchers into these dedicated bins. The waste contractor will use automated collection to remove the organic material, in the same manner that the recyclables are collected. The property management company will be responsible for the upkeep and maintenance of the bins.

Participation in the program will be voluntary during the implementation of phase one and phase two. Staff will work collaboratively with the management companies or condominium boards to introduce the program for participating properties. The following activities are planned to roll-out the program for multi-unit properties:

- The *owner* of each multi-unit property will be contacted via letter requesting participation in the program;
- The Town will supply each participating multi-unit property with large green bins, specialized educational materials, signage and individual kitchen catchers;
- The property owner will be responsible for the distribution of the kitchen catchers and educational materials/signage to the tenants and the placement of the collection bins;
- Staff will work collaboratively with the owners (or representatives) to coordinate the delivery of the materials and to determine the number of collection bins needed to service the property based on the number of tenants and size of the waste management area;
- The bins will be initially supplied at no cost while a fee would be applied to replace the carts in the future.

Following the community-wide implementation, Staff expect to recommend mandatory participation in the program for multi-unit properties, in 2017. Staff recognize that there will be challenges when rolling out the SSO service for multi-unit properties and have incorporated a two year grace period to work towards successful implementation. Staff will work collaboratively with property owners (or representatives) to address specific issues or problems that may arise.

During the pilot program, foul odours were the chief problem and barrier to participation identified by participating multi-unit property managers. To mitigate this issue, Staff will provide a duplicate set of bins that can be cycled into use, allowing property management to periodically clean the containers. This will ensure that debris and fluids do not build up in the bins. Additionally, Staff will provide information on other mitigating techniques for property management to utilize in combating foul odour.

Institutional, Commercial and Industrial (ICI) Properties

Participation for ICI properties for the program will be voluntary. For participating properties, one green bin (46 litre) will be provided and at request a second bin will be supplied (with kitchen catchers) in addition to the curbside collection services. These services include a two bag limit garbage pickup and a maximum of nine recycling units (one unit is equivalent to the volume of a residential blue box). Delivery of bins will be made to small ICI and larger ICI will be dealt with on a request basis. The cart vendor will be provided with a guideline on which locations to make delivery.

Waste Indicator Program

Many residents utilize a stationary waste box to place their garbage and recycling out for collection. This practice requires the collection contractor to check every box for pick-up. Frequently the box is empty, reducing the collection efficiency.

Staff conducted a pilot waste indicator program from July 2011 to July 2012. The pilot program introduced a universal collection indicator system for stationary waste boxes within selected areas of the Municipality. The system is simple to use - place the signs (one for recyclables another for waste) outside of the box on collection day to notify the drivers for pick-up. The drivers flip the signs back into the box after collection.

The pilot program demonstrated that a universal waste collection system:

- Reduces missed collection events
- Improves participation in curbside recycling
- Reduces collection vehicle stops and starts

There is an opportunity to dovetail the introduction of a community-wide waste indicator program with the roll-out of the green bin service. This will require the cart vendor to deliver additional material with the green bin to residences that have a stationary waste collection box. The additional material will include the following:

- Two indicator signs (one for recyclables the other for waste and organics)
- A chain with connector piece and screw (x 2)
- An installation and instructional pamphlet

Residents will be asked to install the indicator on the waste collection box. Delivering the indicator material as part of the green bin distribution will save significant time and money to introduce the program. Furthermore, the indicators will improve collection efficiency and reduced missed pick-ups.

Bylaw Modification

In 2017, following the implementation of phase one and two of the SSO and waste indicator program, Staff expect to recommend modifying the waste collection bylaw (#16/03) that will:

- Prohibit disposing of organic material in the garbage stream;
- Require that residents use the Town issued indicator system, to receive collection service, when utilizing a stationary waste box;
- Require that multi-unit properties divert organic waste from the garbage stream.

This approach provides a grace period for residents to voluntarily participate in the new SSO and waste indicator programs provided by the Town. After the programs are fully implemented and the users understand the expectations of the new service, it will become mandatory, with potential enforcement.

Capital and Operating Requirements

Processing of the SSO material does not require the construction of new facilities or buildings at the waste disposal site, but will include the following capital purchases / improvements:

- Purchasing a stationary electrically driven mixer: one piece of equipment that blends woodchips and food waste into a uniform pile;
- Procurement of sampling and temperature probe equipment;
- Minor site preparation for placement of mixer;
- Procuring green bins and developing promotional and education materials for residents; and
- Upgrading the hydro on-site to power the mixer.

Operationally, the Town's collection services contract will be modified to provide separate collection of the organic materials. The additional SSO material will marginally increase operating costs related to compost sampling, material screening and grinding, additional fuel and hydro, maintenance and training, which has already been incorporated into the 2013 and 2014 Town budget.

Social Implications

Implementing a SSO program would strengthen the residential curbside diversion program and further instill personal responsibility for household waste management.

Source separated organics programs have been implemented in a number of the surrounding municipalities and are recognized as a progressive and essential component of leading integrated waste management programs.

C. The Blue Mountains’ Strategic Plan

Improving the waste diversion performance of the Town furthers the Town’s Strategic Goal #2 “Addressing the Town’s municipal infrastructure needs”.

D. Environmental Impacts

Implementing an organics diversion program helps the Town to:

- Assume full responsibility for the management of our wastes within regional borders;
- Sustainably manage waste generated within the community as locally as possible;
- Become a community that supports a movement towards a zero waste society; and
- Reduces community greenhouse gas emission.

E. Financial Impact

Summary of Program Costs

Capital Costs

The mixer, resident materials (Green Bins, Promotion and Education Material), indicator materials and permitting costs represent the major capital expenditures. These capital requirements and associated costs are summarized in Table 3 as follows:

Table 3: Initial Capital Costs

Item	Budget
Mixer	\$90,000
Hydro Installation and Line Extension	\$15,000
Green Bins, Waste Box Indicators, Promotion and Education Material	\$194,000
Certificate of Approval Amendment	\$50,000

Total: \$349,000

The capital costs of the program are funded from the gas tax reserve.

Operating Costs

Increased collection expenses represent the major increase to operating costs. The additional SSO material will marginally increase operating costs related to compost sampling, material screening and grinding, additional fuel and hydro, maintenance and training. Table 4 summarizes the estimated increased operational expenses incurred at the landfill.

Table 4: Compost Site Operational Cost Impact

Item	Annual Cost
Extra Fuel	1,500.00
Extra Sampling	2,000.00
Extra Hydro	1,000.00
Additional Training	500.00
Additional Maintenance	3,500.00
Green Bin Replacement	2,200.00
Additional Screening	5,687.50
Additional Grinding	1,300.00
Leachate Management	1,000.00
Total:	18,687.50

The operational expenses are based on 2012 costs. Adjusting for inflation the operational costs for the fully roll-out program in 2015 are estimated to be \$20,420. The quoted additional collections cost are \$93,299. All operational expenses are funded from the tax levy. These costs were incorporated into the 2014 and 2015 operational budgets during the 2013 budget deliberations. Table 5 outlines the estimated cost impact for operational expenses over a two-year phase in, from 2014, 2015.

Table 5: Operational Cost Impact 2014 – 2015

Cost	Phase I Costs 2014	Phase II Costs 2015	Total Cost - Phase II & II
Processing	\$12,757	\$7,663	\$20,420
Collection	\$56,253	\$37,046	\$93,299
Total :	\$69,010	\$44,709	\$113,719

Implementing a curbside SSO program requires an upfront expenditure to establish the service but extends the life capacity of the landfill in the long run, providing a long-term financial benefit to the community. It is estimated that the SSO program will extend the life (based on a 40 year life expectancy) of the landfill by 6 years. Table 6 identifies the deferred costs associated with diverting organic waste from the landfill compared to disposal.

Table 6: Deferred Cost Saving of SSO Program vs. Landfilling

SSO Capture Rate	Tonnage Diverted	SSO Cost Per Tonne	SSO Annual Cost	Landfilling Cost*	Annual Deferred Cost	40- Year** Deferred Cost
40%	360	\$280	\$100,818	\$113,400	\$12,582	\$503,260

*Landfilling cost is calculated by multiplying estimated annual diverted tonnage by estimated cost of landfilling (\$315/tonne)

** 40 years is the life expectancy of the landfill

F. In Consultation With

Jeffery Fletcher, Manager of Solid Waste & Environmental Initiatives
Darcy Chapman, Capital Accountant

G. Attached

None.

Respectfully submitted,

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