To: Chair and Members  
Public Works, Infrastructure & Environment Committee

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Re: Pay-As-You-Throw Waste Collection Program - (PW06076) - (City Wide)

Council Direction

On December 11th, 2001, (TOE01013A) City of Hamilton Council passed the Solid Waste Management Master Plan (SWMMP). Recommendation number 7 of the plan states that:

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

Information

Considerable investment has been made in the City’s new waste management programs and facilities to establish an integrated system that will reach 65% diversion from landfill by 2008 and extend the life of the Glanbrook Landfill site. To achieve this diversion rate, high participation and capture of recyclable and organic waste is required by residents. Nine of ten households need to be setting out their blue boxes and green cart and need to be making sure nine of every ten pop cans they generate and nine of every ten banana peels get captured. While voluntary compliance is preferred, other tools may be required to reach 65% diversion from landfill. Often a range of tools will be needed including but not limited to:

- Container limits
- Landfill or Collection Bans
- Education and Outreach
- By-law Enforcement
- Incentives
- User Pay or Pay-as-You-Throw

This report provides an update on research to date on user pay or “Pay-As-You-Throw” (PAYT) waste collection programs and outlines next steps for the ongoing review of this SWMMP recommendation. PAYT programs can provide an incentive to reduce waste and may also help to offset waste management program costs. Municipalities such as Peel and Niagara who have implemented a PAYT program have seen a 10% increase in waste diversion and a 4-5% reduction in total waste generated as a result.
Pay-As-You-Throw programs have been among the most effective waste diversion tools as it affects the waste generator in the home before waste materials are set at the curb. Curbside collection of waste material is the most convenient option for the resident. An item is set out and it “disappears”. Limiting the amount of garbage that can be set out on a weekly basis is a first step in encouraging waste diversion. The next level of waste diversion is achieved by imposing a fee for setting waste out for collection, thereby providing a financial reason to raise awareness. Once awareness is raised, the waste generator can choose to take action to reduce or divert waste.

**Current Practices**

The following provides an overview of current practice for the City’s waste management programs and services:

- The majority of costs (72%) are recovered through municipal taxes. The remaining costs are recovered from the sale of recyclables and Transfer Station Fees. Table 1 below, outlines how the 2006 Approved Waste Management Division Budget is recovered from the tax levy.
- Taxes are set each year as part of the budget process.
- The tax rates are applied to the assessed value of properties in the community.
- The property value is determined by a property assessment process.
- The cost of waste management services is approximately 6.14% of the total tax rate (2006).
- As of April 2006, there is a 3 container limit for waste collection.
- The City’s residential diversion rate was 28% at the end of 2005.

<table>
<thead>
<tr>
<th>Taxation Class</th>
<th>2006 Tax Levy</th>
<th>% of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>$22,298,698</td>
<td>64.1%</td>
</tr>
<tr>
<td>Multi-Residential</td>
<td>$3,930,972</td>
<td>11.3%</td>
</tr>
<tr>
<td>ICI (Industrial, Commercial and Institutional)</td>
<td>$8,557,690</td>
<td>24.6%</td>
</tr>
<tr>
<td>Total</td>
<td>$34,787,360</td>
<td>100%</td>
</tr>
</tbody>
</table>

*Based on 2006 Approved Budget including capital financing charges

**Costs and Options**

In 2005 waste management staff engaged a consultant to assist with the undertaking of a Financing Options Study related to waste management services. The purpose of the study was to outline waste management program costs and potential financing options for future costs, including a user pay or “Pay-As-You-Throw” (PAYT) program. The study resulted in a number of costing models for the waste management system and will serve as a reference tool in ongoing analysis. A number of assumptions were built into the costing model and are outlined in Appendix A. Although the study is in final stages of completion, it has been useful in providing information on cost recovery options and PAYT systems.

There are a number of factors to be considered when determining who should pay and how individual components of the overall waste management system costs should be recovered. The impact on system performance must be considered when establishing
which categories of costs should be recovered by either tax based or user fee based means.

There are a number of different options to recover waste management system costs ranging from 100% tax levy to 100% user fee. Given the City's 65% waste diversion target, an assumption was made that the Solid Waste Management Master Plan goals would not be achieved if there was a user fee for diversion programs because it would provide a disincentive for participating in the diversion programs. On this basis, the following options were explored:

1. 100% Tax Levy (status quo)
2a. Diversion Programs on Tax Levy - 100% Disposal Costs on User Fee
2b. Diversion Programs on the Tax Levy - Portion of Disposal Costs on User Fee & remainder on Tax Levy
3. 100% User Fee

Based on the analysis completed to date, it would appear that Option 2b would be a reasonable first step to improving waste diversion and enabling residents to reduce their waste management costs. With the current cost recovery system, users are unaware of costs and have no ability to influence their costs. Table 2 outlines preliminary costs per container for the various options. Option 2b represents a good first step as it allows the cost per container fee to be controlled at an acceptable level. Increases can be phased in over time rather than starting at full costs. Other Ontario municipalities implementing PAYT programs have chosen this approach in order to get buy in from residents.

<table>
<thead>
<tr>
<th>Option</th>
<th>Cost Per Bag</th>
<th>Tax Levy (2008 estimated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>n/a</td>
<td>$47.88 Million</td>
</tr>
<tr>
<td>2a</td>
<td>$13.80</td>
<td>$17.03 Million</td>
</tr>
<tr>
<td>2b</td>
<td>$2.00 - $5.00</td>
<td>$43.41 - $36.70 Million</td>
</tr>
<tr>
<td>3</td>
<td>*$32.99</td>
<td>$0.00</td>
</tr>
</tbody>
</table>

* As per MacViro Consultants 05/29/06  Preliminary figures

In terms of recovering costs from users, there are three basic models for Pay-As-You-Throw Programs:

1. Weight/Volume Based Systems
2. Bag based System
3. Tag Based System

Appendix B shows the Pro's and Con's of each of these systems. Based on the research to date, a tag based system is considered to be most feasible for implementation for curbside collection should a user pay system be implemented in Hamilton. A weight/volume based system would be preferred for collection provided through front bin collection.
Other Municipalities

Over 100 Ontario municipalities have implemented a PAYT system for waste collection. The PAYT systems implemented to date have taken two approaches with respect to charging for waste containers that are set out for collection:

1. **Full User Pay System** – requiring residents to purchase a tag or marked bag for all bags and containers placed out for collection

2. **Partial User Pay System** – requiring residents to purchase a tag or marked bag for any container over and above a set container limit

Full User Pay systems have only been implemented in small municipalities. Partial User Pay systems have been implemented in larger municipalities such as Niagara and Peel Regions, Markham, Peterborough and Barrie.

Other Considerations

*Illegal Dumping* - Most municipalities contacted noted a small increase in illegal dumping over the first few months of a Pay-As-You-Throw program. Illegal dumping can be successfully resolved through public education, providing other disposal options such as amnesty weeks and increased enforcement. These costs will need to be considered in the implementation of a PAYT system and have been included in the cost model.

*Impact on Low Income Residents* - Staff has met with representatives from Community Services to discuss the impact of a Pay-As-You-Throw program on low income residents. Community Services is providing Waste Management with statistics and information in order to facilitate a program that will work for these individuals in our community.

*Consultation* - The SWMMP Steering Committee and Waste Reduction Task Force have been consulted on the research undertaken to date. Both groups recognize the benefit of a PAYT program on waste diversion and support the continued review of this tool for potential implementation in Hamilton.

*Implementation* – An implementation plan will need to be developed to fully plan the logistics for the program and ensure that all costs have been included in the costing model. There will be additional costs to implement a PAYT and estimates have been included in the cost model. There will be administrative costs for the purchase of tags as well as the addition of 1 FTE at an FA2 level for collection and billing of the bag tags. A communications program will need to be launched to inform residents on how the program works.

*Next Steps*

Staff will continue to explore the feasibility of implementing a PAYT program for Hamilton, in conjunction with the review of container limits (Report PW04114a) and monitoring of waste diversion rates. Based on the research completed to date, a PAYT program based on a set container rate could significantly increase diversion rates and would help to offset a portion of the disposal costs. An effective education program will be critical in the launch of any PAYT program. The feasibility review will include full consideration of costs for implementation, including costs for by-law enforcement, illegal dumping and impact on low income residents. Timeframes for implementation will also be reviewed. The new Council will be asked to consider implementation of a PAYT
system and should they wish to move forward an awareness program could be initiated in 2007 with potential implementation in 2008.

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General Manager
Public Works Department
Appendix A
ASSUMPTIONS

- Diversion will increase the same for all options, the change in the collection and disposal costs are included in the appropriate operating costs.
- Illegal dumping will increase for the first year of any user pay program and then it will level off.
- Costs associated with implementation and operations are included in the costs (staffing, bag tag production and distribution, communication and enforcement).
- Any user pay program could not be implemented before 2008.
- Assuming 1 free bag for options 1 & 2.
- Model includes all waste management program operating and capital financing requirements, including additional administrative, outreach and by-law enforcement costs for a PAYT program.
- # of households and % participating (in purchasing of tags) is estimated.
- Model makes provision for contributions to a Reserve Fund, when revenues exceed expenditures, and assumes no investment return on Reserve Funds.
- Assumes 42% participation in purchasing tags (58% will not need to purchase additional tags beyond the one tag or container limit provided).
- Assumes purchase of 0.5 bag every two weeks.
- Includes equivalent FA2 position for collection/billing.
- Includes enforcement costs of $15,000/month.
- Includes annual illegal dumping costs of $317,187.
- Includes outreach costs of $150,000 annually.
- Includes tag production/distribution of $400,000 annually.
### Appendix B

<table>
<thead>
<tr>
<th>System Type</th>
<th>Pro’s</th>
<th>Con’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight/Volume Based System</td>
<td>• Preferred approach for multi-residential</td>
<td>• Labour intensive for collection crews</td>
</tr>
<tr>
<td></td>
<td>• Accurate tonnage data for weight based systems</td>
<td>• Capital intensive for start up and distribution of carts</td>
</tr>
<tr>
<td></td>
<td>• Equitable</td>
<td>• Not recommended at this time for curbside collection because of the capital implications</td>
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<tr>
<td></td>
<td>• City of Vancouver, British Columbia has a volume based system</td>
<td>• Also known as Utility based</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Residents billed for garbage &amp; recycling collection as a utility</td>
</tr>
<tr>
<td>Bag Based System</td>
<td>• Bags sold at local retailers and Municipal locations.</td>
<td>• Limits types of containers residents can use</td>
</tr>
<tr>
<td></td>
<td>• Same size bags used – residents cannot use oversized bags</td>
<td>• The City of Hamilton has banned plastic from its Leaf and Yard program and Green cart program. If the City then sold garbage bags it would seem to be promoting the use of plastic bags.</td>
</tr>
<tr>
<td></td>
<td>• Simple for collection crews</td>
<td>• Users would purchase identifiable garbage bags and only those would be collected</td>
</tr>
<tr>
<td>Tag Based System</td>
<td>• Enables user flexibility to use tags based on need</td>
<td>• Collectors need to check for tags – not as easy as a coloured garbage bag.</td>
</tr>
<tr>
<td></td>
<td>• Easy for collection crews</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Equitable</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Tags can be sold at local retail outlets and Municipal locations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Preferred system for curbside collection</td>
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<tr>
<td></td>
<td></td>
<td>• Neighbouring municipalities (Peel &amp; Niagara) have adopted a bag tag programs</td>
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