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REQUEST FOR NEW BLUE BOX MATERIALS

The Solid Waste Management Committee recommends the adoption of the recommendations contained in the following report, October 20, 2005, from the Commissioner of Transportation and Works:

1. RECOMMENDATIONS

It is recommended that:

1. Staff continue to monitor emerging markets for additional blue box materials and report back to Committee as change warrants consideration.
2. The following guiding principles be considered when determining whether to establish programs to divert materials from disposal:
 - A reasonable expectation to divert material from landfill (or the material must not pass through the diversion process only to be landfilled as residue).
 - The availability of two or more domestic markets, or a market with a stable operational history and financial security.
 - The completion of a “due diligence” review of the proposed market outlet.

2. PURPOSE

The purpose of this report is to follow up on the request made by the Town of Markham to add plastic packaging to the Region’s blue box program following direction from Regional Council at its May 19, 2005 meeting. In addressing this request, the current operation of the new Waste Management Centre, blue box materials markets and the performance of the current blue box program have been considered.

3. BACKGROUND

On June 24, 2004, Regional Council approved the addition of six new material types to the curbside blue box program (Clause 1 of Report No. 6 of the Solid Waste Management Committee). This program expansion brought the Region’s blue box program in line with the most inclusive residential recycling programs within the province. On July 4th, 2005, the Region also opened its new Waste Management Centre and began accepting commingled blue box materials to reduce curb side blue box collection costs for local municipalities. It is anticipated the current additions to the blue box program will increase our diversion rate by 1% in 2005.

The Town of Markham formally submitted its request to the Region on April 18, 2005, to consider adding further materials to the blue box program. The Town requested the

Region approve the addition of all plastic containers and packaging. This request was initially responded through Clause 2 of Report No. 4 of the Solid Waste Management Committee received by Council May 19, 2005; where staff recommended that these additions be deferred for consideration to 2006, when and if stable markets for these materials might be available. Council subsequently amended the recommendations such that staff be directed to provide a response before year end.

4. ANALYSIS AND OPTIONS

4.1 Market Sustainability

The following sections examine the implications of adding blister packaging, expanded polystyrene and plastic film to York Region's single stream blue box program. Market availability, revenues and diversion rates are discussed.

4.1.1 Blister Packaging

Currently, there are no local markets that exist to process plastic packaging (i.e., blister pack). According to the Region's recycling markets, mixing blister packaging into our existing blue box recyclables would decrease revenues, and would necessitate the material be shipped overseas for processing. Marketing material overseas makes it almost impossible for staff to ensure the material is in fact being managed in an environmentally and socially responsible manner. This practice is not supported by staff and precipitated the development of the guiding principles for blue box materials, introduced in Clause 2 of Report No. 4 of the Solid Waste Management Committee as discussed in section 4.6 of this report.

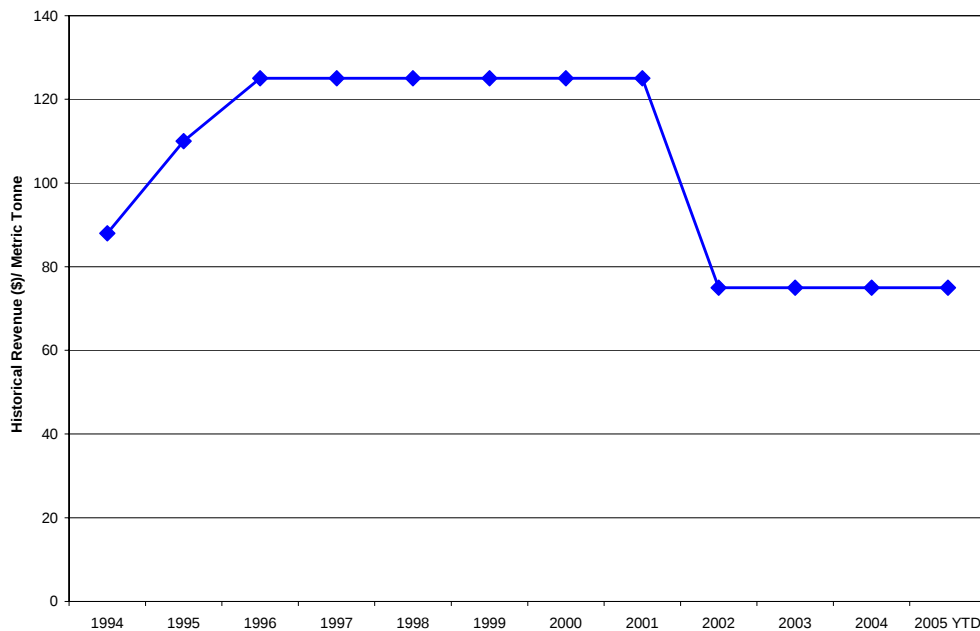
4.1.2 Expanded Polystyrene

York Region currently recycles the rigid form of polystyrene through the blue box program. Expanded polystyrene is the foam-like packaging that is used to package fragile goods, such as a television, within a cardboard box. Take-out "clam shell" trays from food convenience establishments and meat trays from supermarkets are also made from expanded polystyrene. This light-weight material is currently collected by only 48 source separated blue box programs and 3 residential depots of the 190 municipalities reporting to Waste Diversion Ontario (WDO) in 2004. There is only one domestic market that will process this mix of food grade and packaging grade expanded polystyrene which is located in Mississauga. This facility is run by the Canadian Polystyrene Recycling Association (CPRA), of which the industry organization EPIC is a member.

Historically, the prices for this material have been consistent with the exception of a period of time during 2001 and 2002 (see Figure 1). However, the plant was shut down during this period due to a fire within the facility. Municipalities doing business with CPRA at the time of the fire were forced to stockpile and dispose of their collected material almost a year following the plant closure. The higher price paid in the late 90's to municipalities was dropped in 2002 because the association could no longer afford to

support a high price. The market for this material is artificial in that the operation is supported by the industry and the prices, therefore, fails to reflect the true market value for the material.

Figure 1
Historic Revenue for Polystyrene



Source: The Price Sheet, CSR

Note: Revenues do not include transportation (FOB CPRA)

It is estimated that polystyrene represents only 1,100 tonnes of waste annually or approximately 0.3% of the total waste stream in York Region. If added to our blue box program, it is projected to have a net cost to the Region of \$563 per tonne in addition to the cost of shipping. This material is projected to increase the Region's diversion rate by 0.2% based on an 80% capture rate.

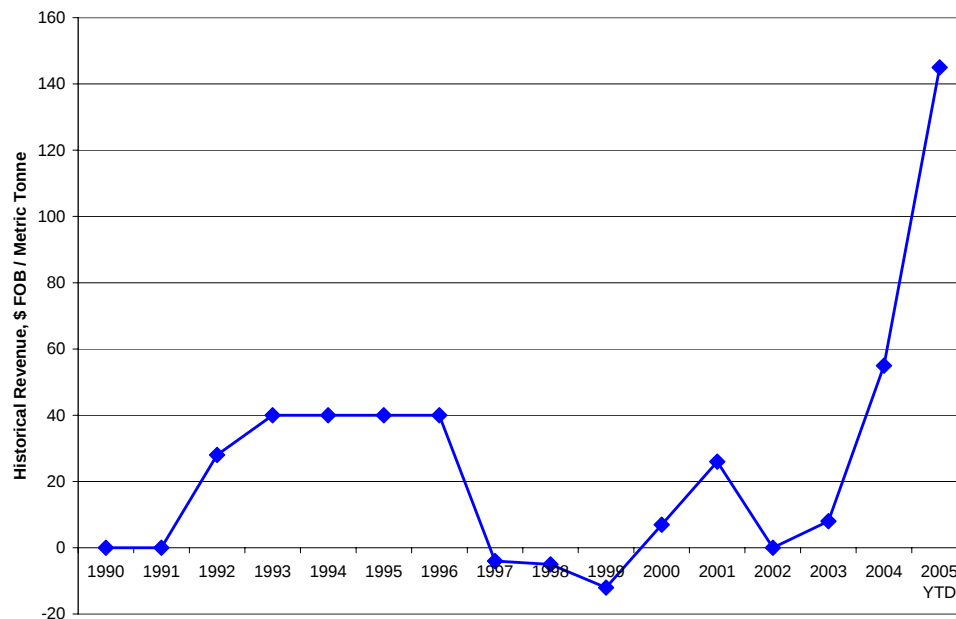
4.1.3 Plastic Film

The markets that exist for plastic film are volatile and unstable. The decision to move to a commingled blue box recycling program plays a key role in determining what materials can be cost effectively added to the program. Two-stream systems like the City of Hamilton's (i.e., fibre and containers), and source separated recycling programs provide more flexibility to add materials from a processing perspective. In these systems, the plastic film is kept separate from the container stream with the paper fibre where it can be kept clean, and is easily removed. In a commingled system, the plastic film "blinds" the picking belts making it difficult and costly to get at the materials below. The film plastic also wraps itself around automated sorting equipment, necessitating premature line shut down at significant cost to the Region. Processing plastic film in a single stream system is more challenging. Materials such as broken shards of glass, and food residuals

contaminate plastic film during commingled collection and processing making the film difficult to market even when the markets are good and readily available.

The blue box program is not the only way to collect plastic film. Community Environmental Centres are an ideal location for residents to drop off plastic film, expanded polystyrene and other materials, and would resolve processing and contamination concerns. Prices for plastic film have, until recently, remained very low (see Figure 2). Current market price increases for plastic film are a result of the higher prices for oil and petroleum products.

Figure 2
Historic Revenue for Plastic Film



Source: The Price Sheet, CSR

Projections indicate that plastic film represents 4,900 tonnes of waste generated in York Region annually. If added to our blue box program, plastic film is estimated to have a net cost to the Region of \$492 per tonne in addition to the current costs of the program. Diversion of this material would be expected to increase the Region's diversion rate by 1.2% based on an 80% capture rate.

4.2 MRF Operations

York Region's new Waste Management Centre has been in full operation for roughly 18 weeks. Approximately 23,000 tonnes of blue box material has been processed during this time period. It is apparent through visual inspection that there is an increasing amount of "not acceptable" blue box materials being delivered in collection vehicles to the Materials Recycling Facility (MRF). The Waste Management Centre's MRF residue rate currently averages approximately 5% compared with the average residue rate for a source

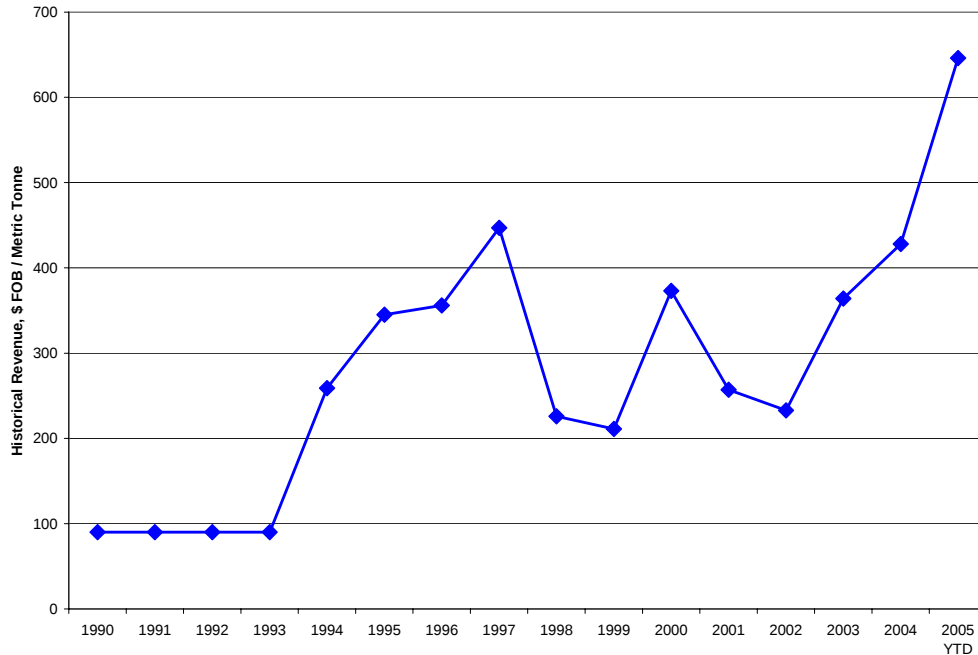
separated MRF program of 3 to 4%. Due to the short amount of time the MRF has been operating, staff are concerned that making changes to the program at this time further complicates these issues.

4.3 Industry Comments

Markets continue to fluctuate throughout the recycling industry. In particular, markets for blister packaging, expanded polystyrene and plastic film continue to be problematic in that the local markets either do not exist or continue to be unstable. These facts remain unchanged from the Council report dated May 19, 2005. Experts within the plastics recycling field continue to advise the Region that markets are not available for blister packaging (*see Attachments 1 through 5*). Staff continue to work with industry organizations such as the Environment and Plastics Industry Council (EPIC), (*see Attachment 5*), along with brokers and processors of mixed plastics on this issue. However, many people involved within the mixed plastics recycling industry predict that blister packaging will continue to be rejected by our markets for the foreseeable future, and their addition to the Region's current program, will reduce the marketability of our current material mix. Our contractor, Miller Waste Systems, continues to support this position and advises of the difficulties of handling these material types in our MRF (*see Attachment 1*).

Due to continuous market fluctuations, it is challenging to forecast revenues for the blue box program. Even materials such as high density polyethylene (i.e., HDPE, bleach bottles) experience market instability (*see Figure 3*). Overall, the recycling markets are currently experiencing a negative trend, although due to fluctuations in the oil markets, plastics like HDPE are increasing in value. According to the Corporations Supporting Recycling (CSR) Composite Index, the basket of goods prices for blue box recyclables are down approximately \$14 per tonne, from this time last year. This seemingly small amount is estimated to result in a decrease of approximately \$750,000 in net earnings for the Region's blue box program in 2005.

Figure 3
Historic Revenue for HDPE



Source: The Price Sheet, CSR

4.4 Waste Diversion Ontario (WDO) Initiatives

On July 19, 2005, Waste Management Staff applied to Stewardship Ontario's Effectiveness and Efficiency Fund through the WDO to fund a project that would examine the processing of blue box recyclables and MRF residue in foreign countries such as India. Markets exist overseas, but need to be examined using the Guiding Principles for blue box materials (see Section 4.1.1).

A number of initiatives across the Greater Toronto Area (GTA) are also being undertaken to address the issue of recyclable material recovery and MRF efficiencies. The WDO through the Effectiveness and Efficiency Fund is funding portions of the following projects:

- Optical Plastics Sorting Equipment - The City of Toronto is studying the impacts of optical plastics sorting equipment on productivity, capture rates, operating costs and staffing for separating HDPE and PET at two single-stream facilities.
- Desktop Study of the Feasibility of Developing a Centralized Plastics Recovery Facility in the GTA - The Region of Peel in conjunction with EPIC, Entec, MacViro Consultants, and Gartner Lee are developing a business case that compares a centralized sorting facility with the existing process of separation at individual MRF's.

- MRF Optimization Study - The Region of Peel is evaluating the feasibility of including automated optical plastic sorting equipment and automated bag breaker technologies in their MRF.
- Dufferin MRF Optical Plastics Sorting - The City of Toronto is examining the business case for installing optical sorting equipment for plastic containers at its Dufferin Street single-stream MRF.

York Region staff are working closely with the GTA municipalities to monitor the outcome of these projects. The findings of these projects may influence how plastics are handled by municipalities. Adding more materials to the blue box program prior to knowing the outcome of these projects would be premature.

4.5 York Region Initiatives

Staff has been working in partnership with the Township of King to develop quantitative data to assess the viability of diverting blister packaging, expanded polystyrene and plastic film from the waste stream. The Township of King is planning a rural blue box pilot where these materials will be added to the blue box program to assess curbside capture rates. The Region is working set up expanded polystyrene and plastic film collection points at our waste depots to evaluate depot/drop off capture rates. The collection of this data will allow the Region to make an informed decision.

4.6 Proposed Guiding Principles for Evaluating Markets

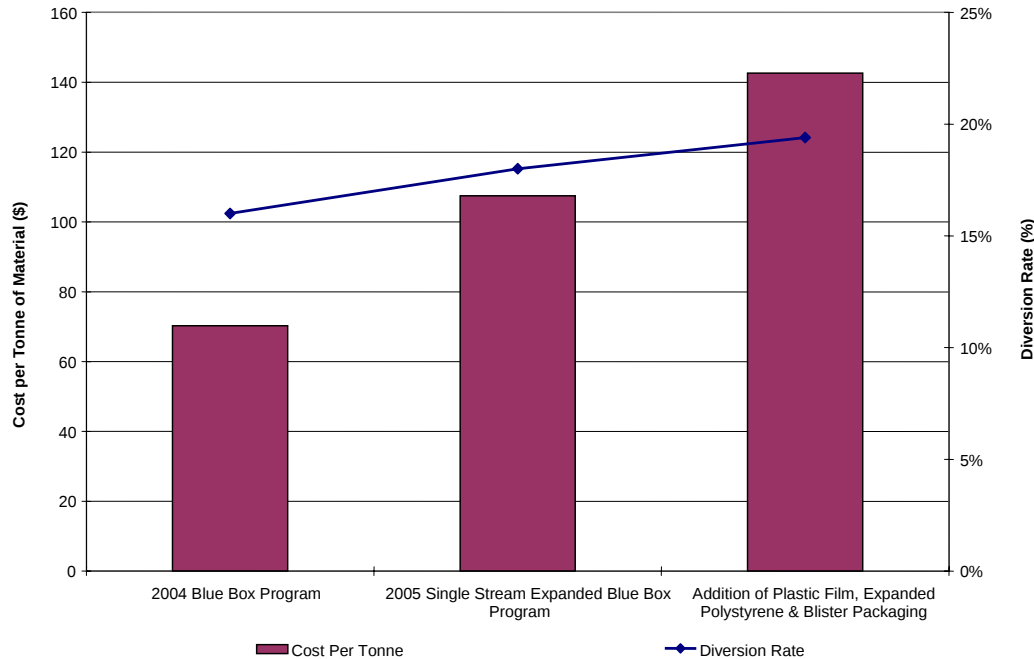
The original guiding principles proposed by Staff in Clause 2 of Report No. 4 of the Solid Waste Management Committee inadvertently excluded the consideration of stable processors. The proposed principles have been modified to recognize and give consideration to sole processors with stable financial and operational histories. The proposed principles include:

- A reasonable expectation to divert material from landfill (or the material must not pass through the diversion process only to be landfilled as residue).
- The availability of two or more domestic markets, or a market with a stable operational history and financial security.
- The completion of a “due diligence” review of the proposed market outlet.

5. FINANCIAL IMPLICATIONS

Adding new materials to the blue box program would result in increased costs to the Region (Figure 4). The cost increases are a direct result of higher processing costs by our operating contractor due to increased staffing requirements to physically sort and remove the proposed new materials and additional volumes of residue requiring disposal. The need for modifications to the processing lines and equipment to handle these new materials would also require additional capital funding of approximately \$400,000 (Table 1). In addition, these new materials have a low market value.

Figure 4
Projected Cost Increases for Additional Blue Box Materials



Notes:

*The 2004 Blue Box tonnage is that of the KPI report. The 2005 and projected tonnages were estimated using the 2005 and 2006 budget forecast.

Plastic blister packaging would in practice be allowed to pass through the MRF and simply be discarded as residual waste as there is no market for this material. However, production on the line would be slowed because of the increased amount of residual waste in the system. Markets currently fail to exist for plastic blister packaging. Expanded polystyrene in the MRF would cost the Region an additional \$495,000 annually in operating costs, and capital funding is not required as spare capacity was built into the MRF's design to handle new materials. However, choosing to use this spare capacity for expanded polystyrene will eliminate the opportunity to add other more potentially important materials such as shredded paper, or plastic film. The costs associated with the addition of plastic film are high due to the fact that the material is bulky, but weighs very little making it difficult to sort. An additional \$1,930,000 annually to fund operating costs would be required to process plastic film.

Table 1
Projected Operational Cost Increases

Item	Capital Cost	Operational Cost Increase per Year	Net Increase in 2006 Draft Operating Budget	Diversion Rate Impact**
Blister Packaging	N/A	Unknown*	0.6%*	0%
Polystyrene	N/A	\$495,000	1.6%	0.2%
Plastic Film	\$400,000	\$1,930,000	6.2%	1.2%
Promotion & Education	N/A	\$200,000 ⁺	0.6%	N/A
Total	\$400,000	\$2,625,000	9.0%	1.4%

Notes:

* The Region's MRF contractor was unable to estimate the impact on productivity of blister packaging within the MRF. The Net Operational Budget Impact for this material was estimated using the projected costs of disposal for 2006.

** Diversion rate impact is based upon 80% recovery.

⁺ One time only expenditure to launch the new program.

Addition of blister packaging, expanded polystyrene and plastic film will achieve a 1.4% increase in the Region's diversion rate but at a cost of a 9.0% increase in the 2006 draft operating budget of the Solid Waste Management Branch.

6. LOCAL MUNICIPAL IMPACT

6.1 Promotion and Education

The addition of new materials to the blue box program would potentially be problematic for those municipalities who have recently distributed new 18-month collection calendars to their residents. These calendars provide waste collection related information to residents through to the beginning of 2007. Many of the local municipalities may not be in a position to advertise additional new materials to the blue box program until 2007 because the calendars are the main promotion and education tool. If the municipalities were to reprint the information prior to the calendar's expiry, this would potentially be costly and confusing to residents.

Consideration should also be given to the fact that many materials, which are currently considered "not acceptable", are being placed in blue boxes by residents across the Region. It is not clear at this time whether the problem is caused by communications to the residents, or the collection staff. Additional time is required prior to adding more materials to the collection program to ensure the current program is running smoothly and the promotional material developed by the local municipalities and the Region is effective.

6.2 Potential Collection Issues

The majority of local municipalities currently provide their residents with an alternating week blue box collection service with the exception of the City of Vaughan and the Towns of Georgina and Markham. Focus groups conducted by the Region in 2004 have indicated that blue box capacity is a limiting factor in the amount of material that households recycle. As reported in the Region's preliminary findings of the 2004 Ipsos Reid survey, 20% of residents do not participate fully in the program due to the fact their blue boxes were already full and their collections were not frequent enough. It should be noted this survey was completed ten months prior to introducing residents to the six new material types now included in the blue box program. The addition of more bulky materials to an already full blue box will only exacerbate this problem. The issue of curbside blue box capacity needs to be addressed by the local municipalities prior to adding more materials to the program. Further program expansion may only result in an increase to the tax levy with no appreciable increase in diversion. Due to the fact that the requested materials, in particular polystyrene, are bulky, collection vehicles would reach capacity sooner, and as a result, collection costs could potentially increase as more vehicles would be required.

7. CONCLUSION

Reliable markets to recycle all plastic packaging fail to exist within North America, and as reported by many industry experts, it is not expected this fact will change in the near future. The Region's blue box program as approved by Council continues to be at the leading edge of blue box program development in Ontario. The addition of plastic packaging is not supported by staff or industry experts due to the marketing risks and increased operational costs. York Region staff continue to examine the markets and identify program improvement measures. Time is needed to assess the operations of the current MRF operations, and the effectiveness of our communications to residents. Prematurely adding plastic packaging to our current program would exacerbate any issues staff are currently working to address and it would decrease the ability of staff to pinpoint the source of these problems.

The Senior Management Group has reviewed this report.

(The attachments referred to in this clause are included with this report.)