1
POTENTIAL BLUE BOX PROGRAM CHANGES

(Regional Council, at its meeting on June 24, 2004, amended the following clause by adding the words "at this time" to staff recommendation 2 so that it reads as follows:

2. Plastic bag breaking equipment not be installed in the Bales Drive Materials Recycling Facility (MRF) at this time.)

The Solid Waste Management Committee recommends the following:

1. The presentation by Dave Gordon, Manager, Environmental Waste Programs, The Clorox Company of Canada Ltd., regarding Blue Bag recycling, be received; and

2. The recommendations contained in the following report, June 15, 2004, from the Commissioner of Transportation and Works be adopted:

1. RECOMMENDATIONS

It is recommended that:

1. Rigid plastic containers with the resin codes #3 to 7 be added to the residential blue box collection program.

2. Plastic bag breaking equipment not be installed in the Bales Drive Materials Recycling Facility (MRF).

3. Local municipalities be requested to investigate weekly blue box collection services and the distribution of additional larger blue boxes and/or recycling carts to York Region residents.

2. PURPOSE

The purpose of this report is to respond to the local municipalities and Committee's request that staff report back on the costs associated with adding additional materials to the blue box and installation of plastic bag breaking equipment at the Bales Drive MRF.

3. BACKGROUND

At its June 2, 2004 meeting, the Solid Waste Management Committee directed staff to outline the costs associated with adding new materials to the blue box. Staff were also

asked to re-evaluate the costs associated with installation of the necessary equipment and additional labour to process blue bags at the Bales Drive MRF.

Regional Council has previously reviewed the local municipalities' request to accommodate the use of transparent blue plastic bags as a collection tool for local residential recycling programs. The original design of the Bales Drive materials recycling facility (MRF) included the necessary equipment to open and process blue bags. However, at the December 19, 2002 meeting of Regional Council (Clause 7 of Report No. 6 of the Solid Waste Management Committee) a recommendation was adopted to eliminate the bag processing equipment from the MRF design. This decision reduced the operational costs of the MRF by $1.65 million per year, and saved $1 million in capital costs.

The Bales Drive MRF is currently being constructed and is scheduled to begin full operations in July 2005. The construction contract allowed for a design modification period which has now passed. Design changes made to the facility at this point will result in increased costs and assessment of penalties by the contractor, Miller Waste Systems.

4. ANALYSIS AND OPTIONS

Over the past three years, the amount of blue box material diverted from York Region's waste stream has remained constant while the population has continued to increase. At the end of 2003, the Region had achieved a waste diversion level of 24%. In April 2004, the Honourable Leona Dombrowsky, Minister of the Environment announced that the province would be seeking to achieve a level of 60% waste diversion. As a result of this announcement, waste management staff from the local municipalities and Region are currently examining their diversion strategies, goals and programs.

With more materials potentially being diverted through the blue box program, the management of materials in the home and at the curbside becomes an issue. Container size, type and frequency of collection impact the success of the program.

4.1 York in Comparison with other Regional Municipalities

As seen in Table 1, York Region has one of the lowest diversion rates in the Province compared with the other Regional governments. Three factors set apart the better performing municipalities including: provision of weekly blue box collection services, provision of free blue boxes and an expanded range of materials collected through the blue box. Included in the current contract for the Bales Drive MRF are plans to add aseptic and gable top containers, aluminium foil, tubs and lids, empty paint cans and aerosol cans. Addition of the #3 to 7 plastics were not considered at the time because of the problems other municipalities were encountering in trying to market these plastics.

Table 1
Regional Government Experience

Municipality	Population	Diversion Rate	Collection Methods	Extra Materials Collected Beyond Regular Blue Box
York	866,833	24%	Mixture of weekly and bi-weekly collection, blue boxes purchased for $5 to $7.50	N/A
Toronto	2,481,494	32%	Bi-weekly blue/grey box collection, boxes purchased by residents for $6	Aseptic, Gable top, Aluminum foil, food waste
Durham	531,000	40%	Bi-weekly blue box collection, boxes purchased for $5	Aseptic, Gable top, some areas have food waste collection
Halton	375,229	41%	Weekly blue box collection, 16 gallon blue boxes distributed free of charge	Aseptic, Gable top, Aluminum foil, Polystyrene
Niagara	410,574	41%	Blue/grey box collected alternating weeks, 16 gallon blue boxes purchased for $5	Aseptic, Gable top, Aluminum foil, Polystyrene, #4 and 5 Plastics, film, majority of population receives food waste collection
Peel	1,000,000	45%	Weekly blue box collection, boxes purchased for $6	Aseptic, Gable top, Aluminum foil, Polystyrene, #3 to 7 Plastics, film
Waterloo	450,000	57%	Weekly blue box collection, blue boxes distributed free of charge	Aluminum foil, #3 to 7 Plastics, film bags

***Note: Regular Blue Box Program Includes: Fibre, Glass, Metal Containers, #1 and 2 Plastics.**

4.2 Addition of #3 to 7 Plastics to the Blue Box

The use of plastic containers to distribute food and other household products continues to increase. Along with this increased availability, the plastic resins used to manufacture these types of containers have diversified. It is confusing for many citizens to differentiate between the resin codes to determine which plastic containers can be placed in the blue box. Moreover, while plastic containers with the resin codes #3 to 7 do not represent a significant amount by weight, they do represent a large amount of what resident dispose of by volume. These factors have led to increasing demand by residents to add more plastics to the local blue box program.

Marketing of #3 to 7 and film plastics has proven to be very challenging for the municipalities. Historically, the bulk of this material is shipped to Asia in the absence of local markets. More recently, the Asian market for these materials has collapsed leaving many municipalities with large quantities of stock piled material and no definitive outlet for their materials. Municipalities collecting #3 to 7's and plastic shopping bags, who were contacted by Regional staff, were unanimous in recommending against addition of these materials to the Region's blue box program. The City of Ottawa, for example, has recently cancelled their collection programs for the #3 to 7 and plastic film bags because of ongoing problems with their processing costs and marketability. Regional staff have been working diligently over the past year to identify stable markets for this waste stream. Staff believe that there is sufficient capacity in the market place to absorb the small amount of #3 to 7 plastics that the Region would generate although revenues from sales are expected to be negligible.

The addition of #3 to 7 plastics to the Region's blue box program is expected to divert an additional 800 tonnes of waste from landfill annually. This represents less than 1% by weight of the solid waste landfilled by York Region. However, allowing residents to divert essentially all plastic containers to the blue box program will simplify communications about what the program accepts. This change is expected to increase diversion rates for other plastics such as #2 HDPE from its current capture rate of 25%, to well over 60%. While diversion of #3 to 7 plastics is expected to have an operating cost of approximately $187,500 annually, the improved capture rate of #2 HDPE is projected to generate sufficient revenues to cover this loss.

Other plastic materials commonly found in the residential waste stream include polystyrene packaging and film plastic shopping bags. Again, while prevalent by volume, they represent less than 1% of the residential waste stream. Addition of polystyrene and film plastic to the Region's blue box program is expected to only divert about 300 tonnes of material annually. Both polystyrene packaging and film plastic have proven problematic and costly to manage in MRF operations, particularly single stream systems such as the Region's. Addition of these materials to the Region's blue box program is expected increase processing costs at the Bales Drive MRF by over $2.4 million. These materials also tend to contaminate other recyclables in the MRF reducing their marketability and resulting in further lost revenues. Experience in other municipalities has demonstrated that community recycling depots provide a better approach to capturing these materials. Therefore, the addition of #3 to 7 plastics to the Region's blue box program, excluding polystyrene and film plastic bags, is recommended.

4.3 Collection Containers

The blue box has become the most widely used container in Ontario for collecting residential recycling material. Other types of collection receptacles include roll-out carts, and transparent blue bags. As the Region expands its residential recycling program, receptacle capacity will become an increasingly significant problem for householders with large quantities of recyclables to divert.

4.3.1 Blue Boxes

Blue boxes are the container of choice for Regional residents with seven out of ten residents preferring them over carts and bags for recycling according to the January 2001 IPSOS Reid York Region Waste Management Survey. Blue boxes are compact, durable, reusable, can be readily stacked to minimize the storage space and are normally constructed from recycled content. Their open top design facilitates review of the contents for potential contaminants and allows collection crews to leave behind non-recyclable materials as an educational point for residents. Blue boxes are available in a variety of sizes, some which are considerably larger than those currently used by York Region residents.

The open top of blue boxes can however cause litter problems on windy collection days. Several manufacturers offer lids to address this problem at a wholesale price of approximately $2.50-$5/lid. Standard blue boxes typically wholesale for approximately $5.50/unit.

4.3.2 Labelled Collection Cans

Another option for a reusable recycling container is labelling curbside collection cans. A similar practice is used in Halton and Waterloo Regions for the collection of yard waste. The municipalities provide highly visible stickers to residents free of charge. Residents are then able to either use an old collection can or purchase a new one with the visible sticker for their collection. A similar program for the curbside collection of recyclables could be implemented in York Region.

4.3.3 Carts

Wheeled carts with lids have gained increasing acceptance recently amongst the general populace for garbage and yard waste management. Two out of ten Regional residents prefer them over their blue box as a container to hold their recyclables. Carts come in varying sizes ranging from 32 to 95 gallons and like blue boxes are durable, reusable and can be made from recycled content. Carts take up very little floor space relative to their large capacity and are ideally suited to single stream recycling programs where separation of recyclables at the curb is not required. Town of Markham residents who trialed spilt carts as part of a 2002 study diverted more recyclables with the carts than with blue boxes or film bags. The hinged lid feature of carts also effectively addresses the roadside litter issue attributed to blue box collection.

Wheeled carts also offer a unique advantage in that they can be used with an automated collection vehicle as is common in the United States. This feature eliminates the need for collection crews to manually load recycling trucks and can potentially reduce fleet operating costs.

Carts can present a problem to residents with limited storage space more aptly suited to blue boxes (e.g., cupboards and closets). Given their larger size, and wheeled design, they also have a higher average unit cost of approximately $35 to 40 for a 32 gallon unit.

4.3.4 Plastic Blue Bags

Transparent blue plastic bags are a light weight option for the collection of residential recycling materials. The transparent nature of bags is also thought to facilitate inspection of the contents to ensure there are no contaminants present. However, unlike the blue box, the contaminants cannot be left behind without leaving the entire bag. Moreover, municipalities which currently collect recyclables in transparent bags have in fact found that contamination levels are twice as high as with blue box programs. Bags are advantageous in that they require minimal storage space while empty. Once filled however, they use just as much room as other containers and cannot readily be stacked. Bags are also not reusable, nor are they normally made from recycled content making them an environmentally undesirable option. Like blue boxes, bags can present a litter problem in urban environments were rodents and other vectors frequently tear them open in search of the food related containers inside. As a result, only one in ten Regional residents prefer blue bags over reusable boxes and carts according to the 2001 Ipsos Reid survey. The disposable nature of bags also means that residents must purchase replacement bags on a regular basis for a cost of $0.22 per bag as reported by a 2004 survey performed by the City of Guelph.

Municipalities currently using transparent bags for recycling collection include the Cities of Guelph and Edmonton, and Northumberland County. Tours of the Guelph and Northumberland facilities revealed that plastic bags are serious contaminant in the recycling stream resulting in substantially higher sorting costs, reduced quality of other recyclables and higher residue rates from the MRF. Northumberland County reports that 30% of all incoming material in the blue bag is waste. Many bags are also normally contaminated beyond a point where they can be diverted for recycling and in most cases discarded to landfill.

Experience at the Guelph and Northumberland facilities indicates that the bag breaking machines required to open blue bags are not able to operate at speeds high enough to work effectively. They are also extremely sensitive to contamination commonly found in blue bag programs and frequently break down. Northumberland County is only able to use their bag breaking equipment to manage approximately 5% of the materials processed and are forced to use manual labour to break open the remaining 95% of incoming material. Operators at both the Guelph and Northumberland facilities indicated that plastic film was the root cause of many costly ongoing operational problems.

In order to permit the use of blue bags by York Region residents, costly changes to the design of the Bales Drive MRF would be required. In 2002, the Region received a building credit from Miller of $1 million after the decision was made to not include bag breaking equipment in the MRF. Recent negotiations with Miller indicate that to put bag breaking equipment back into the Bales Drive facility will cost the Region an additional capital expenditure of $1.9 million. Operational savings in 2002 were quoted as $1.65 million per year. Miller has now indicated that if blue bag collection is permitted, the Region will have to pay an additional $1.6 to 2.4 million annually in operational costs.

Given that only one in ten residents want to use plastic bags in the 2001 survey, these additional costs cannot be justified. It is therefore proposed that the Region not install debagging equipment in the MRF at this time. Staff will re-evaluate this option as the debagging technology improves. It is also recommended that the local municipalities explore the viability of the alternative collection containers previously discussed in this report.

4.4 Collection Frequency

The majority of York Region residents currently receive bi-weekly service of blue box collection. Expanding the types of materials collected to include more plastic containers will result in residents filling their recycling containers at a much faster rate. One option to assist residents in dealing with this extra recycling material, without forcing them to store the recyclables on site for two weeks, is to increase the frequency of collection. The Regions of Halton, Niagara, Peel and Waterloo all offer weekly collection of recyclable materials, as seen in Table 1. Consequently, these Regions also boast a significantly higher diversion rate than that of York Region. Collection frequency is a responsibility of the local municipalities.

4.5 Relationship to Vision 2026

Collecting additional materials in the blue box encourages conservation practices by York Region residents which enhances our environment through waste diversion. It also allows the Region to take a leadership role by enhancing our waste management strategy and balancing our population growth with extended environmental responsibility.

5. FINANCIAL IMPLICATIONS

Staff projections indicate that by promoting collection #3 to 7 rigid plastic containers in the residential blue box program, an additional 800 tonnes of #3 to 7 plastics and 360 tonnes of #2 HDPE will be diverted from landfill. The operational cost increase will be approximately $187,500 annually as shown in Table 2. This may be off set with increased revenue from the sale of additional HDPE.

The financial implications of installing bag breaking equipment in the Bales Drive facility were deemed unpractical in 2002. Costs provided by Miller Waste Systems in 2004 continue to emphasize that transparent blue bags are not a cost effective solution to curb side recyclable collection, as seen in Table 2. Expending an additional $2.4 million in annual operation costs to permit one in ten residents the use transparent bags for the collection of recyclable materials is not justifiable.

Table 2
Program Cost Implications

	Loose Collection		Bagged Collection		
	Current Program	**#3 to 7's, No Film**	**Current Materials**	**#3 to 7's, No Film**	**#3 to 7's, Including Film**
*2002 Operational Cost Increase	$0	N/A	$1,650,000	N/A	N/A
*2002 Capital Cost Increase	$0	N/A	$1,000,000	$1,000,000	$1,000,000
Annual Operational Cost Increase	$0	$187,500	$1,562,500	$1,812,500	$2,437,500
Capital Cost Increase	$0	$0	$1,900,000	$1,900,000	$1,900,000

6. LOCAL MUNICIPAL IMPACT

Including rigid plastics with the resin codes #3 to 7 should simplify local municipal communications with the public about the types of plastic containers allowed in the Regional blue box program. This program expansion will however, result in higher volumes of material and could cause incrementally higher collection costs for local municipalities.

Provision of weekly blue box collection service, as currently offered by the Towns of Georgina and Markham, could have a significant impact on current collection costs. This option would however, address residential issues with storage of recyclables more effectively than any other option.

7. CONCLUSION

To further support waste diversion in York Region, the Region should expand the residential blue box program to include the collection of #3 to 7 rigid plastic containers. It is not recommended that bag breaking equipment be installed in the Bales Drive MRF at this time. As mentioned in Section 4.3 of this report, local municipalities still have other options that are preferred by residents that include blue boxes, labelled collection cans, and roll out carts. It is also recommended that the local municipalities review their blue box collection programs to provide a level of service consistent with other major municipalities in Ontario.