



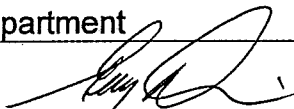
Hamilton

8.2

CITY OF HAMILTON

**PUBLIC WORKS DEPARTMENT
Operations and Waste Management**

Originally Presented Public
Works Committee Meeting
Feb 6, 2012/
Referred by Council
Feb 8, 2012

| | |
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| TO: Chair and Members Public Works Committee | WARD(S) AFFECTED: CITY WIDE |
| COMMITTEE DATE: February 6, 2012 | |
| SUBJECT/REPORT NO: Waste Collection Procurement Process for 2013-2020 (PW11030e) - (City Wide) (Outstanding Business List Item) | |
| SUBMITTED BY: Gerry Davis, CMA General Manager Public Works Department | PREPARED BY: Raffaella Morello (905) 546-2424, Extension 3445 Pat Parker (905) 546-2424, Extension 3916 |
| SIGNATURE:  | |

RECOMMENDATION

- (a) That the City's Waste Collection System commencing April 1, 2013 be approved consisting of the following services:
 - (i) Weekly collection of Organic Waste;
 - (ii) Bi-weekly collection of Garbage;
 - (iii) Weekly Leaf and Yard Waste collection;
 - (iv) Bi-weekly call-in Bulk Waste collection for curbside collection and weekly call-in collection of Bulk Waste for multi-residential buildings;
 - (v) Weekly two-stream collection of Recyclable Materials;
 - (vi) Weekly two-stream Automated Recycling Cart collection;
 - (vii) Weekly front-end Bin Service for Garbage collection;
 - (viii) Supply of front-end Bin Containers for Recyclable Fibres and weekly front-end Bin Service for Recyclable Fibres collection;
 - (ix) Multi-day collection of Public Space Litter Containers and Public Space Recycling Containers;

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- (b) That the waste collection system in (a) include the following refinements:
 - (i) Collection of up to three (3) containers of garbage per residential unit on an bi-weekly schedule;
 - (ii) Permit the use of alternative recycling containers to reduce escaped waste;
 - (iii) Supply of front-end garbage bin containers for garbage collection at municipal facilities;
 - (iv) Continue with Special Considerations for households with children, medical circumstances, home day cares and agricultural properties based on the container limit;
 - (v) Bulk waste reuse events as a pilot program;
 - (vi) Phase in of smaller green carts;
- (c) That each residential unit be provided with six (6) vouchers to replace the three (3) original amnesty days to allow drop off of garbage up to 30 kg at the Community Recycling Centres (CRC) at any time;
- (d) That a tag system for additional garbage for curbside collection be available for purchase at specified locations at a cost of \$2 per tag in blocks of five (5) tags;
- (e) That the Special Considerations provisions in the Solid Waste Management By-law 09-067 be amended to allow for families with two (2) children under the age of four (4) to be eligible for Special Consideration;
- (f) That appropriate amendments to Solid Waste Management By-law 09-067 be enacted to implement recommendations (a), (b), (c), (d) and (e);
- (g) That Halton Recycling Ltd. (dba Emterra Environmental), be selected as the Successful Proponent for:
 - (i) Project 5 of Request for Proposals C11-30-11 which is comprised of:
 1. Weekly collection of Organic Waste in Zones B1, B2 and B3;
 2. Bi-weekly collection of Garbage in Zones B1, B2 and B3;
 3. Weekly Leaf and Yard Waste collection in Zones B1, B2 and B3;
 4. Bi-weekly call-in Bulk Waste curbside collection and weekly collection of Bulk Waste for multi-residential buildings in Zones B1, B2 and B3;
 5. Weekly two-stream collection of Recyclable Materials City-wide;
 6. Weekly two-stream Automated Recycling Cart collection City-wide;
 7. Weekly front-end Bin Service for Garbage collection City-wide;

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8. Supply of front-end Bin Containers for Recyclable Fibres and weekly front-end Bin Service for Recyclable Fibres collection City-wide;
 9. Multi-day collection of Public Space Litter Containers and Public Space Recycling Containers in Zones B1, B2 and B3;
- (ii) Additional Work identified in Request for Proposals C11-30-11 including:
1. The collection of three (3) or more containers for bi-weekly collection of garbage;
 2. A garbage tag system to supplement the curbside program;
 3. Collection of blue boxes with lids and larger blue boxes;
 4. The supply of bin containers at municipal facilities;
 5. Bulk waste reuse events, at the discretion of the City.
- (h) That the contract period be seven (7) years commencing April 1, 2013 with the potential extension of one (1), one (1) year term;
- (i) That the General Manager of Public Works be authorized and directed to finalize the terms and conditions of the agreement with Halton Recycling Ltd. (dba Emterra Environmental) in accordance with the provisions of Request for Proposals C11-30-11;
- (j) That the Mayor and City Clerk be authorized and directed to execute the agreement with Halton Recycling Ltd. (dba Emterra Environmental), together with any necessary documents, in a form satisfactory to the City Solicitor;
- (k) That Capital Project 5121294500 Recycling Program - Vehicle Acquisition and Facility Modification, which was parked during the 2012 Capital Budget process be withdrawn from further consideration and the 2012 Capital Financing Strategy be amended to reflect a lower reliance on Future Fund financing;
- (l) That the Outstanding Business Items referring to Waste Collection and Recycling Processing Procurement Processes for 2013-2020 as well as Activity Based Costing for Public Sector Waste Collection 2013-2020 be identified as completed and removed from the Public Works Committee Outstanding Business List;
- (m) That the Outstanding Business Item referring to Illegal Dumping, Litter and Escaped Waste be identified as completed and removed from the General Issues Committee Outstanding Business List.

EXECUTIVE SUMMARY

This report provides the recommendations for the City's Waste Collection Services for the period from 2013 to 2020. The City's existing waste collection contracts will end in March 2013 and new contracts need to be in place for a seamless transition. In 2011, staff investigated several waste collection alternatives to develop the appropriate waste collection system for the City. Based on Council's approved recommendations from

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Report PW11030a, staff issued RFP C11-30-11 to solicit pricing for the City's waste collection services. A Preferred Waste Collection System for 2013-2020 was summarized in Report PW11030d which included the financial results from RFP C11-30-11, Internal Costing for the public sector services, and operational considerations for the waste collection system. On January 16, 2012, the Public Works Committee referred Report PW11030d to the February 6, 2012 Public Works Committee meeting and directed staff to respond to several questions that were raised. Additional information was provided in Information Update OWM1201, 2013-2020 Waste Collection Contract Period – Follow-ups from the January 16th Public Works Committee, which is provided in Report PW11030e as Appendix A.

This report contains the same Project recommendations as in Report PW11030d (i.e. Project 5) but contains fine tuning of the Additional Work based on the feedback from the Public Works Committee. Table 1 shows the comparison of the curbside waste collection services for the current system, the system recommended in Report PW11030d and the revised system being recommended in this Report PW11030e.

Table 1 - Comparison of Curbside Collection Services

| Current Collection System | System Recommended in PW11030d | Revised System Recommended in this Report PW11030e |
|--|--|---|
| Weekly Garbage Collection | Bi-Weekly Garbage Collection | Bi-Weekly Garbage Collection |
| 1 container limit for garbage | 6 container limit for garbage | 3 container limit for garbage |
| Extra Garbage - 15 Amnesty Days for extra garbage (3 original + 1 per month allowing 30 extra bags per year) | Extra Garbage covered by container limit. | Extra bags can set out with a tag (\$2 each) Six vouchers for free drop off at Community Recycling Centres |
| Total bags per year = 82 | Total bags per year = 156 | Total bags per year = 84 |
| Special Considerations – 3 bags per week for eligible households (three children under five, medical circumstances, home day care facilities, and agricultural properties) | Special Considerations – not required | Special Considerations – 6 bags bi-weekly for eligible households (two children under four , medical circumstances, home day care facilities, and agricultural properties) |
| Weekly Recycling (unlimited) | Weekly Recycling (unlimited) Larger Blue Boxes and Containers with lids | Weekly Recycling (unlimited) Larger Blue Boxes and Containers with lids |
| Weekly Green Cart + 2 leaf and yard waste bags | Weekly Green Cart collection, use of Smaller Green Carts | Weekly Green Cart collection, use of Smaller Green Carts |
| Bi-weekly seasonal Leaf & Yard waste (unlimited) | Weekly Leaf & Yard waste (unlimited) | Weekly Leaf & Yard waste (unlimited) |
| Seasonal weekly call-in bulk collection | Weekly call-in bulk collection | Bi-weekly call-in bulk collection Pilot Bulk reuse event |

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The Preferred Waste Collection System, referred to as Alternative 2 in this report, is based on Project 5 of RFP C11-30-11. The system is similar to what was proposed in Report PW11030d; the recommended Project is the same however changes are proposed Additional Work to allow flexibility for extra garbage, particularly for households with diapers, pet waste and extra garbage containers. These revisions include the following:

- Bi-weekly garbage collection with a three (3) container limit per residential unit rather than a six-container limit as proposed in Report PW11030d;
- A voucher system to provide residents with six free vouchers for use at the Community Recycling Centres;
- Inclusion of a user pay garbage tag system as Additional Work to supplement the curbside collection program, with tags available for purchase;
- Bulk waste reuse events, tested with a pilot project in Ward 13.

The vouchers and the garbage tag system would provide flexibility to residents to set out additional containers of garbage when necessary during the year, rather than prescribing amnesty weeks. In addition, it is recommended that the Special Considerations policy be amended to accept families with two children under the age of four, rather than three children under the age of five.

The waste collection changes and the Special Considerations policy change will be addressed in an amendment to the Solid Waste Management By-law No. 09-067. Recommendations related to the award of the contract are the same as in Report PW11030d.

In conjunction with the Waste Collection Calendar, it is proposed to include an advance notice to residents early in 2013 to advise them of the changes, what they can expect, when the changes will take place and telling them to look for the calendar in March.

The recommended system maintains several aspects of the current system while increasing the service levels for the container limits, leaf and yard waste and bulk waste, and providing flexibility for diapers, pet waste and extra garbage. The system increases waste diversion through bi-weekly garbage collection.

The recommended system costs would continue to show savings of \$1.22 to \$2.74 million annually over the 2011 waste collection budget of \$24.81 million.

Alternatives for Consideration - See Page 9

FINANCIAL / STAFFING / LEGAL IMPLICATIONS

Financial: A financial analysis was undertaken to compare the costs of Projects 1, 3 and 5 from Report PW11030d with the alternative projects presented in this Report and is provided in this Report PW11030e as Appendix B. Projects 1 and 5 continue to be financially favourable compared to current costs when all enhancements are included. The alternatives in this report relative to Project 3 could result in increased costs if all of the revenues are lost. Additional information is also contained in Alternatives for Consideration, Section 6 of this report.

The Preferred Waste Collection System, represented by Project 5 (from Report PW11030d) with the enhancements from Alternative 2 in this report is expected to continue to show a savings of \$1.22 to \$2.74 million annually over the 2011 waste collection budget of \$24.81 million. The range is related to the potential loss of revenues at the Community Recycling Centres from a loss of all minimum fees up to a loss of all residential fees.

Staffing: There are no staffing implications with the recommendations in this report. The waste collection services will be provided using the existing staff complement.

Legal: An Agreement will be finalized with the Preferred Proponent which includes the Preferred Waste Collection System pending approval from Council.

HISTORICAL BACKGROUND

The City's Waste Collection contracts expire in March of 2013. In preparation for new contracts, a Request for Proposals (RFPs), was issued in August 2011 and closed in October 2011, for six (6) projects reflecting three (3) waste collection systems.

An evaluation process was undertaken for the RFP technical submissions, followed by a review of the financial submissions for Acceptable Projects. On January 16, 2012, Report PW11030d was presented to the Public Works Committee with the results of the waste collection procurement process. The Public Works Committee deferred the matter to the February 6, 2012 Public Works Committee meeting, requesting staff to provide additional information on the waste collection services. Several questions raised at the January 16th Public Works Committee meeting were addressed in an Information Update OWM1201 issued to Council on January 23, 2012. The Information Update is included in Report PW11030e as Appendix A.

The purpose of this Report PW11030e is to complete the answers to the questions, provide updated costing information and to make further recommendations related to the recommended Preferred Waste Collection System and Preferred Proponent for the collection contracts. It is not intended to repeat the information provided in Information Update OWM1201, but to draw conclusions from it related to the Waste Collection System and the 2013-2020 waste collection system period.

POLICY IMPLICATIONS

The recommendations in this report are guided by the Public Works Business Plan, 'Innovate Now!', the City's Purchasing Policy, the Solid Waste Management Master Plan (SWWMP), and the Solid Waste Management By-law 09-067.

1. Public Works Business Plan - 'Innovate Now!'

The recommendations in this report support the vision drivers of Processes and People as they provide innovative solutions to creating a more efficient service delivery model to the citizens of Hamilton.

2. City of Hamilton Purchasing Policy

Purchasing Policy 5.4 – Policy for Request for Proposals (\$5,000 and greater): The RFP process was structured in accordance with Policy 5.4 to solicit pricing for the waste collection services.

3. Solid Waste Management Master Plan (SWMMP)

The development of the Waste Collection System complies with several SWMMP recommendations, including:

- Optimizing the landfill capacity through waste diversion (SWMMP recommendation #2);
- Implementing waste diversion programs to help increase the City's waste diversion rate (SWMMP recommendation #3);
- Developing programs to support the continuous improvement of the City's waste management system (SWMMP recommendation #13); and
- Ensuring that contractual arrangements with the private sector provide protection to the City against risk associated with non-performance (SWMMP recommendation #15).

4. Solid Waste Management By-law 09-067

The City's Solid Waste Management By-law 09-067 regulates the requirements for the waste collection programs. Amendments will be required to the By-law related to the proposed changes to the waste collection services including allowing alternative recycling containers, and revisions to the waste collection schedule.

RELEVANT CONSULTATION

In the preparation of this report staff consulted with a number of municipalities with regard to bi-weekly garbage collection, garbage container limits, garbage tag systems, managing pet waste and diapers, special considerations tipping fee relief, and educational requirements. Municipal waste management systems vary across the province and country, and relevant comments will be included in the Alternatives for Consideration section of this report.

Staff has also consulted the Customer Service Division to review potential impacts on the Municipal Service Centre operations in the event that the new system involves the sale of bag tags. The Customer Service Division has advised that they would be able to handle the sale of tags when the system is set up.

The Clean City Liaison Committee (CCLC) discussed the matter at its January 19, 2012 meeting and some members expressed concern about the six (6) container limit for bi-weekly garbage collection. There was discussion the CCLC may consider a formal position and may request a delegation at the February 6, 2012 Public Works Committee.

By-law and Parking Service staff will be consulted further once the Preferred Waste Collection System has been selected. It is recognized that the current system is placing

demands on enforcement and that changes as proposed in the enhanced systems can help to reduce enforcement requirements by added flexibility for garbage and more convenient bulk and leaf and yard waste collection.

ANALYSIS / RATIONALE FOR RECOMMENDATION

The Preferred Waste Collection System being recommended is based on Project 5 of RFP C11-30-11 Waste Collection Services with improvements in Alternative 2 of this report. It is considered that the Preferred Waste Collection System will provide the City with best value. The system components include the following:

- bi-weekly curbside collection of up to three (3) containers of garbage;
- six (6) vouchers per residential unit for extra garbage, with each voucher having a maximum weight of 30kg;
- continuation of the current Special Considerations policy for families (to be revised to two children under the age of four), medical circumstances, home day cares and agricultural properties;
- establishment of a garbage tag system for extra waste to be set out bi-weekly at curbside, with a tag cost of \$2.00;
- weekly curbside collection of recyclable fibres and containers;
- weekly curbside collection of leaf and yard waste;
- bi-weekly curbside collection of bulk waste;
- weekly collection of automated cart collection of recyclable fibres and containers;
- weekly collection of front end bin garbage;
- weekly collection of bulk waste at multi-residential properties;
- supply of front-end bin containers and collection for recyclable fibres;
- supply of front-end bin containers for municipal facilities;
- multi-day collection of litter containers; and
- bulk waste reuse event pilot in Ward 13.

The recommended Waste Collection System is expected to provide the City with the following benefits:

- providing an optimum level of service, increasing service levels for the number of garbage containers, leaf and yard waste and bulk waste;
- providing flexibility for residents for occasions when extra garbage may be generated and for households with diapers and pet waste;
- continuing to encourage the City's waste diversion initiatives;
- reducing processing costs for leaf and yard waste;
- maintaining the revenues at the Central Composting Facilities; and
- providing a consistent service method for the public for a number of years.

The Preferred Proponent for the Preferred Waste Collection System is Halton Recycling Ltd. (dba Emterra Environmental). Once the Preferred Waste Collection System is approved, the contract with Halton Recycling Ltd. (dba Emterra Environmental) will be finalized so that the Successful Proponent, together with the City will be able to proceed

with their vehicle acquisition to ensure Hamilton residents have continuous waste collection services in April of 2013.

ALTERNATIVES FOR CONSIDERATION

This section will address the outstanding questions and issues that have not been addressed in report PW11030d Waste Collection Procurement Process for 2013-2020 and the subsequent Information Update OWM1201. The following sections are included:

1. Finalization of the Garbage Collection Program Requirements
2. Special Consideration Policy
3. Bulk Waste Reuse Events
4. Tipping Fee Impacts
5. Public Education
6. Clarifying Waste Collection System Costs
7. Landfill Capacity and Avoided Costs
8. Implications of Keeping the System for Seven (7) Years
9. Concluding Comments

Each item will be discussed and the concluding comments will include a revised Preferred Waste Collection System, Preferred Proponent and associated costs.

1. Finalization of the Garbage Collection Program Requirements

Report PW11030d recommended that Project 5 of RFP C11-30-11 be selected as the Preferred Waste Collection System which included bi-weekly collection of garbage and bulk waste, and weekly collection of organic waste, leaf & yard waste, and recyclable materials. Adopting a bi-weekly garbage collection system may be considered as a significant change to some households. Report PW11030d recommended a six container limit for bi-weekly collection; however, a limit between two to six containers could be considered for the system.

Information in this section will address alternatives to the original recommendations that consider the container limit for bi-weekly garbage collection, options for garbage tag and voucher systems, and managing Special Considerations and amnesty days.

The information in Table 1 has been used in the development of alternatives to the original recommendations in Report PW11030d. The table shows the potential options relative to the garbage container limit.

Table 1: Bi-Weekly Collection Container Limit Options

| Option | 6 container limit | 5 container limit | 4 container limit | 3 container limit | 2 container limit |
|---|-------------------|-------------------|-------------------|-------------------|-------------------|
| Special Considerations | Not required | ✓ | ✓ | ✓ | ✓ |
| Container Limit Amnesty Days | Not required | ✓ | ✓ | ✓ | ✓ |
| Disposal options at Community Recycling Centres | Not required | ✓ | ✓ | ✓ | ✓ |
| Garbage tag system | ✓ | ✓ | ✓ | ✓ | ✓ |
| ✓ Potential option for implementation | | | | | |

1.1 Alternative 1 – Two (2) Container Limit

Although a garbage tag system has not been viewed favourably by Council in the past, there appears to be new interest in this approach as a means of providing flexibility to residents. The City's Customer Service staff often receives inquiries from the public regarding the possibility of introducing a garbage tag system.

One system alternative that was suggested by staff in Information Update OWM1201 on January 23, 2012 proposed the following curbside collection program which consists of a lower limit and tag program related to bi-weekly garbage collection:

- up to two containers of garbage every other week;
- 30 free tags per household per year to be used to supplement curbside collection or for use at a CRC;
- 104 tags for Special Considerations for households with young children, medical circumstances, home day care centres and agricultural properties;
- revisions to the Special Considerations policy for households with young children (addressed in Section 2); and
- approximately 80,000 tags for sale at a cost of \$2 each for use at curbside only supplement bi-weekly garbage collection.

In this system, residents could set out two containers of garbage bi-weekly for collection. They could supplement with the tags at curbside on collection day or in non-collection weeks at the CRCs. The 30 free tags is equivalent to the number of containers associated with the amnesty days without prescribed collection weeks. The Special Consideration households would receive sufficient tags to allow them to set out up to six containers on a bi-weekly basis. To increase flexibility for residents, 80,000 tags would be available for sale at \$2 each, in minimum quantities of five at Municipal Service Centres and City Hall to supplement the curbside collection or drop off as necessary. It is expected that 100,000 tags would be produced to allow for growth and

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new development however that the uptake on the sale of tags would be about one for every four households.

The following comments follow a similar structure to Report PW11030d, including comments on social, environmental and economic impacts.

Social Impacts

The social impacts associated with Alternative 1 include public acceptability, communicating collection services and impacts on illegal dumping.

The public acceptability of Alternative 1 is expected to be similar to base Project 5, in that the garbage container limit of six per week is offset with the flexibility of the tags so that residents will be able to manage their garbage, rather than the prescribed amnesty weeks. Most odour issues can be addressed with proper use of the green cart program and the tags provide residents with the flexibility to manage diapers and pet waste seasonally. This issue of storage is mitigated with the weekly collection of organics, recyclables and leaf and yard waste, and the year-round bi-weekly collection of bulk waste. It is expected that the uptake on the purchase of extra tags will be about one tag for every four households, for a total sale of 40,000 tags.

In the launch of any new program, initial communication and education is important for the program's success. Although the elements of bi-weekly garbage collection and garbage tags would be new, this will be included in program launch material and on-going messaging. Details of the communication and education plans are included in Section 3 of this report.

The flexibility provided in Alternative 1, together with the weekly collection of leaf and yard waste and year-round bi-weekly collection of bulk waste will provide residents with programs that will contribute to reduced illegal dumping.

Environmental Impacts

The environmental impacts relate to waste diversion, waste processing and the fleet requirements.

Alternative 1 is expected to have a higher waste diversion potential than the base Project 5 with a potential to achieve an additional 9% with continued improvement that could achieve 63% in 2014.

The waste processing advantages at the Central Composting Facility are the same as base Project 5.

The fleet and fuel requirements for Alternative 1 are expected to be similar to base Project 5. Report PW11030d included information on the fleet size; however, it is noted that the actual fleet requirements were not specified in the RFP, and the numbers provided were the approximate number of vehicles based on the RFP submissions and the internal costing.

Economic Impacts

The economic impacts include the cost of producing, distributing and tracking tags, operating and revenue impacts of allowing use of tags for drop off of garbage at Community Recycling Centres. Table 2 shows the additional cost impacts associated with Alternative 1.

Table 2: Alternative 1 (2 Containers Bi-weekly) – Estimated Additional Annual Cost

| Additional Requirements | Additional Annual Cost |
|--|----------------------------------|
| Additional Waste Collection Calendar Costs, including Tags | \$155,000 |
| Operational Impacts (revenue loss) | \$900,000 - \$2,418,500 |
| Garbage Collection - Tag System | \$57,000 |
| Administrative Costs | \$0 |
| Revenues from Tag Sales | (\$80,000) |
| Total | \$1,032,000 - \$2,550,500 |

The costs of the production of tags and calendar distribution would be about \$155,000 higher than current costs.

This system would require an administrator of the tag system which is estimated to be 0.25 of an FTE (based on the need for 0.5 FTE, but eliminating the 0.25 FTE currently looking after Special Considerations as they would be part of the tag system. This would be accommodated within the existing staff complement.

The revenues at the Community Recycling Centres are expected to be reduced by a minimum of \$900,000 which represents all of the revenues for the residential minimum fee, and up to \$2.42 million which is the total revenues from residential drop off. CRC revenues are discussed in Section 4.

From the RFP/Internal Costing process, the additional costs for the garbage tag system is \$57,000.

The revenue from the sale of tags is estimated to be \$80,000.

The net annual additional cost of Alternative 1 ranges from \$1.03 to \$2.55 million.

1.2 Alternative 2 – Three (3) Container Limit

Following the issue of Information Update OWM1201 on January 23, 2012, staff received some feedback from Councillors that suggested the following system:

- up to three containers of garbage every other week;
- six free vouchers per household per year, for up to 30 kilograms each, for use at the CRCs to supplement curbside collection;
- continue with the Special Considerations for households with young children, medical circumstances, home day care centres and agricultural properties;

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- revisions to the Special Considerations policy for households with young children (addressed in Section 2); and
- approximately 80,000 tags for sale at a cost of \$2 each.

The three containers bi-weekly is the equivalent to one container per week plus the two containers allowable for the monthly amnesty weeks. The six CRC vouchers could be used for extra waste and to handle waste in non-collection weeks in warmer months and is the equivalent to the containers allowed for the original three amnesty weeks. Together the container limit and vouchers are equivalent to all of the amnesty days for April 2012 to March 2013. The vouchers could be used throughout the year such as in warmer months or in non-collection weeks.

The extra garbage tags could be used to supplement the bi-weekly curbside collection. Tags would be available for sale at \$2 each, in minimum quantities of five at Municipal Service Centres and City Hall. Staff has reviewed the logistics with the Customer Service Division staff and they are satisfied that this can be accommodated by the staff and their systems. Tags could be used for extra containers in the bi-weekly curbside collection or for drop off at CRCs. This would also provide flexibility in warmer months in non-collection weeks. As is Alternative 1, about 80,000 tags would be made available and it is estimated that the uptake on the sale of tags will be one for every two households, so most of the tags would be sold.

Social Impacts

The social impacts associated with Alternative 2 include public acceptability, communicating collection services and impacts on illegal dumping.

The public acceptability of Alternative 2 is expected to be similar greater than base Project 5 in that residents will have flexibility with the tags to be able to manage their garbage, rather than the prescribed amnesty weeks. Residents with concerns about odour issues can use their vouchers to manage diapers and pet waste seasonally. The issue of storage is mitigated with the weekly collection of organics, recyclables and leaf and yard waste, and the year-round bi-weekly collection of bulk waste. It is expected that the uptake on the purchase of extra tags will be more than Alternative 1, about one tag for every two households, for a total sale of 160,000 tags.

Similar to Alternative 1, details of the communication and education plans are included in Section 3 of this report.

The flexibility provided in Alternative 2, similar to Alternative 1 will provide residents with programs that will contribute to reduced illegal dumping.

Environmental Impacts

The environmental impacts relate to waste diversion, waste processing and the fleet requirements.

In Alternative 2 the expected diversion rate increase is the same as base Project 5, but not as high as Alternative 1. The increase in waste diversion could increase by 5 to 6%, continued improvement that could achieve 61% in 2014.

The waste processing advantages at the Central Composting Facility are the same as base Project 5.

The fleet and fuel requirements for Alternative 2 are expected to be similar to base Project 5 or Alternative 1. Report PW11030d included information on the fleet size; however, it is noted that the actual fleet requirements were not specified in the RFP, and the numbers provided were the approximate number of vehicles based on the RFP submissions and the internal costing.

Economic Impacts

The economic impacts include the cost of producing, distributing and tracking tags, operating and revenue impacts of allowing use of vouchers for drop off of garbage at Community Recycling Centres. Table 3 shows the additional cost impacts associated with Alternative 2.

Table 3: Alternative 2 (3 Containers Bi-Weekly) – Estimated Additional Annual Cost

| Additional Requirements | Additional Annual Cost |
|---|--------------------------------|
| Additional Waste Collection Calendar Costs, including Tags and Vouchers | \$30,000 |
| Operational Impacts | \$900,000 - \$2,418,500 |
| Garbage Collection - Tag System | \$57,000 |
| Administrative Costs | 0 |
| Revenues from Tag Sales | (\$160,000) |
| Total | \$827,000 - \$2,345,500 |

The additional costs of the production of tags and inclusion of bar-coded vouchers with the waste collection calendar would be about \$30,000 per year.

There would be no additional administrative staffing costs associated with Alternative 2.

The revenues at the Community Recycling Centres are expected to be reduced similar to Alternative 1 by a minimum of \$900,000 which represents all of the revenues for the residential minimum fee, and up to \$2.42 million which is the total residential fee. The upper end of the loss would relate to the use of every voucher in the system.

The cost associated with the collection of additional containers from the tag system is from the RFP/Internal Costing process.

The estimated revenue from tag sales is expected to be \$160,000.

The additional annual costs of Alternative 2 would range from \$827,000 to \$2.35 million.

2. Special Considerations Policy

The Special Considerations policy is proposed for the Preferred Waste Collection System to allow eligible households to set out up to six containers on a bi-weekly basis. With the current collection system, the policy is available for households with three

children under the age of five, medical circumstances, home day care facilities, and agricultural properties. Since the introduction of the policy in 2009, there are approximately 1,000 households that are approved for this policy.

The main change proposed for the policy is to provide the exemption to households with two children under the age of four in consideration of the possibility of increased household garbage due to diapers. It is anticipated that this change will be well-received by the public since staff has received requests for this type of exemption.

The current application process will continue to be used to administer the Special Considerations policy. Addresses of households qualifying for Special Consideration will be included in the waste collection database and provided to the waste collectors as part of their route information.

It is recommended that the Solid Waste Management By-law be amended to change the families with small children provision from "three children under 5 years" to "2 children under 4 years". This in combination with garbage tags or vouchers will adequately address family needs related to diapers.

3. Bulk Waste Reuse Events

In July 2011, Council directed staff to solicit pricing for bulk waste events in each waste collection zone. The RFP requested pricing to provide bulk events either by collection zone or by ward. Report PW11030d did not recommend the inclusion of the bulk waste reuse events as part of the award of Project 3 or Project 5 since bulk waste collection would be available year-round; however, the City could include these events at any time during the contract subject to the pricing. On January 16, 2012, the Public Works Committee directed staff to determine the costs for providing the bulk event as a pilot in the Dundas area.

Bulk waste reuse events were held in the Dundas area prior to City's amalgamation and were well-received by the Dundas community. The cost to complete the pilot in the Dundas area is approximately \$3,000 considering collection costs and disposal operational impacts. As part of the pilot, staff would complete field reviews to provide a qualitative assessment on the amount of bulk waste being reused. The pilot could be used to determine the merits of expanding the bulk waste event to other areas of the City.

The financial analysis of the RFP included the cost of providing the bulk waste reuse events on a ward basis for all Wards as shown in Table 3. The cost to provide the bulk waste reuse event for all wards is slightly higher for Project 3 compared to providing the service for the collection zones.

Table 3: Additional Work – Bulk Waste Reuse Events by Ward (Estimated Annual Cost in 2011\$)

| Description | Project 1 | Project 3 | Project 5 |
|-----------------------------------|-----------------|-----------------|-----------------|
| Price for Bulk Events – All Wards | \$44,100 | \$41,400 | \$27,200 |
| Operational Impacts | \$25,000 | \$25,000 | \$25,000 |
| Total | \$69,100 | \$66,400 | \$52,200 |

It is recommended that the bulk waste reuse events be included in the Waste Collection System costs to be implemented at the City's discretion and that a pilot event be undertaken in Ward 13 in 2013 at a time to be determined with the Ward Councillor.

4. Tipping Fee Impacts

Staff was requested to explore methods of providing some level of free drop off at the Community Recycling Centres (CRCs) to provide residents with flexibility to drop off extras garbage. The current minimum fee is \$8.50 to drop off 100 kg or less.

Should a free drop off system be introduced, a voucher system would be the recommended approach, in conjunction with a reduced limit for the quantity of garbage per voucher being equivalent or similar to the weight of one or two garbage bags. Based on the average weight of a bag, a limit of 30 kg would be appropriate.

A free drop off system also creates the following concerns:

- impacts on revenues
- impacts on waste diversion
- increased traffic and operating costs at CRCs

The impacts on revenues would depend on the number of free vouchers that are provided and the redemption rate of the vouchers. The greater number of vouchers the higher the risk of reducing revenues.

There are currently 83,000 residential trips to the CRCs annually which is equal to about half of the curbside households in the City, although there are many households who make multiple trips. A voucher system where each curbside household received one (1) voucher would result in 160,000 vouchers in the system. Resident who never use the CRCs may begin to with the opportunity for free drop off.

Multiple vouchers will increase the risk of eliminating all residential revenues at the CRCs. The revenues generated by the residential visits are about \$2.4 million annually, of which \$900,000 is in minimum fees. Therefore it is reasonable to assume that most revenues would be lost with a voucher system.

One of the values of fees is to maximize the use of the recycling programs offered at the CRCs. If garbage can be dropped off free, like recyclables, the incentive to recycle is diminished. This could impact on the annual tonnage of materials recycled at the CRCs which is about 14,000 tonnes, impacting on waste diversion.

There may also be additional costs for traffic control and CRC operations as the free option will further encourage use of the garbage areas which currently see delays on a regular basis. The costs associated with these potential operational impacts are difficult to estimate and are not included at this time.

5. Public Education

An effective public education campaign is essential for ensuring the public is informed of any changes to the waste collection system. The City's community outreach materials including the City's website and printed materials will be updated to reflect any of the changes required for the new waste collection system. Adopting a bi-weekly collection

service will mean that community outreach materials will need to include tips on how to manage garbage. Staff proposes to hold some community focus groups to have resident participation in the development of the outreach materials, in other words, by residents for residents.

There are several items which will be incorporated into the communication materials:

- Odour Issues – The waste collection calendar and the website will include tips on managing odours. The main focus is to encourage the weekly use of the green cart for organic waste, since food waste is the largest component of the waste stream and has the potential to generate the most odours. Odour reduction tips from other municipalities include using rigid garbage containers, storing waste containers in a shaded area, and using baking soda to reduce odours.
- Storage – Staff will work with various associations to develop solutions for storage issues. As an example, the City of Ottawa is working with Ottawa's condominium association to determine solutions for condominium units which may have limited space to store waste materials.
- Promoting cloth diapers – The City will continue to promote the use of cloth diapers as an opportunity to reduce waste. Based on staff findings, cloth diapers can be an economical solution for households with children in diapers.

Community outreach information for households which are approved for the Special Considerations policy will continue to include information on participation in the City's waste diversion programs.

A review of other municipal practices indicates that it is common to send residents a notification, in advance, of changing waste collection services. This is related to the time that passes from the decision to implementation and the municipality's responsibility to "let people know". We've also found that direct mail continues to be the best way to reach people. Therefore, it is proposed to send a direct mail piece to households early in 2013 to outline the waste collection system, to tell them about the upcoming changes and to look for in the waste collection calendar. This has been done in the past related to collection day changes, the green cart program and the one container limit with great success. It catches early attention and prepares residents to watch for the delivery of their waste collection calendar. It is estimated that the cost of the preparation of the mailer, printing and postage will be \$60,000. Since this is a one time cost it is proposed that it be funded from the Waste Management Planning & Approvals capital project ID 5121095525. One of the objectives of this capital project is for diversion options and the bi-weekly collection of garbage is considered to be a diversion option.

6. Clarifying Waste Collection System Costs

At the January 16, 2012 Public Works Committee meeting, staff was requested to clarify the Waste Collection System costs. To assist in this clarification a comprehensive table has been developed and is included as in Report PW11030e as Appendix B.

The costs include:

- the Base Price for Projects 1, 3 and 5 from the RFP/Internal Costing, including the operational impacts at the Central Composting Facility (refer to Table 4, Report PW11030d)
- the cost of Additional Work from the RFP/Internal Costing (including additional garbage, a garbage tag system, alternative recycling containers, supply of front end bins and bulk waste reuse events, all as applicable), (refer to Tables 5, 6, 7, 8 and 9 of Report PW11030d)
- total costs for Projects 1, 3 and 5 (from Table 10 in Report PW11030d)
- total costs for Projects 1, 3 and 5 including the costs of Alternatives 1 and 2 in this report
- 2011 budget for waste collection services
- potential savings from each system

Report PW11030e, Appendix B shows that all of the Projects including the Alternatives in this report continue to see savings compared with the 2011 waste collection budget.

7. Landfill Capacity and Avoided Costs

Avoided costs are directly related to waste diversion. As indicated in Table 4, Alternatives 1 and 2 both have better potential to increase diversion potential than base Project 5, which was the only original system that would see diversion improvement.

Table 4: Waste Diversion, Landfill Life and Cost Savings

| | Project 5 | Alternative 1 | Alternative 2 |
|--|---|---|---|
| Potential Waste diversion Increase | 5.7% (60% curbside residential in 2014) | 9% (63% curbside residential in 2014) | 7.7% (61% curbside residential in 2014) |
| Reduced Landfill Consumption (over 30 years) | 280,000 tonnes (440,000 m ³) | 480,000 tonnes (640,000 m ³) | 400,000 tonnes (540,000 m ³) |
| Extension to Landfill Life | 3 years | 5 years | 4 years |
| Defers Capital Need | 3 years | 5 years | 4 years |
| Estimated Long Term Potential Cost Savings | \$24 million | \$39 million | \$33 million |

Alternative 1 has the best diversion potential at 9%, which could, with continuous improvement, see the curbside residential rate reach 63% in 2014. Alternative 2 follows with a potential increase of 7.7%, and 61 % curbside residential diversion in 2014, while base Project 5 has a potential of a 5.7% increase in curbside residential diversion and 60% in 2014.

Correspondingly the consumption of landfill is reduced and the life of the landfill extended based on diversion.

In terms of avoided disposal costs, Alternative 1 offers the longest landfill life extension at four years and would save in the order of \$39 million over a period of 30 years. Alternative 2 would add three years to the landfill life and save an estimated \$33 million. The base Project 5, which was the only original system that would extend the landfill life, would see an extension of two years and savings of approximately \$24 million.

8. Implications of Keeping the System for Seven (7) Years

There is an interest in maintaining the waste collection system without further changes for the seven (7) year collection period. The weekly garbage collection systems will make it difficult to improve waste diversion during the collection period 2013-2020. Bi-weekly garbage collection is a best practice to encourage diversion.

The recommended system balances costs and waste diversion with supportive systems to address different household needs.

The introduction of a voucher systems for free drop off at the Community Recycling Centres, although related, is independent of the waste collection system, so adjustments can be made if required during the seven year period 2013-2020.

9. Concluding Comments

In concluding there is not likely one Waste Collection System that will address the needs or concerns of every resident in the City of Hamilton. The analysis of a range of alternatives has shown that flexibility for residents can be achieved while continuing to address the longer goals of waste diversion.

All systems analysed in this report continue to be financially favourable when all enhancements are included, against current costs.

The recommended Preferred Waste Collection system is represented by Project 5 with the additional requirements of Alternative 2 in this report, for the following reasons:

- the level of service for the quantity of garbage that may be set out is retained
- the issuance of vouchers together with the sale of garbage tags and improvements to the leaf and yard and bulk waste collection schedules provide residents with the flexibility that can reduce illegal dumping associated with waste management services
- the year round collection of leaf and yard waste removes the risk associated with the potential loss of revenues at the Central Composting Facility
- amnesty days are not required
- the Special Considerations Policy is maintained and improved for families
- bi-weekly collection of garbage promotes waste diversion which extends the life of the Glanbrook Landfill and defers consideration of future costs and capital financing

This Preferred Waste Collection System will provide the City with good value and good services for residents for the upcoming collection contract period.

CORPORATE STRATEGIC PLAN

Focus Areas: 1. Skilled, Innovative and Respectful Organization, 2. Financial Sustainability, 3. Intergovernmental Relationships, 4. Growing Our Economy, 5. Social Development, 6. Environmental Stewardship, 7. Healthy Community

Skilled, Innovative & Respectful Organization

- ◆ More innovation, greater teamwork, better client focus

Financial Sustainability

- ◆ Financially Sustainable City by 2020
- ◆ Delivery of municipal services and management capital assets/liabilities in a sustainable, innovative and cost effective manner

Environmental Stewardship

- ◆ Reduced impact of City activities on the environment
- ◆ Aspiring to the highest environmental standards

Healthy Community

- ◆ Plan and manage the built environment


APPENDICES / SCHEDULES

- Appendix A Information Update - 2013-2020 Waste Collection Contract Period - Follow-ups from the January 16th Public Works Committee
- Appendix B Waste Collection Systems Cost Analysis



Hamilton

INFORMATION UPDATE

| | |
|---|---|
| TO: Mayor and Members City Council | WARD(S) AFFECTED: CITY WIDE |
| DATE: January 23, 2012 | |
| SUBJECT: 2013-2020 Waste Collection Contract Period - Follow-ups from the January 16 th Public Works Committee (City Wide) - (OWM1201) | |
| SUBMITTED BY: E. (Beth) Goodger, Senior Director Operations & Waste Management Division Public Works Department | SIGNATURE:  |

On January 16, 2012, the Public Works Committee referred report PW11030d to the February 6, 2012 Public Works Committee to allow staff to respond to a number of questions that were raised.

The Public Works Committee requested that information be made available as responses to questions as soon as possible. The purpose of this Information Update is to provide Council with answers to or status of the questions. A follow up staff report with the balance of the information will be provided to the Public Works Committee in advance of the February 6th meeting.

1. *Resolution of process issues*

The Public Works Committee was advised at the meeting by Legal Services that matters relating to the Request for Proposals (RFP) complaint process should be referred to the Audit, Finance & Administration Committee (AF&A). This was a result of letters received from one of the Proponents, Modern Landfill, the week before the Public Works Committee Meeting. The AF&A Committee received a delegation from the Proponent at their meeting on January 18, 2012. Based on responses from staff it was confirmed that the process had been followed as set out in the RFP Documents and is outlined below.

In the evaluation process of the technical proposals for Request for Proposals (RFP) C11-30-11, Modern Landfill did not received passing scores in the technical evaluation. Financial submissions were not reviewed for Projects that did not receive passing scores in the technical evaluation.

Procurement and Operations & Waste Management staff had held a de-briefing meeting with Modern Landfill on December 13, 2011 to review the reasons that their proposals for Projects 1 to 6 had not received a passing score in the technical evaluation, and that pursuant to the RFP their financial submissions were not reviewed.

During the week before the Public Works Committee, members of Council received letters for of RFP C11-30-11, Waste Collection Services. Procurement staff contacted Modern Landfill to advise them that the RFP did not allow for them to contact Council and that they must follow the complaint process. Modern Landfill agreed to do this.

The first step of the complaint process is a meeting with Procurement and Operations & Waste Management staff, which took place on January 17, 2012. If the Proponent was not satisfied, the next step was for them to request a delegation at Audit, Finance & Administration (AF&A) Committee. On January 18, 2012 the AF&A Committee heard the delegation from Modern Landfill and received it, concluding the complaint process. The AF&A Committee requested staff to review the RFP and purchasing policy to ensure the emphasis on the anti-lobbying provisions.

2. *Is there any cost savings to have bi-weekly bulk collection for Project 3?*

Project 3 is a weekly collection system with enhancement, including weekly collection of bulk waste. Staff was asked if there would be any cost savings in this system the weekly bulk waste collection service in Project 3 was provided instead on a bi-weekly schedule. This was not contemplated in the Request for Proposals (RFP), further to direction received from General Issues Committee on the services to be included in the three collection systems. The bulk collection schedule was designed to align with waste collection schedules for both of the enhanced collection systems.

It is unknown what cost savings, if any, there would be by going to bi-weekly bulk waste collection for Project 3, because proponents were not asked to provide pricing for bi-weekly bulk collection as part of Project 3. The RFP asked proponents to provide pricing for 6 discrete and separate Projects. Regarding bulk waste collection, proponents were asked to submit pricing as follows:

| | |
|-----------|--|
| Project 1 | Seasonal weekly call-in bulk waste collection Scheduled bulk waste collection reuse event |
| Project 3 | Weekly call-in bulk waste collection Scheduled bulk waste collection reuse event |
| Project 5 | Bi-weekly call-in bulk waste collection Scheduled bulk waste collection reuse event |

The RFP does not authorize the City to "swap" the services described in the Projects. For example, the City cannot transfer bi-weekly call-in bulk waste collection (specified only for Project 5) to Project 3. Amending the description of services in this way would constitute a breach of the City's contractual obligations under the RFP to all proponents.

Even though it was not priced by proponents, it is unlikely there would be significant cost savings (or any savings) for bi-weekly bulk collection for Project 3. Bulk waste collection is combined with garbage collection. Therefore, if Project 3 is selected, the Successful Proponent will be required to collect garbage on a weekly basis, and it is unlikely that the co-collection of call-in bulk waste would add a significant cost.

3. *How do other municipalities address or promote bi-weekly collection, especially pet waste and diapers?*

Some municipalities deal with diapers and pet waste in the same way, while other municipalities treat these materials differently. Most municipalities, Toronto and York Region being the main exceptions, treat diapers and pet waste as garbage. Information is provided on the following municipalities with bi-weekly waste collection: Halton Region, Ottawa, Durham, Nanaimo BC, Verdun and Vaudreuil-Dorion PQ (two suburbs of Montreal).

In Halton Region, diapers and pet waste are acceptable garbage. To assist residents in managing diapers, Halton residents can apply for 30 free tags annually to supplement the bi-weekly 6 container limit at curbside, or to be dropped off at any time. Halton staff estimate that they have received an average of 50 bags per year at the drop off since the program started in 2009. For pet waste, Halton suggests flushing it, burying it, including it in garbage, contracting a pet waste removal service or using a pet waste composter.

Ottawa, with its 6 containers weekly accepts diapers and pet waste in the garbage. With a recent decision to move to bi-weekly garbage collection later in 2012, Ottawa is proposing a tag system for diapers and incontinence products. Ottawa suggests flushing of pet waste or double bagged as garbage with no more than 10% of the bag volume be pet waste.

Some municipalities like Dufferin County with its bi-weekly limit of 4 containers plus tags system or Halifax Regional Municipality collect diapers and pet waste as garbage with no particular special instructions to residents.

The City of Nanaimo, British Columbia has a 1 bag bi-weekly limit plus a \$2 tag system to a maximum of 3 bags with no other particular instructions to residents regarding diapers and pet waste. The City's position is that it would be wrong to subsidize a household using disposable diapers and not subsidizing the household using reusable diapers which don't impact on the landfill.

The Verdun and Vaudreuil-Dorion suburbs of Montreal have opted for an incentive based program to address the disposable diaper issue. They offer subsidies to families who opt to use reusable diapers, e.g. \$100 to buy a washable diaper kit or a refund of 50% of the cost of washable diapers, to an upset of \$100.

The municipalities with bi-weekly waste collection use their websites and collection calendars to provide information on how to handle diapers and pet wastes. Staff are also gathering information on specific materials that were used for the launch of the bi-weekly collection system. This information will be provided as part of the Public Works Committee Report.

It is noted that the City of Ottawa website has information now about changes they are making in November of this year.

4. *How can we accommodate diapers and pet waste in Hamilton's system?*

Staff will be reviewing the information from the other municipalities as well as options to accommodate and promote safe handling of diapers and pet waste for Hamilton's system for bi-weekly collection as part of the follow up staff report for the February 6, 2012 Public Works Committee meeting.

Tag systems appear to be a viable way of accommodating extra waste that may be generated from diapers or pet waste. The tag could be used either at the curb or at a community recycling centre. Further information on a tag system is included under question 11.

Bi-weekly collection and any service variations would be promoted through the annual Waste Collection Schedule, in the booklet that would be reproduced to reflect the new waste collection system, on the website, through brochures and advertising and at presentations. Website information and media announcements can be made well in advance of the April 2013 implementation date.

5. *How does each of the options address landfill capacity / diversion rates and avoiding capital costs for EFW or landfill?*

In Projects 1 and 3 there is minimal impact on waste diversion, while bi-weekly garbage is expected to increase diversion by 5 to 6%. This in turn extends the landfill capacity by 2 to 3 years, pushing any capital costs of pursuing additional disposal capacity out by the same 2 to 3 years. More detail about this can be found in Appendix A to this Information Update.

6. What do trucks do when they're not collecting LYW in Feb for the enhanced systems?

RFP C11-30-11 allows for flexibility for the type of waste collection vehicles to be used for the collection services.

The waste collection service provider has the option of using the collection fleet to provide services in a cost effective manner. From the public perspective, the vehicles that typically are used to collect leaf & yard waste during the year would be assigned to collect other waste streams during the winter months. On the contracted side, the City does not prescribe the use of the vehicles during the winter months and the Proponent would likely use the collection vehicles for other services similarly to the public sector.

7. What are the container limit options for < 6 containers for bi-weekly? What does each one look like? What's the optimal system?

Although a six (6) container limit was recommended in report PW11030d, the limit could range between anywhere between two and six containers. Any of the container limit options can be combined with other 'relief valves' or program policies that allow some flexibility to accommodate different household needs. Table 1 below provides an overview of the optional policy changes and how they would work. Staff are in the process of determining any cost implications and will be providing some recommendations as part of the staff report.

Table 1: Bi-Weekly Collection Container Limits & Supporting 'Relief Valves'

| Component | Description |
|---------------------------|--|
| Container Limit | A limit of between 2 to 6 containers can be considered. Two containers is based on the current limit of one container per week. Supporting programs can supplement container limits to allow flexibility for setting out additional waste. |
| Special Considerations | There are approximately 1,000 households eligible for the current special considerations program. This program would not be required with a 6 container limit based on current use. The program should be continued for lower container limits and staff are looking at refinements to the current policy. |
| Container Amnesty Days | Amnesty Days for container limits are not required for a six container limit. As of April 2012 there will be 15 weeks of the year where residents can set out up to 3 containers. Continuation of the amnesty days could be considered with a lower container limit and the need would depend on what other options are selected. (e.g. Amnesty Days would not be required with a tag system.) |

| Component | Description |
|---|--|
| Diaper Tag System | A tag system could be introduced to allow residents to set out additional bags on their collection week or take diapers to a Community Recycling Centre (CRC) in the weeks when garbage is not collected. This system could be accommodated through the Special Considerations Policy. Staff will also explore the cost to provide an incentive program to promoting the use of reusable diapers.. |
| Disposal options at Community Recycling Centres (CRC) | A free or reduced fee can to drop off extra waste at ff can be considered to provide flexibility to drop off extra waste in between garbage collection weeks and for special clean-ups. This may reduce or eliminate the need for Container Limit Amnesty Days. Residents would be provided with a set number of vouchers or tags for use at their convenience. |
| Garbage tag system | A tag system would allow for extra waste to be set out for collection beyond the set container limit. The number of tags would depend on the limit that is selected and could eliminate the need for the Container Limit Amnesty Days. A fee could also be charged for additional tags and a fee of \$2 per tag is considered to be a reasonable fee based on Hamilton's waste management system. |
| Public Education | <p>Marketing, education and outreach efforts will address how to maximize waste diversion programs and how to safely store waste that can't be diverted, with emphasis on diapers and pet wastes.</p> <p>Efforts will also include:</p> <ul style="list-style-type: none"> • Advance consultation with community and interest groups. • Updated Information Booklet and Calendar for 2013 • Updated website information |

Special Considerations Policy Refinements

It is expected that Special Considerations will continue in any option that involves less than six (6) containers bi-weekly. This can be accomplished by continuing with the current process or through a tag system and the costs associated with these options will be determined. Table 2 shows what the variable container limit and the additional containers would look like for Special Consideration households.

Table 2: Special Considerations – Additional Containers

| Bi-Weekly Container Limit | Additional Containers |
|----------------------------------|------------------------------|
| 6 | 0 |
| 5 | 26 |
| 4 | 52 |
| 3 | 78 |
| 2 | 104 |

Several municipalities have implemented policies to increase the garbage container limit for households with unique circumstances. For example, Niagara Region has a weekly one container limit for residential properties and has a special consideration policy to allow two additional garbage bags for households with young children, medical circumstances, and group homes. The Town of Whitby has a bi-weekly four container limit and a special consideration policy to allow households with medical circumstances or three children under the age of three years to set out one additional bag at the curb on their bi-weekly schedule.

Based on the review of the other municipal programs, a lower threshold for age and number of children should be considered for Hamilton's Special Consideration Policy. Changes in other categories do not appear to be required. Staff will be providing recommended revisions to the policy as part of the follow up Report to Public Works Committee.

8. What are the costs to do a pilot bulk reuse program in Dundas?

The cost of a pilot bulk reuse event in Dundas would be in the order of \$3,000 including contract and operating costs. If a pilot option is selected, the award of the contract should include the package cost of events in all wards. The annual cost would be approximately \$52,000 - \$66,000, depending whether the program is provided on a by collection zone or by ward on a city-wide basis.

9. What are the implications of allowing pet waste and diapers in the City's Green Cart on the City's Central Composting Facility (CCF)?

There are a number of key areas where the introduction of pet waste (PW) and / or diapers will impact the CCF. They include:

- operational issues –residue and odour
- regulatory concerns
- Ontario compost guidelines
- Increased cost and revenue loss

Information is provided on each of these areas as well as a review of other municipal programs.

9.1 Operational Issues

Processing and Residue

- Residents normally wrap diapers up into tight balls. The size and shape of the resulting diaper ball prevents them from effectively breaking down and decomposing in normal aerobic in vessel composting systems.
- PW is frequently double bagged in small, often non compostable bags. If the PW is not removed from the bags then the material will pass through the system without composting.
- The existing processing equipment will have difficulty in breaking apart the diaper balls and bagged PW which results in these materials not being processed and therefore sent to landfill as residue.
- Diapers and PW can increase plastic in the finished compost product. Heavily contaminated compost product will not be able to meet guideline requirement and will be difficult to sell.

Odour

- In the 1999 Canadian Council of Ministers of the Environment (CCME) composting guidelines (November 2009) states that the acceptance of diapers and sanitary products are a key contributing factor in causing odours at composting facilities and are not recommended as an acceptable feedstock unless the composting facility has specific mechanical processes to deal with these products.
- In the last number of years, numerous composting facilities have had to stop operations due to odour complaints. Such facilities include Waterdown Gardens, City of Guelph, Orgaworld London, and Universal in Welland.
- The CCF currently has very limited odour complaints due to operations. With the addition of diapers and PW, the potential for an increased amount of odour complaints is greater.

9.2 Regulatory Concerns

Certificate of Approval

- Under the existing site Certificate of Approval (C of A) the CCF is not permitted to accept diapers. To accept diapers, the City would need to apply to the Ministry of Environment (MOE) for an amendment to the existing site C of A. PW and sanitary products are currently approved under the current C of A.
- All C of A amendment applications are subject to MOE approval. Based on staff's experience with C of A amendments and the MOE's recommendations on diapers as per the CCME guidelines, it is possible that MOE approval for the acceptance of diapers could take longer than a year.
- The City is of the understanding that the MOE is not easily allowing the introduction of diapers into green cart programs and composting facility due to the odour potential and the cause of adverse affects.

9.3 Ontario Compost Guidelines

- In Ontario, the MOE has adopted Interim Guidelines for the Production and Use of Aerobic Compost in Ontario.
- The CCF currently produces Category A, unrestricted compost that is sold to the Agriculture market and soil blenders.
- Compost that does not meet Category A parameters has limited use such as landfill cover.
- Allowing materials such as diapers and PW in the feedstock increases the risk of not meeting Category A parameters for foreign matter (plastics) and possibly heavy metals due to the inclusion of adult diapers which can contain heavy metals from pharmaceuticals.
- It is expected that the Provincial Government will pass new, more stringent guidelines within the next year or two outlining new requirement for compost quality. Based on the draft guidelines that staff has reviewed, the addition of diapers and PW will make it more difficult to meet the more stringent requirements. A few of the specific parameters are foreign matter and heavy metals.

9.4 Cost

Capital

Capital upgrades to the facility may be required to process diapers and PW. Additional equipment may include a bag breaker, upgraded screening plant, etc. The estimated cost of a bag breaker is \$400,000. Additional equipment may increase operating costs e.g. maintenance costs.

Operational

A manual sorting line may be required to reduce contamination to the incoming feedstock. There may be a need to re-negotiate parts of the contract e.g. if diapers were to be accepted there could be an additional per tonne cost. This may increase costs to the operations contract e.g. cost of sorters.

Note: if additional equipment is installed to process diapers and PW it is not anticipated that a sorting line would be required.

Lost Revenue from Reduced Compost Sales

Acceptance of diapers and PW may reduce the quality and marketability of the compost product which may result in the finished compost generating little or no revenue. The loss of revenue to the City is estimated to be approximately \$5,000 to \$15,000 annually. Additionally, there may be a cost to dispose of the finished compost.

Increased Residue

Based on the results of a trial on diaper waste conducted in 2006 the CCF experienced twice the contamination rate (plastic) compared to feedstock not containing diapers. The result of that trial was a doubling of the residue rate. If the 2011 residue rate of 4% was doubled it would result in an estimated \$17,500 annual increase to transportation costs related to residue disposal.

Partnerships

The CCF may develop a negative image by producing a large amount of residue and a compost product that does not meet unrestricted Category A compost. Current and future partners may have an issue with the finished compost produced at the CCF not meeting Category A requirements. This may result in a lack of merchant capacity customers and a reduction/loss of revenues.

Perception

The goal of a composting system is diversion of waste from the landfill. If the finished product cannot be sold as an unrestricted product and is forced to go to landfill then the waste is being double handled. The City is paying for the waste to be composted and then landfilled.

If diapers and PW are allowed into the compost program then there may be the potential for residents to assume that the CCF operation is contributing to odour issues when it is not. This negative perception can contribute to odour complaints.

9.5 Municipalities and Other Composting Facilities

Staff has reviewed some information from other municipalities on the management of diapers and pet waste. One of the main considerations is the processing method.

Toronto accepts both diapers and pet waste, and processes the material through an anaerobic digester that mixes the materials and separates plastics, then dries the material out for land application or landfilling.

Niagara, Guelph and Waterloo accept pet waste but not diapers. The processing systems are similar to Hamilton's Central Composting Facility, and although the pet waste specifically has not created processing concerns, staff understands that the facilities have experienced odour issues.

Similar to Hamilton's green cart program and processing facility, Durham, Halton, Peel, Ottawa Valley and St. Thomas do not accept either diapers or pet waste. This ensures the best quality end product and the best return.

Hamilton Diaper Trial

In 2006, the City composted feedstock that contained diaper waste from pilot programs within the City of Hamilton. There was an increase in visual contamination in the feedstock and compost product. During the trial it was found that that the diaper material feedstock produced a residue rate of 4% while the "clean" material feedstock had a residue rate of 1.53%.

Region of Niagara

When Niagara originally rolled out their green cart program, they included plastic bags and PW but not diapers. In 2008 they moved away from plastic bags to compostable liners. Niagara does include PW but does not include diapers in the green cart program. Walker Brothers processes Niagara's organics in a GORE system. They notice no impacts from the small amount of pet waste they receive.

Orgaworld London

Orgaworld, London has a similar technology as the City and accept diapers and PW. They service the City of Toronto and York Region. Contamination rate is relatively high (between 15 - 20%) compared to Hamilton which is at approximately 4% in 2011.

In recent years, Orgaworld London was closed and the MOE decreased the amount of feedstock that the facility was permitted to accept. At that time, the MOE also prevented the facility from accepting diapers, PW and plastic bags due to odour issues. Orgaworld London appealed the removal of these materials and recently won the case.

Other Municipal programs

- Municipalities that have similar in vessel technology as the CCF do not allow diapers and PW in green cart programs. For example, Region of Peel, City of Ottawa and Durham Region do not accept these materials in their programs. The facilities that do use in vessel tunnel technology and accept diapers and PW typically have higher contamination and lower diversion from landfill.
- Municipalities that successfully compost diapers and PW use technologies such as anaerobic digestion and incineration.

Table 3 provides an overview of Ontario municipal green cart programs and the technology used to process source separated organics (SSO). The first section of the table provides information on municipalities that do not accept diapers or pet waste and the second section of the table provides information on municipalities that accept these materials.

| Table 3: Overview of Ontario Green Cart Programs & Processing Technology | | | |
|---|---|--|--|
| Municipality | Materials Collected | Composting Technology used | Comments |
| Municipalities that do not accept diapers or pet waste | | | |
| Durham Region | <ul style="list-style-type: none"> ○ Kitchen waste ○ No diapers or pet waste ○ Yard waste Seasonally - Biweekly | Miller Inc - In-vessel technology and curing pad | |
| City of Hamilton Households in program: 150,000 SSO collected: 35,000 tonnes/year Per household: 230 kg/year | <ul style="list-style-type: none"> ○ Kitchen waste ○ No diapers or pet waste ○ Yard waste Seasonally - Biweekly | Hamilton Central Composting Facility - In vessel composting technology | |
| Ottawa Valley (Pembroke, Petawawa, Laurentian Valley) Households in program: 18,000 SSO collected: 3,700 tonnes/year Per household: 210 kg/year | <ul style="list-style-type: none"> ○ Kitchen and yard waste ○ No diapers or pet waste ○ Yard waste Seasonally - Biweekly (no bags) | Orgaworld Ottawa - In vessel composting technology | C of A allows diapers and pet waste but is not currently in Ottawa Valley's green cart program |

| Table 3: Overview of Ontario Green Cart Programs & Processing Technology | | | |
|--|---|---|---|
| Municipality | Materials Collected | Composting Technology used | Comments |
| Peel Region ○ New Program Households in program: 153,000 (so far) SSO collected: 54,000 tonnes/year Per household: 350 kg/year | ○ Kitchen waste and minimal yard waste allowed ○ No diapers or pet waste ○ Yard waste April – Nov (no bags) | Peel Region composting Facility - In-vessel composting technology | |
| City of St. Thomas Households in program: 14,800 SSO collected: 3,000 tonnes/year Per household: 200 kg/year | ○ Kitchen and yard waste ○ No diapers or pet waste | Orgaworld, London - In vessel tunnel technology | High contamination History of odour complaints |

| Table 3: Overview of Ontario Green Cart Programs & Processing Technology | | | |
|--|--|--|--|
| Municipality | Materials Collected | Composting Technology used | Comments |
| Municipalities that accept diapers and pet waste | | | |
| City of Guelph Households in program: 36,000 SSO collected: 9,500 tonnes/year Per household: 260 kg/year | <ul style="list-style-type: none"> ○ Kitchen waste, diapers and pet waste ○ Yard waste Seasonally – Biweekly (no bags) | Guelph Composting Facility - In-vessel composting technology | |
| Niagara Region Households in program: 120,000 SSO collected: 19,000 tonnes/year Per household: 160 kg/year | <ul style="list-style-type: none"> ○ Kitchen and yard waste an pet waste ○ No diapers ○ Branch collection Seasonally (no bags) | Walkers - GORE System | This facility accepts PW not diapers and has not experience any increased contamination or odour |
| City of Toronto Households in program: 510,000 SSO collected: 100,000 tonnes/year Per household: 200 kg/year | <ul style="list-style-type: none"> ○ Kitchen waste, diapers and pet waste ○ Yard waste Weekly – Spring/ Fall Biweekly – Summer (no bags) | Orgaworld, London - In vessel tunnel technology | High contamination History of odour complaints |

| Municipality | Materials Collected | Composting Technology used | Comments |
|---|---|---|---|
| York Region Households in program: 75,000 SSO collected: 21,000 tonnes/year Per household: 280 kg/year | <ul style="list-style-type: none"> ○ Kitchen waste, diapers and pet waste ○ Yard waste collected separately (no bags) | Orgaworld, London - In vessel tunnel technology | High contamination History of odour complaints |

10. What would a program to waive tipping fees look like?

Staff has undertaken a review of other municipalities and options for tipping fee relief to provide flexibility to residents. This information is included as Appendix B to this report. What we found with other municipalities is that most voucher programs are for bulk items in municipalities that don't offer curbside collection of bulk waste. Most are also smaller than Hamilton. In Simcoe County, residents are eligible for 2 free vouchers annually for free tipping at their landfill. In Wasaga Beach, residents are eligible for 2 vouchers valued at \$25 each for disposal of large items and brush. In Northumberland County residents are sent vouchers upon request for bulk items of 100kg or less. In Richmond, British Columbia, residents may purchase \$5 garbage disposal vouchers good for \$20 in disposal value, one per household per year.

Since the concern appears to be the potential need to occasionally get rid of a bag of garbage in the non-collection week related to bi-weekly garbage, staff focused on ways to alleviate this. Although the weight limit of a bag of garbage is 23kg (50lb), waste audits suggest that the actual average weight of a bag is less than 15kg (33lb). With this in mind, staff set out to consider system that would be equivalent to a free bag of garbage.

Based on the scale operations software and arrangement of the Community Recycling Centres (CRCs), a voucher or tag system would be the best means to allow for additional flexibility while minimizing impacts on revenues. One option would be to provide residents with a set number of free vouchers each year in conjunction with the issue of the Waste Collection Calendar. A tag could system could also be used, which would allow residents to use the tag either at the curb or a CRC. A weight limit of 20

kilograms is suggested, which would make the voucher/tag a value of \$2 based on the current minimum fee. Residents would be able to use more than one voucher or tag at one time or give them away if not needed.

Staff is working on the development of the costs associated with voucher/tag production, distribution, administration, communication, impacts on minimum fee and tipping fee revenues and operating costs.

11. *What would a bag tag system look like?*

A bag tag system to supplement a lower container limit for garbage is quite common in municipalities that have a manual collection system with manual (some municipalities including Toronto and Vancouver have automated weight/volume based systems). The use of garbage tags is often part of reducing the municipality's garbage container limit while allowing households the flexibility to set out additional garbage if required.

The municipalities with bi-weekly container limits plus tags for additional containers include Durham, Toronto, Vaughan, and Nanaimo. The container limit ranges from one to four and the cost of the tag ranges from \$2 to \$2.50. The Town of Perth and Owen Sound have full tag systems. Owen Sound has a full user pay system at a tag cost of \$2.50 and a maximum of 4 bags bi-weekly. Any additional garbage can be taken to the transfer station and the tipping fees paid. Perth provides each household with 40 tags to be used as necessary with extra tags at \$2.50. Perth also promotes a local reusable diaper service as a convenient and cost effective alternative.

Although a tag system has not been viewed favourably by Council in the past, there appears to be new interest in this approach as a means of providing flexibility for bi-weekly garbage collection. It may also provide a way to eliminate the need for special considerations and amnesty days. Residents will have 15 amnesty days in 2012-13, with the ability to set out two extra bags on each of the 15 days with an equivalent of 30 bags.

Staff would suggest a tag program around 2 container limit where residents could be provided with 30 free tags per year to use as they need either at curbside or at the CRCs. Although the collection would continue to be bi-weekly, the tags may help with concerns about pet waste and diapers during summer months when bags could be taken to the CRCs.

Beyond this, staff would also suggest that Council could consider the sale of tags for extra waste at a cost that would encourage residents to plan how they use their free 30 tags and that would also cause residents to pause and consider their real need for the extra tags. The upset limit could be 6 bags every two weeks. The tag system would enable the bi-weekly collection with a two container limit and provide residents with flexibility. A fee of \$2 per tag is suggested based on the value of 20 kg suggested above for a tipping fee voucher/tag system. This option would continue to promote waste diversion while providing good flexibility to residents.

Staff will be reviewing the costs of tag production, distribution, administration and communication as part of the follow up report to Public Works Committee.

12. *What are the revenues from recycling? What are the impacts from increased diversion?*

Revenue from the curbside recycling program was \$6.3 million in 2011, compared to the budget of \$5.1. Markets have recovered from 2008-09, but the recovery has been slow and revenues are expected to be stable in 2012. Revenues from recyclable materials dropped off at the CRCs were \$208,000 in 2011.

Additional diversion will help to increase revenues, however, financial analysis did not account for increased revenues from recycling because of the high capture rates on high value materials. The additional diversion will come from lower value materials and this is difficult to estimate at this time.

13. *What impacts do the options have on illegal dumping?*

It is expected that both of the enhanced collection systems (Projects 3 and 5) will help to reduce illegal dumping concerns for leaf and yard and bulk waste because of increased service levels for both of these services compared to the current collection system. Options to provide flexibility to set out extra waste as discussed in previous sections of this update will also help to discourage illegal dumping.

Unfortunately there are ongoing requirements to clean up materials from City roadways and parks. In February of 2011, staff estimated that the cost to the Operations & Waste Management Division (Roads and Parks Sections) was about \$700,000 in 2010 however the clean up takes place as part of the ongoing regular maintenance operations, so it cannot be isolated. Although it is expected that illegal dumping may be reduced with the proposed waste collection system, this would enable the front line staff to concentrate on their core duties of maintaining roads and parks, facilitating efficiencies. It is estimated that the 2011 costs would have been similar to 2010.

A review of the municipal tonnages delivered to the transfer stations over the past three years does not suggest that there is increased material. The municipal tonnages have been consistent at 2937 tonnes in 2009, 2868 tonnes in 2010 and 2881 tonnes in 2011.

14. *What are the implications of keeping the system for 7 years?*

It is recognized that there is a desire to avoid any program changes from 2013-2020. The follow up Report to Public Works Committee will address the implications of the various collection systems that could be considered.

15. *What are the costs of the various options, revised options and clarification of cost savings between the options?*

A number of alternative systems can be considered based on the information provided in this Update. Staff will be provide information on costs and savings as part of the follow up report, once all the options have been developed.

Next Steps

As previously mentioned, a follow up report is being prepared for consideration at the February 6, 2012 Public Works Committee meeting. Staff will also be making a presentation on the report to enable Committee to move forward in approving service levels and a Preferred Proponent for the 2013-2020 waste collection contract period. This will enable service to be in place for April of 2013.

In the meantime, should you have any questions, comments or additional questions, please contact me at (905) 546-2424, extension 4409 or Pat Parker, Director of Support Services, at (905) 546-2424, extension 3916.

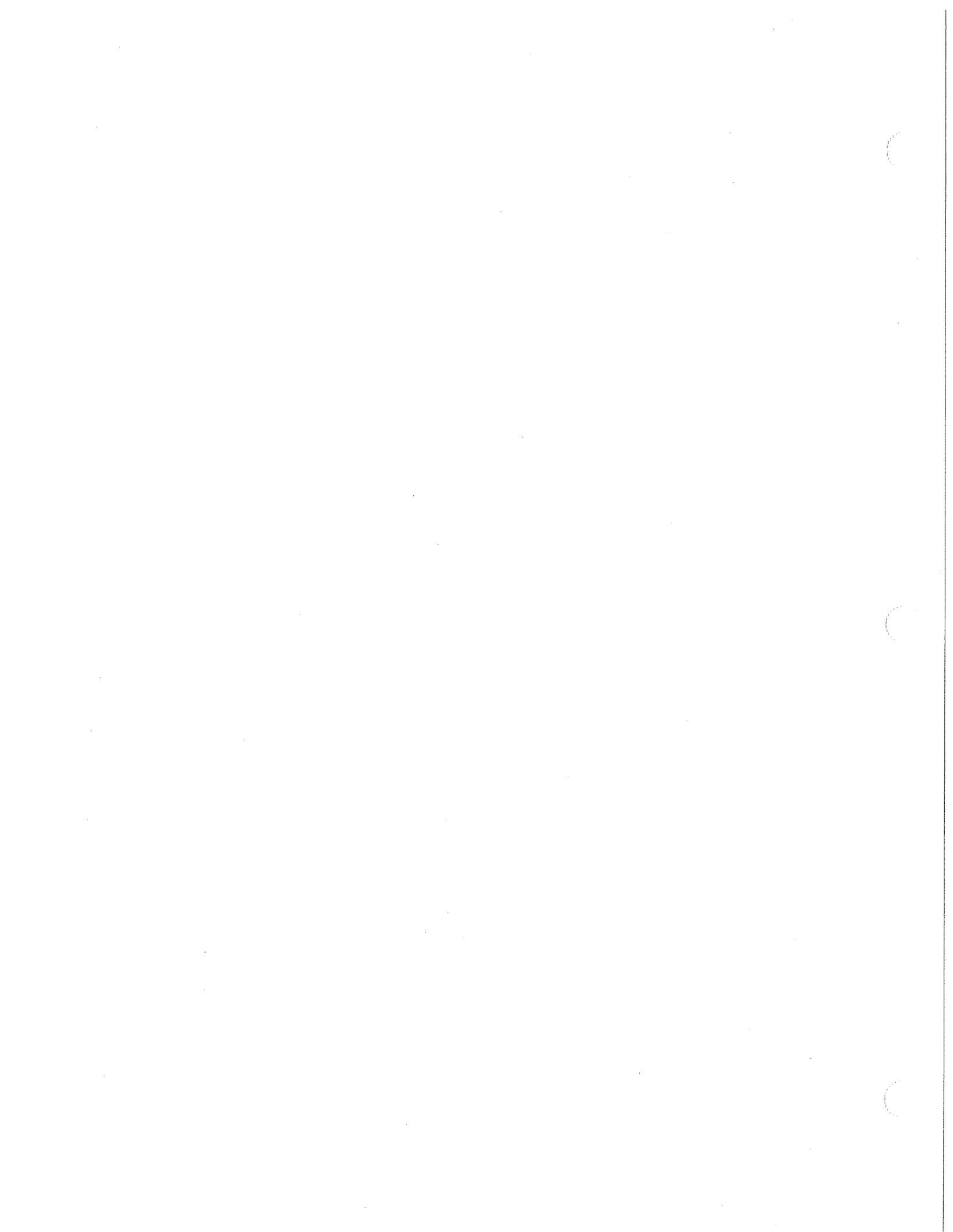
Copy to:

Chris Murray, City Manager
Gerry Davis, General Manager, Public Works
Rose Caterini, City Clerk
Mary Gallagher, Manager, Legislative Services/Deputy Clerk
Kelly Anderson, Public Affairs Coordinator, Public Works
Andy Grozelle, Legislative Assistant, City Clerks
Craig Murdoch, Director, Environmental Services
Bryan Shynal, Director, Operations
Pat Parker, Director, Support Services

| WASTE COLLECTION SYSTEM ANALYSIS | | | |
|--|---|---|--|
| Waste Diversion & Landfill Capacity | | | |
| Curbside Service Level | Projects 1 and 2: Status Quo | Projects 3 and 4: | Projects 5 and 6: |
| Garbage | Weekly, Co-Collected with Green Cart | Weekly, Separate Collection | Bi-Weekly, Co-Collected with Bulky |
| Recyclables | Weekly, Two-Stream, Co-Collected | Weekly, Two-Stream, Co-Collected | Weekly, Two-Stream, Co-Collected |
| Green Cart | Weekly, Co-Collected with Garbage | Weekly, Co-Collected with LYW | Weekly, Co-Collected with LYW |
| Leaf & Yard Waste (LYW) | Bi-Weekly (spring and fall), Separate Collection | Weekly, Co-Collected with Green Cart | Weekly, Co-Collected with Green Cart |
| Bulky Waste | Separate Collection on non-LYW weeks | Weekly Call-in | Bi-Weekly Call-in, Co-Collected with Garbage |
| POTENTIAL EFFECTS ON DIVERSION | <p>DISADVANTAGE The potential for additional diversion is limited.</p> <p>Single Family residential diversion is estimated to reach approximately 54% by 2013-14 and is likely to remain at that rate over planning period without other significant program changes.</p> | <p>DISADVANTAGE The potential for additional diversion is limited.</p> <p>Single Family residential diversion is estimated to reach approximately 54% by 2013-14 and is likely to remain at that rate over planning period without other significant program changes.</p> <p>Bulky waste quantities collected curbside may increase, but some of this is likely to be materials redirected from CRRC's or materials that may have been illegally dumped, thus no real change in bulky waste tonnes disposed is anticipated.</p> | <p>ADVANTAGE Potential for increase in diversion of organics due to reduction in garbage collection. Potential for increased diversion of recyclables.</p> <p>Additional 5.7% Diversion, increasing residential diversion up to 60% as of 2013/2014.</p> <p>Conservative estimate: 2,600 tpy of additional recyclables 5,600 tpy of additional organics</p> <p>Bulky waste quantities collected curbside may increase, but some of this is likely to be materials redirected from CRC's or materials that may have been illegally dumped, thus no real change in bulky waste tonnes disposed is anticipated.</p> |

| WASTE COLLECTION SYSTEM ANALYSIS | | | |
|---|---|---|---|
| Waste Diversion & Landfill Capacity | | | |
| Curbside Service Level | Projects 1 and 2: Status Quo | Projects 3 and 4: | Projects 5 and 6: |
| Garbage | Weekly, Co-Collected with Green Cart | Weekly, Separate Collection | Bi-Weekly, Co-Collected with Bulky |
| Recyclables | Weekly, Two-Stream, Co-Collected | Weekly, Two-Stream, Co-Collected | Weekly, Two-Stream, Co-Collected |
| Green Cart | Weekly, Co-Collected with Garbage | Weekly, Co-Collected with LYW | Weekly, Co-Collected with LYW |
| Leaf & Yard Waste (LYW) | Bi-Weekly (spring and fall), Separate Collection | Weekly, Co-Collected with Green Cart | Weekly, Co-Collected with Green Cart |
| Bulky Waste | Separate Collection on non-LYW weeks | Weekly Call-in | Bi-Weekly Call-in, Co-Collected with Garbage |
| POTENTIAL EFFECTS ON LANDFILL CAPACITY CONSUMPTION | DISADVANTAGE The potential to reduce consumption of landfill capacity specific to single family residential curbside waste is limited. | DISADVANTAGE The potential to reduce consumption of landfill capacity specific to single family residential curbside waste is limited. | ADVANTAGE Has potential to reduce consumption of landfill capacity specific to residential curbside waste. |
| | Compared to Projects 5 and 6, it is estimated that an additional 280,000 tonnes of material would be disposed over the period from 2013 to 2041, equivalent to using an additional 440,000 cubic metres of landfill airspace. | Compared to Projects 5 and 6, it is estimated that an additional 280,000 tonnes of material would be disposed over the period from 2013 to 2041, equivalent to using an additional 440,000 cubic metres of landfill airspace. | Compared to Projects 1 to 4, it is estimated that the City would dispose 280,000 tonnes of material less over the period from 2013 to 2041, equivalent to saving 440,000 cubic metres of landfill airspace. |
| | Glanbrook landfill would close approximately 2 years earlier compared to Projects 5 and 6. | Glanbrook landfill would close approximately 2 years earlier compared to Projects 5 and 6. | Glanbrook landfill would close approximately 2 years later compared to Projects 1 to 4. |
| | | | |

| WASTE COLLECTION SYSTEM ANALYSIS | | | |
|--|--|--|---|
| Waste Diversion & Landfill Capacity | | | |
| Curbside Service Level | Projects 1 and 2: Status Quo | Projects 3 and 4: | Projects 5 and 6: |
| Garbage | Weekly, Co-Collected with Green Cart | Weekly, Separate Collection | Bi-Weekly, Co-Collected with Bulky |
| Recyclables | Weekly, Two-Stream, Co-Collected | Weekly, Two-Stream, Co-Collected | Weekly, Two-Stream, Co-Collected |
| Green Cart | Weekly, Co-Collected with Garbage | Weekly, Co-Collected with LYW | Weekly, Co-Collected with LYW |
| Leaf & Yard Waste (LYW) | Bi-Weekly (spring and fall), Separate Collection | Weekly, Co-Collected with Green Cart | Weekly, Co-Collected with Green Cart |
| Bulky Waste | Separate Collection on non-LYW weeks | Weekly Call-in | Bi-Weekly Call-in, Co-Collected with Garbage |
| POTENTIAL AVOIDED COSTS | <p>DISADVANTAGE</p> <p>Investment would have to be made at least 2 years earlier for alternative disposal capacity (landfill, EFW or other disposal technology).</p> <p>Difficult to value the additional cost to the City, however, based on current market costs for private sector landfill tipping fees (approximately \$69/tonne) and cost for haul (approximately \$13/tonne) the cost to dispose the additional tonnes of waste disposed would be approximately \$20 to \$23 million over the next 30 years.</p> | <p>DISADVANTAGE</p> <p>Investment would have to be made at least 2 years earlier for alternative disposal capacity (landfill, EFW or other disposal technology).</p> <p>Difficult to value the additional cost to the City, however, based on current market costs for private sector landfill tipping fees (approximately \$69/tonne) and cost for haul (approximately \$13/tonne) the cost to dispose the additional tonnes of waste disposed would be approximately \$20 to \$23 million over the next 30 years.</p> | <p>ADVANTAGE</p> <p>Investment would be delayed by at least 2 years for alternative disposal capacity (landfill, EFW or other disposal technology).</p> <p>Difficult to value avoided costs, however, based on current market costs for private sector landfill tipping fees (approximately \$69/tonne) and cost for haul (approximately \$13/tonne) the avoided costs associated with the additional diversion would be approximately \$20 to \$23 million in savings over the next 30 years.</p> |
| Overall Result | DISADVANTAGE | DISADVANTAGE | ADVANTAGE |

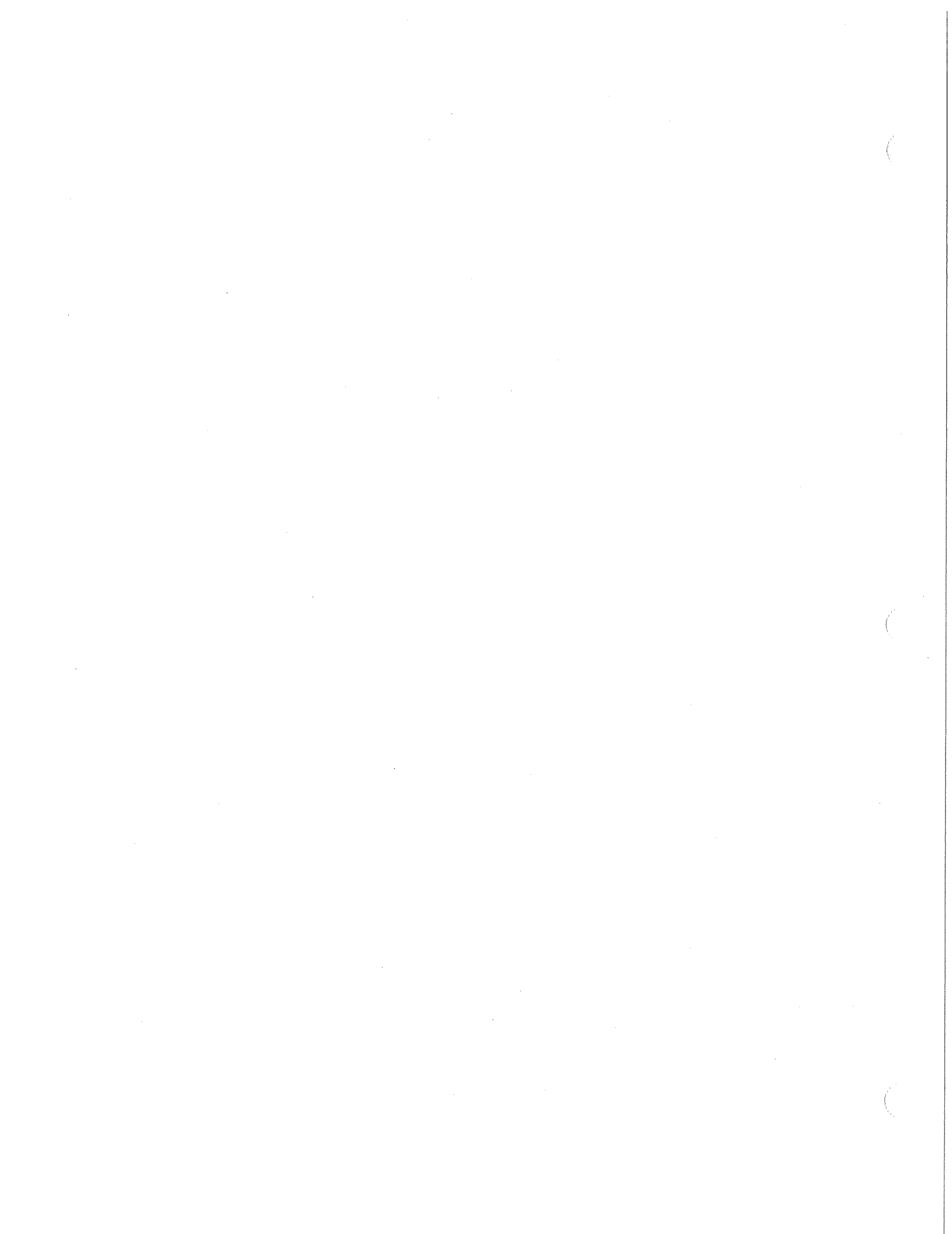


Examples of Voucher Systems for Landfills/Transfer Stations

| Municipality | Details | Landfill/Transfer Station Fees | Bulky Collection |
|---|---|---|---|
| <p>Simcoe County: At present, lower tier municipalities in Simcoe County offer special collections at their own discretion. Nine municipalities offer a one-day special collection of bulky/metal items and five municipalities offer vouchers instead. One municipality offers neither special collection or vouchers. Simcoe County is endeavoring to provide consistent service among all municipalities. Tipping fees vary at each transfer station/disposal site.</p> | | | |
| <p>Simcoe County – Lower tier municipalities offering a special collection day.</p> | | | <p>Maximum of 5 bulky items and 5 metal items. Appliances containing Freon will not be collected unless tagged by a licenced technician.</p> |
| <p>Simcoe County – Lower tier municipalities providing vouchers instead of special collection service</p> | | | |
| <p>Essa & Ramara Township, (Simcoe County)</p> | <p>Residents are eligible for two vouchers annually for free tipping at the landfill.</p> | | |
| <p>Midland, (Simcoe County)</p> | <p>Eligible properties receive a two part voucher with a total value of \$25.00. <i>(It is unclear whether this program is still available as information on the website is only current to December 31, 2011).</i></p> | | |
| <p>Wasaga Beach (Simcoe County)</p> | <p>Residents are eligible for two vouchers valued at \$25.00 for disposal of large articles and brush.</p> | | |
| <p>Other Jurisdictions</p> | | | |
| <p>Northumberland County</p> | <p>Residents are sent a voucher for bulky waste for free disposal of 100 kg or less.</p> | <p>Flat rate tipping fee varies from \$9.50 to \$15.00 for garbage.</p> | <p>Bulky collection is not provided to residents. Residents can use their voucher to dispose of mattresses, bikes, scrap metal, carpet, white goods, furniture, leaf & yard waste, luggage, shingles, wood, drywall, siding, piping,</p> |

| Municipality | Details | Landfill/Transfer Station Fees | Bulky Collection |
|----------------------------|---|--|--|
| | | | plastic lawn chairs, plastic pools & liners. Vouchers cannot be used to dispose of HSW or bagged residential garbage. |
| Richmond B.C. | Residents may purchase \$5.00 garbage disposal vouchers good for \$20.00 in disposal charge value, limited to one per household. | Minimum charge is \$10 for 0 – 90kg outside peak hours and \$20 for 0-190kg during peak hours (M-F 10-2) | Bulky collection is not provided to residents. Fees are applied to dispose of recyclable items such as mattresses, box springs, futons, gypsum drywall. |
| Township of McNab/Braeside | One free voucher per household may be obtained by property owner for one half ton capacity excluding tires, items with refrigerants and HSW. | \$9.50 per passenger vehicle | Bulky collection is not provided to residents. Residents can dispose of scrap metal, brush, leaf & yard waste and recyclables for free. |
| Minneapolis, Minnesota | <p>Residents can get six clean-up vouchers per year per property to dispose of excess garbage, appliances (max 2) or C&D debris. Maximum of 2,000 lbs per voucher.</p> <p>Residents also are provided with two vouchers per year for disposal of 8 tires per voucher.</p> <p>Residents are billed \$24.00/month for collection of garbage, large items, L&Y waste, recyclables and vouchers. A credit of \$7.00/month is applied if the resident participates in the recycling program. Large garbage cart disposal is \$5.00/month, small garbage cart disposal is \$2.00/month.</p> | If not a resident, \$88.92 for all materials, minimum charge is \$35.57 for 1 – 800 lbs. | <p>Collection program is cart-based with weekly collection of garbage and biweekly collection of recycling (regular 24 gallon blue boxes used). Residents may place up to two extra plastic bags or boxes of garbage weekly, each weighing less than 40 lbs.</p> <p>Residents may place a maximum of two large items at the curb at no additional charge. Burnable items are collected on the regular garbage day, non-burnable items (major appliances, items >50% metal) will be collected the next day by a special crew.</p> <p>(•City crews use low-entry, Crane Carrier chassis with a custom</p> |

| Municipality | Details | Landfill/Transfer Station Fees | Bulky Collection |
|--------------|---------|-----------------------------------|---|
| | | | <p>designed stakebed box and hydraulic tailgate to collect large item materials.</p> <ul style="list-style-type: none">•During the winter, two trucks service an average of 3,000 dwelling units per route per day.•During the summer, three trucks service an average of 2,000 dwelling units per route per day with one to two crew members per route.) <p>A special clean up can be arranged with a minimum fee of \$75.00 with an hourly rate of \$181/hr. Garbage must be at the curb by 6:00 am on the requested date of clean-up.</p> |



Waste Collection Systems Cost Analysis

This Appendix provides waste collection system costs from Projects 1, 3, and 5 based on:

- Costs for these projects provided in Report PW11030d (Table 1)
- Costs for Alternative 1 presented in Report PW11030e (Table 2)
- Costs for Alternative 2 presented in Report PW11030e (Table 3)

Project 1 is based on the **current waste collection system**.

Project 3 is based on a **weekly garbage collection system with enhancements** to the current system.

Project 5 is based on a **bi-weekly garbage collection system with enhancements** to the current system.

| TABLE 1 – SYSTEM COSTS FROM REPORT PW11030d | | | |
|--|--------------------------------|------------------|------------------|
| <i>Base Work and Additional Work – Estimated Annual Cost (2011 \$)</i> | | | |
| | Project 1 | Project 3 | Project 5 |
| Base Price for Project incl. Operational Impacts at CCF | \$19,840,000 to \$21,100,000 | \$21,726,900 | \$20,926,400 |
| Additional Garbage Containers | \$280,000 | \$308,000 | \$248,300 |
| Recycling Container Lids | 0 | \$342,600 | 0 |
| Supply Front End Bins | \$17,900 | \$19,900 | \$17,900 |
| Additional Costs | N/A | N/A | N/A |
| Bulk Waste Reuse Events | N/A | N/A | N/A |
| Total | \$20,137,900 to \$21,397,900 | \$22,397,400 | \$21,192,600 |
| 2011 Budget - Waste Collection Services | \$24,812,000 | \$24,812,000 | \$24,812,000 |
| Potential Cost (Potential Savings) | (\$3,414,100) to (\$4,674,100) | (\$2,414,600) | (\$3,619,400) |

| TABLE 2 – SYSTEM COSTS FOR ALTERNATIVE 1 (2 Containers Bi-Weekly or 1 container weekly) | | | |
|--|-----------------------------------|---------------------------------|-----------------------------------|
| <i>PW11030d: Base Work and Additional Work - Estimated Annual Cost (2011 \$)</i> | | | |
| | Project 1 | Project 3 | Project 5 |
| Base Price for Project incl. Operational Impacts at CCF | \$19,840,000 to \$21,100,000 | \$21,726,900 | \$20,926,400 |
| Additional Garbage Containers | \$0 | \$0 | \$0 |
| Recycling Container Lids | 0 | \$342,600 | 0 |
| Supply Front End Bins | \$17,900 | \$19,900 | \$17,900 |
| Additional Costs for Tag and Voucher System | \$1,043,000 to \$2,561,500 | \$1,272,000 to \$2,790,500 | \$1,032,000 to \$2,550,500 |
| Bulk Waste Reuse Events incl. Operational Impacts – All Wards | \$69,100 | \$66,400 | \$52,200 |
| Total | \$20,989,000 to \$23,765,500 | \$23,446,800 to \$24,963,300 | \$22,047,500 to \$23,564,000 |
| 2011 Budget - Waste Collection Services | \$24,812,000 | \$24,812,000 | \$24,812,000 |
| Potential Cost (Potential Savings) | (\$1,046,500) to (\$3,823,000) | \$151,300 to (\$1,365,200) | (\$1,248,000) to (\$2,764,500) |

| TABLE 3 – SYSTEM COSTS FOR ALTERNATIVE 2 (3 Containers Bi-Weekly or 2 Containers weekly) | | | |
|---|---------------------------------|---------------------------------|-----------------------------------|
| <i>PW11030d: Base Work and Additional Work - Estimated Annual Cost (2011 \$)</i> | | | |
| | Project 1 | Project 3 | Project 5 |
| Base Price for Project incl. Operational Impacts at CCF | \$19,840,000 to \$21,100,000 | \$21,726,900 | \$20,926,400 |
| Additional Garbage Containers | \$280,100 | \$308,000 | \$248,300 |
| Recycling Container Lids | \$0 | \$342,600 | \$0 |
| Supply Front End Bins | \$17,900 | \$19,900 | \$17,900 |
| Additional Costs for Tag and Voucher System | \$838,000 to \$2,356,500 | \$1,067,000 to \$2,585,500 | \$827,000 to \$2,345,500 |
| Bulk Waste Reuse Events | \$69,100 | \$66,400 | \$52,200 |
| Total | \$21,045,100 to \$23,823,500 | \$23,530,800 to \$25,049,300 | \$22,071,800 to \$23,590,300 |
| 2011 Budget - Waste Collection Services | \$24,812,000 | \$24,812,000 | \$24,812,000 |
| Potential Cost (Potential Savings) | (\$988,400) to (\$3,766,900) | \$237,000 to (\$1,281,200) | (\$1,221,700) to (\$2,740,200) |