



**REPORT TO:** Co-Chairs and Members of the  
Integrated Community Planning and Public Works Committee

**SUBJECT:** Leaf and Yard Material Collection  
Options

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### **RECOMMENDATION(S)**

That this Committee recommend to Regional Council:

That Council's current policy with respect to collection of leaf and yard material be maintained; and

That Staff keep on hand a supply of high quality paper leaf and yard material bags in order to provide free sample packs to residents who are experiencing problems with paper bags.

### **EXECUTIVE SUMMARY**

In response to requests from the Waste Management Planning Steering Committee and the Planning and Public Works Committee, staff have prepared a cost/benefit analysis of paper versus plastic yard waste bags. Staff have also investigated alternative options for the collection of leaf and yard material to address the cost of paper bags.

Staff have concluded that the cost savings from eliminating plastic bags from the compost process are greater than the incremental cost to residents for buying paper bags.

Furthermore, all of the options for addressing the cost of paper bags present significant cost impacts and implementation challenges. As a result, staff are not recommending any changes to the leaf and yard material collection program at this time. Staff will continue to educate residents on the benefits of using paper bags and options to reduce the need for paper bags for leaf and yard material. Staff are recommending that a supply of paper bags be kept on hand in order to supply, on a gratis basis, sample packs to residents who are experiencing problems with the cost or quality of paper bags.

## **PURPOSE**

The purpose of this report is to present a cost/benefit analysis of paper versus plastic yard waste bags and to evaluate alternate options for leaf and yard material collection that may reduce the cost of purchasing paper bags to Niagara residents.

## **BACKGROUND**

In May 2007, Regional Council approved the Planning and Public Works Committee's recommendations to eliminate plastic bags from the collection of source separated organics (food and leaf/yard material).

Since eliminating plastic bags from the collection of leaf and yard material, Regional staff and politicians have received calls from residents about the cost of kraft paper bags, compared with regular plastic bags. A few residents have indicated that they are on low, fixed incomes and cannot afford to purchase paper bags for the leaf and yard material generated by the large number of trees on their properties.

On October 21, 2008, the Waste Management Planning Steering Committee requested that staff provide recommendations to deal with seniors' issues regarding the cost of paper bags for leaf and yard material.

On October 29, 2008, the Planning and Public Works Committee requested that staff report back on the cost of compostable/paper bags versus the projected cost savings, alternate options for the collection of leaf and yard material, and the cost of not reaching the 65% diversion rate.

Several local municipalities have also received complaints from residents and have passed the following motions:

- The Town of Pelham Council passed a resolution requesting that the Region collect leaf and yard material in plastic bags during the periods of April 1 to May 31 and October 1 to November 30 each year.
- The City of St. Catharines Council has requested that the Region review the requirement for residents to use paper bags for leaf and yard material.
- The City of Niagara Falls Council has directed its city staff to investigate alternatives for loose leaf pickup.

Niagara Region's current leaf and yard material collection program is consistent with programs offered by many other municipalities. Over 80% of municipalities across Ontario, including Durham Region, York Region, Halton Region, Peel Region, the City of Hamilton and the City of Toronto only collect leaf and yard material in reusable containers or paper bags.

Based on information provided by the Region's collection contractor, fewer than 2% of households placed leaf and yard material at the curb in plastic bags during November, 2008, down from approximately 7% in October, 2008. Residents are becoming more familiar with the program changes and the use of paper bags or reusable containers.

## **REPORT**

### **Cost Benefit Analysis of Paper versus Plastic Bags**

Based on a recent review of prices in major retail stores in Niagara, the average unit price is \$0.52 for a paper bag and \$0.27 for a plastic bag. It should be noted that the cost of plastic bags ranges from \$0.18 to \$0.44 and the cost of paper bags ranges from \$0.44 to \$0.59. Therefore, the cost differential between paper bags and plastic bags ranges from nil to as much as \$0.41 per bag. To calculate the cost per household, staff used the average cost of paper and plastic bags, the annual tonnage of leaf and yard material collected and the estimated number of bags used by all households.

Niagara Region collects approximately 19,700 tonnes of leaf and yard material annually. Assuming 90 per cent of the material is set out in paper bags (with the other 10 per cent being placed in reusable containers), an average of 12 bags per household served is used per year. The incremental cost premium to purchase paper bags is \$3.40 per household, or approximately \$478,000 per year for all Niagara households.

Taking into consideration the fact that not all residents generate the same amount of leaf and yard material, residents with large properties who use 200 bags per year would incur an estimated additional cost of \$49 per year for paper bags. Most residents with average lot sizes would not require this many paper bags.

Niagara Region has recently entered into a long term contract agreement with Integrated Municipal Services (IMS) for composting organic material based on the collection of leaf and yard material without plastic bags. IMS has informed staff that processing costs would increase by \$40 to \$60 per tonne if leaf and yard materials were delivered in plastic bags. The estimated annual processing cost increase would, therefore, range from \$684,000 and \$1,034,000 if plastic bags are permitted in the curbside collection program. The additional cost covers screening out the plastic bags, loss of revenues from poorer quality finished compost and increased residue disposal costs.

This additional processing cost would still be incurred if plastic bags were only permitted in Spring and Fall because the majority of material is collected in these times. In addition, it would be challenging to educate residents on when plastic bags are or are not permitted.

In summary, the annual cost premium to Niagara residents for purchasing paper bags instead of plastic bags is approximately \$478,000. However, the annual processing cost premium to Niagara Region for composting organics collected in plastic bags instead of paper bags is estimated to be at least \$684,000. Therefore, reverting back to plastic bags in the Region's Leaf and Yard Material collection program would result in an overall system cost increase of at least \$206,000 per year.

### **Current Options for Residents**

There are several options currently available to residents to reduce the need for purchasing paper bags. These options include:

- Using open top, rigid reusable containers labelled "Organics" for average weekly quantities of leaf and yard material. Labels are available free of charge from the Region.
- Mulching grass and leaves into the lawn. This improves lawn health and reduces collection and processing costs.
- Composting leaf and yard material in a backyard composter.
- Delivering leaf and yard material to Regional drop off facilities. There is no tipping fee for residential customers delivering leaf and yard material. Leaf and yard material may be transported loose or bagged; however, material transported in plastic bags must be debagged by the resident when dropped off.

### **Alternative Options**

Staff have investigated three options for reducing residents' cost of paper bags for leaf and yard material, in order to address the concerns of seniors and low income residents.

#### **1. Leaf vacuuming in designated urban areas**

Several municipalities in the Greater Toronto Area provide limited fall leaf vacuum service in mature urban neighbourhoods one to three times per year. In Niagara Region, only the City of Niagara Falls provides a fall leaf vacuum collection service, three times per year in designated neighbourhoods. Operating

costs for vacuum leaf collection are reported to be in the range of \$200 - \$300 per tonne.

Typically, this service is provided by the local municipality which determines the eligible neighbourhoods, collection dates and frequency. If the ten cities and towns in Niagara provided fall vacuum leaf collection three times per year, the total estimated operating cost to the municipalities would be approximately \$800,000 - \$1,200,000 per year.

The advantage of this option is that it reduces the need for residents in older neighbourhoods to purchase yard waste bags.

The challenges of this option include:

- High cost of equipment, operation and maintenance
- All residents would pay for the service through their taxes, but only some urban residents would receive the service
- Duplication of service – since bag-based curbside collection service would still be provided to mature neighbourhoods
- Inconsistent collection due to variability of weather
- Difficulty in establishing a collection schedule that ensures all residents in the designated areas are serviced.
- If leaves are not collected before snowfall, ploughs push the leaves into driveways resulting in large blocks of frozen leaves on driveways that require heavy machinery for removal

## 2. Debagging at curbside by the Region's collection contractor

Prior to 2003, the Region's collection contractor collected leaf and yard material in plastic bags and debagged at curbside. Due to the high cost for this type of service, which was passed on to the municipalities, the service was discontinued at the beginning of the collection contract in 2003/04.

The advantage of debagging is that it would allow residents to continue to use the lower cost plastic bags for leaf and yard material.

Debagging at curbside has many drawbacks which include:

- Additional collection costs charged back to municipalities. The collection contractor has provided an estimate of \$974,000 per year to debag at curbside during the months of October and November.
- Routes could not be completed as scheduled due to extra time required for debagging, resulting in some material left at the curb until the following day
- After debagging, the plastic bags are not recyclable and must be sent for disposal at landfill sites

### 3. Paper Bag Subsidy

Staff has investigated providing a set quantity of free bags to qualifying residents (e.g. fixed income pensioners living on large, mature properties in urban neighbourhoods).

Targeting the free bags to those most in need of them would reduce the overall cost of the subsidy.

Assuming 10% of households qualify and based on providing 50 free bags to qualifying households, the estimated cost would be \$306,000 per year, plus shipping and administration costs.

Challenges associated with this option include:

- Eligibility criteria for income levels, age, lot size will be difficult to develop, and in the case of income levels, difficult to apply in practice
- Any minimum lot size and age of property criteria would be challenged by ineligible households
- Not all seniors need financial assistance
- Some smaller lots are more heavily treed than larger lots, yet would not qualify for the subsidy
- Mechanism to deliver bags to qualified residents would involve additional staff time
- Distributing free bags would undermine the retail network

## **Performance of Paper Bags**

Some residents have complained about the performance of their paper yard waste bags, indicating that the bags fall apart when being moved to the curb. As with any consumer product, quality may vary from one manufacturer to the next. Residents are encouraged to use two-ply kraft paper bags that are able to hold up to 20 kg of leaf and yard material for fourteen (14) days in a variety of weather conditions.

Staff have recently asked major retailers in Niagara Region to ensure that their suppliers are providing paper bags that meet the above criteria.

Staff are also planning to purchase a supply of 14,000 high quality paper bags so that sample packs of five bags can be provided without cost to residents who have experienced problems with bag quality, or who are having difficulty with the cost of paper bags. The estimated cost to the Region would be less than \$8,000 per year.

## **Waste Management Advisory Committee**

On December 9, 2008, Waste Management Advisory Committee members noted that they do not want plastic bags to be reintroduced for collection of leaf and yard materials.

## **Conclusion**

Paper yard waste bags are now the standard method of collection across most Ontario municipalities. In Niagara, the cost savings associated with paper bags in the composting system are higher than the total extra cost to residents from buying paper bags. Staff evaluated three options for reducing the cost of paper bags to residents, but have not recommended any of them due to the high cost and challenges in implementing any of the options. However, staff will continue to educate residents on the benefits of paper bags, and options to reduce the need for paper bags for leaf and yard material.

Submitted by:

Approved by:

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Kenneth J. Brothers, P.Eng.  
Commissioner of Public Works

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Mike Trojan  
Chief Administrative Officer

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