

# Policy Discussion Papers - Preliminary Discussion

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## Request for Recommendation

### Implementing a City-wide Residential Curbside Green Cart Organics Program

Presented To:	Priorities Committee
Presented:	Wednesday, Jun 18, 2008
Report Date	Monday, Jun 09, 2008
Type:	Policy Discussion Papers - Preliminary Discussion

## Recommendations

OPTION #1 is being recommended by staff and the Solid Waste Advisory Committee:

- That a residential 'Green Cart' organics curbside co-collection system be approved for approximately 57,000 households; and
- That the program be launched once the MOE approvals to process the materials are received (anticipate in mid 2009 if program is approved in mid 2008); and
- That funding for the approved collection containers, sample compostable bags, distribution, staffing and educational materials be funded from the Capital Financing Reserve Fund - Solid Waste at an estimated cost of \$1.72 million; and
- That the organic pilot project collection service continue until the City-wide residential collection program is implemented and that this cost be funded from the Capital Financing Reserve Fund - Solid Waste at an estimated cost of...

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[recommendation continued...](#)

## Finance Implications

Fund the pilot from July 2008 to June 2009 and the one-time cost of \$1.72 million by a contribution from the Capital Financing Reserve Fund - Solid Waste in the amount of \$2.06 million leaving a ba...

finance implications continued...

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(Financial Implications continued from cover)

...balance of \$3.5 million in the reserve fund.

Option #1 - add the \$151,000 to the 2009 base operating budget (annualized to \$354,000 in 2010) with a tax levy impact of 0.08% (annualized 0.2%).

Option #2 - Refer to the 2009 Budget Process.

(Recommendations continued from cover)

...\$28,200 per month or \$338,400 per year; and

- That once the pilot project is completed, the Industrial Commercial & Institutional (IC&I) pilot project participants be permitted to deliver source-separated organics to the designated organic composting area within the Sudbury Landfill Site at no charge until Council reviews the recommendations from the IC&I Waste Diversion Study; and
- That staff organize an annual 1 tonne compost giveaway program; and
- That replacement containers be provided at no cost to encourage continued participation; and
- That residents purchase or provide their own approved compostable liner bags; and
- That the annual operating cost plus inflation be incorporated in future base operating budgets, with an estimated tax levy of 0.2%.

All in accordance with the report from the General Manager of Infrastructure dated June 9, 2008.

## Introduction

The City has set a 65% residential waste diversion goal in support of local environmental initiatives and to assist the province in meeting its goal of diverting 60% of Ontario's waste from disposal.

Over the last decade the City has established various programs to meet these goals and this report outlines an initiative that targets a large portion of the residential waste stream, household organics.

## Background

In February 2005, the results of the Waste Optimization Project administered by staff and the Technical Steering Committee was presented to Council. The recommendations were accepted in principle and staff was directed to report back to Council with detailed plans and detailed financial costs for implementing each of the recommendations for Council's consideration and review. The project recommendations and the status of each are summarized below:

	Recommendations	Status
1	New Garbage and Leaf & Yard Trimmings/Christmas Trees Co-collection System	Implemented in 2007

2	New Blue Box Recyclables and Organics Co-collection System	Implemented single-stream blue box recycling collection in 2006 Organics pilot collection is ongoing
3	Upgraded Facilities	Single-stream blue box processing equipment operational in 2006 Other facility upgrades on-going
4	Selection of Curbside Household Organic Containers	Conducted and selected by the Technical Steering Committee in April 2006
5	Continue to operate and promote: Source Reduction Programs; Reuse Initiatives; Household Hazardous Waste Disposal Services; Home Composting Programs and the Bulky Item Collection Service	Ongoing
6	Generate Electricity with Landfill Gas	Launched in September 2007
7	Continue to lobby the federal and provincial governments to support municipalities with waste management programs with appropriate legislation, funding and fiscal policy	Ongoing
8	Monitor the waste composition regularly to provide feedback on the effectiveness of the overall waste management system and public communication program	Conducted 4 waste audits during the 2007/2008 period Participating in a Provincial Waste Audit - Spring/Summer 2008 Ongoing public communication plan
9	Review additional waste diversion options for the high density residential, multi-type, commercial, institutional and industrial sectors	IC&I Waste Diversion Study - to commence in 2009

This report and the presentation will focus on the implementation and financial costs for a City-wide curbside residential Organic 'Green Cart' program.

## What are Organics?

For this purpose, organics are defined as all food waste; household plants, including potting soil and non-recyclable paper products such as disposable paper cups, napkins and plates; waxed paper and cardboard; soiled newsprint; freezer paper; flour, sugar, salt and popcorn paper bags and ice cream paper cartons.

## Organic Pilot Project and Waste Audit

Approximately 1110 homes were selected to participate in the pilot project. The pilot project was conducted for a number of reasons.

Firstly, it was necessary to determine any issues with the approved collection containers and liners. The 'Kitchen Collector' was provided to the resident as a convenient indoor storage unit, and sized small enough to fit under the kitchen sink.

The 'Green Cart' curbside container design was easy to use for both the resident and the waste collector. One important feature of the cart was its ability to be bear and pest resistant, especially in rural areas. The Ministry of Natural Resources supports this cart, noting that if the secure latching lid is used properly, residents should not experience difficulties.

Various liner bags were provided to contain the organics in the 'Kitchen Collector'. Liner bags are an important feature to both the resident and the collector. They contain the wet organics in the kitchen collector and reduce the requirement to wash the container by the resident. Once the liner bags are full, they are tied/closed and placed in the 'Green Cart' which keeps the cart cleaner and contains odours. They also reduce the chance of the organics freezing in the 'Green Cart' and in the collection vehicle.

Secondly, it provided an opportunity to test our outdoor 'Windrow' composting method and potential operational issues such as contamination, testing various quantities and the application of bulking agents to balance the carbon and nitrogen mixture, determining the impact of various liner bags, potential odour problems and most importantly determining whether the process would produce an unrestricted product as defined by the Ministry of the Environment.

The processing was conducted within an area at the Sudbury Landfill Site, where on-site equipment and staff could be used to monitor the program. Odours were controlled effectively with the proper mixture of on-site wood chips and the small quantity of contamination was easily removed by the attendants at the initial dumping stage and again during final screening. It was during the processing stage, that the breakdown of liner bags was evaluated and plastic bags were disqualified and only compostable plastic bags certified with the organic biodegradable logo were approved.

Thirdly, the pilot project identified areas where education was required to improve organic quality (e.g. remind residents to remove plastics) and areas where additional information on what could actually be included in the program (e.g. include meats and dairy products).

Lastly, the pilot project was very useful to identify the anticipated participation rate and the amount recycled from the program and what quantities could actually be recycled from the current household garbage stream.

The pilot households generated 110 tonnes of organics at a 41% participation rate. Using this rate, staff estimates that a city-wide program would divert a minimum of 5,700 tonnes in the first year. New programs typically start with low participation and recycling rates. Over time, rates increase as residents become more educated and accept that very little effort is required to participate. Based on blue box increases in the first few years, staff estimates that the amount recycled will increase by 15% in year 2 (to 6600 tonnes) and an additional 15% in year 3 (to 7600 tonnes).

The waste audit process (a process whereby all waste streams from a number of households are sorted and analyzed), identified that the actual participating households recycling rates were closer

to 4.8 kilograms of material per household per week. This translates to 250 kilograms per household per year or approximately 14,000 tonnes per year City-wide. The waste audit also revealed that an additional 1.6 kilograms per household per week could have been diverted. Of the 1.6 kg placed in the garbage stream, soiled paper products, meat and bones were the most commonly noted materials that could have been placed in the 'Green Cart'. A city-wide program based on full participation and a 100% capture rate could then divert up to 19,000 tonnes per year.

## **Proposed City-wide Residential Organics 'Green Cart' Program**

### **City-wide Residential Organic Curbside Containers, Sample Liners, Initial Educational Materials and Implementation Staff**

A Norseman 'Green Cart' and the 'Kitchen Collector' would be provided to each low-density residential home on a curbside collection route. The 'Green Cart' and the 'Kitchen Collector' are valued at approximately \$15 and \$5, respectively. A specifically designed educational kit would be produced and one sample compostable plastic bag box would be placed in the 'Green Cart' and the equipment and material distributed at an estimated cost of \$5 per container. Residents would be required to provide their own liner bags.

The estimated cost to implement the new program, including the temporary staff required for this initiative is \$1.72 million. This would be a one time investment and it would be funded from the Capital Financing Reserve Fund - Solid Waste.

### **City-wide Residential Organic Curbside Collection Services**

Weekly collection would be provided to low-density residential units on a curbside collection program. The co-collection vehicles currently collecting residential blue box recyclables would now also collect the organic waste in one of the two compartments.

The additional collection costs are relatively low, since the vehicles are already collecting blue box materials.

The estimated annual cost to collect in 2009 would be \$144,000. This rate is based on a per household tendered cost and would fluctuate annually based on the Canadata Cost Index and fuel prices.

### **City-wide Residential Organic Curbside Processing Services**

The blue box recyclables and organics co-collection vehicles would continue to deliver the mixed blue box materials to the Recycling Centre and would then drive a few kilometres to deliver the organics to the designated processing site within the Sudbury Landfill. The proven and relatively low cost outdoor 'Windrow' Composting method would continued to be used to produce a high quality material.

The annual cost to process the estimated quantity of 5,720 tonnes is anticipated to be \$159,000. This rate is based on a per tonne rate provided by the current operator at the Sudbury Landfill and would fluctuate based on actual quantities processed and annual Canadata Cost Index increases.

## **City-wide Residential Organic Miscellaneous Services**

Allowance for replacement containers, temporary staff hours, and the annual compost giveaway would also be required in the base budget commencing in Year 2 of the program. The annual cost for these miscellaneous items is estimated at \$41,000. The Solid Waste Advisory Committee felt very strongly that replacement containers be provided at no charge and that educational efforts be increased to ensure the success of the program. It was also discussed that staff ensure that the approved compostable liners become available for sale at numerous outlets within Greater Sudbury.

To recap, the total estimated annualized cost to implement the residential 'Green Cart' organic program is:

Year 1 - \$303,000; Year 2 - \$352,000; and Year 3 - \$384,000.

## **Benefits of Organic Composting**

The most significant benefit to composting organic municipal waste is that it lowers our requirement for landfill capacity and preserves existing landfill capacity for other wastes (a value of \$60/tonne). Finished compost is also a valuable soil amendment and when added to soil it can improve current plant growth, reduce soil erosion and nutrient runoff, alleviate soil compaction, and help soil retain water. Compost can also reduce the need for artificial fertilizers, which require natural gas to produce certain materials, can result in water contamination, can deplete soil health and produce greenhouse gases during tillage.

Although home composting would continue to be encouraged, homeowners would now have two options available to them. Backyard composters could continue to be used and then the 'Green Cart' could be used for dairy products, oils and fatty foods, meat and fish and the non-recyclable paper products.

## **Implementation of a City-wide Residential Organic Program**

The following steps would be completed if and when the City-wide program is approved:

1. Notify the pilot project participants regarding service levels. The cost to continue this service is estimated at \$28,200 per month. This cost would be funded from either the remaining capital funds allocated for the project or the Solid Waste Reserve Fund.
2. Hire temporary staff to oversee program development, implementation and additional pilot projects as part of the Industrial, Commercial & Institutional Waste Diversion Study.
3. Submit the Ministry of the Environment Certificate of Approval amendments for a permanent organics processing site at the Sudbury Landfill Site. The commencement of the City-wide program would be conditional on receiving this amendment.
4. Order approved collection containers and the sample compostable bags to be provided during launch.
5. Organize the distribution outlets for replacement compostable bags based on pilot project results.
6. Develop and produce the educational materials.



7. Distribute equipment and educational materials.
8. Update Waste Management By-law.
9. Review additional processing methods as approved in the 2008 Capital Budget.
10. Review an organics program for the IC&I sector as part of the IC&I Waste Diversion Study.

## Financial Implications

Approval of either option would require the City to purchase and distribute the collection container kits ('Green Cart', 'Kitchen Collector', sample liner bags, education material etc.) for all households at a cost of \$1.72 million. This one-time cost would be funded from the Capital Financing Reserve Fund - Solid Waste.

Option #1 - Implement program with a target commencement date of mid 2009 would allow the program to be expedited for approval by the Ministry of the Environment. The monthly charge to provide the residential service City-wide would be \$25,250 per month and would be incorporated into the 2009 operating budget (6 months - \$151,500). The pilot project serving the 1,110 households and nine IC&I locations at \$25,000 and \$3,200 per month respectively, would continue to be funded from the reserve until mid 2009.

Option #2 - Delay the decision to the 2009 Budget process would delay the approval by the MOE and the earliest estimated date that the program could be initiated is expected to be late 2009 or early 2010. This would require the continuation of the pilot project serving 1,110 households and nine IC&I locations at \$25,000 and \$3,200 per month respectively funded from the reserve until the MOE approval was secured.

The cost difference between the options is minimal, but the service would essentially be provided to an additional 55,000 households, 3 to 6 months sooner if Option #1 is approved.

Recap of Financial Implications:

<u>2008</u>	Option 1	Option 2
Continue Pilot – July to December 2008	\$169,200	\$169,200

It is recommended that the extension of the pilot be funded from the Capital Financing Reserve Fund - Solid Waste.

<u>2009</u>	Option 1	Option 2
Continue Pilot from January to June 2009	\$169,200	\$169,200
Continue Pilot from July to December 2009	<u>\$0</u>	<u>\$169,200</u>
	\$169,200	\$338,400
City Wide Service (July to December 2009)	<u>\$151,500</u>	<u>\$0</u>
Total 2009 Operating Costs	<u>\$320,700</u>	<u>\$338,400</u>

Financed as follows:

Solid Waste Reserve Fund	<u>\$338.400</u>	<u>\$338.400</u>
Tax Levy	<u>\$151.500</u>	<u>\$169.200</u>
2009 Tax Levy Increase	0.08%	0.08%
Annualized Tax Levy Increase	0.2%	0.2%

Historically, the City's process encourages service enhancement decisions to be delayed to budget. However, since there is a service level enhancement and a savings of \$17,700 by proceeding with the City Wide implementation at this time, it is recommended that Option 1 be approved.

The estimated savings may not materialize if there are Ministry of Environment delays.

## Recommendation

Two options are being presented for Council's consideration and direction.

Option #1 is being recommended by staff and the Solid Waste Advisory Panel and recommends that a city-wide residential organics program be implemented as per the General Manager of Infrastructure's report dated June 9, 2008.

Option #2 provides for Option #1 to be referred to the 2009 Budget as an enhancement option.