SUBJECT: Status of Solid Waste Management Master Plan, Options for Increasing Diversion and Landfill Capacity - (PW07151) - (City Wide)

RECOMMENDATION:

(a) That the Solid Waste Management Master Plan (SWMMP) Recommendation 3, "The City of Hamilton must set an aggressive objective of 65% waste diversion by the end of 2008, based on 2000 waste generation rates." be amended to "The City must strive to meet an aggressive objective of 65% waste diversion by the end of 2010, based on 2006 waste diversion rates."

(b) That the implementation of the multi-residential diversion program be accelerated in 2008 for completion in 2009 as outlined in this report PW07151.

(c) That a one (1) container limit on garbage be established for implementation on March 31, 2008 together with:

(i) three (3) grace weeks following Victoria Day, Thanksgiving and New Years when residents could set out up to three (3) containers of garbage;

(ii) a transition period between March 31, 2008 and January 16, 2009 during which enforcement will focus on education and customer service;

(iii) a special consideration process for medical circumstances and families with three (3) or more children under the age of five (5) years; and all in conjunction with the 2008-09 Waste Collection Calendar.

(d) That the two (2) temporary Customer Service Co-ordinator positions, funded through the Waste Management operating budget since April 2006 be made permanent full-time positions.

(e) That enhanced enforcement of the Solid Waste Management By-law 05-190 be undertaken, including the addition of one half (.5) full-time employee (FTE) to the Municipal By-law Enforcement staffing in 2008 at no net cost, and further, that this be referred to the 2008 Budget Process.
(f) That, effective March 31, 2008, appropriate compostable bags be accepted in the City’s Green Cart program.

(g) That staff continues to explore options to reduce waste and to increase diversion in 2009 and 2010 to achieve the 65% diversion target.

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

**EXECUTIVE SUMMARY:**

This report will provide an update on the status of implementation of the Solid Waste Management Master Plan that was approved by Council in December 2001 and current landfill capacity and consider options for increasing diversion.

Significant progress has been made in implementing the recommendations of the SWMMP to improve waste diversion from landfill. The residential diversion rate has increased from 20% in 2002 to 40% in 2006. It is noted that the overall diversion rate is 35.7% reflecting waste from industrial, commercial, institutional and municipal sources which is used for the purpose of calculating landfill capacity.

The target of 65% remains realistic and achievable however not within the 2008 timeframe. The key reasons for this are the current participation and capture rates, historic operational issues with the recycling program and the logistical challenges around implementation of diversion programs in multi-residential buildings. It is expected that the target can be achieved by the end of 2010. A range of approaches will be required to achieve 65% diversion.

Figure 1 shows the original annual diversion rates required to get to 65% by 2008 and the actual diversion trend. Staff is confident that with a focus on the outstanding issues of the SWMMP, the revised target can be achieved.

**Figure 1 - Original Annual Diversion Projections and Actual Diversion**
The outstanding recommendations of the SWMMP that need to be addressed include:

- full implementation of multi-residential diversion programs
- consideration of a user-pay system or further container limits
- more progressively rigorous enforcement
- continuation of investigation of Energy from Waste

With regard to diversion programs, this report is recommending that:

- implementation of the multi-residential diversion program be accelerated in 2008 for completion in 2009 using student resources and previously approved capital
- the curbside garbage limit be reduced to one (1) container per household per week commencing March 31, 2008, with grace periods three (3) weeks per year when up to three (3) containers could be set out
- enhanced enforcement including the funding for one half (.5) additional FTE for municipal law enforcement commencing March 31, 2008
- continued education, community outreach and customer service activities
- compostable bags

It is expected that the revenues generated from the recycling program and reduced disposal costs will offset the cost associated with these diversion programs, however the amount of the revenue is contingent on obtaining the tonnages. The key to successful programs is the education and outreach activities. In addition, increased diversion extends the life of the landfill and reduces the need and costs associated with new disposal capacity.

The recommendations above will achieve approximately 55% diversion. Other opportunities will need to be explored to achieve the remaining 10% in 2010. It is recommended that staff continue to investigate options for additional diversion and report back to the Public Works Committee in the latter half of 2008.

It is recommended that SWMMP Recommendation 3 be changed to target 65% diversion by 2010.

The investigation of Energy from Waste continues to be discussed through the Niagara-Hamilton WastePlan Environmental Assessment Study.

The capacity of the Glanbrook Landfill has been reviewed and through operational and design changes the expected lifespan of the site is greater than expected. The estimated capacity ranges from twenty-seven (27) years at the current rate of diversion to forty-five (45) years if 65% diversion is reached in 2010 and to sixty-five (65) years if an Energy from Waste facility was operational by the end of 2014.

**BACKGROUND:**

The information and recommendations in this report have City wide implications.

The Solid Waste Management Master Plan was approved by Council in December 2001, consisting of nineteen (19) recommendations geared to preserving the Glanbrook landfill capacity by achieving a waste diversion target of 65% by 2008. The recommendations of the SWMMP are attached as Appendix A for ease of reference. At that time it was estimated that the Glanbrook landfill had a capacity for twenty-five (25) years if the target of 65% diversion was reached by 2008.
The SWMMP contemplated the closure of SWARU in 2006, at which time consideration would be given to the success of the diversion programs and the need for a new Energy from Waste facility to optimize the capacity at Glanbrook. With the early closure of Solid Waste Area Reduction Unit (SWARU) in December 2002, Council gave staff direction to initiate the review of a new Energy from Waste facility. The closure of SWARU reduced landfill life by about three (3) years or twenty-two (22) years from 2001 if the diversion target of 65% was reached by 2008.

In the spring of 2003, discussions commenced with the Region of Niagara, leading to the formation of the Niagara-Hamilton WastePlan and the Environmental Assessment study that has been ongoing for the past three (3) years.

The aspects of the SWMMP that have contributed directly to increased waste diversion include:

- Centralized Composting Facility
- Community Recycling and Reuse Centres
- three (3) stream collection system for recyclables, organics and garbage for curbside residences
- flexible enforcement system
- comprehensive public education, awareness and marketing program
- siting consideration to neighbourhood issues
- monitoring through waste composition studies
- annual report cart documents progress
- corporate recycling program (lead by example)

The 2006 Annual Report of the Waste Management Division provides an update on the progress towards achieving the goals of the SWMMP. Although many of the recommendations have now been implemented, diversion has fallen short of the annual targets required to reach 65% by 2008. Diversion in 2006 was 40% and continues at a similar rate in 2007. The following table shows the progress in the diversion rate since 2001 and some of the contributing factors to the increases.

<table>
<thead>
<tr>
<th>Year</th>
<th>Diversion %</th>
<th>Contributing Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>16</td>
<td>Ban of plastic bags in the leaf and yard waste program improved participation and capture.</td>
</tr>
<tr>
<td>2002</td>
<td>20</td>
<td>New collection system, Environment Days, Green Cart demonstration started.</td>
</tr>
<tr>
<td>2003</td>
<td>24</td>
<td>New recycling collection contract, distribution of 160,000 blue boxes, addition of tetra packs and gable top containers in the blue box.</td>
</tr>
<tr>
<td>2004</td>
<td>28</td>
<td>Multi-residential recycling campaign, addition of tubs and lids in blue box, expansion of Green Cart demonstration.</td>
</tr>
<tr>
<td>2005</td>
<td>30</td>
<td>Addition of scrap metal to the White Goods program, Mountain Community Recycling Centre and reuse store opened.</td>
</tr>
<tr>
<td>2006</td>
<td>40</td>
<td>City wide roll-out of the Green Cart program from April to June, enforcement of a three (3) container limit for garbage (voluntary limit of one [1] container), by-law enforcement strategy.</td>
</tr>
</tbody>
</table>
Glanbrook remains the City’s one and only active landfill and extending its capacity for as long as possible will avoid the need to site a new landfill or to export waste out of the City, which is contrary to the first principle of the SWMMP, to maintain responsibility for residual waste within our boundaries.

A review of the capacity of the Glanbrook landfill was undertaken earlier in 2007. The review considered options related to diversion and other factors related to landfill design and compaction techniques. Engineering improvements have improved the capacity at Glanbrook. It is now estimated that the landfill life is from twenty-seven (27) to sixty-five (65) years if the Master Plan in fully implemented.

In 2004, the Public Works Committee dealt with Report PW04114a regarding a Waste Collection Service Strategy. Council approved a recommendation on a one (1) container limit for garbage subject to an enforcement strategy for achieving this limit. This strategy was outlined in the following recommendation:

“(k) That the enforcement strategy to be developed for the one (1) container limit in subsection (b)(iii), include the following considerations:

(i) the continuation of the voluntary three (3) container limit through 2005;
(ii) that 2006 be a transition period, in which a voluntary one (1) container be implemented with the delivery of the Green Cart program; and
(iii) that the one (1) container limit be enforced commencing in 2007, subject to a staff report in early 2007 on the status of the Waste Collection Service Strategy program.”

A report back in early 2007 was delayed with the extensive review of the recycling program which was approved by Council in early May. However this matter can be addressed at this time in conjunction with budget deliberations and the upcoming development of the 2008-09 Waste Collection Calendar. Achieving a limit of one (1) container would have the biggest single impact on increasing diversion. It will encourage residents to more actively participate in waste diversion programs. Significant investments have been made in waste processing infrastructure with the construction of the Central Composting Facility and upgrades to the Materials Recycling Facility, so it is imperative that residents recognize the importance of maximizing the use of these facilities and reducing the amount of waste going to landfill.

In addition, Information Report No. PW06076 concerning Pay-as-You-Throw options was received by the Public Works, Infrastructure and Environment Committee on June 19, 2006. The minutes of that Committee were subsequently approved by Council on June 28, 2006. The report provided an update in the research that had been undertaken on user-pay systems for garbage. The report indicated that the most appropriate of the user-pay options that the City might consider would be a fee for a portion of the waste disposal cost of the levy, while the diversion programs and a portion of the disposal cost would remain on the levy.

The purpose of this report is to follow up on these previous reports, review the status of implementation of the Solid Waste Management Master Plan (SWMMP) recommendations related to waste diversion and landfill capacity and to recommend an approach to addressing the outstanding SWMMP recommendations and continuing to increase waste diversion.
The recommended aspects of the SWMMP that should be pursued to maximize the life of the Glanbrook landfill include:

- full implementation of multi-residential diversion programs
- consideration of a user-pay system or further container limits
- more progressively rigorous enforcement
- continuation of investigation of Energy from Waste

A range of options was presented for consideration and discussion to the Waste Reduction Task Force and the SWMMP Steering Committee.

Although the options reviewed in the Alternatives for Consideration section of this report will not achieve 65% diversion in 2008, they would all result in increased diversion. Recognizing that the target will not be achieved, the recommended approach is to undertake some of the options that will continue to move us forward while managing the financial impacts associated with waste diversion. As such, the following is recommended:

- completion of the three (3) stream collection for multi-residential buildings by 2009
- implementation of a limit of one (1) container of garbage per household per week effective March 31, 2008
- enhanced enforcement in the form of an additional one half (.5) FTE in 2008 and monitored for further assessment in 2009
- continued investigation of alternative disposal technology including Energy from Waste
- continued education and voluntary compliance
- acceptable compostable bags

The details of these recommended components are outlined below.

Together these recommended enhancements are expected to achieve about 15% diversion reaching 55% in 2009. Additional diversion options will need to be explored together with continued community outreach and enforcement of all programs to achieve 65% by 2010.

1. **Multi-Residential Diversion Optimization**

The full implementation of the multi-residential diversion program will involve the introduction of the Green Cart program, rejuvenation of the recycling program and information on other diversion programs to approximately 60,000 multi-family households. It is expected that the delivery of this program will be done over two (2) years in 2008 and 2009.

The capital for this program was budgeted as part of the overall Green Cart implementation so there is no new capital involved. Implementation costs will be covered by this capital and include:

- appropriate large containers to set out for collection (a combination of standard Green Carts or alternative larger container that could be automatically tipped)
- in-unit materials similar to the curbside Green Cart program including a container for the kitchen, booklet, fridge magnet and sample liners
• up to three (3) additional collection vehicles for the publicly serviced A zones
• distribution costs for carts, materials and outreach activities (open houses, door-to-door visits) including temporary staffing (students)

Additional operating costs in 2008 for collection and processing of recyclable and compostable materials would be offset by the recycling revenues and reduced disposal costs. If tonnages to diversion are achieved there may be cost savings associated with this program. This will be monitored relative to future budget processes.

In 2009, additional vehicles would be added to provide dedicated collection service for approximately four-hundred (400) large multi-residential buildings as the current system will be operating at maximum efficiency. Two (2) additional FTEs will be required in 2009 to operate the additional vehicles. Staff is proposing that the city wide collection service of organic waste be provided by City staff. This will maximize flexibility by providing an option for leasing one or two trucks for a period of time to test collection methods and by adding trucks as they are needed. In addition there may be opportunities to minimize costs associated with work accommodation if fully automated trucks are acquired that may be operated by employees on work accommodation.

In 2010 it is proposed to include an additional FTE in the Solid Waste Planning section Community Outreach group to continue to implement diversion programs to new multi-residential residents and to promote waste reduction. Funding for this position will be reviewed in the context of overall staffing needs for 2010 and may not be a budget issue at that time.

It is estimated that the projected tonnage from full implementation of the multi-residential diversion programs will be 12,000 tonnes, which represents a 5% increase in diversion.

2. Container Limits for Garbage

At the present time the curbside limit for garbage is three (3) containers per household per week. As indicated in the Background Section, Report PW04114a outlined an enforcement strategy that directed staff to report back on the enforcement of a one (1) container limit for garbage in 2007 once the curbside Green Cart program was fully implemented. A waste composition study carried out in October 2006 showed an average of 1.2 containers of garbage per household was set out weekly. This suggests that a two (2) container limit would have minimal impact on waste diversion particularly when the container size is far below the 23 kg allowed by the Solid Waste Management By-law. A bigger impact from diversion could be achieved by reducing the number of garbage containers to one (1) per household per week.

Current waste diversion rates need to be improved to move closer to 65% diversion from landfill. Monitoring of recycling and organic tonnages shows that diversion has not improved from 2006 to 2007 and verifies that many residents are not voluntarily reducing the amount of garbage going to landfill.

The Waste Reduction Task Force supports the reduction to one (1) container per household per week as soon as this can be achieved. The SWMMP Steering Committee favours the staged approach to two (2) containers in 2008 and one (1) container in 2009.
In consideration of the recommendation from Report PW04114a, the progress made with the Green Cart program to date and the results of the waste audit, staff is of the opinion that proceeding to a one (1) container limit in 2008 is appropriate and necessary to reach 65% diversion.

In conjunction with this container limit, it is recommended that three (3) enforcement activities take place including:

(i) Grace periods be allowed for the week following Victoria Day, Thanksgiving and New Years when residents would be permitted to set out up to three (3) containers of garbage for one (1) week. These would be shown on the Waste Collection Calendar and included in the existing community outreach educational budget.

(ii) A transition period between March 31, 2008 and January 16, 2009 during which enforcement would focus on education and customer service.

(iii) A special consideration process would be established for medical circumstances and families with three (3) or more children under the age of five (5) demonstrating a need for additional waste containers. This would be done on an individual basis through the customer service staff. If a doctor’s certificate is presented a medical exemption would granted. In the case of large families a statement of the family’s status would be required. Special considerations would be reviewed on an annual basis to account for changing circumstances. The limit would be three (3) containers of garbage per household per week, with the second and third containers being labelled with tags provided by the City. Other municipalities have implemented similar programs and the take up on special considerations appears to be quite low, e.g. the Town of Whitby experiences about 1% of households using special considerations.

The container limit will be incorporated in an amendment to the Solid Waste Management By-law which is proposed to be presented to the Public Works Committee by early 2008, with a goal to it being effective prior to the commencement of the 2008-09 Waste Collection Calendar.

There are no capital costs associated with a container limit and enforcement would continue with the existing level of customer service and by-law enforcement.

Additional operating costs, including the production of the tags for the special consideration program, would be offset by the recycling revenues and reduced disposal costs. Similar to the multi-residential program, if tonnages to diversion are achieved there may be cost savings associated with this program. This will be monitored relative to future budget processes.

It is estimated that a reduction in the limit to one (1) container of garbage per household per week would have the biggest impact on waste diversion, diverting approximately 19,500 tonnes or 7.8% between 2008 and 2009 once fully enforced.

3. **Enhanced By-law Enforcement**

A more progressive enforcement system would complement the multi-residential program and the container limit. An amendment to By-law 05-190, the Solid Waste Management By-law is being prepared to address changing requirements and updating the enforcement strategy. An amending by-law will be brought forward to Public Works
Committee to address the necessary changes including any changes resulting from this report. 

By-law enforcement has predominantly been done by the Waste Management Customer Service Co-ordinators. There are currently four (4) Co-ordinator positions, two (2) are permanent FTEs and two (2) were created as temporary positions in conjunction with the implementation of the Green Cart program. The funding for the four (4) positions has been included in the Waste Management operating budget since 2006. The face to face customer service has proven to be a successful approach to enforcement. It is recommended that these positions be made permanent FTEs. This does not impact on the 2008 operating budget as the cost associated with these positions can be accommodated within the existing budget.

In addition, one half (.5) FTE in the municipal law enforcement staff is dedicated to and funded by Waste Management to handle more serious and repetitive concerns. It is estimated that in 2006 the approximate time dedicated to Waste Management issues was about 60% of an FTE’s time. More progressive enforcement combined with the container limit and the multi-residential diversion program will require increased staffing at the municipal law enforcement level. It is therefore recommended that an additional one half (.5) FTE be funded by the Waste Management Division for allocation to municipal law enforcement staffing resulting in one (1) FTE dedicated to Waste Management enforcement issues.

The estimated cost associated with the addition of one half (.5) FTE in April of 2008 would be $30,000. The full year cost of approximately $40,000 would be realized in 2009. However it is expected that these costs may be offset from the increased revenues from recyclable materials recovered and savings in disposal costs as a result of enhanced enforcement. Enforcement staffing will be monitored relative to future budget processes.

It is estimated that enhanced enforcement would have an impact of diverting an additional 5000 tonnes or 2% of waste from landfill.

4. Compostable Bags

The City’s Green Cart program for household organics does not allow plastic bags or compostable or biodegradable bags that look like plastic. The technology at the Central Composting Facility (CCF) was not designed to accept plastic and needed to be tested operationally before consideration could be given to the acceptance of compostable bags.

In the year and a half that the CCF has been operating, Aim Environmental Group has reviewed the feasibility of accepting compostable bags and determined that there are certain compostable bags that will break down under the conditions and time of the CCF process.

However not all compostable bags are the same and there is a need to restrict those that can be accepted. Staff has been working closely with several municipalities who are interested in accepting appropriate compostable bags in their household organics programs to make organics programs more acceptable to residents. Considerable progress has been made to developing a consistent message with our inter-municipal partners and we will be in a position to accept certain compostable bags in Hamilton’s
Green Cart program in April of 2008. This additional option as a container liner will complement the other diversion measures being recommended in this report.

Prior to the completion of the content for the 2008-09 waste collection calendar late this year, we will be developing a list of the acceptable compostable bags that will be permitted in the program. Until we finalize the acceptable bag list, residents will continue to be reminded that plastic bags and bags that look like plastic are not accepted at this time.

5. Education and Community Outreach

Education and community outreach are integral to the success of the City’s waste diversion programs.

A portion of this is carried out by the Customer Service Co-ordinators responding to concerns and non-compliance for residents at the curb.

With the container limit, enhanced diversion in multi-residential buildings and promotion of compostable bags, the existing community outreach resources (staffing and advertising) would focus on these aspects of diversion and also on waste reduction.

This would be done with existing resources and as such there is no impact on the 2008 budget.

6. Energy from Waste

Energy from Waste is being considered as part of the Niagara-Hamilton WastePlan Environmental Assessment Study on alternative disposal systems. An addendum report to the report on ‘Evaluation of “Alternatives To” and Selection of a Preferred Disposal System’ was presented to the Niagara-Hamilton Joint Working Group in August. The result was that some things have changed since December 2005 when the preferred option was presented and that three (3) options could remain for further consideration. One of the changes relates to the changing philosophical direction of the Region of Niagara with regard to the available capacity at the Walker landfill. The Joint Working Group has recommended a recess in the process to allow for the Region of Niagara to negotiate a contract with Walker Industries and to allow both municipalities to continue pursuing their diversion targets. The Joint Working Group is to reconvene in May 2008 to consider the next steps. Further information was provided recently in Information Report PW07115.

However the City of Hamilton should continue to consider disposal options that preserve the longevity of the Glanbrook landfill.

ALTERNATIVES FOR CONSIDERATION:

The discussion on alternatives for consideration will review the capacity of the Glanbrook landfill relative to complete and incomplete SWMMP recommendations, and waste diversion activities that have yet to be achieved.

Status of SWMMP Recommendations

The aspects of the SWMMP that contribute directly to waste diversion that have been implemented include:

- Centralized Composting Facility
- Community Recycling and Reuse Centres
three (3) stream collection system for recyclables, organics and garbage for curbside residences
flexible enforcement system
comprehensive public education, awareness and marketing program
siting consideration to neighbourhood issues
monitoring through waste composition studies
annual report cart documents progress
corporate recycling program (lead by example)

The items of the SWMMP that support diversion but have not been completed are:

state-of-the-art Materials Recycling Facility (MRF) to divert conventional “dry” recyclable materials
state-of-the-art Energy from Waste (EFW) facility
three (3) stream collection system for recyclables, organics and garbage for multi-residential residences
user-pay system to encourage diversion and fund waste management facilities
enforcement systems that become progressively rigorous as waste diversion systems come into operation

The existing MRF continues to function satisfactorily although as recycling tonnages continue to increase, there will be a need to undertake significant upgrades in the next few years. The installation of a new container line proposed to take place early in 2008 will improve sorting of containers and reduce residue. The processing equipment is scheduled for full replacement by April of 2013.

Fully integrated waste collection service for multi-residential facilities, user-pay or further container limits and more progressive enforcement will be the key components to achieving the 65% diversion target. As these aspects of the SWMMP will not be fully implemented by 2008, the target will not be met. At this time, staff estimates the target of 65% diversion may be attainable by 2010 if these aspects of the SWMMP are implemented. This is based on existing staff and financial resources. Additional resources would be required to reduce the time required to achieve 65% diversion.

Options for Improving Waste Diversion

There are a number of options available for consideration that can improve diversion. In this section these options will be reviewed relative to environmental impacts (waste diversion), community/social impacts and financial impacts (cost of implementation).

The options for consideration include:

1. User-pay for more than two (2) garbage containers
2. One (1) container limit on garbage, three (3) grace periods per year
3. Clear plastic bags for garbage, limit of one (1) bag per week
4. Enhanced multi-residential diversion programs
5. Incentive programs, RecycleBank
6. Enhanced enforcement of Solid Waste Management By-law No. 05-190
7. Education and Community Outreach

The details of these options are included in Appendix B to this report.
Glanbrook Landfill Capacity 2007 Review

A review of the capacity of the Glanbrook landfill was undertaken earlier in 2007. The review considered options related to diversion and other factors related to landfill design and compaction techniques.

The landfill capacity is being maximized in a number of ways. Diversion programs are reducing the amount of waste going to the site. Operation of the site has been improved to increase compaction (amount of material per cubic metre) and in minimizing the thickness of the daily cover used to cover the waste at the end of each day. The design of the landfill has been optimized by shifting capacity from Stage 4 of the landfill (which has been designed but not yet approved for landfilling) to the existing three (3) stages of the landfill. This has been done by increasing the side slope from a 4:1 grade to a 3:1 grade and by moving a pumping station outside of the approved landfill footprint into the buffer areas.

The review of the capacity indicates that at the 2006 rate of diversion of 35.7%, the landfill has twenty-seven (27) years of capacity. The diversion rate referred to in public documents such as the Annual Report and Waste Diversion Ontario data call was 40% in 2006, representing the residential diversion rate. The overall diversion rate of 35.7% includes all of the waste managed including a portion of ICI (industrial, commercial and institutional) waste and municipal waste (parks, street sweepings, grit) received at the Transfer Stations. It is necessary to use the overall diversion rate of 35.7% to accurately analyse the amount of waste going to landfill and to project landfill capacity. This option would require no further action on implementation of the SWMMP.

If a diversion target of 65% is achieved in 2010, the capacity improves to forty-five (45) years. This option requires that consideration continue on those aspects of the SWMMP that promote diversion. These include implementation of three (3) stream collection in multi-residential facilities, user-pay or further container limits and more progressive enforcement.

If 65% diversion is reached by 2010, and a new Energy from Waste facility is operational by 2014, the capacity of the Glanbrook landfill is extended to sixty-five (65) years. This requires the continued implementation of the SWMMP including the Environmental Assessment process for an alternative disposal technology.

Conclusion

The SWMMP recognizes the Glanbrook landfill as a valuable resource and the City must optimize the use of the capacity to accommodate the City’s residual waste. Waste management technologies will continue to evolve however at this time most waste technologies require some form of disposal, typically in the form of a landfill. All opportunities to extend the life of the landfill should be undertaken.

Each of the options reviewed has the potential to increase diversion. In recommending a course of action, staff has considered the options that provide the best value to improve diversion while minimizing costs and community impacts.

It is therefore recommended that the City continue to implement aspects of the SWMMP that improve diversion and extend the capacity of the Glanbrook landfill including:

- full implementation of multi-residential diversion programs between 2007 and 2009
• a one (1) container limit for garbage per household per week effective March 31, 2008 for curbside households subject to grace periods, transitional enforcement and special considerations
• enhanced by-law enforcement with the addition of one half (.5) FTE in April 2008 to be monitored one half (.5) FTE in April 2009
• continued education, community outreach and customer service
• continuation of investigation of Energy from Waste
• the acceptance of compostable bags effective March 31, 2008

In view of the status of implementation of the SWMMP, it is considered appropriate to adjust the 65% diversion target to 2010 to allow for the outstanding recommendations to be addressed. As such it is recommended that Recommendation 3 be amended to read “The City of Hamilton must strive to achieve an aggressive objective of 65% waste diversion by the end of 2010, based on the 2006 diversion rate.”

This change would also set the stage for a full review of the SWMMP around 2010, ten (10) years after it was first approved.

In consideration of Recommendation 17 of the SWMMP regarding the establishment of a task force to assist with the implementation of the Master Plan, the options presented in this report have been thoroughly considered by the Waste Reduction Task Force and their opinions offered in this report.

**FINANCIAL/STAFFING/LEGAL IMPLICATIONS:**

**Legal**

There are no legal implications from any of the recommendations.

**Staffing**

There are no staffing implications of reducing the container limit. Although waste diversion will increase, the same waste material would be handled.

The enhanced enforcement has the staffing impact of adding the cost for one half (.5) FTE in April 2008 at an estimated cost of $30,000 for the nine (9) month period in 2008. The full year cost would be realized in 2009 at approximately $40,000.

The implementation of the multi-residential diversion program has no FTE implications in 2008. Four (4) students, funded from Green Cart Implementation capital account 5120594528, will be delivering Green Carts and educational materials to buildings during 2008 and 2009. Consideration of an additional full-time position in Community Outreach to continue delivering diversion programs to new multi-residential residents will be put forward in the 2009 budget process. The two (2) Customer Service Co-ordinator positions created around the implementation of the Green Cart program are included in the 2008 budget for Waste Management.

It is expected that the full roll-out of the multi-residential diversion program will require two (2) additional FTEs in 2009 dedicated to the collection service of large multi-residential buildings. Vehicles with fully automated tipping equipment are being explored, which would provide an opportunity to staff the two (2) new FTE positions with employees who are on work accommodation. The FTEs would be funded positions that would help to reduce the City’s work accommodation costs.
Financial

There are no expected net negative impacts from the implementation of the recommendations on the operating budget for 2008. If estimated tonnages are achieved, there may be cost savings and this will be monitored and reviewed in conjunction with future annual budget processes. The costs are outlined in Table 2.

<table>
<thead>
<tr>
<th>Description</th>
<th>2008</th>
<th>2009</th>
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<tbody>
<tr>
<td></td>
<td>$</td>
<td>FTEs</td>
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<tr>
<td>Multi-Residential Diversion</td>
<td>431,000</td>
<td>Temporary (students)</td>
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<td>One (1) Container Limit</td>
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<td>By-Law Enforcement</td>
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<td>Gross Costs</td>
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<td>Recycling Revenues/Disposal Savings</td>
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<tr>
<td>Net Costs</td>
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<td>0.5</td>
</tr>
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</table>

Any capital expenditures associated with the implementation of the recommendations are within the existing capital projects and no new capital is required.

POLICIES AFFECTING PROPOSAL:

The recommendations in this report are guided by the Solid Waste Management Master Plan (SWMMP) and the Public Works Strategic Plan.

SWMMP

Recommendation #2 is the guiding principle that “The Glanbrook landfill is a valuable resource, and the City of Hamilton must optimize the use of its disposal capacity to ensure that there is a disposal site for Hamilton’s residual materials that cannot be otherwise diverted.” Continuing to implement the other recommendations of the Master Plan supports this principle.

Recommendation #3 is recommended to be changed to reflect that “The City of Hamilton must strive to achieve an aggressive objective of 65% waste diversion by the end of 2010, based on the 2006 diversion rate.”

Recommendation #5, revised in December of 2006 around the early closure of SWARU, states “That in view of the early closure of SWARU, the General Manager of Transportation, Operations and Environment begin exploring the need for a new state-of-the-art Energy From Waste (EFW) facility to form part of the City of Hamilton’s waste management system to optimize the disposal capacity at the Glanbrook landfill site immediately instead of 2006 as set out in Recommendation 5 of the SWMMP.”

Recommendation #6, “The City of Hamilton should adopt a three-stream waste collection system (recyclables, organics and residual garbage), commencing with a pilot test in 2002 to identify and resolve operational and implementation considerations” supports the need to implement the Green Cart program at multi-residential facilities in addition to the existing curbside program.

Recommendation #7, “The City will consider the potential need for a user-pay system to encourage waste diversion and fund the waste management activities” is one of the
outstanding SWMMP recommendations for which information will be presented to Council in the near future.

Recommendation 8, “The City of Hamilton should adopt flexible enforcement systems that become progressively rigorous as waste diversion systems come into operation, recognizing the socio-economic and cultural diversity of the City.” has been partially implemented with the June 2005 approval of Solid Waste Management By-law 05 and a flexible enforcement system. The part that has not been implemented is the more rigorous implementation. With the Green Cart program in place, residents have all the tools they need to reach 65% diversion and enforcement enhancements can be considered.

Recommendation 10, “The City of Hamilton must implement, sustain and support a comprehensive public education, awareness and marketing program in all areas of the city outlining the benefits and encouraging participation in waste reduction, re-use, and recycling programs.” is being implemented through the existing Community Outreach budget and through the capital budget related to program implementation. The addition of an outreach staff in 2010 would ensure that education and awareness is maintained with new multi-residential residents and also provide dedicated staff time to waste reduction activities.

Public Works Strategic Plan

As the Public Works Department strives to be recognized as the centre of environmental and innovative excellence in Canada, the vision drivers and actions of the Public Works Strategic Plan affecting the recommendations in this report are:

- **Communities: Services our communities connect with and trust**
  Waste management services and improvements recommended in this report contribute to the Public Works Department’s leadership on “greening” and stewardship providing residents with appropriate services and contributing to a reduction in greenhouse gasses.

- **People: Skilled teams ready for any situation**
  Two (2) Waste Management Customer Service Co-ordinators have been trained and working in the field for the past two (2) years. Approval of the recommendations making these permanent positions recognizes their contribution in working with residents to find solutions to waste management situations.

- **Finances: Providing financial management for the long haul**
  The implementation of programs that have no net negative impact on the budget represents sound and efficient financial management.

- **Processes: Business processes are defined and aligned**
  Waste diversion programs that are cost neutral or cost savings align with the Strategic Plan.

**RELEVANT CONSULTATION:**

The contents and recommendations of this report were reviewed by the Solid Waste Management Master Plan Steering Committee and the Committee is in support of the recommendations. Comments are included throughout the evaluation of the options.
The Waste Reduction Task Force had a workshop to discuss the options for diversion and the results of that workshop are included throughout the evaluation of the options. As a result of the workshop, the Task Force passed a motion that is included in this report as Appendix C. It is expected that Task Force representation will be made at the Public Works Committee when this report is considered.

CITY STRATEGIC COMMITMENT:

By evaluating the “Triple Bottom Line”, (community, environment, economic implications) we can make choices that create value across all three bottom lines, moving us closer to our vision for a sustainable community, and Provincial interests.

Community Well-Being is enhanced. ☑ Yes  □ No
Residents of multi-residential facilities will be provided with the same services as residents receiving curbside collection. If residents are using the diversion tools (blue boxes, green carts, leaf and yard, white goods and household hazardous waste programs) they will be able to comply with quantity limits.

Environmental Well-Being is enhanced. ☑ Yes  □ No
The reduction and diversion of waste contributes to environmental well-being, reduces waste going to landfill, reduces greenhouse gas emissions and extends the life of the Glanbrook landfill.

Economic Well-Being is enhanced. ☑ Yes  □ No
The implementation of the SWMMP diversion programs provide better value for the City than the need to site a new landfill site.

Does the option you are recommending create value across all three bottom lines? ☑ Yes  □ No
The continued implementation of the SWMMP over the next 2 to 3 years represents value across triple bottom line considering impacts on the community and the environment within limited financial resources.

Do the options you are recommending make Hamilton a City of choice for high performance public servants? □ Yes  ☑ No
## Solid Waste Management Master Plan Recommendations

### Guiding Principles

1. The City of Hamilton must maintain responsibility for the residual wastes generated within its boundaries. Inter-regional diversion facilities will be considered.

2. The Glanbrook landfill is a valuable resource, and the City of Hamilton must optimize the use of its disposal capacity to ensure that there is a disposal site for Hamilton’s residual materials that cannot be otherwise diverted.

### System Recommendations

3. The City of Hamilton must set an aggressive objective of 65% waste diversion by the end of 2008, based upon 2000 waste generation rates.

4. The City of Hamilton must develop a waste management system that contains the following waste diversion components:
   - State-of-the-art Material Recycling Facility (MRF) to divert conventional "dry" recyclable materials
   - A centralized composting facility capable of managing household organic and leaf and yard wastes
   - Community Recycling & Reuse Centres

5. A new state-of-the-art Energy From Waste (EFW) facility may form part of the City of Hamilton’s waste management system so the need for the EFW facility must be revisited in 2006 to determine if such a facility is needed to optimize the disposal capacity at the Glanbrook landfill site. Our diversion rates will be continuously monitored in order to determine the likelihood of success of achieving our 2006 diversion target.

6. The City of Hamilton should adopt a three-stream waste collection system (recyclables, organics and residual garbage), commencing with a pilot test in 2002 to identify and resolve operational and implementation considerations.

7. The City of Hamilton will consider the potential need for a user-pay system to encourage waste diversion and fund the waste management activities.

8. The City of Hamilton should adopt flexible enforcement systems that become progressively rigorous as waste diversion systems come into operation, recognizing the socio-economic and cultural diversity of the City.

9. The City of Hamilton should implement the components of the new waste management system as soon as possible based upon their diversion potential and operational viability.
### Solid Waste Management Master Plan Recommendations

#### Sustainable Development

| 10 | The City of Hamilton must implement, sustain and support a comprehensive public education, awareness and marketing program in all areas of the city outlining the benefits and encouraging participation in waste reduction, re-use, and recycling programs. |
| 11 | The siting of any new waste management facilities must consider neighbourhood issues, equity for its communities and the location and concentration of existing waste facilities. |
| 12 | The City of Hamilton should seek opportunities to share waste diversion (recycling or organics) facilities with neighbouring municipalities. |
| 13 | The City of Hamilton is committed to continually improving its waste management system and will support annual investment in research and development. |
| 14 | The City of Hamilton should continue to lobby the federal and provincial governments to do everything in their power to support municipalities with waste management programs with appropriate legislation, funding and fiscal policy.  
In the short term the City of Hamilton should request the Province to enact and implement Bill 90 as soon as possible. |
| 15 | The City of Hamilton should enter any Public-Private partnerships with caution. If pursued, the City should ensure it retains sufficient control and financial protection, to allow the City to continue to deliver the service should the private partner be unable or unwilling to fulfil its obligations. |
| 16 | The City of Hamilton should monitor the waste composition regularly to provide feedback on the effectiveness of the overall waste management system and public communication program. |
| 17 | The City of Hamilton should establish a waste management implementation task force to help staff and politicians implement and monitor the new waste management system. |
| 18 | The City of Hamilton should produce an annual report card to document progress toward its waste diversion objectives and the implications of that progress. |
| 19 | That the General Managers review and report back on how their respective department's policies, by-laws and operations can be enhanced to implement and support the Solid Waste Management Master Plan. |
OPTIONS FOR IMPROVING DIVERSION

There are a number of options available for consideration that can improve diversion. In this section these options will be reviewed relative to environmental impacts (waste diversion), community/social impacts and financial impacts (cost of implementation).

The options for consideration include:

1. User-pay for more than two (2) garbage containers
2. One (1) container limit on garbage, three (3) grace periods per year
3. Clear plastic bags for garbage, limit of one (1) bag per week
4. Enhanced multi-residential diversion programs
5. Incentive programs, RecycleBank
6. Enhanced enforcement of Solid Waste Management By-law No. 05-190
7. Education and Community Outreach

The details of these diversion options are contained in the following paragraphs:

1. User-Pay for More than Two (2) Garbage Containers

The concept of user-pay is based on excluding the cost of collection and disposal of garbage from the tax assessment and having the cost applied directly to a container set out for collection. Variations on the system include the first container being included in the assessment, any additional containers being at the established cost. The cost is established by estimating tonnages, cost of collection and disposal and the number of containers required to offset those collection and disposal. This approach would put a high cost on a container and most municipalities with user-pay systems establish a nominal cost per container ($1.50 to $3.00) to get residents thinking about the cost, and include the balance of the waste management costs including diversion and a portion of collection and disposal on the tax assessment. The price is usually associated with a tag that is placed on a container when it is set out for collection.

To temper the cost of a container, only a portion of the cost of collection and disposal of garbage could be removed from the tax assessment and applied to a container cost. In this way, a nominal cost per container can be established, for example $1.50 or $2.00, and the balance of the waste management costs including diversion and a portion of collection and disposal would remain on the tax assessment. One concern about user pay systems is that as residents catch on to the program and reduce the amount of garbage generated, the revenues may not offset the costs after (2) to three (3) years. After this time, a user-pay system would only be sustainable through increased container cost or encouraging the set out of more garbage which defeats the purpose of diversion.

It is estimated that the diversion from a user-pay program will increase diversion by about 10,900 tonnes, or 4.4% per year. However the social implications, the perception of double-dipping and the lack of sustainability associated with user-pay systems make it more difficult to support.

Although the revenues from additional recyclable materials collected would help to offset the costs, there are administrative costs associated with a user-pay system including additional staffing, education and outreach, enforcement and clean up of illegal dumping. These costs in the first year are offset by the revenues generated by tag sales.

The SWMMP Steering Committee does not favour a user-pay system.

The Waste Reduction Task Force does not favour user-pay as it is perceived as double-dipping, allows residents to buy their way out of container limits, has impacts on low income households and will likely result in increased illegal dumping. Although this may be the perception, a portion of the disposal cost is actually removed from the tax assessment and replaced with the revenues from the sale of tags.

Start up costs associated with a user-pay system would be about $835,000 to cover the cost of tag production, program launch and initial community outreach.
In addition, annual operating costs would include the addition of two (2) finance staff to administer the program, one (1) enforcement staff (separate from enhanced enforcement) and costs associated with illegal dumping clean up. These costs are estimated to be approximately $688,000 annually.

Although there would be revenues from the sales of tags, this revenue could range from virtually nothing to an estimated $7 million (if 40% of eligible households used one [1] tag per week). The reliability of this revenue is uncertain for the purpose of budgeting.

2. Further Container Limits on Garbage Per Household Per Week

Limiting curbside garbage to one (1) container per week is achievable in most single family households. Waste composition studies indicate that the average weekly set out of garbage is 1.2 containers, indicating that many residents set out less than one (1) container per week (they don’t set garbage out every week). In addition, the average weight of a garbage container is far below the 23 kg that is permitted in the Solid Waste Management By-law.

However there is still a significant amount of divertible materials going into the 1.2 garbage containers weekly. A waste composition study undertaken in October 2006 indicated that the average curbside household produces 761 kg. of waste per year, excluding leaf and yard waste. Of this 364 tonnes, 48% is diverted through the recycling and organics programs. It is noted that this represents a sample of one-hundred (100) households receiving full curbside collection programs. The overall diversion rate of 40% is impacted by lower diversion in the multi-residential sector. If the goal of 65% diversion was to be achieved at curbside, approximately 19,700 additional tonnes would be diverted annually through the recycling and organics programs representing a 17% increase in diversion.

To assist in achieving the further container limits most of the year, grace periods can be established around seasonal occasions/events when residents may generate more garbage. It is suggested that grace periods could be implemented for the week after Victoria Day, Thanksgiving and Christmas or New Year’s. During these times the limit on garbage would be increased to three (3) containers.

With the waste diversion tools available to residents in the form of blue boxes and green carts, a one (1) container limit per household per week for garbage places no financial hardship on residents.

The implementation costs are minimal as the education and outreach requirements include the calendar and promotional advertising that are in the existing operating budget. The cost associated with reducing the number of garbage containers is predominantly related to the collection and processing of increasing materials diverted and reducing garbage.

The Steering Committee prefers to see the container limit phased in over two (2) years, so that in 2008 the limit would be two (2) containers and in 2009 the limit would be one (1) container. In view of the enforcement strategy approved by Council in 2004 around moving to one (1) container and the waste audits conducted after Green Cart implementation, most residents are ready to move to one (1) container of garbage per week.

The Waste Reduction Task Force supports this option and suggests that the City reduce the limit on garbage to one (1) container as soon as possible and in 2008 and that enforcement goes hand in hand with the container limit.

In recognition of the Steering Committee position, there are options around enforcement. A one (1) container limit could be established with a focus on education and customer service for a period of time, e.g. for the balance of 2008. This may have an impact on the amount of waste diverted in 2008 although further additional diversion would be seen in 2009. More rigorous enforcement would not likely commence until mid-January 2009 to accommodate the grace period and the collection of Christmas trees.

In addition there are processes that can be set in place to address requirements related to medical situations and families with small children. This has been done in other municipalities including the Region of Peel, the City of Oshawa and the Town of Whitby.

This can be done through a special consideration application to the Waste Management Division. Eligibility would be a certificate from a doctor for a medical situation or evidence that a household had
three (3) children under the age of (5). Special consideration households would be eligible for up to three (3) containers of garbage per week with the second and third containers being tagged. It is estimated that the cost associated with the tags would be about $10,000 per year. The administration of the special consideration program would be through the Customer Service Co-ordinators in the Waste Management Division.

There is no capital cost to the implementation of a limit of one (1) container of garbage per household per week.

The operating costs of $536,800 for processing additional materials of associated with the limit of one (1) garbage container per household per week including the special consideration program would be offset by the recycling revenues generated and disposal savings from increased diversion. Education and outreach would be done in conjunction with the issue of the annual waste collection calendar and the annual advertising budget.

The container limit is the best option for achieving diversion and has no financial impact on the resident.

3. Clear Plastic Bags for Garbage, One (1) Bag Limit Per Week

The use of clear bags for garbage has been implemented in several municipalities in Nova Scotia in conjunction with a container limit. This option has the ability to increase diversion while being easy for residents and collection crews. Transition periods can be used so that residents can use up existing supplies of coloured bags.

One concern that staff has is that it would appear to promote the use of plastic bags over reusable containers in a system where we don’t promote the use of plastic. However the amount of plastic is predictable.

This option has the ability to divert a similar amount of waste as the simple one (1) container limit, about 10,900 tonnes per year or about 4.4% additional diversion.

Concerns around this option relate predominantly to privacy issues for residents. Some municipalities where clear plastic bags have been implemented allow residents to put one opaque grocery bag inside their larger clear plastic bag to address this issue. Alternatively where an opaque grocery bag is adequate to accommodate all garbage, it can be set out on its own.

The implementation costs are minimal as the education and outreach requirements include the calendar and promotional advertising that are in the existing operating budget. The cost associated with reducing the number of garbage containers is predominantly related to the collection and processing of increasing materials diverted and reducing garbage.

The Steering Committee also does not favour this option.

The Waste Reduction Task Force does not support this option, citing public resistance related to privacy issues and having to buy a specific bag. They also thought that although the program is easy to implement, it places onus on the collection operators to check the material in the bag and make a judgement call on the acceptable amount of recyclable material in the bag. This option should be a last resort.

4. Enhanced Multi-Residential Diversion Programs

In 2003-04, a significant effort was made to get the recycling program into all multi-residential buildings with the delivery of blue carts, apartment recycling bags and a brochure. Although over 95% of these buildings have access to the recycling program, there was little follow-up with property managers, superintendents or residents until recently when a survey of superintendents was undertaken around the launch of the Green Cart program in multi-residential buildings. Some of the findings suggest that there is not only a high turnover in residents, but also a significant turnover in superintendents.

A waste composition study undertaken in October 2006 indicated that the average multi-residential unit produces 568 kg of waste per year. Of this, 88 tonnes, or 16% is recycled. If a conservative goal of 50% diversion was established for multi-residential facilities, approximately 12,000 additional tonnes would be diverted annually through the recycling and organics programs or a 4.8% increase in diversion.
It is proposed that the Green Cart program be implemented in multi-residential buildings between 2008 and 2009. However in 2007 the program delivery has started at small buildings of up to fifteen (15) units that receive curbside garbage collection and can be serviced with the curbside Green Carts. Collection will be undertaken with the existing fleet of split vehicles for garbage and organics and the change is simply which side of the truck the material goes into. This can be accommodated within the existing collection system. The tonnage received at the Central Composting Facility will increase slightly and this is proposed to be included in the 2008 budget.

It is also proposed to rejuvenate the recycling program while delivering the Green Cart program to multi-residential buildings.

Delivery of the Green Cart program to these small buildings will follow a similar order to the delivery of the curbside program. Distribution will start in collection Zones A2 (Dundas, West Hamilton) and A3 (Flamborough), followed by B2 (Stoney Creek) and B3 (Glanbrook, Ancaster), B1 (upper Hamilton) and A1 (lower Hamilton). The distribution schedule facilitates the initiation of the program while further consideration is given to alternative containers and collection vehicles for high rise buildings and more densely developed areas.

The program delivery could be accelerated with the addition of staff resources, containers, collection vehicles, vehicles to distribute containers and communication materials. The costs associated with the delivery of this option are available in the existing Green Cart Implementation Capital account to do this. The operating costs for the collection and processing of organic materials and additional recyclables would have an impact on the operating budget in 2008 and 2009 if the program was accelerated.

The implementation of the Green Cart program and rejuvenation of the recycling program in multi-residential facilities has good diversion potential over the next two (2) years. However this is also the biggest challenge to diversion. The City of Toronto has launched some pilot projects around multi-residential organics but has yet to develop a plan for full roll-out. Resident barriers relate to convenience, cleaning kitchen containers and Green Carts and odours. Challenges for superintendents and property managers relate to anonymity and accountability of residents and tenant turnover. For the multi-residential diversion program to remain successful after the launch of the program will require a constant maintenance program.

The Steering Committee supports the more active implementation of the multi-residential diversion programs over the next two (2) years.

Capital costs for the program delivery of the multi-residential program over the next two (2) years would be associated with the purchase of containers (carts and/or bins and kitchen containers), collection vehicles for larger carts and/or bins and communication materials and cart/container distribution. It is estimated that these costs will be approximately $4.1 million. This will be funded from the existing Green Cart Implementation capital account 5120594528. This capital would be expended in 2008 however the operation impacts would not be considered until 2009.

Most of the program delivery in 2008 would be accommodated with existing public and contracted services for curbside collection, and costs are expected to be offset by recycling revenues. Although there would be new operating costs for collection in 2009 it is also expected that these costs would be offset by the recycling revenues. Potential savings would be monitored for future budget processes.

The cost of staffing future implementation for new development and new residents is proposed to be covered through the capital budget while the program is delivered to 2009 after which consideration will need to be given to operating budget impacts. The Waste Reduction Task Force is of the opinion that 65% diversion cannot be reached without the multi-residential participation in all diversion programs. They comment that this may be the most difficult option and education and outreach will be keys to success. Phasing and incentives to building owners were suggested.

5. Incentive Programs, RecycleBank

RecycleBank is a company based in New York that has developed an incentive program where residents receive rewards for recycling. The program has been implemented in parts of Philadelphia, Wilmington, Delaware and Gloucester County, New Jersey with other areas pending.
Although the program has typically been implemented in areas where there is single stream recycling, it can be adapted to any cart based collection system, and the preliminary discussions with the representatives indicate that it could work for the Green Cart program.

Carts are equipped with radio frequency identification (RFID) chips that are linked to the street address. The trucks are equipped with an RFID reader that sends the weight information to a computer system that credits the account with the reward. The rewards are redeemable at area retailers, the accounts of which are established by RecycleBank. Residents can achieve up to $35 per month in credit that can be redeemed at participating stores and restaurants. A reward program is a big asset for low income housing.

There is a cost associated with the program and between this cost and the additional collection and processing cost associated with additional diversion, this would be a higher cost diversion option.

Staff has had discussions with the RecycleBank representatives about a pilot program to 4,000 households with Green Carts in a variety of areas at a cost of about $150,000 plus any related collection and processing costs. The $150,000 would cover the cost of the RFID chips and their installation on the carts, the RFID reader and accounting system, arrangements with retailers and promotion. The collection and processing costs are expected to be minimal with the number of households that would be involved. The cost to deliver the program city wide would be in the order of $2.7 million per year.

The SWMMP Steering Committee suggested that we focus on the current Reward and Recognition program and consider other alternative incentives.

The Waste Reduction Task Force does not support this option as it rewards residents for what they should be doing anyway. The RecycleBank program has no proven track record. The program is consumer based and suits private interests. Incentives will have to be increased over time to get residents to do more.

Although the cost associated with the city wide implementation of the RecycleBank program would be significant, launching a pilot would provide an opportunity to test the potential impact on waste diversion.

6. Compostable Bags

The City’s Central Composting Facility (CCF) was not designed or equipped to accept plastic bags. As such the Green Cart program was launched in 2006 with a policy around “no plastic bags or bags that looked like plastic”. The quality of the material received at the facility and the end compost product have been very good.

The use of compostable bags in the Green Cart program would complement other diversion options. It would provide both curbside and multi-residential residents with flexibility to minimizing garbage quantities.

In the year and a half that the CCF has been operating Aim Environmental Group has reviewed the feasibility of accepting compostable bags and considered testing results and determined that there are certain compostable bags that will break down under the conditions and time of the CCF process.

However not all compostable bags are the same and there is a need to restrict those that can be accepted. Staff has been working closely with several municipalities who are interested in accepting appropriate compostable bags in their household organics programs to make organics programs more acceptable to residents. Considerable progress has been made to developing a consistent message with our inter-municipal partners and we will be in a position to accept certain compostable bags in Hamilton’s Green Cart program in April of 2008. This additional option as a container liner will complement the other diversion measures being recommended in this report.

Prior to the completion of the content for the 2008-09 waste collection calendar late this year, the list of acceptable compostable bags will be developed for inclusion in the calendar and use in the Green Cart program. Until the calendar is issues residents will continue to be reminded that plastic bags and bags that look like plastic are not accepted at this time.
7. **Enhanced Enforcement of Solid Waste Management By-law 05-190**

Enhanced enforcement can be implemented on its own or in conjunction with most other diversion options. Curbside enforcement is undertaken directly with the resident. Enforcement in multi-residential buildings is generally done through property managers or superintendents.

With regard to the curbside enforcement, the current enforcement strategy has been focused on voluntary compliance. Initially collection operators sticker containers that are not in compliance (unacceptable material, too many containers). As required, Customer Service Co-ordinators in the Waste Collection section of the division follow up with residents as required. The non-compliance has decreased substantially, however there is still room for improvement and there are habitual offenders.

The enforcement strategy has been in place since November 2005 with the approval of Report PW04034c however most of the enforcement to date has focused on voluntary compliance. As indicated in Information Update ESSWM-001, dated July 17, 2007, taking the next step of more involvement of the Municipal Law Enforcement Officers to assist in the hard cases will be undertaken. In this regard there is a schedule of set fines under Part 1 of the Provincial Offences Act that can be imposed. In addition, Part 3 charges can be applied for offences not covered by set fines.

The current level of enforcement consists of four (4) Customer Service Co-ordinators in the Waste Management division and half (.5) of an FTE in the Municipal Law Enforcement section dedicated to Waste Management. Two (2) Customer Service Co-ordinators were added in 2006 in the budget process to provide customer support service around the implementation of the Green Cart program and voluntary compliance with the by-law.

This level of enforcement can be undertaken with no expected additional costs. Further enhancement to enforcement is expected to promote waste reduction and increase waste diversion. It is expected that enhanced enforcement on its own (not in combination with other diversion options discussed in the section) would result in additional collection and processing costs for the increased diversion and the cost of additional municipal law enforcement staffing.

In conjunction with enforcement staff is the process of updating the Solid Waste Management By-law related to program changes (White Goods, bulk items, acceptable materials and container limits) and the proposed amendments should be presented to Council this year.

The Waste Reduction Task Force suggests that enhanced enforcement needs quick and diligent follow-up. A continuum approach should be used for enforcement ranging from education and customer service to stronger enforcement and uniformed by-law officers with resources to match.

The Steering Committee asked that the need for additional enforcement staffing be justified.

Staff reviewed this with the municipal law enforcement staff and found that in 2006 approximately 60% of an FTE’s time was dedicated to Waste Management issues. This is expected to continue to increase. The addition of half (.5) of an FTE would dedicate a full enforcement FTE to Waste Management matters to help improve waste diversion. The cost of this enforcement enhancement would be $30,000 in 2008 and $40,000 when fully annualized in 2009.

The total cost associated with enhanced enforcement would be approximately $371,700 in 2008. This would be offset by the revenue associated with additional recyclable materials disposal savings.

8. **Education and Community Outreach**

Education and community outreach activities are essential to implementation and maintenance of waste diversion programs.

The SWMMP includes a recommendation that:

“The City of Hamilton must implement, sustain and support a comprehensive public education, awareness and marketing program in all areas of the city outlining the benefits and encouraging participation in waste reduction, re-use, and recycling programs.”
During the implementation of the multi-residential diversion program from 2007 to 2009, co-op students are being funded from the Green Cart Implementation capital account. These students are surveying superintendents and property managers and providing direct contact while green carts, in-unit containers and communication packages are being delivered. It is proposed that these students be funded until the end of 2009.

Once implementation is completed, enforcement with building superintendents and property managers will be assumed by the four (4) Customer Service Co-ordinators. Although two (2) of these positions were created temporarily to handle the additional house calls resulting from the Green Cart program, it will be critical to the success of the multi-residential program to have these positions retained as FTEs.

However there is an aspect to multi-residential buildings that is almost non-existent with residential curbside programs and that is multi-residential is highly tenant based and experiences high turnover of residents. Combined with the growing trend for new development to be compact and multi-family, there will be a continuing need to have education and outreach services to deliver the initial program to new residents and new buildings. It is expected that this could fill the time of a full-time employee. This cannot be accommodated in the current staff complement in the Community Outreach group in the Solid Waste Planning section. It is proposed to add an FTE to the Community Outreach group in the 2010 budget.

It is also proposed that a portion of this additional FTE time be dedicated to waste reduction activities, which have only been promoted peripherally around waste diversion programs.
Waste Reduction Task Force Recommendation

The WRTF recommendation on diversion options was read aloud by the Chair. The recommendation is as follows:

“After careful consideration, the Waste Reduction Task Force has concluded that if the City is to achieve 65% diversion from landfill even two years behind the Solid Waste Management Master Plan schedule, four areas of concern must be given high priority. Prompt action in these areas coupled with technological advance can prolong the life of Glenbrook Landfill significantly, and in so doing save the City millions of dollars. Failure to act promptly now, while we still have options, will have a significant financial, environmental and political cost.

Resolved: The Waste Reduction Task Force asks Council through the Public Works Committee to immediately take all necessary steps to provide Waste Management Division with the tools to reach 65% diversion from landfill by 2010 or sooner. The highest priority should be given to three areas:

1. Implementation of the Green Cart program in all multi-residential housing units in the City by 2010 at the very latest. The Task Force does not believe a 65% diversion target can be reached without significant advances in this area.

2. A non-voluntary one container limit for garbage should be imposed immediately. Since the introduction of the Green Cart Program, an overwhelming majority of households are already close to this standard, and special arrangements can easily overcome individual and seasonal challenges.

3. It is time to implement the "progressively rigorous" enforcement of relevant by-laws called for in Recommendation 8 of the SWMMP. The Task Force has long advocated that enforcement of waste management by-laws should be conducted in a reasonable and sensitive manner. However, the current situation could best be described as "all carrot, no stick.

4. As an integral part of the efforts in these and other areas, residents should be reminded at every opportunity that reduction is a key component to all waste management strategies, and one that requires no special equipment, expertise or expense.”

A motion was put forward that this recommendation be approved as stated and that staff forward this recommendation to Public Works Committee at their November meeting.

The motion passed unanimously. (Moved by Peter Hutton, seconded by Dave Hart Dyke)