



STAFF REPORT ACTION REQUIRED

Long Term Waste Management Strategy

Date:	March 1, 2013
To:	Public Works and Infrastructure Committee
From:	General Manager, Solid Waste Management Services
Wards:	All
Reference Number:	P:\2013\Cluster B\SWM\March\003PW (AFS #14891)

SUMMARY

This report addresses City Council's request for a follow-up report on the plan to get to 70% Solid Waste Diversion by 2010. The report provides a summary of the status of the 70% plan initiatives; an explanation of why 70% has not been achieved; and, describes the plans for moving forward on diversion initiatives in 2013 including the development of a Long Term Waste Management Strategy.

Solid Waste Management Services staff will develop the Long Term Waste Management Strategy, in consultation with community stakeholders. The Long Term Waste Management Strategy will recommend waste management policies and programs, including the management of post diversion residual waste, which are environmentally sustainable and economically viable. Staff will provide regular updates to Public Works and Infrastructure Committee on the development of the Long Term Waste Management Strategy. Ultimately, staff will also bring forward to City Council a final report on the findings once the Long Term Waste Management Strategy has been completed.

In 2013, staff will continue to proceed with numerous source separation initiatives as originally identified in the Target 70 plan, such as focusing on the source separated organics rollout in the multi-residential sector and schools, while concurrently developing the Long Term Waste Management Strategy.

RECOMMENDATIONS

The General Manager, Solid Waste Management Services, recommends that:

1. Solid Waste Management Services report back to the Public Works and Infrastructure Committee with updates on development of the Long Term Waste Management Strategy. The first update will be on the cost of the consultant and the study timelines.

Financial Impact

Funding for the hiring of a consultant to develop a Long Term Waste Management Strategy has been provided for in the approved 2013 Capital Budget of Solid Waste Management Services under the project Mechanical and Biological Treatment Facility/Solid Waste Management Master Plan (Account CSW013-01-01).

The implementation of the initiatives described in this report will not have any incremental financial impacts as they have already been incorporated and will be accommodated in the approved 2013 Operating and Capital Budgets of Solid Waste Management Services.

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

DECISION HISTORY

At its meeting of June 19, 20 and 22, 2007, City Council adopted the recommendations in EX9.1 entitled “Proposed Initiatives and Financing Model to Get to 70% Solid Waste Diversion by 2010”, as amended.

<http://www.toronto.ca/legdocs/mmis/2007/cc/decisions/2007-06-19-cc10-dd.pdf>

At its meeting of November 29, 30 and December 1, 2011, City Council requested the Acting General Manager of Solid Waste Management Services in consultation with the Deputy City Manager and Chief Financial Officer to report to the Public Works and Infrastructure Committee and the Budget Committee prior to the 2013 Budget Process to reconfirm City Council’s commitment to continue with the 70% Waste Diversion Program and to recommend a supporting Multi-Year Rate Strategy; and to report on a complete financial assessment regarding the viability of proceeding with the Mechanical and Biological Treatment Facility including how this facility will impact the Multi-Year Strategic Plan for Solid Waste Management Services.

<http://app.toronto.ca/tmmis/viewPublishedReport.do?function=getCouncilDecisionDocumentReport&meetingId=4422>

At its meeting of November 27, 28 and 29, 2012, City Council requested the General Manager of Solid Waste Management Services in consultation with the Deputy City Manager and Chief Financial Officer to report to the Public Works and Infrastructure Committee and the Budget Committee early in 2013 to reconfirm City Council's commitment to continue with the 70% waste diversion program and to recommend a supporting multi-year rate strategy.

At its meeting of November 27, 28 and 29, 2012, City Council also requested the General Manager of Solid Waste Management Services to "report to the Public Works and Infrastructure Committee in February 2013 on the Division's Plan for implementing the green bin program in multi-residential buildings for 2013" and "in consultation with the Director of Facilities Management, to develop a plan to implement green bin and recycling programs for City owned facilities beginning in 2013 and report to the Public Works and Infrastructure Committee in the First Quarter of 2013."

<http://app.toronto.ca/tmmis/viewPublishedReport.do?function=getCouncilDecisionDocumentReport&meetingId=5668>

ISSUE BACKGROUND

The Getting to 70% Diversion Plan approved by City Council in 2007 set a goal of 70% residential waste diversion by 2010. The residential diversion rate in 2011 stood at 49%. This report addresses City Council's request for a follow-up report on the 70% waste diversion program.

It is important to note that the initial Target 70 report to Council in 2007 only focused on residential waste and diversion. Residential waste only accounts for 53% of the waste that the City delivers to Green Lane Landfill. The other 47% comes from Agencies, Boards, Commissions and Divisions, schools, commercial establishments, institutions, commercial paid tonnes at transfer stations, paid private tonnes at Green Lane Landfill and other municipalities' waste also accepted at Green Lane Landfill.

COMMENTS

Target 70% Plan Initiatives - 2007

The Getting to 70% Diversion Plan approved by City Council in 2007 included a number of recommended programs and initiatives necessary to achieve a goal of 70% diversion by 2010. These initiatives were as follows:

1. Source Reduction Initiatives;
2. Green Bin Organics in Apartments/Condos;
3. Behavioural Change through Financial Incentives;
4. Enforcement of Mandatory Diversion By-law;
5. New Materials for Recycling;
6. Improved Recycling Capacity;

7. Reuse/Disassembly of Durable Goods for Recycling;
8. Townhouse Collection;
9. Biological/Physical Processing of Mixed Waste.

All of these initiatives had and continue to have a large educational component to them in an effort to effect positive behavioural change.

1. Source Reduction Initiatives

- A By-law requiring all retailers in the City to charge customers a minimum of five cents per plastic retail shopping bag was introduced in June 2009. Based on single-family waste composition audits, there was a reduction of 53% in plastic retail bag generation between 2008 (prior to implementation of the By-law) and 2011. This equates to a reduction of 240 million plastic bags annually or 1,460 tonnes of plastic. In June 2012, City Council repealed the five cent charge. As per City Council direction, staff will be reporting in June 2013 on “the benefits and implications of a range of measures to reduce the use and disposal of plastic bags in Toronto.”
- The sale and distribution of bottled water has been discontinued at Civic Centres and many City facilities.
- Advertising campaigns aimed at changing the purchasing behaviour of residents to reduce waste (e.g., encouraging the use of reusable mugs for coffee and water) have been implemented. Between 2009 and 2012, Solid Waste Management Services conducted a communications campaign to encourage reuse. This included newspaper ads, outdoor posters, transit shelter ads and feature pages in the single-family and multi-residential collection calendars.
- The City has requested the Province to make changes to the Waste Diversion Act to mandate Extended Producer Responsibility which would make producers responsible for the waste impact of a product until its final disposal. Since the producers would be paying for everything that is generated, there would be an incentive for them to reduce packaging. The Province has postponed a decision on the Waste Diversion Act review without any timeline on when they will revisit this matter. Staff are continuing discussions with the Province and the industry to work towards a goal of Extended Producer Responsibility.

2. Green Bin Organics and Other Diversion Initiatives in Multi-residential Buildings

- Over 80% of city-serviced multi-residential buildings have been invited to participate in the Green Bin Organics Program. There are currently 1,005 buildings (144,000 units) on the Green Bin Program. Staff are currently working with the remaining 3,575 buildings (294,000 units) to implement the program.
- All newly constructed buildings are brought on to the program at start of collection services.
- The development of the 3Rs Ambassador Volunteer Program which trains volunteers to teach neighbours in their own building about the 3Rs. Approximately 180 ambassadors have been trained so far.
- Numerous Multi-residential Waste Reduction Workshops for property managers and owners have been carried out.
- Staff have mailed out thousands of the Waste Diversion Handbook for property managers and owners.
- Recycling Calendars have been delivered to all multi-residential residents.
- Ad campaigns encouraging multi-residential waste diversion including print, outdoor transit posters, digital subway and building lobby screens, radio, online and direct mail.
- New diversion posters, information cards, stickers etc. have been developed to be used in buildings.
- The launch of Waste Wizard, an on-line search tool to learn how to properly recycle and dispose of used items (also applicable for single-family homes).

3. Behavioural Change through Financial Incentives

- In 2008, a volume-based rate structure for residential solid waste services was implemented to provide residents with a financial incentive to reduce the amount of waste they dispose. This included the volume-based system for multi-residential customers which took effect in July 2008 and the cart system for single-family homes which took effect in November 2008.
- It is estimated that the volume-based rate structure has been responsible for the largest part of a customer's behavioural change.

4. Enforcement of Mandatory Diversion By-law

- The volume-based rate structure for waste and other waste diversion initiatives created the necessary incentive and behavioural change for single-family residents to maximize use of their Blue Bins and Green Bins. Therefore, there has been very little need for the enforcement of the mandatory diversion By-law. The participation rates (percentage of residents setting out their bin for collection) for single-family homes in the Blue Bin and Green Bin Programs are 96% and 89% respectively. The capture rates (the % of requested material found in the right bin) is also high at 91% and 80% respectively for the Blue Bin and Green Bin programs.
- Four Municipal Licensing and Standards By-law Officers were hired and formed the Diversion 70 Team to enforce mandatory diversion in the multi-residential sector. These officers check to ensure that property managers are providing adequate recycling services for the residences and that the recycling bins are relatively contaminant free. For example, during the period April 1, 2011 to July 23, 2012, 3,401 buildings were inspected by Municipal Licensing and Standards By-law Officers with 80 notices of violation and eight (8) verbal warnings issued.

5. New Materials for Recycling

- Foam polystyrene and plastic grocery bags were added to the Blue Bin Recycling Program in 2008.
- Mixed rigid plastics such as clamshell containers, clear fruit and vegetable containers, clear takeout food containers and moulded bakery item trays were added to the Blue Bin Program in September 2012.
- Carpets were added to the durable goods recycling program in September 2012 as a pilot project.

6. Improved Recycling Capacity

- Replacement of Blue Boxes with larger Blue Recycling Carts to increase recycling container capacity for households was implemented in 2008. Four different sizes of carts were offered to residents. Sizes ranged from small which has the equivalent capacity of one standard Blue Box used in the former collection system to extra large which is equivalent to six Blue Boxes.
- A total of 370,000 in-unit recycling containers have been provided to residents in multi-residential buildings to increase the recovery of recyclable materials.

7. Reuse/Disassembly of Durable Goods for Recycling

- Separate collection of durable goods that can be recycled has been implemented for all single-family homes and multi-residential buildings. Residents can set out mattresses and box springs, metal bed frames/sofa beds, large plastic items, clean wood, carpets and toilets, which are then taken to the City's reuse centre where they are disassembled if required and then sent to recycling markets, where feasible.
- Separate collection of electronics for recycling is also available to all single-family households and multi-residential buildings in the City. The City has provided plastic E-waste bags to single-family residences and small apartment buildings to set out their smaller electronic items. Larger buildings were offered E-waste boxes for use in a central area of the buildings for residents to use.

8. Townhouse Collection

- Townhouses and other locations were previously on pile collection (residents had to bring their material to a central area). Townhouses now receive curbside collection, making Blue Bin recycling and Green Bin collection more convenient. This represents approximately 6,000 townhouse units and 1,500 other pile locations.

9. Biological/Physical Processing of Mixed Waste

- Biological/Physical Processing commonly known as Mechanical Biological Treatment uses a mechanical and biological processing technology to process residual waste. The primary feedstock for this technology is from the high organic content of the multi-residential sector waste.
- The concept of Mechanical Biological Treatment is new in Canada. The concept is to re-sort the residual waste that comes to the landfill into recyclables, organics and inert waste. The recyclable material is then sorted and sold to market; and, the organics are digested biologically to reduce the volume, produce methane gas that can potentially be used for energy generation, and produce a residual compost that has the potential to reduce the volume of organics going into the landfill.
- In 2012, consultants were retained to assess the financial viability of a Mechanical Biological Treatment facility. Their report will be completed in April 2013 but their initial conclusions indicate that there are many potential risks to the City associated with proceeding with a Mechanical Biological Treatment facility at this time.

Impact to Date of Target 70% Initiatives on Residential Diversion

In 2011, over 390,000 tonnes of residential waste was diverted from landfill. This represents a residential diversion rate of 49%. The rate of 49% is a combined diversion rate for single-family and multi-family residences only and does not include other waste producers or sectors. The actual 2011 diversion rate is 64% for single-family residential and 20% for multi-residential, diversion for multi-residential for 2012 is anticipated to be 25%. Table 1, below shows a detailed breakdown by program.

Table 1 – 2011 Residential Waste Diversion

	Tonnes
Blue Bin Program	146,538
Leaf/yard/Christmas trees	84,297
Backyard Composting	18,970
Green Bin SSO	100,663
Environment Days/Depots	2,713
Large Appliances/Scrap Metal	3,641
Grass Recycling	17,116
Household Hazardous Waste	1,544
Electronics	1,719
Deposit Return and Stewardship Program	14,409
Diversion in Tonnes	391,610
Waste	408,202
Diversion and Waste	799,812
Diversion in %	49%

The overall residential diversion rate has increased from 42% in 2007 to 49% in 2011. This is comprised of increases from 59% to 64% for single-family residential and 13% to 20% for multi-residential.

The Getting to 70% Diversion report done in 2007 projected a residential diversion rate of 72% by 2011, and projected a diversion rate percentage increase by initiative. It is difficult to individually measure the diversion impact of each initiative as various initiatives were interrelated (e.g., in-unit recycling containers, multi-residential education initiatives, the volume-based rate structure and mandatory diversion By-law would all have been contributing factors to an increase in multi-residential recycling). While the diversion rate of 49% clearly fell short of the target, increased diversion from the initiatives that were implemented since 2007 has extended the life of the Green Lane Landfill by approximately three years, from the original estimate of 2026 to the current estimate of 2029.

Cost of 70% Diversion Plan to Date

The cost to implement the Target 70% diversion initiatives up to 2011, and increase the diversion rate from 42% in 2007 to 49% in 2011 has been \$92 million in operating expenditures and \$164 million in capital expenditures (including commitments) for a total spending amount of \$256 million.

Capital spending includes projects such as the new curb-side waste and recycling bins in the amount of \$55.8 million, Disco Source Separated Organics Facility - \$83 million and Dufferin Source Separated Organics Facility - \$14 million.

Operating initiatives over the last four (4) years included increased spending for communication and education of waste diversion programs, By-law enforcement of waste diversion, enhanced collection of durable goods, bulky items, household hazardous waste and electronics, townhouse collection and processing of durable goods, single stream recyclable materials and source separated organics. Also included in the operating expenditures is Solid Waste Management's contribution to the Waste Management Reserve Fund to fund future waste diversion facilities, thereby reducing reliance of debt funding in the future.

Why 70% Diversion Was Not Achieved?

There are several main reasons the 70% target was not achieved. They include:

1. Optimistic Targets Fell Short

Some of the initiatives, specifically the switch to Recycling Carts, the volume-based rate structure and curb-side townhouse collection were fully and successfully implemented; however, they did not achieve the diversion results originally anticipated. For example, even with the implementation of these initiatives, the tonnes of Blue Bin recyclables collected only increased by 3% from 2007 to 2011.

2. Light Weighting of Packaging and Reduction in Overall Waste Produced

Light weighting of packaging, plastics replacing heavier containers such as glass and the significant decline in newspapers due to the internet have resulted in less tonnes (which diversion is measured by) than anticipated. A study conducted for the City by Kelleher Environmental forecasts a 15% reduction in printed paper and packaging generation over the next ten years. One of the reasons for this is changes to the printed paper and packaging waste stream.

This trend in packaging is corroborated through our waste audits which show a significant reduction in newspapers and packaging generation from 2007 to 2011. For example, based on single-family waste audits, there was a 26% decrease in the per household generation of newspapers during this period.

Waste diversion in the Province is calculated based on weight; however, this does not reflect the fact that municipalities are managing more units of packaging to divert a tonne of recyclables. If packaging weights and the volume of paper had remained the same, the diversion rate would be much higher. Single Family Residential would be over 70% and multi-residential would probably be closer to 30 or 35%. A new performance metric to measure waste diversion is needed to acknowledge the first two Rs, reduction and reuse. For example, light weighting of packaging results in less waste being generated; however, this is not reflected in diversion calculations in the Province.

3. Delays in Various Program Initiatives

Target 70 programs that have been delayed or only partially implemented include the following:

- Implementation of Green Bin organics collection in apartments and condominiums has been delayed due to insufficient source separated organics processing capacity.
- Indoor recycling carts have not been provided to all multi-residential property managers to place in different areas of the building such as laundry rooms, different parking levels, the mailroom and other common areas, due to the fact that many of the property managers have not developed processes to manage these carts.
- Proposals for source reduction initiatives for hot drink cups and take-out food packaging are on hold or were delayed pending the Waste Diversion Act review process. While plastic takeout food containers were recently added to the Blue Bin program, there are still marketing and processing challenges that staff are working on before the City can consider the addition of coffee cups to the Blue Bin program. These include the variation in the types of materials used to make the cups as well as the fact that the lids are usually made of plastic.
- The disassembly of certain items such as padded furniture proved to be too labour intensive and cost prohibitive to recycle. Staff did try a system where charities involved in reuse could cull through durable goods that were collected but they found practically all the items were not in good enough condition for their reuse operations. Staff have also not been able to find a reliable market for materials such as unclean wood.
- Plastic film such as rinsed milk pouches and outer bags; bread, sandwich and bulk food bags; and overwrap for toilet tissues and paper towels have not been added to the Blue Bin Program as there are issues related to long term, stable recycling markets for this material.

4. Mechanical Biological Treatment Not Constructed

A Mechanical Biological Treatment Facility to recover resources from mixed residential waste was not constructed, due to many risk factors below that have yet to be resolved:

- The primary feedstock for any potential Mechanical Biological Treatment is the multi-residential waste which is very high in organic material. In 2011, multi-residential diversion was 20%. If the City is able to get the multi-residential sector to 65% or 70%, then the Mechanical Biological Treatment Facility would be redundant and inefficient.
- An important consideration and criteria in proceeding with Mechanical Biological Treatment was that it would qualify as diversion as defined by the Ministry of Environment. Due to the variability of the mixed waste feedstock and the quality of the materials produced from Mechanical Biological Treatment processing, the finished compost is of poorer quality than from other feed stocks, such as leaf and yard waste or the Green Bin Program, and is classified as Class B compost.
- Class B compost was recently approved by the Ministry of the Environment but can only be land applied for restricted beneficial use. The viability of Mechanical Biological Treatment is subject to being able to find beneficial use markets for the Class B compost. Without markets, the compost produced would have to be land-filled.

Moving Forward on Diversion Initiatives - 2013

There are numerous initiatives that staff will continue to develop and implement throughout 2013 and beyond, as well as new initiatives, to not only achieve Target 70% for the residential sector, but also address the lack of attention to the other waste generators in the City and at Green Lane Landfill. They are:

1. An enhanced, more aggressive strategy for the multi-residential sector now that the issues around processing capacity are well on their way to being addressed;
2. The continuation of the Durable Goods Program;
3. Continuing to look for new ways to sort and bring additional recyclable materials to the market which in turn will allow these materials to be added to the Blue Bin Program;
4. The procurement and roll out of the next generation of Green Bin;
5. Continuing to expand the Source Separated Organics capacity;
6. Continuing to expand the Single Stream Recyclable Materials capacity;

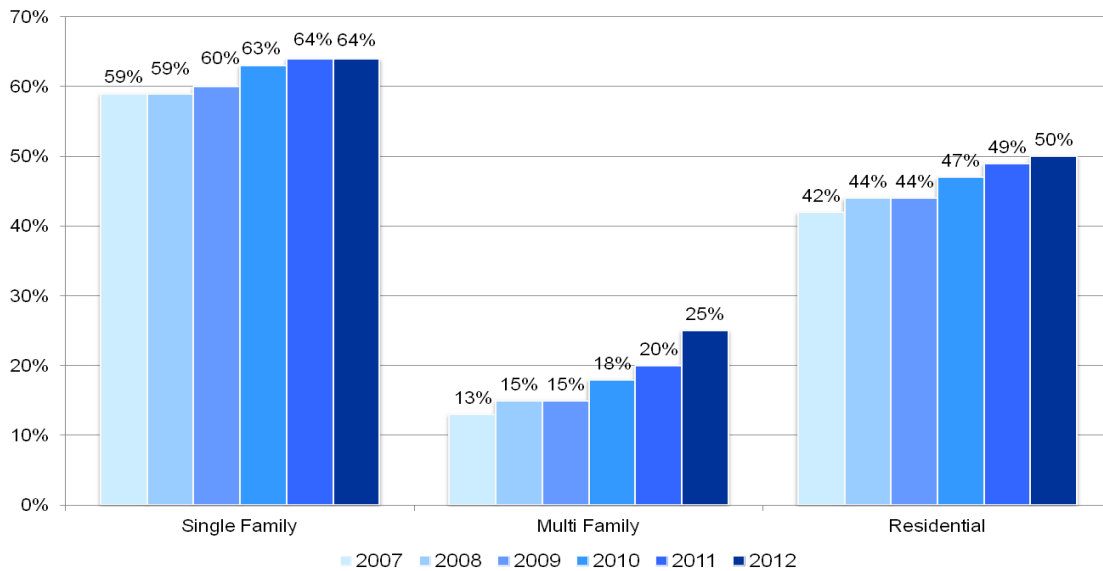
- 7. Focusing on other City waste generators such as schools and Agencies, Boards, Commissions and Divisions, as well as other waste generators at Green Lane Landfill.

1. Multi-Residential Strategy

a) 2013 Diversion Rate

It is projected that the overall residential diversion rate in 2013 will be 52%; 65% single-family residential, 26% multi-residential. Graph 1 below describes the diversion rate since 2007.

Graph 1 – Diversion Rate from 2007 to 2012



b) Waste Audit Data

As indicated earlier in the report, the results of the waste audits conducted in 2010/2011 indicate that participation in the programs by the single-family homes is very high. However, the results of the multi-residential audits reveal that there is significant room for improvement as the capture rate for Blue Bin materials is 42%. In other words, 58% of multi-residential Blue Bin recyclable materials are being put in the garbage.

c) Buildings Opting Out of City Services

Solid Waste Management Services provides waste management services to 4,580 multi-residential buildings. Since implementation of the volume-based rate structure in July 2008, approximately 700 multi-residential buildings have opted out of City collection and arranged for collection by the private sector. The majority of these buildings opted out in

the first few years of the change to a volume-based rate structure primarily due to perceived cost issues.

The number of buildings opting out of City collection has somewhat tapered off. In the last 18 months, a net of 95 buildings have opted out of City collection (117 opted out and 22 returned). The reduction in the rate of buildings terminating City collection can be the result of a change in 2010 to a more simplified rate structure that more accurately reflects the exact volume of waste a building produces, as well as an increased awareness of the many waste diversion services the City offers under its program.

d) Customer Service

In May 2011, Solid Waste Management Services undertook exit interviews with the former multi-residential customers. The research found that aside from cost factors, multi-residential customers preferred the dedicated service representative offered by the private sector. They also indicated that the private firms helped to educate the building staff on how to increase efficiency. Staff have listened to these concerns and are implementing similar tactics in an effort to ensure buildings stay with City services.

Solid Waste Management Services is also undergoing a reorganization that will focus on customer service as its core priority. This includes a dedicated Waste Diversion Implementation team whose primary initial focus will be on increasing multi-residential diversion. Customer Service Representatives will be established and will be responsible for a group of buildings, similar to an account manager for a group of customers. These representatives will conduct site visits to identify ways to improve set out of waste and recycling, audit for contamination in the Blue and Green Bins, and troubleshoot and conduct presentations to building residents. Customer Service Representatives will also work together with property managers to create Waste Reduction Action Plans, monitor their progress and provide ongoing advice on implementing the initiatives identified in the Action Plan.

Additional 3Rs Ambassador Volunteer Coordinators will be hired in order to expand that program. The current Coordinator is managing 180 volunteers and the program has been successful. For example, a 300 unit building in the Etobicoke area has reduced its garbage volume by 21% and increased its recycling volume by 30% due to the Volunteer working together with our Coordinator, and has enhanced recycling convenience and education in the building.

These staffing changes have been accommodated within Solid Waste Management Services 2013 Operating Budget Submission by filling existing vacancies and through redeployment of existing staff.

e) Additional Recycling Containers

In order to increase recycling convenience, staff will be proceeding with offering indoor recycling carts to multi-residential property managers at no charge to place in different

areas of the building such as laundry rooms, different parking levels, the mailroom and other common areas. Funds for this purpose are available in Solid Waste Management Services 2013 Capital Budget.

f) Participation in the Green Bin Organics Program

This section is in response to City Council's directive in November 2012 for the "General Manager, Solid Waste Management Services to report to the Public Works and Infrastructure Committee in February 2013 on the Division's Plan for implementing the Green Bin Program in multi-residential buildings for 2013."

To date, staff have not taken an aggressive approach with all of the City's multi-residential customers to implement the Green Bin Program as the City did not have sufficient Source Separated Organics processing capacity, and not all the buildings were in a position to immediately start collection. Staff have afforded sites the opportunity to review their individual needs, including approved budgets, and future budget requirements to allow appropriate operational changes, including the purchase of collection containers, as required.

Staff have worked in cooperation with our customers to ensure successful implementation, encourage participation and maximize diversion. Staff continues to add multi-residential buildings as they are ready, and upon receipt of the collection containers and delivery of in-unit containers, collection is scheduled.

Section 844-3 (D) of the Municipal Code requires that, in order to be eligible to receive collection services, locations must participate fully in the City's collection of recyclable materials and organic materials. As such, staff will be sending a follow up letter to locations that have been previously invited, but not yet participating. This correspondence will again advise of the program, the City's Municipal Code requirement and an expected timeline for implementation. These letters will be sent in a "phased" approach to ensure sufficient resources are available to provide the necessary one on one support required and ensure collection crews are able to manage the rollout seamlessly.

To support the above implementation requirements, the 2013 Solid Waste Management Services Approved Operating Budget included funding for temporary and permanent staff that will be dedicated to a rollout strategy that will include follow up phone calls to the written correspondence, site visits to provide technical advice, educational materials, presentations to residents and overall support to assist with a successful implementation.

In addition, Solid Waste Management Services is increasing its educational outreach to the City's multi-residential customers. This outreach includes organics workshops and information sessions for property managers that provide overviews of the program and case studies of buildings that have implemented a Source Separated Organics program successfully. In addition, staff are reviewing options for "Fact Sheets" that include improving participation, communication tools available and reminder notices for buildings that are already on the Green Bin Program about how to maintain the program,

how to assist seniors/disabled residents, reduce contamination and further communication tools.

It is anticipated that there will be a total of 2000 multi-residential buildings on the Green Bin Program by the end of 2013 and staff have set a goal of 4000 multi-residential buildings by the end of 2014.

g) Tower Renewal Project

Solid Waste Management Services is also assisting with the Tower Renewal Project, which is testing various ways to improve waste diversion in the multi-residential sector. Different initiatives being tested under the Tower Renewal Project include indoor recycling areas, increased recycling capacity, flyer and signage enhancement, in-unit recycling containers and a 3Rs Ambassador. Results of the various waste diversion initiatives tested are expected soon.

2. Durable Goods Collection

Solid Waste Management Services is examining ways to increase the recovery of durable goods city-wide, such as the recently implemented Carpet Recycling Program. Staff will also continue to monitor potential markets for padded furniture to determine whether this material can be viably recycled at a reasonable cost.

3. Addition of New Materials to the Blue Bin Program

Staff will continue to monitor markets for plastic film such as rinsed milk pouches and outer bags; bread sandwich and bulk food bags; and overwrap for toilet tissues and paper towels. Staff are also monitoring a pilot in the Regional Municipality of Halton. This pilot is being carried out to collect and recycle hot drink cups to determine whether it is possible for them to be recycled.

4. “Next Generation” Green Bin

A Request for Proposals was recently issued for “next generation” single-family Green Bins that potentially have more capacity and can be collected through our automated collection system currently in place for garbage and recycling.

The capacity of these new bins will be approximately 75-90 litres and will replace the current 46 litre bins. This will allow residents and small businesses to maximize the amount of organic material that they are putting in their green bins and will ultimately increase the diversion rate for Source Separated Organics.

The bins will also have a new automated locking mechanism that will unlock when tipped upside down by the automated collection system. This will be more convenient for homeowners and should increase the amount of people willing to use their green bin.

It is expected that Solid Waste Management Services will report to the June 2013 Public Works and Infrastructure Committee meeting on the results of the Request for Proposal. The new bins would likely be rolled out across the City over an 18 month period commencing in late 2013 or early 2014.

5. Source Separated Organics Processing Capacity (Green Bin)

The City currently collects approximately 140,000 tonnes of source separated organics annually. In 2007, City Council decided to fulfil its source separated organics material processing requirements by developing City-owned infrastructure capable of processing 60% - 70% of the estimated ultimate tonnage, and to procure contracts to process the remainder at private facilities. This strategy was designed to address two key risks; risk of service interruptions, and risk of error in forecasting future tonnage.

Collected source separated organics is currently being processed through a combination of the City-owned Dufferin Organics Processing Facility and private processors' facilities. The City-owned Dufferin Organics Processing Facility has been reliably processing source separated organics since the advent of the Green Bin Program in 2002.

Additional capacity is required to process the quantities of source separated organics that will be collected from rolling out the program to the remaining multi-residential buildings and to schools, ABCD's and Charities, Institutions and Religious Organizations. This processing will be achieved by a new source separated organics processing facility at the Disco Road Transfer Station site and expanding the capacity of the existing Dufferin Facility, supplemented by processing at private sector facilities. This will result in the processing of at least 70% of the ultimate estimated tonnage at City-owned facilities and approximately 30% at private sector facilities.

Solid Waste Management Services is planning to expand the source separated organics processing capacity of the Dufferin Facility from 25,000 to 55,000 tonnes per year. Solid Waste Management Services will be issuing procurement calls to design, construct and possibly operate the expanded Dufferin Facility.

Construction of the Disco Road Facility began in the spring of 2011 and commissioning is planned to begin in July 2013 and to be completed in January 2014. As approved by Council, AECOM Canada Ltd. will design, build and operate a facility capable of processing 75,000 tonnes per year of source separated organics (base tonnage plus an additional 15,000 tonnes per year of contingency capacity).

6. Single Stream Recyclable Materials Processing Capacity (Blue Bin)

City collection programs currently generate single stream recyclable materials or Blue Bin material, at a rate of approximately 210,000 tonnes per year. Tonnage and composition of the single stream recyclable materials will change in the future in response to changes in packaging materials and the addition of new materials to the Blue Bin program as recycling markets become available.

Beginning in April 2013, the City’s single stream recyclable materials processing capacity requirements will be satisfied by two facilities; the City-owned Dufferin Material Recovery Facility and Canada Fibres Ltd.’s new Material Recovery Facility in Toronto.

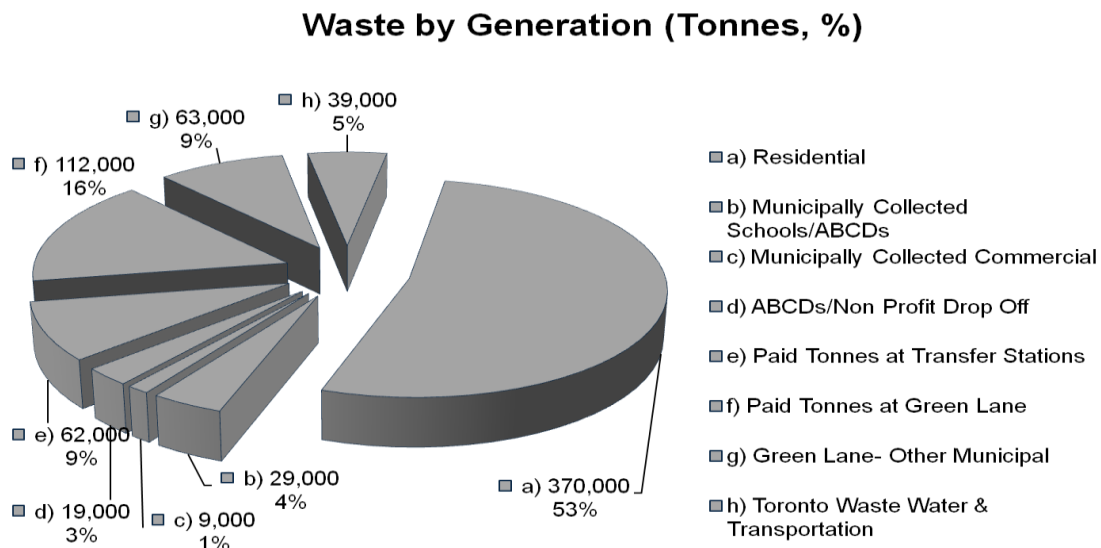
Approximately 100,000 tonnes of single stream recyclable materials is processed annually at the City’s Dufferin Material Recovery Facility. The Dufferin Material Recovery Facility is operated by Canada Fibres Ltd. under a design, build and operate contract. The term of the operating component of the work runs to the end of 2014.

In 2011, City Council awarded a contract to Canada Fibres Ltd. to process up to 140,000 tonnes of single stream recyclable materials per year for a term beginning in April 2013, and extending for seven (7) years with an option to extend for up to two (2) additional years. Canada Fibres Ltd. will process the single stream recyclable materials at a new facility on Arrow Road in Toronto. The new facility will incorporate industry-leading recycling technologies and methods, all being necessary to provide the capabilities and performance required by the City. The new Canada Fibres facility has the capability to process up to 400,000 tonnes of single stream recyclable materials annually.

7. Other City and Green Lane Waste Generators

As mentioned earlier in the report, the original Target 70 report only addressed the management of residential waste. However, Solid Waste Management Services also provides collection services to non-residential groups, which includes the City’s Agencies, Boards, Commissions and Divisions, schools, small commercial properties, and eligible non-residential customers (e.g., profit and non-profit nursing homes, hospitals, places of worship, etc.), see Graph 2 below which is based on Solid Waste Management Services 2013 budget estimate.

Graph 2 – Waste Landfilled by Generation Totals



Similar to the residential volume-based rate structure, non-residential groups are required to participate in the City's diversion programs in order to receive garbage collection service and are subject to service fees to encourage moving towards increased diversion.

In 2011, Solid Waste Management Services collected approximately 40,000 tonnes of garbage and diverted 38,055 tonnes of materials generated by commercial customers, schools, Agencies, Boards, Commissions and Divisions, other eligible non-residential customers and litter bins, resulting in a 49% diversion rate. The diversion included 25,431 tonnes of recyclables, 11,957 tonnes of Green Bin Single Stream Organics and 667 tonnes of other diverted materials such as drywall and tires.

Non-residential customers can also pay to drop off garbage and recycling at transfer stations. In 2011, Solid Waste Management Services received 27,578 tonnes of garbage and 640 tonnes of recycling from Agencies, Boards, Commissions and Divisions and eligible non-residential customers at transfer stations.

a) Schools

The Toronto District School Board and the Toronto Catholic District School Board, as well as a few private schools receive garbage and recycling collection services from Solid Waste Management Services. In total, 784 schools receive collection service from Solid Waste Management Services.

Both Toronto District Schools Boards have implemented waste diversion measures at schools. Schools have heavily promoted waste diversion through the Eco Schools Program, which is an environmental education and certification program that implements environmental best practices to reduce the ecological footprint of the school. Solid Waste Management Services provides schools with electronic files of Solid Waste communication materials, which schools use to create their own information posters and literature. Schools also encourage staff and students to participate in programs such as the Waste Free Lunch challenge. Solid Waste Management Services will continue to support the schools recycling efforts by providing communication files and periodic program information updates.

Solid Waste Management Services has also begun phasing in the collection of Green Bin organics from schools. All schools in both boards will be able to participate in the Green Bin Program by September 1, 2013.

b) Agencies, Boards, Commissions and Divisions

This section is in response to City Council's directive in November 2012 for the "General Manager of Solid Waste Management Services, in consultation with the Director of Facilities Management, to develop a plan to implement green bin and recycling programs for City-owned facilities beginning in 2013 and report to the Public Works and Infrastructure Committee in the First Quarter of 2013".

Solid Waste Management Services provides waste and recycling collection and transfer station drop-off services to the City's 945 Agencies, Boards, Commissions and Divisions. Several locations also receive Green Bin organics collection.

In 2003, Toronto City Council established a Waste Diversion Team comprised of representatives from each organization, along with a representative each from the Toronto District School Board and Toronto Catholic District School Board. Co-lead by Facilities Management and Solid Waste Management Services, the group's mandate was to follow City Council's directive for each organization to reach a 100% diversion rate by 2010, which was subsequently changed to 70% by 2010.

Between 2004 and 2010, members of the Waste Diversion Team cumulatively diverted approximately 300,000 tonnes of recyclables and the overall collective diversion rate increased from 39% to 67%. This diversion included initiatives implemented by the Agencies, Boards, Commissions and Divisions such as the recycling of office paper, electronics, scrap metal, motor oil and tires as well as recyclable material collected by Solid Waste Management Services.

The Waste Diversion Team's mandate officially ended in 2010 and a report titled *City of Toronto Agencies, Boards, Commissions and Divisions' Waste Diversion Team: Diverting News* outlines the accomplishments achieved between the team's mandated period of 2004 and 2010. The report can be viewed at:

http://www.toronto.ca/environment/pdf/diverting_news_2011.pdf

Waste Diversion Team members continue to share information and best practices to improve their diversion rate. Solid Waste Management Services will circulate updated solid waste program information to Agencies, Boards, Commissions and Divisions through already established channels of communication. Providing updated information to Agencies, Boards, Commissions and Divisions, such as the addition of mixed rigid plastics to the Blue Bin Program, ensures consistent messaging to staff and members of the public. Staff will continue to provide guidance on waste diversion measures; however, each individual organization is responsible for making the appropriate changes to their respective diversion initiatives and for communicating updated information to staff and program users.

c) Green Bin Expansion for Schools, Agencies, Boards, Commissions and Divisions

Facilities Management does have a limited number of facilities on the Green Bin Program such as Metro Hall, City Hall and the Scarborough Civic Centre. Staff are currently working with Facilities Management, including conducting site visits, to bring the remainder of the buildings that they are responsible for on to the Green Bin program in the coming months. This includes buildings such as the North York, Etobicoke, East York and York Civic Centres, Don Mills Computer Centre, Old City Hall, and some Operations locations.

Once the majority of multi-residential locations, schools and Facilities Management locations are on the Green Bin program, staff will focus on the remainder of the Agencies, Boards, Commissions and Divisions. It is anticipated that roll-out of the Green Bin program to these locations will occur primarily in 2014.

d) Eligible Non-Residential Customers

Solid Waste Management Services collects from 1,185 eligible non-residential customers (i.e., charities, religious organizations, institutions). All eligible non-residential customers receive garbage and recycling collection and approximately 50% of them receive organics collection. All of them have been invited and are eligible to receive organics collection.

To assist these customers in transitioning to the phased fee structure that commenced July 1, 2012, Solid Waste Management Services staff conducted site visits to assess and provide recommendations for opportunities to increase diversion, and provided educational literature.

Invitation to participate in the 3Rs Ambassador Volunteer Program is being extended to recruit volunteers from eligible non-residential customers. Expanding the Ambassador Program to accommodate additional volunteers from eligible non-residential groups will be undertaken by the additional Coordinators identified earlier in this report to expand the 3Rs Ambassador Volunteer program in the multi-residential sector.

e) Small Commercial Properties

Small commercial properties that Solid Waste Management Services collects from are part of the volume-based rate structure and are provided with curb-side collection service, including waste, recycling and organics collection. The majority of the large organics generators, such as green grocers and restaurants, participate in the organics collection program.

f) Litter and Park Litter Bins

Solid Waste Management Services maintains approximately 6,100 litter and recycling bins on City streets and 6,500 litter and recycling bins in City parks. Additional litter and recycling bins are being added and better sign installation in parks is also underway.

g) Special Events

In 2011, Solid Waste Management Services serviced over 1000 events such as parades, street closures, runs and walks. Recycling and organics collection is provided by Solid Waste Management Services at no cost but event organizers are responsible for managing litter and garbage collection. Solid Waste Management Services works with event organizers to encourage diversion and has created a Waste Diversion Handbook for event organizers.

h) Private Paid Customers at Green Lane Landfill and Transfer Stations

In 2011 the City received over 174,000 tonnes of waste directly at the City's transfer stations and Green Lane Landfill through paid tipping fees. Some of these tonnes, specifically at Green Lane Landfill, Solid Waste Management Services are contractually obligated to accept. However, much of the tonnage at the transfer stations and at the gate of Green Lane Landfill are private companies or individuals who pay fees ranging from \$50 to \$100 per tonnes to dispose of their waste. This does raise revenue for the Solid Waste Management Services division. However, it is essentially selling valuable space in the City's landfill. Staff need to revisit the cost per tonne of disposal and the cost/benefit in comparison to other options.

Moving Forward for Long-Term Sustainability

Staff are committed to achieve 70% diversion by 2016, which would extend the life of the Green Lane Landfill until 2036. However, there will still be a need for disposal capacity in the future. Solid Waste Management Services needs to look beyond 2036 and explore other long-term sustainability measures for management of the City's waste.

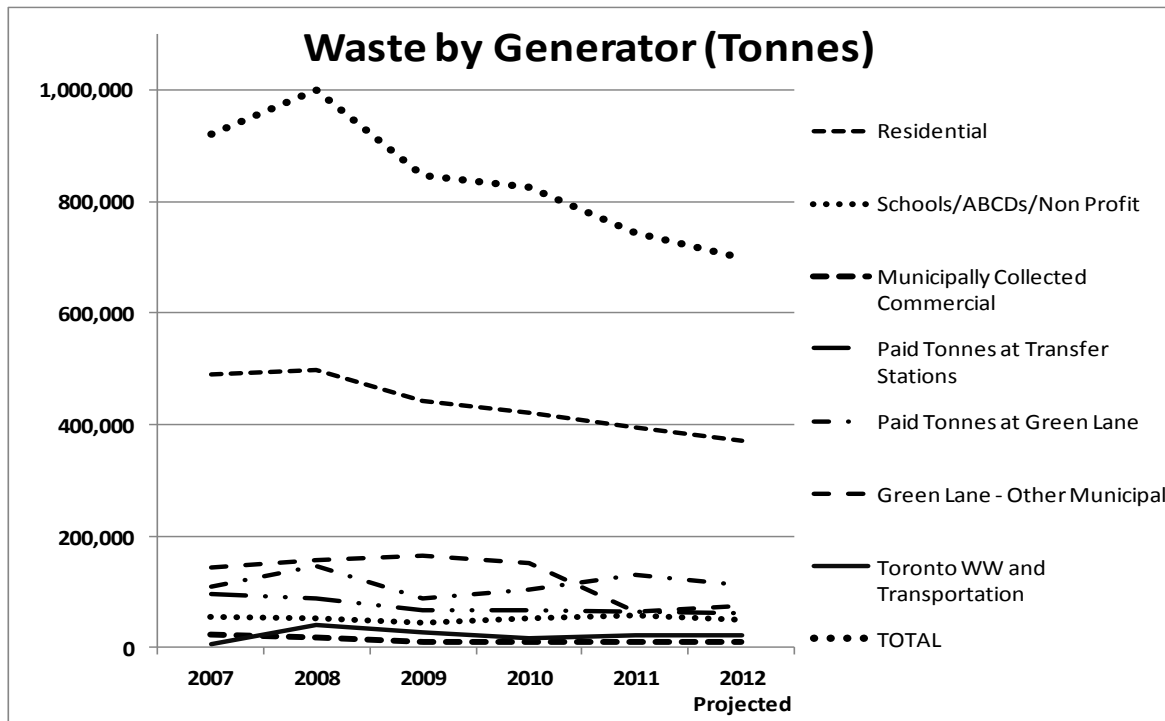
The initial Target 70 report to Council in 2007 only focused on residential waste and diversion. Residential waste only accounts for 53% of the waste that goes into the Green Lane Landfill. The other 47% comes from Agencies, Boards, Commissions and Divisions, schools, commercial establishments, institutions, commercial paid tonnes at transfer stations, paid private tonnes at Green Lane Landfill and other municipalities' waste also accepted at Green Lane. Staff needs to focus on all waste generators not just residential.

Staff will continue to focus on waste diversion and to research and monitor new opportunities to extend the life of the Green Lane Landfill as long as possible.

Life Expectancy of Green Lane Landfill

Even though Solid Waste Management Services did not achieve 70% diversion by 2010, the Green Lane Landfill has not been filling up as fast as expected because of changes to the waste stream and other reasons. Graph 3 below shows the various streams of waste that are land filled at Green Lane. It shows that there has been a 27% reduction in total waste going to landfill since 2007. During the same time period, residential waste diversion increased 8 points from 42% to 50%, representing a 19% increase.

Graph 3 – Waste Land-filled at Green Lane



¹ (50%-42%)/42% = 19% increase

Based on the 2007 Getting to 70% Diversion Plan which assumed 70% diversion by 2010, it was projected that the Green Lane Landfill would be operational until 2034. Based on current projections and assuming the City was able to achieve 70% diversion by 2016, the Green Lane Landfill would now be expected to be operational until 2036.

Sustainable Waste Management Strategy

In addition to proceeding with source separation improvements described above, such as focusing on source separated organics rollout in the multi-residential sector in 2013, staff would develop a long-term (30 to 50 years) Sustainable Waste Management Strategy. Guiding principles for the study would include:

- Consideration of options which support waste reduction, reuse, recycling and recovery before disposal;
- An open and transparent review of the options;
- Innovation and flexibility to adapt to emerging technologies;

- Development of policies and opportunities for collaboration.

The scope of the study would include:

- A comprehensive review of any new and emerging source separation techniques;
- Mechanical biological treatment as well as other waste treatment technologies;
- Alternative disposal options such as redirecting waste to the other landfills;
- Public/Private Partnerships;
- Expansion of Green Lane Landfill;
- Purchase of another Landfill;
- Future Source Separated Recyclable Materials processing requirements;
- Partnerships with other municipalities;
- All waste managed by the City, not just residential, would be included in the study.

The goal would be to develop a Long Term Waste Management Strategy, in consultation with the community, which will recommend reduction, reuse, recycling and residual waste management strategies that are environmentally sustainable, economically viable, and maximize the life of the Green Lane Landfill.

The Long Term Waste Management Strategy will also consider other potential measures such as possibly reducing or eliminating paid waste accepted at our transfer stations and at Green Lane Landfill, which is currently approximately 174,000 tonnes annually. These generators currently provide a source of revenue to the City which helps fund our diversion programs and reduces garbage rate increases, but as stated earlier they are consuming valuable space at Green Lane Landfill. This benefit will have to be evaluated against the financial benefit of future landfill capacity.

Table 2 below, describes the impacts and cost/benefit, at a very high level, of some of the initiatives described in this report. The intention of the Long Term Waste Management Strategy is to develop and refine these numbers to determine the best course of action for the City in the future.

Table 2 – Cost/Benefit of Various Initiatives

Initiative	Tonnes	Cost/Lost Revenue (in Millions)	Landfill Life Extension
Redirect to Other Landfills	150,000	\$6.2	2.9 months
Eliminate Paid Tonnes at Green Lane Landfill	112,000	\$5.6	2.2 months
Eliminate Paid Tonnes at Transfer Stations	62,000	\$6.2	1.2 months
Mechanical Biological Treatment	143,000	\$25	2.8 months

Staff would issue a Request for Proposals for a consultant to assist us with preparing a Long Term Waste Management Strategy. Staff will also provide regular updates to Public Works and Infrastructure Committee on the development of the Long Term Waste Management Strategy. The first update would be on the consultant, and the cost and timelines of the study. A final report on the findings once the study has been completed will be brought forward to the Public Works and Infrastructure Committee, and City Council by Solid Waste Management Services staff.

Public Consultation

A significant part of the consultant’s work on the Long Term Waste Management Strategy will be stakeholder and public consultation. Meaningful consultation will occur throughout the process with the goal of developing a Long Term Waste Management Strategy that is supported by the community and takes their concerns, ideas and feedback into account.

Staff will develop a communication and consultation plan with the consultant that will target a broad range of impacted stakeholders and the general public. More details of the consultation plan will be available once it is developed but staff expects it will utilize a range of tools to engage stakeholders and the public including:

- An Advisory Group comprised of representatives from a wide range of stakeholders.
- A strong reliance on electronic communications and information materials and online feedback opportunities that will facilitate input from the community.
- Public consultation events such as open houses and stakeholder workshops.

Feedback provided throughout the consultation process will be documented and considered prior to making recommendations to the Public Works and Infrastructure Committee, and City Council.

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SIGNATURE

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