To: Chair and Members
Public Works Committee

From: Scott Stewart, C.E.T.
General Manager
Public Works Department

Date: May 14, 2007

Re: Green Cart Program, Biodegradable Bags and Changes in the Materials Collected in the Demonstration Areas - (PW07075) - (City Wide)

Information:

Given that a year has passed since the roll-out of the source separated organics program (the Green Cart Program), this report is intended to provide Council with information on the status of the Green Cart Program. In addition to the program update, consideration will be given to the issue of biodegradable bags in the system, alternatives to biodegradable bags, and changes to the materials collected in the demonstration areas.

Green Cart Program - Update

The Green Cart Program was launched in April of 2006 with the distribution of carts, mini bins and communication materials to all residents receiving curbside waste collection, between April and late June. Approximately 150,000 Green Carts were delivered, resulting in about 155,000 carts in the system including the demonstration areas that have been on the program since 2002 and 2004. The residential diversion rate in 2006 was 40%, up significantly from 30% in 2005.

Residents are able to set out their Green Carts weekly. Carts can be topped up with leaf and yard waste and in 2006 residents could set out an additional container/bundle of leaf and yard waste with their Green Cart every week, in addition to the separate seasonal bi-weekly leaf and yard waste collection. As of April 2007, residents can set out two containers/bundles of leaf and yard waste with their Green Carts and seasonal leaf and yard waste collection has been extended.

From June to December 2006, over 24,000 tonnes of source separated material was received at the Central Composting Facility (CCF), exceeding our budgeted projection of 20,000 tonnes. The incoming material was clean and the residue rate was less than 2%. The end product met the Canadian Council of Ministers of the Environment (CCME) guidelines for unrestricted Class A compost. The end product was suitable for sale at a
good value and the operator, Aim Environmental Group has received testimonials from the marketplace on the high quality of the material.

**Biodegradable Plastic Bag Products**

A number of Council members have contacted us or referred letters and e-mails from residents to us concerning the use of biodegradable plastic bags. Biodegradable plastic bags are not permitted in the Green Cart program. Biodegradable plastic bags, plastic grocery bags and plastic waste bags are made in a variety of colours that cannot be distinguished from one another by either waste collectors or residents who see their neighbours setting out waste materials. Other municipalities have tried to specify particular biodegradable bag products however receive a variety of plastic and biodegradable products with high levels of plastic contamination. As such the Green Cart program is presently a “no plastic or plastic look-a-like” program as shown on the 2007-2008 waste collection calendar.

Most biodegradable plastic bags contain some resin content and are not completely compostable or biodegradable. The Central Composting Facility was not designed to break and process bags.

The degradation time for most biodegradable plastic bags is up to eleven weeks under aerobic (aerated) conditions. The composting time at the Central Composting Facility is about six weeks. The residue left by the incomplete composting process and the knotted ends of the bags that do not break down in the process is screened at the end of the process but small bits of plastic remain in the finished product.

A Composting Council of Canada survey shows a municipal trend away from plastic bags. The Regional Municipality of Niagara recently approved the ban of plastic bags from their leaf and yard waste program in 2008 and from the household organic program in 2009.

Hamilton’s CCF received and processed 7,322 tonnes of source separated organics from York Region from January to March 2007. The program in York accepts plastic and biodegradable bags and had a residue rate in excess of 50%. The processing, disposal and marketing of the York Region material was managed entirely by Aim Environmental Group.

York Region and the cities of Toronto and Guelph are the only large municipalities continuing to accept plastic in their source separated organics programs.

There are written testimonials from the markets buying the compost from the CCF operator confirming that the quality is good and should not be compromised by plastic including diapers and sanitary products, as well as pet waste. This will be discussed further under Changes to the Materials Collected in the Demonstration Areas.

However it is recognized that the use of biodegradable and compostable bags would likely have benefits to diversion, particularly when the program is delivered to the multi-residential sector. Staff will continue to investigate options that may be acceptable in the CCF composting process through a number of trial runs over a period of time.

The findings on the use of plastic and biodegradable bags were discussed with the Solid Waste Management Master Plan (SWMMP) Steering Committee at their meeting on May 10, 2007. The Committee passed a motion that the City continue the ban on Plastic and Biodegradable Bags within the Green Cart Program.
Alternatives and Green Cart Use

There are options available for use in both the mini bin in the kitchen and in the Green Cart that do not require plastic or biodegradable plastic bags. It is not necessary for either the mini bin or the Green Cart to be lined.

A kraft paper liner bag with a vegetable lining was included in the Green Cart communication package as an example of the alternatives to plastic. The manufacturer of the liner bag that was used in the program roll-out has recently introduced a series of different shaped bags that fit into a variety of container sizes. In addition, another product made of boxboard (like cracker or cereal boxes) is available in different sizes. However, many residents have told us that they use nothing to line their Green Cart and perhaps a sheet or two of newspaper, paper lunch bags, some paper towelling or a cereal or cracker box in the mini bin.

Newspaper, some leaf and yard waste or a leaf and yard waste bag can be used to wrap or layer household organic waste in the Green Cart.

With summer on the horizon, there will be concerns about vermin such as maggots. There are a number of options to deal with these concerns.

In the summer, it is advisable to wash carts regularly using a mild detergent. Carts may be lined with a leaf and yard waste bag. Alternatively, testimonials have been received from residents stating that materials wrapped tightly in a couple of sheets of newspapers can be placed in the Green Cart without any evidence of maggots. In addition to tightly wrapping organic waste materials in newspapers, waste materials can be sprinkled with baking soda or white vinegar (only white as most others have some sugar content). It is also suggested that bones and scraps from meat and fish may be frozen and put in the Green Cart near the time of collection.

Bungee cords and heavy objects continue to keep racoons and squirrels out of Green Carts.

Residents have been very resourceful in finding ways of minimizing nuisances and staff will continue to share these on the FAQ section of the website at [www.hamilton.ca/waste](http://www.hamilton.ca/waste).

Changes to the Materials Collected in the Demonstration Areas

The organic material collected in the Green Cart demonstration areas (4,300 residences) differs from the materials included in the City wide launch. Council may recall that the demonstration area materials included diapers, sanitary products and pet waste. Based on the results of the last year, these materials will be removed from the demonstration area program early in June this year.

The demonstration area material was previously processed by Compost Management Inc. and is now being received at the CCF and is posing operational problems. Aim Environmental Group has been keeping the material separate from the City wide material, but quantities are small because of the number of households and there is not enough material to effectively and efficiently warrant the use of a separated tunnel. In addition, the residue rate in the demonstration area is approximately 12% compared to the 2% residue in the City wide program.
At the same time, the end markets have indicated that they are not prepared to accept finished compost with any fecal and plastic content. Other lower value markets would have to be sought for this end product.

Therefore, to facilitate the composting operation and maintain a high value end product, diapers, sanitary products and pet waste are being removed from the demonstration areas. Residents will be notified by letter and will be provided with the communication package used in the Green Cart full roll-out.

Conclusions

In conclusion, the Green Cart Program is proving to be a successful diversion program and the quality of the material is meeting high standards. Changes in the demonstration areas will equalize service across the City and improve the processing efficiency.

The success of the organics composting program in Hamilton is largely due to the quality of the material collected at the curb, largely a result of the “no plastics or plastic look-a-likes” products in the Green Cart. The City is viewed by a number of our peer municipalities as leaders in this area. This program helps us toward our goal of 65% waste diversion to preserve landfill capacity.

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