Township of McNab/Braeside & Township of Horton







Waste Recycling Strategy

November 2011 Project No. 163401048





WASTE RECYCLING STRATEGY

TOWNSHIP OF MCNAB/BRAESIDE AND HORTON TOWNSHIP

File No. 163401048 November 2011

Prepared for:

Township of McNab/Braeside and Township of Horton

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Stantec WASTE RECYCLING STRATEGY TOWNSHIP OF MCNAB/BRAESIDE AND THE TOWNSHIP OF HORTON Introduction November 2011

1.0 Introduction

This Waste Recycling Strategy (WRS) was initiated jointly by the Township of McNab/Braeside (McNab/Braeside) and Township of Horton (Horton) to develop a plan to increase the efficiency and effectives of their waste management systems and to maximize the amount of waste material that each Township diverts from disposal.

Although the focus of a Waste Recycling Strategy as outlined by the Continuous Improvement Fund's (CIF) *Guidebook for Creating a Municipal Waste Recycling Strategy* is the diversion of blue box material, both McNab/Braeside and Horton recognize the benefits of considering any program improvements in the context of the entire waste management system. Due to the interactive nature of waste management systems, looking at one component in isolation of the others could be counter-productive in that changing one component can affect the efficiency and effectiveness of other parts of the system and these impacts could be in the form of either added opportunities or added constraints (or both) to other parts of that system. As such, this WRS adopts this 'bigger picture' approach which allows both Townships to identify potential blue box program improvements while ensuring that any changes recommended take into account the impacts to each community's waste management system as a whole and also reflect each municipality's unique community characteristics, circumstances and waste system dynamics.

This WRS was developed via a partnership between McNab/Braeside and Horton and using the Continuous Investment Fund's *Guidebook for Creating a Municipal Waste Recycling Strategy* as a guiding document as well as WDO best practices criteria, the Provincial *Policy Statement on Waste Management Planning* (June 2007) and other generally accepted industry best practices. In that context this WRS is also developed in accordance with the Waste Value Chain set out by the Province as part of the *Policy Statement on Waste Management Planning*. The Waste Value Chain places priority on waste prevention/reduction and reuse, then on maximizing diversion and minimizing disposal. This waste 'hierarchy' is discussed in more detail in Section 7.2 that explores a number of options for waste reduction.

TOWNSHIP OF MCNAB/BRAESIDE AND THE TOWNSHIP OF HORTON Overview of the Planning Process November 2011

2.0 Overview of the Planning Process

This WRS was prepared by Stantec Consulting Ltd. (Stantec) in collaboration with municipal staff from both McNab/Braeside and Horton. The following provides an overview of the steps that were taken to complete the study:

- Stantec obtained background information concerning both Townships current waste management systems and after reviewing the information, a teleconference was held with municipal staff from both Townships to review background information, to identify any problems/issues to be addressed during the course of the study and to identify various goals and objectives for each municipality as it related to the study;
- 2) Stantec assessed current waste management trends, practices, systems and future needs for both municipalities based on background information obtained and discussions with municipal staff. Background data was utilized to describe the 'status quo' system and to project future population and resulting tonnages to assess the Townships' long-term waste management needs. From this assessment we identified "gaps" that exist in current program performance and identified various opportunities for improvement to each Township's waste management system;
- 3) Based on program 'gaps' identified in Step 2, a list of waste reduction, reuse, and recycling options was generated based on WDO and other industry known best practices as well as programs successfully implemented in other municipalities. These options were reviewed in the context of appropriate criteria presented in Section 7.0 to assess their applicability to each of McNab/Braeside and Horton, to identify those options that that might be the most logical and feasible for each to implement, and to identify those that may present opportunities for further partnering/joint implementation between the two municipalities;
- 4) Two (2) public open houses were held, one each in the Township of McNab-Braeside and in the Township of Horton. These open houses were held to discuss the proposed waste reduction, reuse, and recycling options to obtain feedback from both communities regarding the proposed options and a public opinion survey was posted on McNab-Braeside's website;
- 5) Key conclusions were developed along with a recommended implementation plan for the proposed waste reduction, reuse, and recycling options;
- 6) A monitoring and reporting protocol was developed for the proposed waste reduction, reuse, and recycling options to help ensure that the goals and objectives for both municipalities are reached over the planning period; and,

TOWNSHIP OF MCNAB/BRAESIDE AND THE TOWNSHIP OF HORTON

7) Stantec developed the draft and this final Waste Recycling Strategy reflecting the results of the strategic planning process including public consultation.

Stantec WASTE RECYCLING STRATEGY TOWNSHIP OF MCNAB/BRAESIDE AND THE TOWNSHIP OF HORTON

Public Consultation Process November 2011

3.0 Public Consultation Process

The preparation of this Waste Recycling Strategy (WRS) included Public Consultation in the form of two (2) public open houses. The first open house was held on Monday, October 17, 2011 at McNab/Braeside Council Chambers and the second held on Tuesday, October 18, 2011 at Horton Township Council Chambers.

The format of these sessions was informal and allowed attendees to engage in one-on-on discussions with the Project Team members and to review the information provided on the Draft WRS at their own pace. A series of information panels were displayed that highlighted the methodology and recommendations of the Draft WRS. Copies of these panels are provided in **Appendix D**.

A short, concise survey with key questions regarding the WRS was available to be completed at each open house and in the case of McNab-Braeside the survey was also provided online to gauge public reaction to the proposed recommendations of the Draft WRS. A copy of the web-based survey is provided in **Appendix D**.

Public response to the Draft WRS included the following:

Reduction Initiatives – overall positive support of the presented initiatives including the concept of Zero Waste, incorporating green purchasing policies and setting reduction and diversion targets for each Township.

Reuse Initiatives – overall positive support including participation in re-use events, and recycling of construction and demolition materials.

Diversion initiatives – generally positive support, most responses were in favour of a pilot clear garbage bag study, although concerns were raised, specifically the cost associated with the purchasing of the clear bags and the procedure around bags that contain unacceptable materials. Preference was given to the use of blue bags for recycling collection over blue boxes, but larger blue boxes are the preference. There was support for an increase in taxes to support diversion initiatives at a rate of \$20 annunally. The respondents did say that they did not find recycling readily available in public spaces or at community/special events.

Suggestions from the responses included standardizing the size of garbage bags placed at the curb and supplying bags with the Township logo stamped on it. This idea could be incorporated into a clear bag pilot program.

Stantec WASTE RECYCLING STRATEGY TOWNSHIP OF MCNAB/BRAESIDE AND THE TOWNSHIP OF HORTON Stated Problem November 2011

4.0 Stated Problem

The management of municipal solid waste, including the diversion of blue box materials, is a key responsibility for all municipal governments in Ontario. The factors that encourage or hinder waste reduction, reuse, and recycling endeavors can vary greatly and depends on a municipality's size, geographic location, demographic characteristics, population and population growth, population density and economy. These factors affect the ability to site local waste management infrastructure (landfill, transfer stations, Materials Recovery Facilities, Organic Waste Processing Facilities etc.) to utilize waste management infrastructure outside the municipal jurisdiction, and to implement various waste collection and programming strategies.

For McNab/Braeside and Horton the key drivers that led to the development of this WRS include:

- The current contract that McNab/Braeside has with Beaumen Waste Management and Recycling (Beaumen) is only based on a 'handshake agreement' and Horton's contract arrangement could end as early as 2015. The current arrangements with Beauman are not deemed to be sustainable in the long term. The length of time that Beaumen will continue to process their materials is an unknown. McNab/Braeside and Horton in concert with several other municipalities assessed the option to joint purchase the Beauman Materials Recovery Facility (MRF) and this option was eliminated from further consideration because of the cost of replacing aging equipment at the MRF. Both municipalities need to assess their options to secure long-term recyclable material processing capacity.
- McNab/Braeside and Horton currently and respectively divert 30.4% and 27.3% of their waste from landfill through various recycling programs. Both municipalities are interested in exploring various program initiatives/options that could contribute to an increased waste diversion rate. One example is that both municipalities currently collect recycling on a bi-weekly basis and garbage on a weekly basis. Because recycling is being collected less frequently than garbage, residents are not being encourage to divert material (i.e., recycling may pile up forcing residents to dispose of materials that could be diverted). This practice is not consistent with industry best-practices and is worthy of evaluation.
- Both McNab/Braeside and Horton are in need of developing an up-to-date waste diversion plan (blue box diversion plan) that establishes defined performance measures including diversion targets, monitoring objectives and a continuous improvement program. Through developing this WRS, both Townships will move closer to achieving best practices and associated and increased Waste Diversion Ontario (WDO) funding.
- McNab/Braeside and Horton have adopted the best practice of applying a multimunicipal planning approach to the development of this WRS. The Townships have a

Stantec WASTE RECYCLING STRATEGY TOWNSHIP OF MCNAB/BRAESIDE AND THE TOWNSHIP OF HORTON

number of program characteristics in common and are geographically proximal to each other. These dynamics may present opportunities for future partnering initiatives that could lower costs and increase the efficiency of both communities' systems. The development of a joint WRS is an ideal forum to identify these opportunities.

WASTE RECYCLING STRATEGY

TOWNSHIP OF MCNAB/BRAESIDE AND THE TOWNSHIP OF HORTON Goals and Objectives November 2011

5.0 Goals and Objectives

Based on the above-mentioned key drivers, a number of goals and objectives were identified during the early stages of WRS development as follows:

- To improve the effectiveness and efficiency of both communities' waste diversion systems to minimize costs but sustain and optimize overall system performance.
- To increase residential participation in each community's blue box program; additional strategies to increase diversion over the longer term.
- To obtain long-term "best practices" contracts for blue box collection and processing.
- To identify opportunities for partnerships (with one another and/or other communities near-by) to increase the efficiency and effectiveness of their waste management systems.
- To develop an up-to-date waste diversion plan (blue box diversion plan) that establishes defined performance measures including diversion targets, monitoring objectives and a continuous improvement program.

As such McNab/Braeside's and Horton's main objectives in the development of this Waste Recycling Strategy (WRS) are:

- To investigate various strategies available to increase participation rates in recycling programs, including enhanced communication strategies, for the residential sector.
- To determine the most appropriate collection and processing contracts to pursue and ensure that best practices are reached.
- To investigate additional diversion programs that may include organic waste collection and processing.
- To identify areas to improve system efficiencies and improvements in level of service.
- To gauge community understanding of programs and acceptance for program change.
- To develop techniques to measure and track program performance.
- To partner with each other and other municipalities where opportunities are identified.

TOWNSHIP OF MCNAB/BRAESIDE AND THE TOWNSHIP OF HORTON Current Solid Waste Trends, Practices, Systems and Future Needs November 2011

6.0 Current Solid Waste Trends, Practices, Systems and Future Needs

6.1 TOWNSHIP OF MCNAB/BRAESIDE

6.1.1 Community Characteristics

McNab/Braeside was formed on January 1, 1998 when the Village of Braeside amalgamated with McNab Township. It is located in Renfrew County (upper-tier municipality) in Eastern Ontario on the south shore of Lac des Chats (part of the Ottawa River). McNab/Braeside has a total land area of 254 km². McNab/Braeside is located approximately 75 km west of the City of Ottawa (centre) and directly southeast of Horton. The following figure illustrates the location of McNab/Braeside in Eastern Ontario.

Figure 6.1: Location of McNab/Braeside



Stantec WASTE RECYCLING STRATEGY TOWNSHIP OF MCNAB/BRAESIDE AND THE TOWNSHIP OF HORTON

Current Solid Waste Trends, Practices, Systems and Future Needs November 2011

In 2010, McNab/Braeside had a population of approximately 7,527. The municipality is home to a total of 3,058 households.¹ Of these households, 2,834 are regularly occupied single family dwellings and 224 are seasonal households which are typically occupied during the summer months. There are no multi-family households located in the Township.

Based on the 2006 StatsCan census, McNab/Braeside has a fairly diverse work force with no one occupation dominating the labour force. Approximately 58% of the labour force work in the following three areas: sales and service, trades, transport and equipment, and business, finance, and administration.

6.1.2 **Existing Programs and Services**

McNab/Braeside currently provides the following services to manage residential solid waste:

Weekly collection of garbage

The Township operates a full user-pay system with a two (2) bag limit per household per week. The two (2) bag limit was implemented in 1999. Any additional bags a household places at the curb per week must be tagged. Garbage tags cost \$2.00 per tag and are available for sale at local stores and municipal offices.

Garbage collection is provided for by a private contractor, Lloyd Cameron, who has had a contract with the township since 2006.² The contract with Lloyd Cameron is renewable every two vears and negotiated by Council and the contractor..

Garbage is disposed at the McNab/Braeside's landfill site located at 573 Calabogie Road.

Bi-weekly collection of two-stream recycling.

Recycling collection is provided for by a private contractor, Beaumen Waste Management & Recycling (Beaumen). Beaumen provides for the collection and processing of recyclables. Marketing of blue box materials is the responsibility of Beaumen; McNab/Braeside does not receive revenues from the marketing of blue box materials. Beaumen operates a material recovery facility (MRF) at 610 Lisgar Avenue, Renfrew, Ontario.

Since 2008, the Township has operated without a contract with Beaumen; they operate under a "handshake" agreement. The following materials are currently accepted in the two stream recycling program; a separate box is utilized for containers and fibres. Shredded paper must be placed in a plastic bag.

¹ Calculated by taking the number of private dwellings found in the 2006 StatsCan census and adding to it the number of single family dwellings constructed for the period of 2006 to 2010. There were a total of 124 new single family dwellings built between 2006 and 2010. Building permit data was provided by the Township. ² 2010 DataCall submission.

WASTE RECYCLING STRATEGY

TOWNSHIP OF MCNAB/BRAESIDE AND THE TOWNSHIP OF HORTON Current Solid Waste Trends, Practices, Systems and Future Needs November 2011

Table 6.1: Materials Accepted in McNab/Braesides Blue Box Recycling Program				
Containers	Papers			
Plastic tubs and lids (#2, 4, 5)	Corrugated cardboard			
Plastic bottles and jugs (#1-7)	Mixed papers (newspapers, magazine catalogues, junk mail, envelopes, writing paper, plain wrapping paper, tissue paper, greeting cards, paper cups and plates)			
Aluminum foil and foil containers	Boxboard			
Milk and juice cartons	Shredded paper (if placed in clear bag)			
Glass bottles and jars				
Metal food and beverage cans				
Empty aerosol cans				
Plastic grocery and bread bags				
Styrofoam packaging				
Clean construction Styrofoam				

McNab/Braeside uses standard sized blue boxes to collect recyclable material. McNab/Braeside provides residents at new homes with blue box free of charge. Additional/replacement blue boxes can be purchased from the Municipal Office at a cost of \$7.00 per box.

In partnership with the Township of Renfrew, depot collection of municipal hazardous and special waste (MHSW).

Residents of McNab/Braeside are able to bring their MHSW to the Renfrew Landfill Site located at 376 Bruce Street in Renfrew County during regular hours from May 22nd to August 25th (for 2011) free of charge. The Renfrew Landfill Site is open Tuesday and Saturday, from 8:00 am to 4:00 pm. The Renfrew Landfill Site is located approximately 20 minutes west of the Township.

The following items are accepted:

- Paints (Paints should be bulked together if possible)
- Solvents
- Turpentine
- Disinfectants
- Propane Tanks
- Household cleaners
- Herbicides & Pesticides
- Batteries (Home & Auto)
- Pool Chemicals
- Varnish
- Antifreeze

WASTE RECYCLING STRATEGY

TOWNSHIP OF MCNAB/BRAESIDE AND THE TOWNSHIP OF HORTON Current Solid Waste Trends, Practices, Systems and Future Needs November 2011

- Bleach
- Furniture Strippers
- Drain & Oven
- Cleaner
- Brake Fluid
- Used Oil and any items marked with a Hazardous Waste symbol.

Municipally-run depots at landfill site for the collection of waste electronic and electrical equipment (WEEE), tires, cardboard, scrap metal, brush and clean wood, leaf & yard waste, and blue box recyclables.

These materials are all accepted free of charge as long as they are clean and sorted. Appliances are received as scrap metal. A certified technician removes Freon for refridgerated appliances and tags them. Wood is only accepted if it is untreated (no paint or stain).

Recycling at special events and seasonal public space recycling in parks.

The Township provides recycling containers at special events (fairs, parades, etc.) and in public spaces (parks, etc.). Containers are picked up as part of the curbside program operated by the contractor.

Garbage drop-off at the township's landfill.

Residents are also permitted to take garbage directly to the landfill and are charged based on load size. McNab/Braeside provides each household with one free voucher each year for a free visit to the landfill site for garbage disposal. The following table lists the current tipping fees at the landfill.³

Table 6.2: Current Tipping Fees at McNab/Braeside's Landfill				
Item	Cost			
Green Garbage Bag	\$2.00			
Car	\$5.00			
Small trailer, towed by car, half ton truck or van	\$15.00			
Half-ton and trailer	\$30.00			
Tandem axle trailers, farm wagons	\$65.00			
Single axle truck	\$150.00			
Single axle packer truck, tandem truck	\$300.00			
Tandem packer truck	\$400.00			

³ Obtained from McNab/Braeside's website located at <u>http://www.mcnabbraeside.com/wastemanagement/</u>

WASTE RECYCLING STRATEGY

TOWNSHIP OF MCNAB/BRAESIDE AND THE TOWNSHIP OF HORTON Current Solid Waste Trends, Practices, Systems and Future Needs November 2011

Table 6.2: Current Tipping Fees at McNab/Braeside's Landfill			
Item	Cost		
Tractor trailers	\$700.00		
Un-compacted waste and roll-off bins	\$15.00/cubic yard		
Stumps, tandem load	\$100.00		
All refrigerated appliances without O.D.P sticker	\$17.00		
All refrigerated appliances certified	No charge		
Sorted and recycled corrugated cardboard and scrap metal	No charge		
All recycling items listed in recycling contract	No charge		
Clean wood, free of paint or stain	No charge		
Garden waste and leaves	No charge		
Uncontaminated waste oil (up to 25 litres)	\$3.50		
Uncontaminated waste oil (25 to 50 litres)	\$7.00		
Tires	No charge		

At the landfill Site, McNab/Braeside also operates a waste oil transfer station.

McNab/Braeside's landfill site is located at 573 Calabogie Road and operates under Certificate of Approval No. A412605. Based on the 2010 Operations Summary report, it is anticipated that the landfill will be able to serve the Township until the year 2031.⁴

6.1.3 Promotion and Education⁵

In 2010, McNab/Braeside spent \$2,670 on brochures/pamphlets to promote their blue box recycling program (compared to \$1,837 in 2009). This amounts to spending about \$0.87 per household. Overall, the Township utilizes the following forms of promotion and education (P&E) to advertise their waste management programs:

- Brochures/pamphlets;
- Calendars;
- Media Releases/Events;
- Newsletters;
- Reminder Cards/Notices;
- Website; and

⁴ Stantec Consulting Ltd. 2011. 2010 Operations Summary – McNab Braeside Landfill CofA No A 412605.

⁵ 2010 DataCall submission.

WASTE RECYCLING STRATEGY

TOWNSHIP OF MCNAB/BRAESIDE AND THE TOWNSHIP OF HORTON Current Solid Waste Trends, Practices, Systems and Future Needs November 2011

• Telephone information.

6.1.4 Current Waste Generation and Diversion

Currently, McNab/Braeside generates approximately 2,843 tonnes⁶ of residential solid waste per year. Of the total residential waste generated McNab/Braeside diverted approximately 865 tonnes, resulting in an overall residential diversion rate of approximately 30.4%.

The following materials were diverted from disposal in 2010:

- 633 tonnes of blue box recyclables⁷;
- 5.9 tonnes of MHSW from the Township of Renfrew MHSW depot⁸;
- 10.0 tonnes of WEEE from the landfill depot⁹;
- 44.0 tonnes of tires from the landfill depot¹⁰;
- 172.1 tonnes of scrap metal from the landfill depot¹¹; and,
- Unknown quantity of wood.

The following materials were disposed in 2010¹²:

• 1,978 tonnes of residential garbage

⁶ McNab/Braeside 2010 datacall submission did not isolate residential from other source waste received at their landfill. These data are therefore based on the average of 351.75 kg/capita/year generation for McNab/Braeside's municipal grouping of Rural Collection South.

⁷ 2010 DataCall submission.

⁸ 2010 DataCall submission.

⁹ Estimated by taking 2009 value and multiplying by the calculated number of units diverted in 2010.

¹⁰ Estimated in 2010 Operations Summary – McNab Braeside Landfill CofA No A 412605 completed by Stantec in 2011.

¹¹ Estimated in 2010 Operations Summary – McNab Braeside Landfill CofA No A 412605 completed by Stantec in 2011.

¹² The 2010 Datacall submission stated that McNab/Braeside disposed of over 4,000 tonnes of waste per year, but this quantity likely includes material from other sectors than just residential. The quantity of garbage produced by the residential sector was estimated using WDO per capita generation rates for McNab/Braeside from 2009 and multiplying this number by the current population.

Stantec WASTE RECYCLING STRATEGY TOWNSHIP OF MCNAB/BRAESIDE AND THE TOWNSHIP OF HORTON Current Solid Waste Trends, Practices, Systems and Future Needs

November 2011

The following table summarizes the total waste generated, diverted, and disposed by McNab/Braeside in 2010

Table 6.3: McNab/Braeside Waste Generated, Diverted, and Disposed (2010)				
Waste Category	Tonnage (2010)			
Waste Diverted				
Blue Box Recyclables (curbside and depot)	633			
MHSW (depot)	6			
WEEE (depot)	10			
Tires (depot)	44			
Scrap Metal (depot)	172			
Total Diverted	865			
Waste Disposed				
Garbage (curbside and taken directly to landfill)	1978			
Total Disposed	1978			
Total Waste Generated	2843			
Waste Diversion Rate	30.4%			

It is useful to compare McNab/Braeside's waste management system performance to other similar municipalities to understand how McNab/Braeside's waste management system is currently performing. Unfortunately, there are no broad-based, generally accepted principles or criteria to assess a waste management systems performance relative to any other municipality other than through comparison provided by Waste Diversion Ontario (WDO).

WDO groups municipalities into one of nine municipal groupings in order to compare similar municipalities (i.e. in terms of demographic, geographic, and program type characteristics) to one another. Performance comparisons within a municipal grouping are used by WDO as one mechanism to allocate funding to each reporting municipality. McNab/Braeside falls into WDO's *Rural Collection – South* municipal grouping.

Based on data gathered by WDO in 2009 (the last year for which data is publicly available), McNab/Braeside's GAP diversion rate was 27.5%. The average GAP waste diversion rate for the *Rural Collection – South* municipal grouping was 29.7% making McNab/Braeside's performance **slightly below average**. It should be noted that the GAP diversion rate takes into account additional diversion such as grasscycling and the residential component of LCBO's deposit return program. In our calculations, we did not take these additional diversion items into account. That being said, according to actual data obtained from McNab/Braeside for the 2010 year (without taking the additional forms of diversion into account), their diversion as noted above is approximately 30.4%

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While the amount of waste diverted relative to the total amount of waste generated is important in terms of targeting all waste streams for diversion, it is also important to understand McNab/Braeside's blue box diversion rate in order to target those recyclables more specifically.

In 2010, of the waste that was diverted from landfill, 633 tonnes (or 22.3% of the total waste) was diverted through the blue box recycling program.¹³ Currently, about 50% of what is collected via the blue box program is paper fibre with the remaining 50% consisting of containers (metal, plastic, and glass).

Table 6.4: McNab/Braeside Waste Generated and Diverted through Blue Box Program				
Residential Waste Stream/Blue Box Material	Tonnes	Percent of Total Waste		
Total waste generated	2,843	-		
Papers (ONP, OMG, OCC, OBB and fine papers)	315	11.1%		
Metals (aluminum, steel, mixed metal)	70	2.5%		
Plastics (containers, film, tubs and lids)	95	3.3%		
Glass	153	5.4%		
Total Blue Box material currently diverted	633	22.3%		

The table below summarizes the current waste generation and blue box diversion rates:

In order to assess the performance of McNab/Braeside's blue box diversion program, WDO data was once again consulted. As the table below indicates, McNab/Braeside's current blue box diversion rate is **slightly above average** for its WDO municipal grouping.

Table 6.5: Comparison of McNab/Braeside's Blue Box Diversion Rate with WDO Grouping			
Average Blue Box Diversion Rate			
McNab/Braeside (2010) 22.3%			
Aunicipal Grouping: Rural Collection South (2009) 21.4%			

6.1.5 Program Costs

In terms of costs, McNab/Braeside reported (to WDO) on average of \$120,367 per year for the years of 2009 and 2010 to operate its blue box recycling program. These costs include the contract cost for collection and processing, the cost for provision of blue boxes, promotional material costs, and program administration costs. The following table illustrates McNab/Braeside's recycling program costs.

¹³ 2010 DataCall submission. Includes blue box material collected curbside and blue box material brought to depot at landfill. Does not include processing residues.

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Table 6.6: McNab/Braeside 2009-2010 Costs for Curbside Recycling, Collection, and Processing						
Year	Calculated Blue Box Tonnes Marketed	Total Gross Costs	Gross Costs Per Tonne	Other Revenue/Per Tonne	Total Net Cost	Net Cost Per Tonne
2009	606.0	\$121,184.05	\$199.97	\$0.00	\$121,184.05	\$199.97
2010	632.9	\$119,549.51	\$188.89	\$0.00	\$119,549.51	\$188.89

In 2010, the total net annual recycling cost for McNab/Braeside was \$119,550.¹⁴ This amounts to \$189 per tonne, or \$16 per capita. As the table below shows, net annual recycling costs for McNab/Braeside are significantly below average for its WDO municipal grouping.

Table 6.7: McNab/Braeside's Net Recycling Costs in Comparison with WDO Grouping								
Net Recycling Cost (per tonne per year) (2010)								
McNab/Braeside								
Municipal Grouping: Rural Collection South								

The total waste disposal cost (landfill operation and garbage collection) was approximately \$70/tonne in 2010. 25% of funds required for waste disposal is recovered through landfill tipping fees while 75% is recovered through municipal taxation.¹⁵ Based upon other landfills in the general vicinity, McNab/Braeside's landfill costs are fairly competitive.

Garbage levies are included on residents' tax bill; these levies are based on the total cost to operate the landfill site, recycling collection, garbage collection, and future costs to manage the landfill site. The current rates charged to different types of households are as follows:

- Residential \$150.00 per year (full service)
- Cottage \$110.00 per year (May to October service)
- Landfill \$35.00 per year (no services, but have access to the landfill site throughout the • year)
- Commercial \$280.00 per year x no. of units of collection (full service)¹⁶

 ¹⁴ 2010 DataCall submission.
¹⁵ 2010 Operations Summary – McNab Braeside Landfill CoA No A412605.

¹⁶ Retrieved from McNab/Braeside's website.

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6.1.6 Potential Waste Diversion

In order to determine the potential amount of waste that McNab/Braeside could divert, the composition of waste generated by the residential sector of McNab/Braeside first had to be determined. As McNab/Braeside has never conducted its own waste composition study, their waste composition had to be estimated using 'surrogate' data from other municipalities.

The CIF *Guidebook for Creating a Municipal Waste Recycling Strategy* provides *Rural Collection – South* municipalities with representative waste composition data from the Town of Blue Mountains in order to estimate their own waste composition. Although the guidebook recommends that the Town of Blue Mountains be used as the reference municipality, Stantec determined that Town of Blue Mountain has sufficiently different characteristics (e.g. high number of seasonal resorts, cottages) that bring on a higher presence of materials like glass than what is generally presented for most municipalities. For example, the Town of Blue Mounting reported 12% of their waste stream to be glass, while the provincial average for small urban and rural municipalities was in the order of 4%.

Because the Town of Blue Mountains data was not deemed to be representative in the case of McNab/Braeside the use of other surrogate data was necessary. As Stantec had completed a comprehensive four season waste audit (following Stewardship Ontario guidelines) on behalf of Simcoe County in 2010, this data was consulted to see how it compared to the provincial average for small urban and rural municipalities as described in the CIF guidebook. Table 6.8 shows how Simcoe County's data compares to small urban and rural municipalities. As the data shows, Simcoe County's data is very similar and was therefore used as the baseline to estimate the overall composition of McNab/Braeside's waste.¹⁷

Table 6.8: Composition of Simcoe County's Waste Compared with Provincial Average									
Waste Material	Simcoe County Composition (2010)	Provincial Average (Small Urban and Regional)							
Papers (ONP, OMG, OCC, OBB and fine papers)	24%	22%							
Metals (aluminum, steel, mixed metal)	3%	2%							
Plastics (containers, film, tubs and lids)	5%	6%							
Glass	4%	4%							
Total Recyclables	36%	34%							

Some slight adjustments were also made to the Simcoe County data as it relates to total waste composition to reflect the quantity of blue box materials actually being diverted in

¹⁷ It should be noted that the waste audit conducted in Simcoe County only include materials collected curbside (garbage, recycling, organics) and does not take into account other divertible materials such as WEEE, MHSW, wood, that may be brought to recycling depots. For this reason, the tonnage used for McNab/Braeside only took into account curbside materials (garbage and recycling). Simcoe County also operates depots that accept a wide variety of divertible materials.

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McNab/Braeside. The proportion of glass was increased by 2% (because McNab/Braeside diverted a large quantity of glass), while the amount of food waste was reduced by 1.5% (because it was very high in the Simcoe data) and the amount of pet waste was reduced by 0.5% (because it was very high in the Simcoe data). These adjustments are based on our professional judgement.

Table 6.9 reflects the potential diversion rate for McNab/Braeside with increased participation in diversion programs (to 95%) and good but reasonable capture rates for each of the recyclable material categories (for example, 100% of participants usually know that newsprint is recyclable but not all participants necessarily know that certain plastics (for example) may be recyclable). This is accounted for in the projections.

Table 6.9 also reflects the addition of an organic waste collection program. The participation rate is estimated at a reasonable 70%. Materials included in the potential organic waste collection program include food waste, leaf and yard waste and paper toweling but excludes pet waste and diaper wastes. While these have been included in organic waste collection programs in the past the Province now appears to prefer in some cases that these materials are not included to minimize odour and to eliminate plastics in that waste stream.

Based on reasonable participation rates and capture rates it is estimated that for the recycling program alone that McNab/Braeside could achieve a diversion target of 38% (for curbside blue box materials only), or 47% when taking into account other diversion of HHW, WEEE, Tires, and Scrap Metal) and with added organics could achieve a diversion rate of approximately 62% (for curbside materials only) or 71% when taking into account other diversion of HHW, WEEE, Tires, and Scrap Metal). This diversion rate doesn't account for any potential waste reduction or other diversion initiatives discussed in Section 7.0.

These initiatives would result in an increase in recycling tonnage to an estimated 1,033 tonnes/year (from the current 633 tonnes/year) and organic tonnage to an estimated 634 tonnes per year. Based on these increases in diversion, only 920 tonnes/year would require disposal at landfill (currently 1,978 tonnes are landfilled every year). Discussion on how to increase diversion rates is discussed in detail in Section 7.0.

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Table 6.9: Potential Diversion for McNab/Braeside															
Material Category	Sub-Category	Composition Participation Rate			Captured in Recyclables Recyclables					Organics		Garbage			
		(kg/hh/yr)	(tonnes/yr)	%	%	(kq/hh/yr)	(Tonnes/yr)	%	(kg/hh/yr)	(Tonnes/yr)	%	(kg/hh/yr)	(Tonnes/yr)	%	
Paper Fibres	Newspaper	86	264	95%	99%	81.3	249	94%	0.0	0	0%	5.1	16	6%	
	Magazines	21	63	95%	99%	19.5	60	94%	0.0	0	0%	1.2	4	6%	
	Phone Books	2	6	95%	99%	1.9	6	94%	0.0	0	0%	0.1	0	6%	
	Mixed Fine Paper	24	74	95%	95%	21.9	67	90%	0.0	0	0%	2.4	7	10%	
	Corrugated Cardboard	35	106	95%	99%	32.7	100	94%	0.0	0	0%	2.1	6	6%	
	Boxboard	36	111	95%	99%	34.1	104	94%	0.4	1	1%	1.8	5	5%	
	Egg Cartons	3	9	95%	95%	2.6	8	90%	0.0	0	1%	0.3	1	9%	
	Kraft Paper	6	19	95%	95%	5.7	17	90%	0.1	0	2%	0.5	1	8%	
	Laminated Paper Packaging	3	10	95%	5%	0.2	0	5%	0.0	0	0%	3.0	9	95%	
	Books	5	15	95%	95%	4.5	14	90%	0.0	0	0%	0.5	1	10%	
	Spiral Wound	2	5	95%	90%	1.5	5	86%	0.0	0	0%	0.3	1	15%	
	Other paper	1	2	95%	5%	0.0	0	5%	0.0	0	0%	0.7	2	95%	
	Gable Top	4	12	95%	85%	3.2	10	81%	0.0	0	0%	0.8	2	19%	
	Aseptic	2	5	95%	85%	1.3	4	81%	0.2	1	10%	0.2	0	9%	
	Sub-Total Paper	230	703			210.4	643	91%	0.7	2	0%	18.9	58	8%	
Ferrous	Steel Food and Beverage Cans	16	49	95%	99%	15.1	46	94%	0.0	0	0%	1.0	3	6%	
	Steel Aerosol cans	2	5	95%	95%	1.4	4	90%	0.0	0	0%	0.2	0	10%	
	Paint Cans	0	1	95%	95%	0.2	1	90%	0.0	0	0%	0.0	0	10%	
	Other Metal	5	14	95%	95%	4.2	13	90%	0.0	0	1%	0.4	1	9%	
	Sub-Total Ferrous	23	69			21.0	64	93%	0.0	0	0%	1.5	5	7%	
Aluminum	Aluminum Food and Beverage Cans	6	17	95%	99%	5.3	16	94%	0.2	1	3%	0.2	1	3%	
	Other Aluminum Containers	0	1	95%	96%	0.2	1	91%	0.0	0	3%	0.0	0	6%	
	Aluminum Foil Trays	2	7	95%	91%	2.0	6	86%	0.0	0	1%	0.3	1	13%	
	Sub-Total Aluminum	8	25			7.5	23	92%	0.2	1	2%	0.5	1	6%	
Glass	Alcoholic Beverage Glass	2	62	95%	99%	1.5	59	94%	0.0	1	1%	0.1	3	5%	
	Food and Beverage: Clear	23	69	95%	95%	20.4	62	90%	0.2	1	1%	2.0	6	9%	
	Food and Beverage: Coloured	6	19	95%	95%	5.6	17	90%	0.1	0	1%	0.5	2	9%	
	Other Glass	7	20	95%	5%	0.3	1	5%	0.1	0	1%	6.2	19	94%	
	Sub-Total Glass	56	171			27.8	139	50%	0.4	2	1%	8.8	30	17%	
PET	PET Beverage Bottles	13	40	95%	99%	12.4	38	94%	0.0	0	0%	0.8	2	6%	

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Table 6.9: Potential Diversion for McNab/Braeside														
Material Category	Sub-Category	Composition		Participation Rate	Captured in Recyclables	Recyclables				Organics		Garbage		
		(kg/hh/yr)	(tonnes/yr)	%	%	(kg/hh/yr)	(Tonnes/yr)	%	(kg/hh/yr)	(Tonnes/yr)	%	(kg/hh/yr)	(Tonnes/yr)	%
	Other PET Bottles & Packaging	7	23	95%	5%	0.4	1	5%	0.0	0	0%	7.1	22	95%
	Sub-Total PET	21	63			12.8	39	62%	0.0	0	0%	7.8	24	38%
Other Plastics	HDPE (2) Bottle/Jug	9	27	95%	95%	7.9	24	90%	0.0	0	0%	0.9	3	10%
	PVC #3	0	0	95%	95%	0.1	0	90%	0.0	0	0%	0.0	0	10%
	LDPE and PP Bottles	0	1	95%	95%	0.4	1	90%	0.0	0	1%	0.0	0	9%
	Polystyrene	6	18	95%	90%	5.0	15	86%	0.3	1	5%	0.6	2	10%
	Tubs and Lids	4	12	95%	85%	3.2	10	81%	0.2	1	5%	0.6	2	14%
	Recyclable Film	11	33	95%	85%	8.7	27	81%	0.5	2	5%	1.5	5	14%
	Non-recyclable film	20	62	95%	5%	1.0	3	5%	0.6	2	3%	18.7	57	92%
	Other Bottles	1	4	95%	5%	0.1	0	5%	0.1	0	5%	1.2	4	90%
	Other Plastic Packaging	9	28	95%	5%	0.4	1	5%	0.5	1	5%	8.2	25	90%
	Durable Plastics	12	37	95%	5%	0.6	2	5%	0.1	0	1%	11.3	35	94%
	Sub-Total Other Plastics	73	222			27.3	83	38%	2.3	7	3%	42.9	131	59%
Organics	Food	245	749	95%	5%	11.6	36	5%	171.5	524	70%	61.9	189	25%
	Diapers/sanitary	37	114	95%	5%	1.8	5	5%	0.0	0	0%	35.6	109	95%
	Animal waste	64	197	95%	5%	3.1	9	5%	0.0	0	0%	61.4	188	95%
	Tissues/towels	32	97	95%	5%	1.5	5	5%	22.1	68	70%	8.0	24	25%
	Grass and Yard Waste	6	18	95%	5%	0.3	1	5%	4.2	13	70%	1.5	5	25%
	Paper Cups and Ice Cream Containers	4	14	95%	5%	0.2	0	0%	3.1	10	70%	1.3	4	30%
	Sub-Total Organics	389	1,189			18.5	56	5%	200.9	614	52%	169.7	519	44%
Other Waste	Other waste	51	157	95%	5%	2.4	7	5%	2.6	8	5%	46.2	141	90%
	Sub-Total Other Waste	51	157			2.4	7	5%	2.6	8	5%	46.2	141	90%
HHW	HHW	4	13	95%	10%	0.4	1	10%	0.2	1	5%	3.6	11	86%
	Sub-Total HHW	4	13			0.4	1	10%	0.2	1	5%	3.6	11	86%
	854	2,611			328	1,003	38%	207	634	24%	300	920	35%	

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6.1.7 Anticipated Future Waste Management Needs

Solid waste generation rates in McNab/Braside are expected to grow slowly over the next 10 year planning period (by approximately 0.8% per year based on slight population increases).¹⁸ As such, population growth is anticipated to have little to no impact on McNab/Braeside's future collection and infrastructure requirements.

6.2 TOWNSHIP OF HORTON

6.2.1 Community Characteristics

The Township of Horton is located in Renfrew County in Eastern Ontario at the confluence of the Bonnechere River and the Ottawa River and has a total land area of 158 km². Horton is located directly northwest of McNab/Braeside and approximately 90 km west of the City of Ottawa. The following figure illustrates the location of the Township of Horton in Eastern Ontario.

Figure 6.2: Location of Horton



¹⁸ Population increases calculated using building permits issues from 2006 to 2010.

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In 2010, Horton had a population of approximately 2,498.¹⁹ The municipality is home to a total of 1.338 households.²⁰ Of these households, 1.102 are regularly occupied single family dwellings. 30 are regularly occupied multi-family dwellings, and 206 are seasonal households which are typically occupied during the summer months.

Based on the 2006 StatsCan census Horton has a fairly diverse work force with no one occupation dominating the work force. Approximately 42% of the labour force works in the following two areas: sales and service and trades, transport and equipment sectors.

6.2.2 **Existing Programs and Services**

Horton currently provides the following services to manage residential solid waste:

Weekly collection of garbage

Garbage collection is provided for by a private contractor, Beaumen Waste Management and Recycling (Beaumen). Horton has a five (5) year garbage collection agreement with Beaumen (until April 30, 2015) although there is a 90 day cancellation clause for both parties.²¹

Horton operates a full user-pay system with a two (2) bag limit per household per week which commenced in 2008. Any additional bags a household places at the curb must be tagged. Garbage tags cost \$1.00 per tag and are available for sale at the municipal office. Horton provides residents with six (6) free bag tags per year. Garbage is disposed at Horton's landfill site which is located on Lot 17, Concession 6.

Bi-weekly collection of two-stream recycling

The recycling collection service provider, like for McNab/Breaside is Beaumen Waste Management & Recycling (Beaumen) which operates under the same agreement as for garbage collection. Beaumen provides for the collection and processing of recyclables collected from the Township. Marketing of blue box materials is the responsibility of Beaumen; Horton does not receive revenues from the marketing of blue box materials. Beaumen operates a material recovery facility (MRF) at 610 Lisgar Avenue, Renfrew, Ontario.

See Section 6.1.2 for the list of materials accepted in the two-stream recycling program (same as McNab/Braeside). Residents are instructed to place recyclable containers inside the blue box and papers outside the blue box (tied with a string and bundled). Standard sized blue boxes are used to collect recyclables but Horton does not provide blue boxes for free to its residents.

 ¹⁹ 2010 DataCall submission.
²⁰ 2010 DataCall submission.

²¹ Taken from : Offer to Beaumen Waste Management 5-Year Garbage and Recycling Contract January 01, 2010 to April 30, 2015 provided by Horton.
Stantec WASTE RECYCLING STRATEGY TOWNSHIP OF MCNAB/BRAESIDE AND THE TOWNSHIP OF HORTON Current Solid Waste Trends, Practices, Systems and Future Needs November 2011

In partnership with Township of Renfrew, depot collection of municipal hazardous and special waste (MHSW)

Residents of Horton are able to bring their MHSW to the Renfrew Landfill Site located at 376 Bruce Street in Renfrew County during regular hours from May 22nd to August 25th (for 2011) free of charge. The Renfrew Landfill Site is open Tuesday and Saturday, from 8:00 am to 4:00 pm. See Section 6.1.2 for a list of materials accepted in the MHSW collection program.

Municipally-run depots at landfill site for the collection of waste electronic and electrical equipment (WEEE), tires, cardboard, white goods (as long as free from Freon), scrap metal, brush, and blue box recyclables

With the exception of tires (which costs a certain amount if still on the rim), these materials are all accepted free of charge as long as they are clean and sorted.

Horton also operates a reuse trailer at the landfill site where used clothing, textiles and objects of value are stored for reuse.

Recycling at special events

Beaumen provides for recycling collection at special events (fairs, parades, etc.).

Garbage drop-off at the township's landfill.

Residents are also permitted to take garbage directly to the landfill and are charged based on the size of vehicle. Residents are allowed one free visit to the landfill per year to dispose of heavy or bulky items. The following table lists Horton's current landfill tipping fees.

Table 6.10: Horton Landfill Tipping Fees				
Garbage and Waste				
Discarded furniture, mattress - per item	\$5.00			
Brush	No Charge			
Half ton vehicle or trailer	\$15.00			
Half ton vehicle and trailer	\$30.00			
One ton truck	\$30.00			
Single Axle dump truck*	\$12.00/cu yd			
Tandem Axle dump truck*	\$12.00/cu yd			
Tri Axle Dump truck*	\$12.00/cu yd			
Tractor Trailer truck*	\$12.00/cu yd			
Roll Off Bins	\$12.00/cu yd			
Garbage Packer Load – half load or more	\$300.00			
Garbage Packer Load (arranged with Council) – half load or less	\$150.00			

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Table 6.10: Horton Landfill Tipping Fees				
Garbage and Waste				
Soil contaminated with fuel oil	\$15.00/cu yd			
Debris from fire cleanup	\$12.00/cu yd			
Construction and demolition - seperated	\$12.00/cu yd			
Construction and demolition - mechanically ground	\$10.00/cu yd			
Metal - white goods	Free if no Freon			
Special opening of Site *Special Permit Required	\$20.00			
Tires				
Passenger Tire up to 16:	Free or \$3.00 with attached rim			
Tires 17" to 24.5 "	Free or \$9.00 with attached rim			
All tires over 24.5"	Free or \$25.00 with attached rim			
Over 6'	Free or \$25.00 with attached rim			

Based on their 2010 Annual Operations Monitoring Report, Horton's landfill is at capacity. In July 2009, the Township applied to amend its existing C of A to increase the existing landfill capacity by slightly less than 40,000 m³. In early 2011, Horton received their C of A to develop the new landfill capacity. The newly expanded landfill should be able to serve the community for an additional 13 to 15 years based on the current rate of waste deposition.

6.2.3 Promotion and Education²²

In 2010, Horton spent \$2,232 on calendars, print ads, and administration to promote their blue box recycling program (compared to \$2,280 in 2009). This amounts to spending about \$1.67 per household. Overall, the township utilizes the following forms of promotion and education (P&E) to advertise their waste management programs:

- Calendars (semi-annually);
- Media Releases/Events (semi-annually);
- Outdoor Signage;
- Paid Print Ads; and,
- Website.

6.2.4 Current Waste Generation and Diversion

Currently, Horton generates approximately 904 tonnes²³ of residential solid waste per year. Of the total residential waste generated, Horton diverted approximately 247 tonnes, resulting in an overall residential diversion rate of approximately 27.3%

²² 2010 DataCall submission.

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The following materials were diverted from disposal in 2010:

- 157 tonnes of blue box recyclables;
- 2.2 tonnes of MHSW from the Township of Renfrew MHSW depot²⁴;
- 12.0 tonnes of WEEE from the landfill depot²⁵;
- 18.9 tonnes of tires from the landfill depot²⁶;
- 57.0 tonnes of scrap metal from the landfill depot²⁷; and,
- Unknown quantity of wood.

The following materials were disposed in 2010²⁸:

657 tonnes of residential garbage

The following table summarizes the total waste generated, diverted, and disposed by Horton in 2010.

Table 6.11: Horton Waste Generated, Diverted, and Disposed (2010)				
Waste Category	Tonnage (2010)			
Waste Diverted				
Blue Box Recyclables (curbside and depot)	156.9			
MHSW (depot)	2.2			
WEEE (depot)	12.0			
Tires (depot)	18.9			
Scrap Metal (depot)	57.0			
Total Diverted	247.0			
Waste Disposed				
Garbage (curbside and taken directly to landfill)	656.8			
Total Disposed	656.8			
Total Waste Generated	903.8			
Waste Diversion Rate	27.3%			

Based on data gathered by WDO in 2009 (the last year for which data is publicly available).

²³ Horton 2010 datacall submission did not isolate residential from other source waste received at their landfill. These data are therefore based on the average of 351.75 kg/capita/year generation for Horton's municipal grouping of Rural Collection South.

²⁴ 2010 DataCall submission.

²⁵ Estimated by taking 2009 value and multiplying by the calculated number of units diverted in 2010.

²⁶ Estimate from report entitled Township of Horton 2010 Annual Operations Monitoring Report completed by Stantec in March 2011. ²⁷ Estimate from report entitled *Township of Horton 2010 Annual Operations Monitoring Report*

completed by Stantec in March 2011. ²⁸ 2010 DataCall submission.

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Hortons's GAP diversion rate²⁹ was 27.4%. The average waste diversion rate for the *Rural Collection – South* municipal grouping was 29.7% making Horton's performance **only very slightly below average**. It should be noted that the GAP diversion rate takes into account additional diversion such as grasscycling and the residential component of LCBO's deposit return program. In our calculations, we did not take these additional diversion items into account but according to actual data obtained from Horton for the 2010 year their diversion as noted above is approximately 27.3%

Again, while the amount of waste diverted relative to the total amount of waste generated is important in terms of targeting all waste streams for diversion (e.g. re-use of some bulky waste items like furniture or recovery of some construction materials like drywall and shingles), it is also important to understand Horton's blue box diversion rate in order to target those recyclables more specifically.

In 2010, of the waste that was diverted from landfill, 157 tonnes (or 17.4% of the total waste) was diverted through the blue box recycling program.³⁰ Currently, about 50% of what is collected via the blue box program is paper fibre with the remaining 50% consisting of containers (metal, plastic, and glass).

Table 6.12: Horton Waste Generated and Diverted through Blue Box					
Residential Solid Waste Generated and Diverted through Blue Box					
Residential Waste Stream/Blue Box Material Tonnes Percent of Total Waste					
Total waste generated	1,760	-			
Papers (ONP, OMG, OCC, OBB and fine papers)	76	8.4%			
Metals (aluminum, steel, mixed metal)	18	2.0%			
Plastics (containers, film, tubs and lids)	24	2.7%			
Glass	39	4.3%			
Total Blue Box material currently diverted	157	17.4%			

The table below summarizes the current waste generation and blue box diversion rates:

In order to assess the performance of Horton's blue box diversion program, WDO data was once again consulted. As the table below indicates, Horton's current blue box diversion rate is **slightly below average** for its WDO municipal grouping.

²⁹ It should be noted that the GAP diversion rate takes into account additional diversion such as grasscycling and the residential component of LCBO's deposit return program. In our calculations, we did not take these additional diversion items into account.

³⁰ 2010 DataCall submission. Includes blue box material collected curbside and blue box material brought to depot at landfill.

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Table 6.13: Comparison of Horton's Blue Box Diversion Rate with WDO Grouping		
Average Blue Box Diversion Rate		
Horton (2010)	17.4%	
Municipal Grouping: Rural Collection South (2009)	21.4%	

6.2.5 **Program Costs**

For the years of 2009 and 2010, Horton reported (to WDO) on average of \$77,440 to operate its blue box recycling program. These costs include contractor collection and processing costs, cost of blue boxes, promotional material costs, and program administration costs.

Table 6.14: Horton (2009-2010) Costs for Curbside Recycling, Collection, and Processing							
Year	Calculated Blue Box Tonnes Marketed	Total Gross Costs	Gross Costs Per Tonne	Other Revenue/Per Tonne	Total Net Cost	Net Cost Per Tonne	
2009	203.35	\$76,562.69	\$376.51	\$289.20	\$76,273.49	\$375.08	
2010	156.88	\$78,317.06	\$499.22	\$0.00	\$78,317.06	\$499.22	

In 2010, the total net annual recycling cost for Horton was \$78,317.³¹ This amounts to \$499 per tonne, or \$31 per capita. As the table below shows, net annual recycling costs for Horton are slightly above average for its WDO municipal grouping.

Table 6.15: Horton's Net Recycling Costs in Comparison to WDO Grouping		
Net Recycling Cost (per tonne per year) (2010)		
Horton	\$499	
Municipal Grouping: Rural Collection South	\$420	

The total cost for waste disposal (landfill operation, garbage collection, annual reporting, facility improvements) was \$127,202. Based on the total tonnage of material disposed in 2010, this amounts to a cost per tonne disposed of \$84 per tonne.³²

6.2.6 **Potential Waste Diversion**

Similar to McNab/Braeside, Horton's waste composition was also estimated using surrogate data from Simcoe County (2010). The rationale for this was previously described in Section 6.1.6.

³¹ Collection costs data taken from Offer to Beaumen Waste Management 5-Year Garbage and Recycling Contract January 01, 2010 to April 30, 2015 provided by Horton. Municipal administration costs taken from 2010 DataCall submission. ³² Township of Horton 2010 Annual Operations Monitoring Report

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November 2011 Table 6.16 reflects the potential diversion rate for Horton with increased participation in

Table 6.16 reflects the potential diversion rate for Horton with increased participation in diversion programs (to 95%) and good but reasonable capture rates for each of the recyclable material categories.

Table 6.16 also reflects the addition of an organic waste collection program. The participation rate is estimated at a reasonable 70%. Materials included in the potential organic waste collection program include food waste, leaf and yard waste and paper toweling but excludes pet waste and diaper wastes. Again, while these have been included in organic waste collection programs in the past the Province now appears to prefer in some cases that these materials are not included to minimize odour and to eliminate plastics in that waste stream.

Based on reasonable participation rates and capture rates it is estimated that for the recycling program alone that Horton could achieve a diversion target of 38% (for blue box curbside materials only), or 46% when taking into account other diversion of HHW, WEEE, Tires, and Scrap Metal) and with added organics could achieve a diversion rate of approximately 62% (for curbside materials only) or 71% when taking into account other diversion of HHW, WEEE, Tires, and Scrap Metal). This diversion rate doesn't account for any potential waste reduction or other diversion initiatives discussed in Section 7.0.

These initiatives would result in an increase in recycling tonnage to an estimated 313 tonnes/year, organic tonnage to an estimated 198 tonnes per year and only 287 tonnes/year would require disposal at landfill. Discussion on how to increase diversion rates is discussed in detail in Section 7.0.

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Table 6.16: Potential	Table 6.16: Potential Diversion for Horton													
Material Category	Sub-Category	Composition		Participation Captured in Rate Recyclables		Recyclables			Organics			Garbage		
		(kg/hh/yr)	(tonnes/yr)	%	%	(kg/hh/yr)	(Tonnes/yr)	%	(kg/hh/yr)	(Tonnes/yr)	%	(kg/hh/yr)	(Tonnes/yr)	%
	Newspaper	62	82	95%	99%	57.9	77	94%	0.0	0	0%	3.7	5	6%
	Magazines	15	20	95%	99%	13.9	19	94%	0.0	0	0%	0.9	1	6%
	Phone Books	1	2	95%	99%	1.3	2	94%	0.0	0	0%	0.1	0	6%
	Mixed Fine Paper	17	23	95%	95%	15.6	21	90%	0.0	0	0%	1.7	2	10%
	Corrugated Cardboard	25	33	95%	99%	23.3	31	94%	0.0	0	0%	1.5	2	6%
	Boxboard	26	35	95%	99%	24.3	33	94%	0.3	0	1%	1.3	2	5%
	Egg Cartons	2	3	95%	95%	1.9	2	90%	0.0	0	1%	0.2	0	9%
Paper Fibres	Kraft Paper	4	6	95%	95%	4.0	5	90%	0.1	0	2%	0.3	0	8%
	Laminated Paper Packaging	2	3	95%	5%	0.1	0	5%	0.0	0	0%	2.2	3	95%
	Books	4	5	95%	95%	3.2	4	90%	0.0	0	0%	0.3	0	10%
	Spiral Wound	1	2	95%	90%	1.1	1	86%	0.0	0	0%	0.2	0	15%
	Other paper	1	1	95%	5%	0.0	0	5%	0.0	0	0%	0.5	1	95%
	Gable Top	3	4	95%	85%	2.3	3	81%	0.0	0	0%	0.5	1	19%
	Aseptic	1	2	95%	85%	0.9	1	81%	0.1	0	10%	0.1	0	9%
	Sub-Total Paper	164	219			149.8	200	91%	0.5	1	0%	13.4	18	8%
	Steel Food and Beverage Cans	11	15	95%	99%	10.8	14	94%	0.0	0	0%	0.7	1	6%
_	Steel Aerosol cans	1	1	95%	95%	1.0	1	90%	0.0	0	0%	0.1	0	10%
Ferrous	Paint Cans	0	0	95%	95%	0.2	0	90%	0.0	0	0%	0.0	0	10%
	Other Metal	3	4	95%	95%	3.0	4	90%	0.0	0	1%	0.3	0	9%
	Sub-Total Ferrous	16	21			14.9	20	93%	0.0	0	0%	1.1	1	7%
	Aluminum Food and Beverage Cans	4	5	95%	99%	3.8	5	94%	0.1	0	3%	0.1	0	3%
Aluminum	Other Aluminum Containers	0	0	95%	96%	0.1	0	91%	0.0	0	3%	0.0	0	6%
	Aluminum Foil Trays	2	2	95%	91%	1.4	2	86%	0.0	0	1%	0.2	0	13%
	Sub-Total Aluminum	6	8			5.4	7	92%	0.1	0	2%	0.3	0	6%
	Alcoholic Beverage Glass	2	19	95%	99%	1.5	18	94%	0.0	0	1%	0.1	1	5%
Glass	Food and Beverage: Clear	16	22	95%	95%	14.5	19	90%	0.2	0	1%	1.4	2	9%
01033	Food and Beverage: Coloured	4	6	95%	95%	4.0	5	90%	0.0	0	1%	0.4	1	9%

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Table 6.16: Potential Diversion for Horton														
Material Category	ory Sub-Category Composition		Participation Rate	Captured in Recyclables Recyclables				Organics		Garbage				
		(kg/hh/yr)	(tonnes/yr)	%	%	(kg/hh/yr)	(Tonnes/yr)	%	(kg/hh/yr)	(Tonnes/yr)	%	(kg/hh/yr)	(Tonnes/yr)	%
	Other Glass	5	6	95%	5%	0.2	0	5%	0.0	0	1%	4.4	6	94%
	Sub-Total Glass	40	53			20.3	43	51%	0.3	1	1%	6.3	9	17%
	PET Beverage Bottles	9	13	95%	99%	8.8	12	94%	0.0	0	0%	0.6	1	6%
PET	Other PET Bottles & Packaging	5	7	95%	5%	0.3	0	5%	0.0	0	0%	5.0	7	95%
	Sub-Total PET	15	20			9.1	12	62%	0.0	0	0%	5.6	7	38%
	HDPE (2) Bottle/Jug	6	8	95%	95%	5.6	8	90%	0.0	0	0%	0.6	1	10%
	PVC #3	0	0	95%	95%	0.1	0	90%	0.0	0	0%	0.0	0	10%
	LDPE and PP Bottles	0	0	95%	95%	0.3	0	90%	0.0	0	1%	0.0	0	9%
	Polystyrene	4	6	95%	90%	3.6	5	86%	0.2	0	5%	0.4	1	10%
	Tubs and Lids	3	4	95%	85%	2.3	3	81%	0.1	0	5%	0.4	1	14%
Other Plastics	Recyclable Film	8	10	95%	85%	6.2	8	81%	0.4	1	5%	1.1	1	14%
	Non-recyclable film	14	19	95%	5%	0.7	1	5%	0.4	1	3%	13.3	18	92%
	Other Bottles	1	1	95%	5%	0.0	0	5%	0.0	0	5%	0.9	1	90%
	Other Plastic Packaging	6	9	95%	5%	0.3	0	5%	0.3	0	5%	5.8	8	90%
	Durable Plastics	9	11	95%	5%	0.4	1	5%	0.1	0	1%	8.1	11	94%
	Sub-Total Other Plastics	52	69			19.4	26	38%	1.6	2	3%	30.6	41	59%
	Food	174	233	95%	5%	8.3	11	5%	122.1	163	70%	44.1	59	25%
	Diapers/sanitary	27	36	95%	5%	1.3	2	5%	0.0	0	0%	25.3	34	95%
	Animal waste	46	61	95%	5%	2.2	3	5%	0.0	0	0%	43.7	59	95%
Organics	Tissues/towels	23	30	95%	5%	1.1	1	5%	15.8	21	70%	5.7	8	25%
	Grass and Yard Waste	4	6	95%	5%	0.2	0	5%	3.0	4	70%	1.1	1	25%
	Paper Cups and Ice Cream Containers	3	4	95%	5%	0.2	0	0%	2.2	3	70%	1.0	1	30%
	Sub-Total Organics	277	371			13.2	17	5%	143.1	191	52%	120.8	162	44%
Other Waste	Other waste	36	49	95%	5%	1.7	2	5%	1.8	2	5%	32.9	44	90%
	Sub-Total Other Waste	36	49			1.7	2	5%	1.8	2	5%	32.9	44	90%
НП/М	HHW	3	4	95%	10%	0.3	0	10%	0.1	0	5%	2.5	3	86%
111744	Sub-Total HHW	3	4			0.3	0	10%	0.1	0	5%	2.5	3	86%
	608	814			234	313	38%	148	198	24%	214	287	35%	

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6.2.7 Anticipated Future Waste Management Needs

Solid waste generation rates in Horton are expected to grow slowly over the next 10 year planning period (by approximately 1.3% per year based on slight population increases).³³ As such, Horton's population growth is anticipated to have little to no impact on long-term collection and infrastructure needs.

³³ Population increases calculated using building permits issues from 2008 to 2010.

7.0 Review and Evaluation of Waste Management Options

Both McNab/Braeside and Horton demonstrate implementation of some best practices in their waste management programming e.g. bag-limit/bag-tag programs, partnering with Township of Renfrew for MHSW, free drop off of recyclables like electronics at depot, special events recycling, and provision of free blue boxes (McNab/Braeside). The options presented in the following sections do not address these already implemented best practices and only represent best or 'better' practices that have not been implemented and that may serve to improve waste management system performance. 'Alternative' best practices are also discussed as appropriate, for example, the Townships could, as an alternative to the current user-pay/bag-tag program, implement clear bag programs should it be determined that would net better blue box capture results.

Further, and although the focus of this WRS is improved recycling program performance, both McNab/Braeside's and Horton's future recycling initiatives should not be evaluated in isolation of the impacts to the rest of their waste management systems and nor should they be evaluated outside of the principles of the 3Rs hierarchy. As such, this section discusses a number of industry recognized best or 'better' practices for waste reduction as well. Other diversion program options beyond the blue box (e.g. organics) are also discussed.

McNab/Braeside and Horton have a lot of similarities when it comes to their current waste management systems. Further, both municipalities face similar challenges and are located close to one another geographically. The following list documents some of the similarities between the two municipalities' waste management systems:

- Both municipalities contract out garbage collection and recycling collection and processing;
- Both municipalities operate a two-stream blue box recycling system, with collection provided on a bi-weekly basis;
- Both municipalities provide weekly collection of garbage with a bag limit (pay-as-youthrow) and bag tag policy in place;
- Both municipalities rely on a partnership with Township of Renfrew to divert MHSW;
- Both municipalities operates diversion depots at their landfill sites for similar materials (WEEE, tires, cardboard, scrap metal, brush, blue box recyclables); and,
- In terms of system performance, both municipalities are currently achieving similar waste diversion rates.

Due to the number of similarities between the two municipalities, many of the options discussed herein could be initiated by both municipalities and as such McNab/Braeside and Horton are discussed together in this section of the report.

In order to assess the relative merits of various program options a number of factors or 'criterion' are applied to the options presented in this Section to determine whether they can be practically applied as part of each of McNab/Braeside's and Horton's respective waste management systems. While there may be more factors for both municipalities to consider, the factors listed in Table 7.1 below provide some assessment and understanding of the impact of implementing various programming options. Table 7.1 describes these option assessment factors.

Table 7.1: Program Option & Opportunities Assessment Factors						
Consideration	Application to Options					
Short-term or Long-term Option	• Short-term options would include those that can easily be implemented within the first few years of the waste recycling strategy (e.g. within the first five years) and/or those options that would only be reasonably available in the short-term.					
	 Long-term options would include those that require more time to implement (i.e. more than five years) and/or are more difficult to implement and/or are not economically feasible in the short term. 					
Interaction with other System Components	 Significance of interactions of options with other potential system components. 					
	 Options should not negatively interact with other components. 					
	 Some options will be contingent upon the viability of implementing another system component, i.e., single stream recycling requires access to a single stream processing facility. 					
Potential Cost Implications	 Potential costs implications for the options, including capital and operating costs and potential revenues. 					
	 Potential costs should be within reasonable range of the current budget unless outside funding sources are available as they may be in some cases. 					
Potential Change in Diversion	 Potential changes in diversion rates that could directly or indirectly result from implementing any of the options are identified if possible. 					
Potential for System Efficiencies and Improvements in Level of	 Preferred if options increase efficiency and/or cost effectiveness of the waste system. 					
Service	 Diversion and collection options should have potential to enhance/improve levels of service. 					
Potential Processing or Disposal Capacity Requirements	 Diversion processing options and waste disposal options must be able to provide sufficient capacity for a reasonable length of time. 					
	 Potential decreases in required landfill capacity for diversion options, would reflect both increased diversion and changes in composition and density of waste requiring landfill disposal. 					
Ease of Implementation/Timing	Examples of implementation requirements may include:					
of Implementation	 Facility siting for any new facilities. 					
	 Procurement processes such as RFPs for development of new facilities and/or new contracts for collection, transfer, processing. 					
	 Implementation requirements/timelines for some system components affect others, for example, changes to collection programs e.g. shift to single- stream, procurement of collection vehicles if necessary etc. 					
	 Some options may be easier to implement than others given staff resources. 					

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Table 7.1: Program Option & Opportunities Assessment Factors						
Consideration	Application to Options					
	budget resources etc.					
Community Acceptance	Some options may be more widely accepted than other options					
	 The best options are more akin to community wants, needs and desire to modify behavior e.g. curbside set-out practices. 					
Ability to Adjust Option to Changes to the WDA & Other Provincial Initiatives	 Options need to have flexibility to adapt to changes that could occur based on changes in Provincial regulatory requirements/policy e.g. added or reduced materials to recycling stream. 					

The following sections identify various waste reduction, reuse and diversion options that have been successfully employed by others. Each option is assessed relative to the criteria set out in Table 7.1 as they are deemed to apply specifically to McNab/Braeside and to Horton and are discussed and assessed relative to the current system.

7.1 WASTE REDUCTION & REUSE OPTIONS

Historically, the main driver guiding waste management regulation (and therefore municipal decisions) was waste diversion. Consequently, and with no regulatory or policy directives guiding them, very few municipalities have established waste reduction practices. Only recently has the Ontario Ministry of the Environment (MOE) stated that the province's waste diversion framework should be guided by the vision of zero waste.³⁴

Although a strong focus on waste reduction is fairly new in Ontario, there are other jurisdictions in Ontario and across North America that have implemented successful waste reduction programs that can be drawn from. Examples of waste reduction initiatives are provided below and while these are not defined as 'best practices' they can be considered 'better practices' for a system that has not established a comprehensive waste reduction program.

The programs discussed in this section are now finding their way into many municipal waste management strategic planning processes and are now being supported provincially in Ontario as demonstrated by the waste value chain set out by the Province of Ontario as part of the "Policy Statement on Waste Management Planning (June 2007)" The waste hierarchy or value chain places priority on preventing waste generation, maximizing diversion of the waste that is generated and minimizing disposal with preference to disposal methods that allow for recovery of energy.

There are many versions of the waste hierarchy in general circulation as set out in governmental and non-governmental policy statements developed for jurisdictions world-wide.

³⁴ "From Waste to Worth: The Role of Waste Diversion in the Green Economy", MOE, October 2009.

Generally, each version presents certain nuances that reflect certain regional or national differences. Put simply, the hierarchy generally appears as set out in Figure 7.1.

Figure 7.1: The Waste Hierarchy



The following sections discuss implementation of a number of options that would reflect a solid waste management system being managed in the context of this waste hierarchy. In most cases there are no predictable impacts, e.g. from a waste reuse or reduction standpoint, because there is little documentation from these programs where they have been implemented elsewhere, that is, quantifiable results from program implementation.

7.1.1 Adopting a Zero Waste Philosophy & Setting Reduction Targets

The Zero Waste movement sprung out of our desire to live in harmony with nature by understanding the complete life-cycle of waste production, use and management and by establishing a closed-loop economy in which all waste is treated as a resource. In the Zero Waste approach, the term waste is replaced by the term resource.

Zero Waste considers every stage of generation and procurement to determine the most efficient means to use raw materials, to eliminate the toxicity of the materials, and ensure that the materials or products are designed to be reused again as a resource. The Zero Waste approach advocates for the use of discarded materials to reduce and eliminate the need for disposal.

Adopting a Zero Waste goal means setting a framework to reduce waste generation over time through a variety of policy instruments including:

- a) Redesigning the way resources and materials flow through society;
- b) Eliminating subsidies for raw material extraction and waste disposal; and
- c) Holding producers responsible for their products and packaging from "cradle to grave" (also referred to in Europe and Canada as Extended Producer Responsibility (EPR)).

These zero waste principals have begun to shape the way in which a number of municipalities set goals and policies. The formal adoption of the approach itself and the development of

supporting programs like those described in this section, can trigger a fundamental shift in thinking for managers, councils and communities. This thinking often includes the notion that Zero Waste is a path or a road, along which society can progress towards a goal of minimizing the amount of waste requiring disposal.

Municipalities that have adopted Zero Waste, such as many communities in British Columbia, have defined the specific behavior shifts that are required for Zero Waste. For example, the Regional District of Kootenay Boundary has defined the necessary shifts in behavior as follows:

"1. It asks consumers, taxpayers and local governments to stop thinking of resources as garbage for which they have to pay to landfill, but to maximize reuse, repair, recycling and composting instead.

2. It asks business to seek out materials efficiencies; redesign products and packaging the community cannot reuse, repair, recycle or compost so that they can be handled that way; and extend their responsibility for the product and its packaging by establishing take-back, reuse and remanufacturing systems.

3. It asks senior levels of government to shift economic incentives for the use of virgin resources to renewable and secondary resources and to facilitate the growth of Zero Waste initiatives."

The Zero Waste approach can be adopted in the short-term or over a longer period and can set the framework for encouraging waste reduction and waste re-use initiatives through promotion and education initiatives. The impact of this programming is unknown from a waste reduction standpoint however this fundamental shift in thinking can trigger behavioural changes that create the potential for reduced waste generation and shifts toward further attempts to divert waste on an individual/household level.

Table 7.2: Adopt a Zero Waste Philosophy					
Option: Adopt a Zero Waste Philosophy					
Short-term or Long-term Option	Implement in short-term, sustain over long-term.				
Interaction with other System Components	• Should be collaboratively developed with other promotion and education (P&E) initiatives.				
	 Could be the 'guiding principle' or overlying objective for all waste reduction based P&E activity. 				
Potential Cost Implications	 Included as part of the promotion & education budget. 				
Potential Change in Diversion	• Even a 5% reduction in waste production for McNab/Braeside would yield a reduction of waste in the order of 142 tonnes per year and increase the waste diversion rate from 30.4% to 31.9%. The same waste reduction for Horton would reduce waste by 45 tonnes per year and increase the waste diversion rate from 27.3% to 28.3%.				
Potential for System Efficiencies and Improvements in Level of Service	 Potential for reduction of waste through system for reduced use of landfill disposal capacity and reduced residual waste in recycling. 				
Potential Processing or Disposal Capacity Requirements	 Achievements would need to be monitored to quantify impacts to processing or disposal capacity requirements (e.g. in conjunction with 				

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Table 7.2: Adopt a Zero Waste Philosophy		
Option: Adopt a Zero Waste Philosophy		
	setting per capita waste reduction targets described in Section 7.1.2) but any reduction in waste is a benefit to extending landfill life.	
General Implementation Requirements	• Review of P&E component in conjunction with other P&E initiatives.	
General Implementation Timeframe	• 4-6 months (assessment of current programs and materials development).	
	Integrated timing with existing P&E initiatives.	
Community Acceptance	• Generally, the public is becoming more aware of society's wasteful tendencies and many embrace the concept of Zero Waste.	
Ability to Adjust Option to Changes to the WDA	• WDA does not currently legislate waste reduction – this option is highly adjustable to any new legislation that targets waste reduction.	

7.1.2 Per Capita Waste Reduction Target Setting

Most municipalities set diversion targets and partly monitor achievement of those targets on a per capita and/or a per household basis, however, many municipalities do not set waste reduction targets in the same way. This option involves a shift in thinking toward a more sophisticated approach that sets, monitors and appropriately supports (e.g. through promotion & education) a specific, measurable waste reduction target.

Beyond the environmental and social benefits of this initiative, it serves as a means to help locally offset the trend of increased per capita waste generation across Ontario. According to Statistics Canada, per capita waste generation (kg of waste per person that was disposed and diverted) increased in all provinces between 2004 and 2006; this increase was 2.74% for Ontario (Statistics Canada, 2009).

This option involves a shift in thinking toward a more sophisticated approach to adopting the principles of the "Waste Value Chain" in that a specific, measurable waste reduction target is set, monitored and appropriately supported. Both municipalities can monitor the achievement of waste reduction generally through routine weighing of its waste stream or to identify specific material streams being reduced, through routine and more detailed waste composition audits.

The best mechanism to achieve waste reduction targets is through various ongoing promotion and educational initiatives that includes specific ideas/instructions for residents (or municipal facility staff if appropriate) to help them understand how to reduce waste generation. A sample of this technique is provided in **Appendix A**.

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Table 7.3: Establish a Per Capita Waste Reduction Target	
Option: Establish a Per Capita Waste	e Reduction Target
Short-term or Long-term Option	Implement in short-term, sustain over long-term.
Interaction with other System Components	 Going forward, should be collaboratively developed with other promotion and education initiatives and zero-waste principles.
Potential Cost Implications	Minimal - integration with existing P&E initiatives.
Potential Change in Diversion	• Even a 5% reduction in waste production for McNab/Braeside would yield a reduction of waste in the order of 142 tonnes per year and increase the waste diversion rate from 30.4% to 31.9%. The same waste reduction for Horton would reduce waste by 45 tonnes per year and increase the waste diversion rate from 27.3% to 28.3%.
Potential for System Efficiencies and Improvements in Level of Service	 Reduced waste volumes contribute to additional remaining disposal capacity.
Potential Processing or Disposal Capacity Requirements	 Saves landfill capacity, has no impact on processing infrastructure capacity.
General Implementation Requirements	 Consider comparable waste composition data provided in this WRS to identify specific material targets to determine target materials for educational campaigns.
	• Determine how to best to incorporate the initiative into design, development and distribution of P&E materials and incorporate program messaging.
	Could be implemented in municipally operated facilities as well.
	• Development of an initial and ultimate per capita waste reduction target.
General Implementation Timeframe	 4 to 6 months (program and materials development)/ /integrated timing with existing P&E initiatives to be sustained long-term.
	 Longer term regular auditing/progress monitoring, feedback to residents and municipal facility managers.
Community Acceptance	 Should be well received with strong educational campaign and clear instructions (see Appendix A).
Ability to Adjust Option to Changes to the WDA	• WDA does not currently legislate waste reduction – this option is highly adjustable to any new legislation that targets waste reduction.

7.1.3 Grasscycling

Grasscycling refers to leaving grass clippings on the lawn when mowing. Grasscycling eliminates and time and effort required to collect grass clippings and fill bags and also reduces the amount of waste that needs to be collected and processed. It also re-fertilizes the law as clipping decomposed and release nutrients back into the soil.

If either municipality realizes any significant grass waste in either their garbage or leaf and yard waste stream this could be promoted through using materials such as information brochures, in annual waste management calendars, on the website in concert with other educational initiatives and detailing what grasscycling is, why grasscycle is beneficial to the system, how it is done, and why grasscycling promotes a healthy lawn.

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Table 7.4: Grasscycling	
Option: Grasscycling	
Short-term or Long-term Option	Implement in short-term, sustain over long-term.
Interaction with other System Components	• Going forward, should be collaboratively developed with other promotion and education initiative.
Potential Cost Implications	Minimal - integration with existing P&E initiatives.
Potential Change in Diversion	Minimal.
Potential for System Efficiencies and Improvements in Level of Service	 Reduced waste volumes contribute to additional remaining disposal capacity.
Potential Processing or Disposal Capacity Requirements	Saves landfill capacity.
General Implementation Requirements	• Determine how to best to incorporate the initiative into design, development and distribution of P&E materials and incorporate program messaging.
General Implementation Timeframe	 2 to 3 months (program and materials development)/ /integrated timing with existing P&E initiatives to be sustained long-term.
Community Acceptance	 Should be well received with strong educational campaign and clear instructions.
Ability to Adjust Option to Changes to the WDA	 WDA does not currently legislate waste reduction – this option is highly adjustable to any new legislation that targets waste reduction.

7.1.4 Re-use Programming

Both McNab/Braeside and Horton could consider various forms of re-use programming. Re-use centres are a common way that communities can reduce waste production and extend landfill life. McNab/Braeside does not currently operate any re-use centres, while Horton currently operates a re-use trailer at the landfill site where used clothing, textiles and objects of value are stored for re-use. McNab/Braeside could consider developing a re-use centre at its landfill site. A joint initiative (e.g. a shared centre) is likely not feasible given the strong need for convenience associated with these programs. Residents would be less likely to drive out of their jurisdiction to participate.

Potential items that could be targeted for re-use include furniture (e.g. couches, chairs, and tables), housewares (e.g. dishes, utensils, pots, pans), clothing, books, CDs, DVDs, and various construction and renovation items, novelty items, other.

Another very user-friendly re-use program implemented in other municipalities are *waste exchange events*. With waste exchange events, residents may leave items like furniture and any other reusable items at the curb (e.g., BBQs, tools, strollers, clothing, etc.) labeled "free" for anyone to pick up during selected times (events) of the year. Although these types of programs do not typically increase diversion rates significantly, they net some degree of environmental, social and potential economic benefit. They also offer a program option to those without their own vehicles or other means to bring larger items to a central facility.

Other local re-use initiatives may already exist, like those supported by organizations such as Habitat for Humanity or the Salvation Army. If not already, McNab/Braeside and Horton could identify, locate, and partner with these organizations to promote local re-use initiatives and promote these locations in waste management promotional and educational materials.

McNab/Braeside and Horton could consider waste exchange events like that described above as well as other tools like the addition of a link on their web page to an McNab/Braeside or Horton exclusive "waste exchange" or with links to other broader local and known 'exchange sites' for community information. Promotion should include specific items wanted for re-use purposes.

Table 7.5: Develop a Re-Use Centre, Re-Use Programs & Re-Use Partnering Initiatives	
Option: Develop a Re-Use Centre, Re	e-Use Programs & Re-Use Partnering Initiatives
Short-term or Long-term Option	 Implement in short-term, sustain over long-term. Waste exchange events can be implemented very short-term with leading promotion of the events.
Interaction with other System Components	 Should be coordinated with other promotional and educational (P&E) programming initiatives.
Potential Cost Implications	 Small - P&E for waste exchange events, web based waste exchange site development, incorporation of re-use centre programming into P&E materials.
Potential Change in Diversion	Diversion impact is minimal.
Potential for System Efficiencies and Improvements in Level of Service	• Larger re-useable items like furniture, windows, doors, etc., do not suit landfill operations as they are difficult to compact and take up more landfill capacity than other residential garbage streams.
Potential Processing or Disposal	Some potential for reduced landfill disposal capacity requirement.
	Material handling requirements vary by programming.
General Implementation Requirements	• Research and identify local community re-use organizations e.g. Habitat for Humanity.
	• In the case of McNab/Braeside a central depot/trailer could be added for central collection of reusable materials.
	 Incorporate re-use centre information into existing P&E/new P&E initiatives.
	• Consider further the feasibility of a web-site link to a 'waste exchange' for the community. Consider in the context of a web link to information on all municipal waste management initiatives.
	• Consider further the benefit of a 'waste exchange event' as described.
General Implementation Timeframe	 3 months best practices/information gathering; re-use organizations, feasibility of waste exchange and waste exchange events.
	2 months promotional materials design and development.
Community Acceptance	 Should be well received with strong promotion and educational campaign and good instruction regarding how and when to participate and what items are acceptable/wanted in the program.
Ability to Adjust Option to Changes to the WDA	 WDA does not currently legislate waste reuse – this option is highly adjustable to any new legislation that targets waste reuse initiatives.

7.1.5 Developing Green Procurement Policies

Also consistent with a Zero-Waste philosophy, green purchasing decisions typically focus on buying products with sustainable or recycled materials that have a limited amount of packaging, and that are produced as locally as possible. Green Purchasing or Green Procurement Policies focus on the use of recycled materials, in effect to encourage product producers to use alternative sources of raw materials and to consider the downstream effects of the product's life-cycle. The potential change in diversion is minimal, however the quantity of non-recyclable packaging sent for disposal is reduced. If not already, both McNab/Braeside and Horton have the opportunity to undertake this initiative for all municipally operated facility procurement requirements.

Table 7.6: Implement a Green Procurement Policy	
Option: Implement a Green Procurer	nent Policy
Short-term or Long-term Option	Implement in short-term, sustain over long-term.
Interaction with other System	Consistent with Zero Waste principles.
Components	 Needs to be collaborative effort between waste management and facility purchasing staff.
Potential Cost Implications	 Staff time to develop research, develop policy and P&E/dependent on methods of promotion.
	 Potential cost savings through changes in product purchases, bulk purchases etc.
Potential Change in Diversion	• Minimal – but reduced non-recyclable packaging for disposal at facilities.
Potential for System Efficiencies and Improvements in Level of Service	• n/a
Potential Processing or Disposal Capacity Requirements	 Actual effect on reducing disposal capacity requirements is difficult to quantify.
General Implementation Requirements	 Research, liaise with others to assess 'best practices' in procurement policy.
	Develop policy and promote the program on a long-term basis.
General Implementation Timeframe	Staff resource availability.
Community Acceptance	Should be well received but will require staff time/staff coordination to implement.
Ability to Adjust Option to Changes to the WDA	 WDA does not currently legislate waste reduction – this option is highly adjustable to any new legislation that targets waste reduction.

7.2 WASTE DIVERSION OPTIONS

The options discussed in this section reflect a suite of options that may be employed to increase waste diversion and that have been successfully undertaken as best practices in one form or another in various other municipalities in Ontario. These waste diversion programming opportunities are presented as a series of options that *may* be implemented by McNab/Braeside and/or Horton and not from the standpoint of recommending that they *be* implemented. This

section considers each option, its advantages and disadvantages, and offers discussion regarding the feasibility of implementation of each by each municipality as appropriate.

These options are assessed relative to ease of implementation and relative to incremental gains in waste diversion. For example, there are programming options presented in this section that generally represent 'low hanging fruit', that is, they are relatively easy to implement at reasonable cost and have a decent impact at increasing diversion and at reducing waste disposal capacity requirements. Discussion on various curbside collection options that can improve waste diversion but that are effected relative to curbside collection infrastructure and operating costs are presented in Section 7.3.

7.2.1 Enhance Existing Waste Diversion Depot Program

Both McNab/Braeside and Horton offer depots at their respective landfill sites for several recyclable materials including waste electrical and electronic equipment (WEEE), tires, cardboard, white goods/scrap metal, brush, clean wood and blue box recyclables. In addition to these shared items, McNab/Braeside also offers opportunities to divert leaf & yard waste.

Both municipalities could consider adding additional recyclable items to those accepted at their depots such as construction and demolition materials. Many communities have developed effective shingle and drywall recycling programs which can save a significant amount of landfill space. Simcoe County for example sent 4,284.40 tonnes of residential and 1071.10 tonnes of IC&I shingles for recycling to TRY Recycling in London in 2008. The cost for trucking and processing was \$179,890 or \$33.59/tonne. They sent a further 1280.54 tonnes of residential and 320.14 tonnes of IC&I drywall for recycling at New West Gypsum in Oakville for a total cost of \$50,046 or \$31.26/tonne. Local markets for these materials could be explored further.

Other initiatives include mattress recycling or textile recycling (textiles represent approximately 2.5% of the waste stream)³⁵. There very well may be local textile collection through bins owned and maintained by local charitable organizations but it might be reasonable to provide direct diversion options to residents who use Township depots to also divert textiles. Bin provision might well be arranged with existing local non-profit organizations.

These types of programs could be assessed relative to existing infrastructure/facilities and resourcing (e.g. staffing). Potential end-markets/end-users for all products should also be assessed e.g as discussed above for shingles and drywall.

³⁵ Noting that Halton receives textiles for reuse at their reuse trailer at the landfill.

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Option: Enhance Existing Waste Diversion Depot Program	
Short-term or Long-term Option	Implement in short-term, sustain over long-term.
Interaction with other System Components	• Existing contracts/arrangements for materials handling: collection and recovery could be evaluated relative to any identified/recommended program change/expansion.
Potential Cost Implications	• Goal would be to maintain or reduce costs associated with various existing programs, costs associated with added materials at facilities could be determined as part of further evaluation of this option.
	• Cost-benefit implications of additional resource requirements (e.g. staff) could be assessed.
	• Potential to reduce landfill revenues from tip fees, and thus potential for higher net operating costs for disposal.
Potential Change in Diversion	• 1-2% (based on other municipal experience with subtle changes to their depot programs e.g. does not include a new shingle recycling program or a focused program for construction waste).
Potential for System Efficiencies and Improvements in Level of Service	Potentially maintain or lower costs but increase diversion.
Potential Processing or Disposal Capacity Requirements	 Existing facility(s) capacity to manage additional materials may be limited.
General Implementation Requirements	Review of municipal best practices in handling, transportation and end- markets.
	 Cost-benefit assessment of enhanced programming for each material type.
General Implementation Timeframe	3 months, best practices review and cost-benefit assessment.
	Existing contract/arrangement dependent, dependent on existing infrastructure capacity.
Ability to Adjust Option to Changes to the WDA	 This option is flexible to changes in the WDA and would complement any new designated wastes under the WDA.

Table 7.7 Enhance Existing Waste Diversion Depot Program

7.2.2 Clear Garbage Bag Program

The use of a see-through (clear) bag for garbage has been ongoing by some municipalities for a number of years (e.g., in Guelph since 2003). A recent study (E&E Fund Project #312) in Madoc Township and the Municipality of Centre Hastings showed very favourable results from the implementation of a clear bag program. The program (like Guelph's program) was compliant-based, that is, it allowed no MHSW or recyclables (in the case of Guelph no organics either) in the clear bag and when these materials were found the bag was left at the curb and not accepted at landfill. The program increased the blue box diversion rate from 33% to 45%.

It should be noted that with the Centre Hastings project there were initial concerns by residents on the matter of privacy and with respect to the inability to use already purchased opaque bags. Results of the study included the recommendation to provide a bag exchange and to provide a long lead time to implementation and enforcement. The issue of privacy was found to be no

longer a concern amongst those surveyed after program implementation. Implementation of a clear bag option could either involve curbside set outs of just the clear bag at the curb and/or residents could be permitted to set out clear bags within a solid container. This mitigates privacy issues if any, but still allow for monitoring of the contents of the bag by the curbside collection contractor.

McNab/Braeside and Horton could further assess the applicability of this option as a mechanism to both increase recyclable materials captured at the curb and decrease waste for disposal at landfill. Notwithstanding that both McNab/Braeside and Horton already have bag limits in place (2 bag limit) with a bag-tag program, the clear bag option could be assessed as an alternative to that program to increase blue box capture rates. The program could be evaluated if the current program doesn't provide enough incentive for all residents to reduce their garbage set-out, that is, they are content to bear the cost of the bag-tag program and the cost provides no incentive for them to divert all of their recyclables to the blue box.

It should be noted that the clear bags must be routinely available at all times. Surrounding municipalities are not participating in the program (so the bags may not be generally available at surrounding retail locations). This puts McNab/Braeside's and Horton's reliance on a local retailer or on municipal administration of bag sales which may or may not present a problem but needs to be considered relative to program implementation and on-going program sustainability. This type of initiative if undertaken usually benefits from a well developed pilot study that includes pre and post surveys of participants to gauge receptiveness and program challenges and successes.

Table 7.8: Clear Garbage Bag Prog	ram
Option: Clear Garbage Bag Program	
Short-term or Long-term Option	Could be implemented in short-term, sustain over long-term.
Interaction with other System Components	Change in mechanism for compliance/monitoring by curbside collection staff.
	 Impact to collection – additional recycling would need to be collected but less garbage would need to be collected.
	 Impact to tonnes requiring transfer to a MRF with increased blue box materials.
	Reduced need for disposal capacity.
Potential Cost Implications	Pilot study if undertaken.
	 Associated promotion and education campaign.
	Loss of revenue from bag-tags.
	 Potential reduced costs associated with administration of bag-tag program but could be administrative costs for sale of clear bags.
	 Potential increased recyclable transfer/processing costs with increased tonnage.
	• The costs of clear bags are now comparable to conventional black/green garbage bags.

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Table 7.8: Clear Garbage Bag Program	
Option: Clear Garbage Bag Program	
Potential Change in Diversion	 Could drive up current blue box diversion rates - assist in increase from current 22.3 to potential 38% available for McNab/Braeside and from 17.4% to 38% available for Horton.
Potential for System Efficiencies and Improvements in Level of Service	• The perception with the introduction of the clear bag program could be that the level of service for garbage is being reduced.
Potential Processing or Disposal Capacity Requirements	Would reduce landfill disposal capacity requirements and increase recyclable materials processing capacity requirements.
General Implementation Requirements	 Most municipalities undertake a pilot study to gauge their own community's acceptance of this type of program change.
	 Would need to assess issue of retail availability/convenience of purchase for clear bags to ensure long-term sustainability of the program.
General Implementation Timeframe	• 6 months for pilot study (P&E in advance, bag procurement and distribution, phased in compliance, monitoring, auditing, pilot participant feedback, assessment).
	Community- wide 6-12 months if pilot successful.
Community Acceptance	 Others have reported concerns about privacy with this program. Community may not like the change in programming but should favour the reduced household costs – clear bags would cost less than bag tags.
Ability to Adjust Option to Changes to the WDA	 This option is flexible to changes in the WDA. This is a WDO 'best practice' – potential increased funding to both communities.

7.2.3 Increase Recycling Container Capacity

Both McNab/Braeside and Horton could also consider the use of either larger blue box containers, carts or the use of blue transparent bags (widely available on the market) to increase curbside recycling set-out capacity. These programs (in other jurisdictions) have been developed based on the notion that increased container capacity reduces overflow that occurs by default to the garbage stream when the blue box is full. At minimum, with the blue box or cart program the containers should be provided free of charge to residents. McNab/Braeside currently provides free blue boxes to residents. Horton has provided free blue boxes on two previous occasions and currently provides all newly constructed residences with blue boxes, replacement blue boxes are provided to residents at a cost.

Given the success of these programs one of the *Continuous Improvement Fund* (CIF) priorities for 2010 was to fund some 200,000 large blue box containers to be distributed in the province (\$1,400,000 CIF budget). It is our understanding that there is still funding available to support this program. The following list describes each strategy in more detail:

1. <u>Cart-Based Program</u>: McNab/Braeside and/or Horton could implement a residential cartbased recycling collection program. Horton implemented this program several years ago

and had issues with breaking wheels on carts, likely because of rural driveway characteristics, e.g. length and gravel. The cost of these larger carts is also higher than either blue transparent bags or the use of larger blue boxes. For some residents they are also undesirable from a handling perspective e.g. hauling the container out to the curb and back, storage because of size. Carts don't necessarily have an advantage over larger containers or blue bags from a diversion standpoint but some municipalities have reported cost-savings because of reduced collection times/increased route size associated with automated cart-based collection.

2. <u>Blue Transparent Bags</u>: Blue transparent bags are deemed to be the 'endless container' and their use provides tremendous opportunity to capture additional recyclable materials at the curb. Blue bags can be easily used to manage two-streams (or one) of recyclable materials because each of the paper and container stream can be identified through the transparent bag and sorted accordingly into the truck. Blue bags can be utilized for all materials or have been used simply as an overflow to an existing blue box program (e.g. Niagara Region promotes this in their program). Blue bags are also more convenient than cart or box based programs as the resident does not have to return to the crub after collection to retrieve the container.

While the use of blue transparent bags does increase the potential capacity for collection of blue box materials at the curb, both McNab/Braeside and Horton are reliant on other processors to receive their blue box materials and would also be reliant on retail providers for provision of the blue bags locally for purchase. A shift to a blue bag program would preclude receipt by some MRFs in Ontario and may eliminate processing options/alternatives in the future for McNab/Braeside and Horton should they arise.

3. <u>Larger Blue Boxes</u>: The use of larger (than the standard size currently used in both communities) blue boxes is a good mechanism to increase recycling container capacity at the curb. It requires no change in recyclable material storage (prior to collection) and set out behaviour for residents but offers additional space to recover more materials.

Table 7.9: Increase Recycling Container Capacity	
Option: Increase Recycling Contain	er Capacity
Short-term or Long-term Option	Implement in short-term and sustain over long-term.
Interaction with other System Components	 Impact to collection program – increasing tonnage for collection of recyclables, decreased garbage collection.
	Impact to tonnages to be transferred to MRF with increased blue box materials.
	Reduced need for disposal capacity.
Potential Cost Implications	Potential increased processing and collection costs with increased recyclable tonnage.
	Potential increased promotion and education costs.
	Capital cost of containers potentially funded 50% by CIF (\$7/container) McNab/Braeside = \$7/container (2 containers x \$7 x 3,058 homes =

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Table 7.9: Increase Recycling Container Capacity	
Option: Increase Recycling Contained	er Capacity
	\$42,812 plus routine long-term replacement). Horton = \$7/container (2 containers x \$7 x1,308 homes (not including multi-family) = \$18,312.
	 Cart-based program (e.g. with automated collection) –carts are more in the order of \$30 a piece. McNab/Braeside = \$30 x 2 x 3,058 homes = \$183,480. Horton = \$30 x 2 x 1,308 homes (not including multi-family) = \$78,480.
	 Blue bag program – bag costs are comparable to regular garbage bag costs
	 With blue bag program avoided municipal costs for blue box replacement due to loss or damage (McNab/Braeside).
Potential Change in Diversion	 7%³⁶ if decide to go with blue carts – no specific study for larger containers or blue bags undertaken but diversion rates high for those programs.
Potential for System Efficiencies and Improvements in Level of Service	 Increased container capacity prevents overflow to garbage bag, complements a clear garbage bag or a bag tag program.
Potential Processing or Disposal	Requires processing of increased quantities of recyclable materials.
Capacity Requirements	Reduces disposal capacity requirements.
General Implementation Requirements	 Based on estimated waste composition there more blue box recyclable material that could be captured, that is, not lost to the garbage stream and a P&E program should be developed to promote this program if implemented and that targets key material losses.
	 Procurement/acquisition and distribution of containers/notification of bag distributors, local wholesalers/retailers.
	 Need to assess the ability of processors to receive a bag-based program at their respective MRFs.
General Implementation Timeframe	• Approximately 6 months for container procurement tender, fabrication and distribution.
Community Acceptance	 A move to larger recycling bins is likely to be seen as an increase in level of service and therefore supported by both communities.
	A blue bag program might be supported because of its convenience.
Ability to Adjust Option to Changes	 This option is flexible to changes in the WDA
	 This option is a WDO best practice – McNab/Braeside and Horton could receive additional annual funding and funding for larger containers or carts.

7.2.4 Enhanced and Sustained Advertising, Promotion & Education

To maintain or increase effectiveness and efficiency, all waste management initiatives need to be supported by a well-developed, comprehensive promotion & education (P&E) program.

The best P&E program is rooted in a current and regularly updated communications plan with identifiable goals and measures. Community-based social marketing approaches have shown

³⁶ Essex Windsor Solid Waste Authority, 2008. Cart Recycling Pilot Project E&E Project 262. Available at: http://www.stewardshipontario.ca/bluebox/pdf/eefund/262/262_report_w_appendices.pdf.

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good success in some communities. Similarly, programs based on local community research initiatives that make use of communications experts prove to be the most successful. A school based program that includes curriculum development and communications from the school to home environments could also play a role in an enhanced P&E program.

An effective P&E program is required to:

- Increase waste reduction and diversion rates;
- Establish and maintain new positive resident behaviours;
- Increase community involvement in diversion programs;
- Encourage proper sets outs of materials at the curb leading to increased collection efficiencies and decreased operator safety issues;
- Lower residue rates at processing facilities, resulting in higher recovery and lower costs.³⁷

In 2010, McNab/Braeside spent \$0.87 per household for promotion and education of its waste diversion program while Horton spent \$1.67 per household. Municipalities achieving around 60% recovery levels, on average, spend in the order of \$1.00 per household and this is identified as a general spending guide in the KPMG report³⁸. Based on the amount noted P&E spending per household, both communities are generally on track with KPMG guidelines. That being said, it is difficult to take the \$1.00 per household has a 'golden' number as both McNab/Braeside and Horton must bear the same P&E design, development and production costs associated with P&E material as any larger municipality and only benefit from the reduced cost of printing and distribution.

Both McNab/Braeside and Horton may consider sustaining and/or increasing P&E funding over the long-term to assist in achieving diversion targets and to implement other various preferred options identified in this section. At minimum, both communities could incorporate waste reduction and reuse programming if adopted, into their P&E initiatives. In order to implement larger programming changes, additional funding will be necessary to support a broader campaign (e.g. changes in recycling containers, clear bag program). Joint P&E material procurement could be investigated further between the two municipalities particularly where both municipalities decide to implement some of the same options identified in this WRS.

In order to assist with P&E material development and communication plans CIF has developed P&E material and communication plan templates designed for smaller municipalities (under 30,000 residents) that enable municipalities to meet the best practice requirements for P&E and

³⁷ Adapted from: KPMG, 2007. Blue Box Program Enhancement and Best Practices Assessment Project (Final Report Volume I – July 31, 2007).

³⁸ Blue Box Program Enhancement & Best Practices Assessment Project Report, KPMG, R.W. Beck, 2007

to respond positively to the WDO Datacall question concerning P&E. Funding for various P&E initiatives is also available through CIF.

Table 7.10: Enhanced and Sustained Advertising, Education & Promotion	
Option: Enhanced and Sustained Ad	vertising, Education & Promotion
Short-term or Long-term Option	Implement in short-term, sustain over long-term.
Interaction with other System Components	• All existing and new program initiatives (like waste reduction) should be integrated together as much as possible for cost-saving purposes.
Potential Cost Implications	 Sustained funding for routine annual implementation of a communication strategy, funding for larger one-time program changes. Funding for initiatives could be made available by CIF.
Potential Change in Diversion	 A study cited in the KPMG report indicates that increasing the per household expenditure up to \$1 per year could yield an increase of 1% in the recycling rate for communities with already high diversion rates. While this may not be applicable to McNab/Braeside and Horton, the potential increase in diversion associated with new P&E initiatives is likely high.
Potential for System Efficiencies and Improvements in Level of Service	 Reduced contamination of recyclables - set out of only those materials accepted in the programs – may yield lower costs for processing.
	 Proper set out of materials at the curb for increased collection efficiencies.
	• Set out of more recyclable materials resulting from understanding of all items that are recyclable.
Potential Processing or Capacity Requirements	Reduce disposal capacity requirements.
General Implementation Requirements	 Development of a "strategy/communications plan" based on the preferred options selected from the WRS to be implemented.
General Implementation Timeframe	• If McNab/Braeside and/or Horton introduces further change to its programming (e.g., the use of larger boxes, etc.) there will be larger P&E development required to support those program changes which will result in sustained awareness/education of residents during program transition.
	 This option is meant to be addressed during normal, status-quo operations to maintain high levels of education amongst residents on a continual basis.
Community Acceptance	 Improved/increased promotional and educational activity to support waste diversion programs will likely be welcomed by residents from both McNab/Braeside and Horton.
Ability to Adjust Option to Changes	This option is flexible to changes in the WDA.
to the WDA	 This option is a WDO best practice and could result in increased annual funding for both communities and funding for P&E initiatives is available from CIF.

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7.2.5 At-Source Composting

McNab/Braeside does not provide residents with the opportunity to purchase backyard composters. Horton does offer composters at a discount to residents, but sales are very small due to in-efficient advertising. Both municipalities could consider providing backyard composters for sale and potentially subsidizing the cost of these composters to increase the availability of them to residents. For example, the municipality could provide composters with a 50/50 cost sharing with residents. In addition or as an alternative, there may be an opportunity to increase diversion with a renewed education and promotion campaign to promote the benefits of backyard composter (see sample in **Appendix B**). Both McNab/Braeside and Horton could consider developing a reward program or some means to encourage residents to keep doing backyard composting.

Table 7.11: At-Source Composting	
Option: At-Source Composting	
Short-term or Long-term Option	Implement in short-term, sustain over long-term.
Interaction with other System	Potential reduction in quantities of garbage.
Components	Potential decrease in odours associated with landfilling operation.
Potential Cost Implications	 According to Ont. Reg. 101/94 composters must be provided at cost or less.
Potential Change in Diversion	Can divert approximately 1.13 kg/household/week ³⁹
Potential for System Efficiencies and Improvements in Level of Service	• This is an improved level of service for both municipalities particularly if composters are subsidized.
Potential Processing or Capacity Requirements	Reduced disposal capacity requirements.
General Implementation Requirements	Promotion and Education.
	 Distribution of backyard composters to residents/some central location(s) where residents can purchase composters.
General Implementation Timeframe	Immediate P&E
Community Acceptance	Would very likely be accepted by some residents.
Ability to Adjust Option to Changes to the WDA	This option is flexible to changes in the WDA.

7.2.6 Public Open Space & Special Events Recycling Program

Open space recycling programs seek to capture additional recyclable materials from residential sources that are typically lost to disposal. These programs have their challenges but a series of best practices have/are being developed for program implementation.

³⁹ JG Press Inc. 1999. Backyard Composting Evaluated in New York City. Available: http://www.environmental-expert.com/resulteacharticle.aspx?cid=6042&codi=217

According to the 2010 WDO datacall, McNab/Braeside and Horton currently provides for the collection of recyclables from some special events and McNab/Braeside also provides recycling containers in some public spaces on a seasonal basis.

The Continuous Improvement Fund (CIF) has recently funded projects to identify a series of best practices in open space recycling for CIF to determine eligible funding criteria/parameters to support those programs. The *Sarnia Public Space Recycling Project* (CIF Project #152), 2009 cited an overall beverage container diversion rate of 77% with the application of best practices in the set up and maintenance of the program. Stantec (*Open Space Recycling Better Practices Review*, CIF Project #159/202) identified program inhibitors to be cost and contamination of the recycling stream but also identified various best practices that could help overcome these obstacles including the use of clear and consistent signage, proper bin design and placement and good communications between collectors and facility managers.

The overall feasibility and success of such a program is contingent on how well contamination in the recycling stream is managed both at the point of collection and in processing (e.g. tolerance for contamination by the recyclable materials processor). Material collected in public spaces is often highly contaminated if best practices are not employed to minimize it.

Special events recycling programs target vendors or organizations (typically those who use municipal facilities like parks and arenas for festivals or special localized events) and ensure that appropriate recycling initiatives are in place at these events. There may be opportunities for either Township to increase/expand programming in this area. The initial focus of a program expansion should be to capture beverage containers and other easy to recycle materials during special events or in open spaces.

Table 7.12: Public Open Space & Special Events Recycling Program		
Option: Public Open Space & Special Events Recycling Program		
Short-term or Long-term Option	Implement in short-term, sustain over long-term.	
Interaction with other System Components	 Adds incremental recyclable tonnage to the system, requires coordination between waste management and parks, recreational area staff. 	
Potential Cost Implications	 Would need to be assessed but could be incorporated into routine recycling collection program. 	
Potential Change in Diversion	 Open space dependent (total number of parks, size of each and use). Estimated at 2kg/capita⁴⁰. 	
Potential for System Efficiencies and Improvements in Level of Service	• Consistency in messaging (at home and in the community) regarding McNab/Braesides and Horton recycling program (both currently accept the same materials).	
Potential Processing or Disposal Capacity Requirements	Minor reduction in disposal capacity requirements.	

⁴⁰ MGM Management, 2006. GTA Public Space and Schools Opportunities Analysis. Technical Memorandum #3. E&E Fund Project #105 – Enhanced Blue Box Recovery Project. Available at: http://www.stawardshipportaip.co/buluebox/opting/constra/105/105_tach_mome_3.pdf

 $http:/www.stewardshipontario.ca/bvluebox/eefund/reports/105/105_tech_memo_3.pdf.$

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Table 7.12: Public Open Space & Special Events Recycling Program **Option: Public Open Space & Special Events Recycling Program General Implementation** Discussion, coordination interdepartmentally within both municipalities Requirements Development of specific messaging/signage (consistent with curbside • program). **General Implementation Timeframe** • Procurement and distribution of containers for separation of recyclables from garbage **Community Acceptance** Most residents would likely support more opportunities to divert waste • away from home. Ability to Adjust Option to Changes • This option is flexible to changes in the WDA. to the WDA

7.2.7 Improved Municipal Facility & Commercial Recycling

Although we are typically trained to separate waste in the home, many work, school, organizational, and recreational facilities do not provide the same opportunity for us to recycle or compost. There are a number of challenges associated with recycling at these locations including the proper set-up of recycling stations and containers, container type, convenience to the program user, understanding of the program (which can be very different from an employee or facility user's program at home), and facility owner and staff support for the program including key housekeeping staff. These programs typically require more extensive educational efforts than residential recycling programs.

Both McNab/Braeside and Horton have municipal facility recycling programs in place and could consider assessing the current performance of waste diversion programs at those facilities (e.g. through waste audits) and determine mechanisms to improve performance (if any). As both municipalities have some commercial component to their curbside collection programs they may also want to expand recycling efforts in that sector through similar promotion efforts.

Table 7.13: Improved Administrative & Other Facility Recycling		
Option: Improved Administrative & Other Facility Recycling		
Short-term or Long-term Option	Implement in short-term, sustain over long-term.	
Interaction with other System Components	 Creates opportunity for consistency in and reinforced messaging (at home and in the community) about recycling program. 	
	Reduced requirement for landfill capacity.	
	 Impact to collections – increased recyclable materials collected. 	
	 Impact to MRF – increased tonnage for transfer to MRF. 	
Potential Cost Implications	Depending on tonnage could increase collection costs.	
	 Increased transfer costs for recyclables to MRF for processing. 	
	Reduced disposal costs long-term.	
	Costs for containers, signage and P&E materials.	
Potential Change in Diversion	Unknown but potentially high.	
Potential for System Efficiencies and Improvements in Level of Service	 Potential for consistent messaging of recycling program in all sectors/multiple-use P&E materials. 	

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Table 7.13: Improved Administrative & Other Facility Recycling		
Option: Improved Administrative & Other Facility Recycling		
Potential Processing or Disposal Capacity Requirements	Reduction in disposal capacity requirements.	
General Implementation Requirements	• Could be new/additional containers procurement, P&E and signage distribution, coordination with housekeeping/facility staff, commercial property owners.	
General Implementation Timeframe	• If required, container procurement and distribution, in concert with P&E development for other program options implemented - 3- 4 months.	
Community Acceptance	 Would likely have a high level of acceptance Would be supported with proper containers and P&E tools, signage etc. 	
Ability to Adjust Option to Changes to the WDA	• This option is flexible to changes and partly a function of potential changes in the WDA.	

7.2.8 Organic Waste Collection & Processing Option

The comparable waste composition data presented in Section 6.1.6 (McNab/Braeside) and Section 6.2.6 (Horton) indicates that McNab/Braeside could reasonably collect (with 70% participation in a curbside organic waste collection program) 634 tonnes per year of Source Separated Organic (SSO) waste while Horton could collect in the order of 198 tonnes per year.

It is estimated that in combination with maximized diversion of recycling that the additional implementation of an SSO program could help both McNab/Braeside and Horton to achieve a diversion rate as high as 62% without taking into account additional diversion initiatives such as HHW, tires, and scrap metal diversion.

McNab/Braeside and Horton have two options with respect to processing of SSO. The first option is to identify and investigate opportunities for SSO to be received at organic waste processing facilities, commonly referred to as Centralized Composting Facilities (CCFs) within a reasonable haul distance. CCF's would need to investigated relative to their requirements for materials receipt (e.g. loose or bagged), accepted contamination rates, materials to be included in the SSO stream, available processing capacity, restrictions of material delivery (hours, vehicle type), location, processing costs and the like.

The second option is to install an appropriately sized composter at a landfill (either at both McNab/Braeside's and Horton's or at one with a partnership for sharing). There are a number of small composter technology providers now with manufacturing and/or distribution rights in Canada. This would involve generating capital and operating costs, facility design parameters (appropriate technology), feedstock requirements, operational perameters (staffing, electrical, leachate management, amendment requirements etc.), site size requirements, timelines for installation and commissioning etc.

McNab/Braeside and Horton could assess the relative advantages and disadvantages of each of these approaches to assess the feasibility of implementing a curbside organic waste

collection program to achieve higher diversion targets. Curbside collection options would need to be assessed in concert with a further assessment of composting options.

Table 7.14: Organic Waste Collection and Processing		
Option: Organic Waste Collection and Processing		
Short-term or Long-term Option	Could be implemented in the short-term.	
Interaction with other System Components	Impact to curbside collection system – additional staff time for collection, collection cycle requirements, other including provincial trend toward green bin collection (containerized loose not bagged) program	
	May be requirement for transfer.	
	Potential for elimination of odour associated with landfilling operations.	
	Potential for odour if not composted (on-site) properly.	
	Reduced landfill capacity requirements.	
Potential Cost Implications	• Would need TBD in association with assessment of the options however current processing fees in Eastern Ontario range in the approximate order of \$80-\$100/tonne	
	Curbside collection cost increases for service and green bin procurement and maintenance.	
	Disposal cost reductions in long-term.	
Potential Change in Diversion	• Assuming a 70% participation rate in an organics program, McNab/Braeside's and Horton's diversion rate could increased by 24%.	
Potential for System Efficiencies and Improvements in Level of Service	• Reduction of substantial waste to landfill, reduction of odourous waste to landfill.	
	• TBD in association with assessment of the options but could provide an opportunity for collection efficiencies e.g. co-collection.	
	• Could present the opportunity to move to a bi-weekly garbage collection program (see Section 7.3.2).	
Potential Processing or Disposal Capacity Requirements	• McNab/Braeside requires about 634 tonnes of processing capacity per year. Potential reduction in disposal capacity of 634 tonnes.	
	Horton requires about 198 tonnes of processing capacity per year. Potential reduction is disposal capacity requirement of 198 tonnes.	
General Implementation Requirements	Potential transfer arrangements necessary.	
	• For composter at landfill require training of operating personnel and new operating personnel, marketing or coordination of use of finished compost.	
	Promotional and educational campaign to residents.	
	Development of source separated organic waste curbside collection program.	
	Procurement and distribution of green bins.	
General Implementation Timeframe	Receiving facility(s) dependent or installation dependent.	
Community Acceptance	Communities would likely see this endeavor as an increase in level of service. Increased cost may impede, however.	
Ability to Adjust Option to Changes to the WDA	 This option is flexible to changes in the WDA. Potential changes could include the designation of 'branded' organics for diversion. 	

7.3 COLLECTION OPTIONS

McNab/Braeside and Horton both currently collect garbage weekly and blue box recycling biweekly. The following subsections discuss some of the collection options that McNab/Braeside and Horton can consider to increase diversion rates both in the short and the long term.

7.3.1 Weekly Blue Box Recycling Collection & Weekly Garbage Collection

In 2007 Waste Diversion Ontario (WDO) commissioned the *Blue Box Recycling Enhancement and Best Practices Assessment Project.* A key outcome of that project was to define 'best practices' as waste system practices that affect Blue Box recycling programs and that result in the attainment of provincial and municipal Blue Box material diversion goals in the most costeffective way possible. The KPMG report states that ideally recyclables should be collected at the same frequency as garbage. The report also determined that those programs with the greatest diversion rates and most effectiveness offer weekly collection of recyclables and organics with bi-weekly collection of garbage. The KPMG report also noted that co-collection of wastes is often more efficient, provided materials can be unloaded at the same or adjacent facilities.

The benefit of collecting recyclable materials as frequently as garbage is in the deterrent for residents to 'default' their recyclable materials into the more convenient garbage collection cycle either because it is simply more convenient/efficient at removing waste frequently from the home and/or because their blue boxes are full and its more convenient than obtaining additional blue box capacity.

Table 7.15: Weekly Collection of Garbage and Recycling		
Option: Weekly Collection of Garbage and Recycling		
Short-term or Long-term Option	Could be implemented in the short-term.	
Interaction with other System Components	Increase to amount of recyclable materials collected.	
	Decrease in amount of garbage collected.	
	Reduced landfill capacity requirements.	
Potential Cost Implications	TBD based on response to competitive bid process.	
	Increased collection and processing costs for recycling.	
	Disposal cost reductions in long-term.	
Potential Change in Diversion	• Specific increase in diversion unknown but municipalities with more frequent recycling collection (and less frequent garbage collection) exhibit higher diversion rates on average especially in conjunction with a bag limit/user-pay/clear bag garbage program.	
Potential for System Efficiencies and Improvements in Level of Service	• Increasing recycling collection to weekly would be seen as an increase in level of service.	
Potential Processing or Disposal	Potential reduction is disposal capacity requirement through increased	

Both McNab/Braeside and Horton could consider moving to weekly blue box recycling collection through requests for pricing in their next collection contracts.
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Table 7.15: Weekly Collection of Garbage and Recycling				
Option: Weekly Collection of Garbage and Recycling				
Capacity Requirements	recycling.			
General Implementation Requirements	 Advanced notification/promotional and educational campaign to residents and facilities as appropriate. 			
	Collection contract procurement.			
General Implementation Timeframe	Immediate with advanced notification and contractor in place.			
Community Acceptance	Would be seen as an increase in level of service.			
Ability to Adjust Option to Changes to the WDA	This option is flexible to changes in the WDA.			
	This option represents a 'best practice' as defined by WDO.			

7.3.2 Bi-Weekly (Every Other Week) Garbage Collection (With a Weekly Organics Program)

If McNab/Braeside and/or Horton do implement an organic waste collection and processing program as part of its long-term WRS then bi-weekly collection of garbage is viable. This reduced level of garbage collection provides very strong incentive for both increased use of blue boxes for recycling and for the use of green bins for organic waste separation. The collection frequency for organic waste should be no less than weekly to both promote green bin use but also to minimize potential for vermin and odours associated with storage. Reducing the frequency of garbage collection in conjunction with sustained weekly recycling collection and organics collection has been demonstrated in a number of other municipalities to have a positive effect on recovery rates for recyclable material (and organics).

Bi-weekly garbage collection is not recommended for programs without an organic waste collection program. It is also not recommended that a weekly organic waste collection program be implemented simultaneous to implementing a bi-weekly garbage collection cycle, that is, a reduced collection cycle for garbage be implemented at some point after residents, and facilities if appropriate, have acclimatized to proper sorting and set-out associated with the organic waste collection program.

Table 7.16: Bi-Weekly Garbage Collection			
Option: Bi-Weekly Garbage Collection			
Short-term or Long-term Option	 Could be implemented in the short-term or the long-term but not recommended without an organics separation program. 		
Interaction with other System Components	• Addition of weekly organics collection and ultimate decrease in garbage collection frequency.		
	• Potential impact to MRF/transfer with increased blue box materials.		
	Reduced need for disposal capacity.		
Potential Cost Implications	Associated P&E campaign.		
	 Potential increased recyclable and organic waste processing fees with increased tonnage. 		

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Table 7.16: Bi-Weekly Garbage Collection				
Option: Bi-Weekly Garbage Collection				
	Potential increased per tonne recyclable and organic waste collection costs with increased tonnage.			
	 Decrease in garbage collection costs due to reduction garbage quantities and reduced collection frequency. 			
	Reduced disposal costs long-term.			
Potential Change in Diversion	• 3 to 4% of total waste stream based on other municipal experience.			
Potential for System Efficiencies and Improvements in Level of Service	• Would work well with clear garbage bag or user pay program and only with an organic waste collection program.			
Potential Processing or Disposal Capacity Requirements	Would reduce landfill disposal capacity requirements.			
General Implementation Requirements	P&E material development and distribution/notification.			
General Implementation Timeframe	 Adequate notification of program change to residents/calendar development and distribution. 			
Community Acceptance	 Moving to bi-weekly garbage can sometime been seen as a decrease in level of service, but if accompanied after the roll-out of a green bin program, many residents will likely support the environmental initiative. 			
Ability to Adjust Option to Changes	This option is flexible to changes in the WDA.			
	This option is identified as 'best practice' by WDO.			

7.3.3 Public Sector Collection Option

Collection of residential waste (and recycling) is usually administered under one of two scenarios: municipal collection or private collection under contract. McNab/Braeside and Horton currently contract collection to the private sector which is typically more feasible than public sector provision of service as discussed later in this section however, in cases where there may be little to no competition in the private sector for the provision of these services, public sector collection can be a viable economic alternative.

There are a number of advantages and disadvantages associated with each of public and private sector collection (see Table 7.17). The advantages and disadvantages noted are not necessarily an exhaustive list but summarizes those that are key.

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Table 7.17: Advantages and Disadvantages of Public Versus Private Sector Collection Scenarios			
Scenario	Advantages	Disadvantages	
Public Sector Collection of Waste	 High level of control over methods of collection and/or changing methods of collection e.g. fleet changes, collection variations e.g. co-collection of streams, routing changes, as well as curbside studies like pilot studies, waste audits. High level of control over timing or modified programming suited only to the City and not to a contract(s) arrangement that may alter preferred implementation timing. High level of direct control of service delivery (e.g. returning for missed waste, replacement of broken blue boxes, direct communication with the public etc.) High level of opportunity for direct and open discussions management and front-line staff to enhance program efficiencies, service delivery. High level of opportunity to have control over compliance (e.g. not collecting clear waste bags with contamination, not collection bags left untagged, leaving appropriate stickers, etc.) 	 Current services are contracted so there would be an initial transition period as drivers become accustomed to the areas, programs, customers and may result in missed collections etc. at program start up. Significant capital investment required for the procurement of a collection fleet and ancillary components. Lack of competition in service delivery may lead to complacency if not controlled properly. Potential for service delivery issues if management-union relations not good (if applicable) and/or there is a potential for a strike. 	
Private Sector Collection of Waste	 High level of opportunity to solicit competitive prices from private sector service providers where in a competitive market. Far less management time required and less direct supervision of collection activities. Less administrative, staff-related matters to address. No capital requirements for a collection fleet. May be more efficient, service-delivery oriented and cost effective in municipal environments where management-union relations are strained. 	 Potential loss of control of some program areas, and flexibility to make program modifications in timelines preferred. Less ability to make adjustments to service levels without experiencing increased costs or unwillingness by the contractor to amend service provisions. Need for contracts to be clear and concise with respect to consequences for failure to provide service and other service related concerns (i.e. late calls, discourteous behaviour, etc.) Township staff has limited control over collection activities and must rely on the private contractors to maintain the integrity of the program. Problems with collection reflect poorly on the township as the owner of the work. Less flexibility as it relates to 	

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Table 7.17: Advantages and Disadvantages of Public Versus Private Sector Collection Scenarios		
Scenario	Advantages	Disadvantages
		methods of collection and/or changing methods of collection e.g. fleet changes, collection variations e.g. co-collection of streams, routing changes, as well as curbside studies like pilot studies, waste audits.

While it appears that there are more advantages to public sector collection than private sector collection from a program management and program flexibility standpoint, a key element is cost. An analysis conducted by Stantec in 2008 that focused on public versus private sector collection of recyclables in Ontario municipalities revealed that per unit costs for municipal collection, expressed as \$/tonne, were generally higher than the estimated cost for collection by private contractors in that 2008 comparison year. Most municipalities in Ontario out-source the collection of their recyclables for this reason. Notwithstanding that study, McNab/Braeside and Horton may have their own unique circumstances that warrant some future cost-benefit analysis of these two scenarios. Any consideration of public sector collection would need to factor in the potential impact associated with Full Producer Responsibility in the Province on municipally owned recycling infrastructure.

7.4 JOINT COLLECTION, TRANSFER AND PROCESSING OPTION

Currently, both McNab/Braeside and Horton have agreements with Beaumen Waste Management & Recycling (Beaumen) to provide for the collection and processing of blue box material. That said, both municipalities' arrangements with Beaumen are not necessarily sustainable in the long-term (e.g. after five years). Since 2008, McNab/Braside has operated on a "handshake" agreement with Beaumen and although Horton has a five (5) year agreement with Beaumen (until April 30, 2015) there is a 90 day cancellation clause for both parties.⁴¹ Once these arrangements end both McNab/Braeside and Horton may require blue box processing capacity at a more distant MRF. That being said, the current relationship and processing arrangements between each of McNab/Braeside and Horton are good from both a service level and a cost perspective and should be sustained as long as possible by each municipality. The discussion in this section is meant for consideration in the longer term.

⁴¹ Taken from : Offer to Beaumen Waste Management 5-Year Garbage and Recycling Contract January 01, 2010 to April 30, 2015 provided by Horton.

When and if both communities are in need of long-term recyclable materials processing capacity both municipalities could consider a joint contracting arrangement to secure that capacity. This could take a number of forms:

- Joint contract for collection, transfer and processing;
- Joint contract for collection and processing with municipally provided (owned) transfer capacity;
- Joint contract for processing capacity only.

These arrangements are viable as McNab/Braeside and Horton are only 15.5 kilometers apart. Alternatively each municipality could contract for any of these arrangements on their own.

Stantec undertook a survey for the County of Simcoe in 2010 to assess available recyclable materials processing capacity in Ontario and recently updated that survey for the City of Hamilton (2011). The results indicated that there are several MRFs (both two stream and single stream) that have available capacity to receive blue box materials in Southwestern Ontario however that may be cost-prohibitive (although some offer revenue from the sale of recyclable materials). Stantec also undertook a survey for the Township of North Dundas in 2010 to assess available blue box processing capacity. That survey identified more proximal MRFs to McNab/Braeside and Horton which include Metro Waste and Tomlinson MRFs in Ottawa, the Kingston MRF, Cornwall's MRF, RARE in Alexandria, the Ottawa Valley Waste Recovery MRF in Pembroke, Quinte in Trenton and Lafleche (Moose Creek) transfers single stream recyclable materials to their MRF in Montreal, QC. Generally speaking there is no shortage of processing capacity in the province for both McNab/Braeside and Horton and further the City of Ottawa is assessing long-term management of their blue box program and could be a potential future partner for McNab/Braeside and Horton.

From a transfer standpoint it is estimated that McNab/Braeside would require transfer capacity of between 633 and 1033/tonnes per year depending on new diversion initiatives and Horton would require between 157 and 313 tonnes/ year of transfer capacity depending again on new diversion initiatives. This equates to somewhere in the order of a combined 15 to 26 tonnes per week.

Using typical densities for each of commingled containers (81 kg/m³) and fibre (284 kg/m³)⁴² and assuming that transfer occurs when sufficient material is stored to load a 53' trailer (uncompacted), a 53' trailer can carry approximately 28 tonnes of fibre and approximately 7.8 tonnes of commingled containers. Current capture rates for both municipalities are in the order of 50% commingled containers and 50% fibres. Which equates to 7.5 to 13 tonnes each per week. For commingle containers this represents 1-2 trailer loads for transfer per week and for fibres represents a trailer load every two (2) to three (3) weeks.

⁴² Residential Waste Materials Density Study (WDO OPT/ORG-R2-02) Town of Markham, City of Guelph, County of Northumberland, ENVIROSRIS, 2001. Note: Notwithstanding changes in waste composition since the time of the ENVIROSRIS report that may affect material densities it is felt that these data suffice to enable an order of magnitude estimate.

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One mechanism by which materials storage and transfer can occur is with a Transtor Transfer System. The Transtor is a combination storage and transfer device that has been used in numerous municipal transfer applications including residential drop-off. The facility pictured is located in Dryden, Ontario. Each Transtor has 53 cubic yards of capacity with a 12' wide loading throat that allows it to accept any equipment. Transtors can be used indoors or outdoors and will integrate with 144 cubic yard or 100 cubic yard compaction trailers or walking floors. Units are powered by a JD49hp fully self contained engine and hydraulic system.



A similar application is shown for Marathon, Ontario below as well as a more simplified version of a Transtor system using a 44 cubic yard compactor.



McNab/Braeside and Horton could consider the Transfor application further for the purpose of shipping recyclable material to a more distant MRF.

Given the similarity in programs there could be a real benefit for the two municipalities to undertake a joint RFP for collection and for processing. Given the close proximity of each, real economies of scale could be achieved through a joint collection contract that allows the contractor to utilize (operate and capitalize) the same fleet for curbside collection in both municipalities. Further, the collective transfer of recyclables to the same processor could result

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in economies of scale through more effective use of new transfer infrastructure to what will be a more distant MRF in the future.

A joint collection and processing contract could also be let by the two municipalities as was the recent case for the Town of Renfrew in partnership with the Town of Arnprior for the collective RFP for collection, processing and marketing of recyclable materials. That RFP (or individual RFP's) should be written utilizing various known best practices for recycling collection RFP/contract development as found on the Continuous Improvement Fund (CIF) webside in the Municipal Blue Box Contracts Database. RFP development that utilizes this database is eligible for CIF funding. Funding details are also provided at <u>www.cif.ca</u>.

Table 7.18: Joint Collection, Transfer and Processing Option		
Option: Weekly Collection of Garbage and Recycling		
Short-term or Long-term Option	Could be implemented in the short-term.	
Interaction with other System Components	 Curbside collection affected if haulage required to new transfer facility depending on location. Overall program affected by distance to new MRF. 	
Potential Cost Implications	Cost for new transfer facility of some configuration.	
	New facility could be eligible for partial funding from CIF.	
	• Potential increased costs associated with blue box processing –TBD.	
Potential Change in Diversion	• None unless new MRF accepts a broader range of blue box materials than presently being processed.	
Potential for System Efficiencies and Improvements in Level of Service	• Could be efficiencies gained through joint collection contracting and joint transfer and processing arrangement.	
Potential Processing or Disposal Capacity Requirements	None unless new MRF accepts a broader range of blue box materials for processing.	
General Implementation Requirements	Site/location determination for a transfer facility.	
	• Certificate of Approval for transfer station or CofA amendment if at existing waste management facility.	
	Transfer station siting, fabrication and construction.	
	• Joint RFP for collection and processing (or some other configuration).	
General Implementation Timeframe	• 1.5 – 2 years (capital budget approvals, funding acquisition if available e.g. CIF, CofA if required, site preparation, transfer construction, RFP for collection and processing).	
Community Acceptance	No service level changes, no set-out change requirements, increased taxation associated with program changes possible.	
Ability to Adjust Option to Changes	This option is flexible to changes in the WDA.	
to the WDA	• The partnering component of this option represents a 'best practice' as defined by WDO. The utilization of best practices in contracting is eligible to CIF funding.	

Stantec WASTE RECYCLING STRATEGY TOWNSHIP OF MCNAB/BRAESIDE AND THE TOWNSHIP OF HORTON Recommended Programming and Initiatives November 2011

8.0 Recommended Programming and Initiatives

The following are recommended initiatives for both McNab/Braeside and Horton to increase waste diversion through the implementation of various industry recognized best practices. The initiatives that are identified as priorities are those that will have the greatest impact on waste diversion and that in some cases would result in additional WDO funding (through WDO datacall reporting) and/or may also be eligible for CIF funding to assist with program implementation. More easily implemented programs are also identified as priorities while programs with greater potential cost constraints and/or are constrained by current contracting arrangements are identified as potential future initiatives. It is not intended that the Townships necessarily implement all programs concurrently but that some be considered in the short-term and some not be precluded in the longer term.

8.1 EXISTING INITIATIVES

Both McNab/Braeside and Horton have successfully integrated some best practices into their currently waste management system. They have implemented waste diversion programs for specialty waste including household hazardous waste, tires, appliances, scrap metal, and brush. The current two-bag limit plus bag tags for garbage also supports the diversion of recyclables from the waste stream. Additional programs include recycling at public spaces and special events, municipal facility recycling programs and commercial locations in each Township (including campgrounds in Horton Township) are supported by the Townships private sector operators.

8.2 PRIORITY INITIATIVES

8.2.1 Zero Waste

Zero Waste focuses on reducing the environmental footprint by minimizing the amount of waste that must be landfilled through reduction, reuse, recycling, redesign, composting, and other actions. By committing to promoting, facilitating and modeling Zero Waste strategies as part of the WRS, McNab/Braeside and Horton would demonstrate their commitment to protecting the environment through the promotion of this target. Notwithstanding that Zero Waste cannot necessarily be achieved in the immediate future, the concept/philosophy can be formally adopted and can pervade waste management reduction, reuse and recycling promotion and educational campaigns as well as policy initiatives undertaken by each municipality.

8.2.2 Green Procurement Policies

The adaption of green procurement policies provides McNab/Braeside and Horton with the ability to reduce the environmental impacts of their operations and promote environmental stewardship by integrating environmental performance considerations in the procurement

process including planning, acquisition, use and disposal. Green procurement also requires an understanding of the environmental aspects and potential impacts and costs, associated with the life cycle assessment of goods and services being acquired. An excellent example of an environmentally preferable purchasing policy from the City of Burlington, Vermont is attached (**Appendix C**).

8.2.3 Enhanced Promotion and Education Program

All effective waste management programs are supported by a well-developed, comprehensive promotion and education (P&E) program. The best P&E programs are rooted in a current and regularly updated communication plan with identifiable goals and measures.

There is a need to promote programs in a way that explains the environmental benefits of the initiative and promotion should be used often through various media and forums. While a number of promotional and educational initiatives are already in place to support current programs the existing program should be expanded to focus on current reduction and reuse initiatives as well as for the introduction of new programs to ensure that the community is aware of all possible avenues for the reduction and diversion of waste. As a number of the recommended initiatives are the same for each of Horton and McNab/Breaside and their blue box recycling material streams are identical the two municipalities should explore all opportunities to share costs associated with P&E material development (e.g. graphics design services, printing template development etc.).

In order to assist with P&E material development and communication plans CIF has developed P&E material and communication plan templates designed for smaller municipalities (under 30,000 residents) that enable municipalities to meet the best practice requirements for P&E and to respond positively to the WDO Datacall question concerning P&E. Funding for various P&E initiatives is also available through CIF. Horton has successfully taken advantage of this funding and McNab/Braeside could access and make use of the web-based templates and investigate with CIF any opportunities for funding they may receive for new communications plan to support the initiatives of this WRS and other P&E initiatives.

8.2.4 Setting Reduction and Diversion Targets

As per the WDO best practices, both McNab/Braeside and Horton should set reduction and diversion targets waste. By setting clearly defined goals for the program, the Townships can use these as a basis for their P&E programs. Both targets are measurable through routine weigh ins of waste streams and for specifically targeted materials the completion of a detailed composition audit.

Clearly defined targets provide an end goal and a way to measure success of the implemented initiatives and to celebrate accomplishments within the community at large.

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8.2.5 Reuse Programs and Waste Exchange Events

McNab/Braeside could consider the inclusion of a reuse centre at the landfill. Horton had earlier success with this program however additional staffing was deemed to be required to properly manage receipt and distribution of materials. Additional staffing could be considered further for this initiative in as it may compliment other additional staffing needs at each Township's municipal landfill. Additional staff could also be utilized to support each Township's recycling program to reduce contamination in that waste stream through added inspections and subsequent communications back to residents through P&E initiatives described above.

Further reuse initiatives could include promotion of the use of community programs like the Arnprior clothing bank and the Salvation Army in Renfew, again through enhanced P&E activity that may include website links to community partners. Partnering could include initiatives like the addition of charitable organization boxes at the landfill for gently used household goods and clothing.

Curbside waste exchange events are also an option and are easy to implement. This program allows residents to set out reusable household items at the curb on prescribed days during the year (usually weekends). Materials are marked "free" for anyone to take a reuse at their discretion. Proper ongoing communication of these events (acceptable materials and dates the program is promoted) is paramount to the success of this program.

8.2.6 Landfill Depot

Both McNab/Braeside and Horton could consider improvements and expansion to their current landfill depot to increase collection of divertible materials. This includes investigating the expansion and cost associated with diversion of construction and demolition materials. Horton currently segregates and shreds bulky items (e.g. mattresses) as well as construction and demolition waste for size reduction and associated saved landfill capacity. This segregated material may be able to be diverted from disposal from Horton and the same opportunity could be realized for McNab/Braeside.

8.2.7 Clear Bag Collection Program

Consideration should be given to the development of a program for collection of garbage in clear bags. Notwithstanding the existing bag limits in place the blue box program diversion rates for both municipalities could be improved. The clear bag program allows for the contractor to examine the contents of the garbage bag and determine whether or not recyclable material content is unacceptably high, that is, there are blue box materials in the garbage stream that could have/should have been sorted from the garbage. This is an enforcement based program where if the recyclable materials content of the clear bag is deemed to high the bag is left at the curb for re-sorting by the resident. This program should be supported with a 'sticker program' that alerts the resident to the reason why the materials were left behind. Usually this program is supported by a pilot study to gauge community acceptability. This program is best supported

through the provision of additional blue boxes (free of charge) to residents prior to implementation or a shift to a weekly collection cycle for recycling (or both). This initiative results in greater annual WDO funding.

8.2.8 Backyard Composting

Both McNab/Braeside and Horton could support an enhanced at-source (backyard) composting program for residents. Consideration could be given to either selling backyard composters directly to residents through a truckload sale or more conveniently to subsidize the cost of composters purchased at local retail locations through a rebate program. Success hinges on proper use of backyard composters and proper instructions regarding the use of backyard composters should be supported through the P&E programs. Instructions are provided in **Appendix B**.

8.3 FUTURE PLANNING

Future planning initiatives could include but not be limited to:

8.3.1 Collection Frequency Changes

Recycling collection could be increased from bi-weekly to weekly collection consistent with the best practice that recycling collection should not occur on a less frequent basis than garbage. More frequent and convenient delivery of recycling services provides for greater opportunity for set out of recyclable materials (as opposed to those materials being diverted to the more convenient garbage collection program). This could be costed in the next collection services procurement process. This initiative results in greater annual WDO funding.

8.3.2 Use of Larger Containers or Blue Bags

Both Townships could explore the use of larger containers or the use of blue bags for recyclable materials collection in future collection service procurement processes. Both programs serve to provide additional capacity for the collection of as much recyclable material as possible. The blue bag is attractive in that it reduces litter, is convenient in that it is a 'one way trip to the curb' (especially convenient in rural areas where longer driveways are more prevalent) and is an 'endless' recycling container allowing for maximum capture. This initiative is CIF funding eligible and results in greater annual WDO funding.

8.3.3 Partnering for Transfer and Processing of Recyclable Materials

In the event that the Townships required processing capacity at a more distant MRF it is recommended that a joint transfer and processing arrangement be explored. An associated procurement process for transfer and/or processing services should be developed as a Request for Proposal (RFP) consistent with contracting best practices identified by WDO. This initiative is CIF funding eligible and results in greater annual WDO funding.

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9.0 Conclusions

The following are key conclusions drawn from the review of the current programs for each Township:

- McNab/Braeside's GAP waste diversion rate is only slightly below average (27.5%) compared to the average of 29.7% for municipalities in McNab/Braeside's WDO municipal grouping. Horton's GAP waste diversion rate is also only slightly below average (27.4%) compared to the average of the WDO municipal grouping.
- 2. Net annual recycling cost/tonne for McNab/Braeside is significantly below average for its WDO municipal grouping in 2010. Net annual recycling cost/tonne for Horton is slightly above average for its WDO municipal grouping. It should be noted that Horton's gross program costs were approximately the same for 2010 as for 2009 but that the net annual recycling cost/tonne in 2009 was well below average. The difference is that the Township reported less collected tonnage in 2010 as well as no revenue.
- 3. The opportunity exists to further decrease waste from landfill through improved participation in current diversion programs, better promotion of current diversion initiatives and through new program initiatives not just for recycling but for waste reduction and reuse.
- 4. Specific reduction and diversion targets for each municipality should be set and include measurable goals and target dates. These targets can be achieved through the implementation of identified reuse, reduction and diversion initiatives.
- 5. A number of the initiatives identified above are eligible for CIF funding and both McNab/Braeside and Horton should access as much funding as possible to improve their recycling programs.
- 6. Because the Townships' programs are so similar there are opportunities to partner in the short-term for any new P&E programming initiatives to support existing programs and for new programming where both municipalities implement them (e.g. a clear bag program). Future partnering could occur as it relates to new recyclable material processing needs as well as new future initiatives like the use of blue bags/larger containers for recycling.
- 7. Of the options evaluated in the WRS those identified as not necessary include grasscycling promotion/grass bans as this material is already well managed and minimal in volume or enhanced programming in municipal facilities, businesses or public space and special events. Again, these programs are already well managed.
- 8. Of the options evaluated, the options that are not feasible in the short term include the implementation of an organic waste collection and processing program or moving to a bi-

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weekly collection cycle for garbage in concert with an organics program. An organic waste management program can be extremely costly in Townships where the population is more rural than urban in nature and it is usually also difficult to support these programs (from a cost perspective) even in small urban clusters. This option will need to be explored further only if either Township adopts sustainability strategies that require it or if provincial regulatory requirements necessitate it, that is, through mandatory organics program requirements and/or through mandatory landfill organic waste bans.

10.0 Monitoring and Reporting

10.1 MONITORING

Proper monitoring and measuring of waste management system performance serves a number of functions, including the ability to:

- Adhere to currently accepted best practices;
- Identify issues with the system and effectively mitigate these issues;
- Adjust implementation schedules if issues arise;
- Assist in the selection and development of appropriate promotion and education initiatives; and,
- Identify opportunities for cost savings and increased effectiveness of the system.

The monitoring of system performance is an important aspect of ensuring the proper functioning of McNab/Braeside and Horton's waste management system and ensuring goals as set out in this document are achieved. That being said it also helps with several other reporting exercises including:

- Completion of the annual WDO Datacall (tonnage and financial);
- Reporting on the Municipal Performance Measurement Program (MPMP) as part of the preparation of the annual municipal Financial Information Return;
- Reporting internally for departments and Council; and
- Completing Statistics Canada biennial survey(s) if applicable.

10.1.1 Waste Audits

Neither McNab/Braeside nor Horton currently have a regular waste auditing program in place. Regular auditing of waste program performance, through observations of curbside behaviour (e.g. number of set-outs) and the collection and sorting of a representative sample of waste material, is the primary means of determining waste generation rates, participation in the municipal programs and the actual capture rate for diversion of various material streams.

It is recommended that at least one residential audit be conducted in the near term and followup audits be completed several years into implementation of this WRS. Audits should be conducted in accordance with WDO guidelines. Households selected for the audit should be the same households to be audited four times over the course of year (winter, spring, summer and fall) in order to capture the variations in seasonal generation of different waste streams. Garbage and recycling streams (and organics) would be collected, weighed and sorted. This waste auditing practices provides the following key information:

- Participation and set-out data that can be used to support program decisions;
- Generation rates and capture rates used for planning purposes;
- Information which may be used to target specific education campaigns; and,
- Baseline data to monitor pilot programs and other system changes.

The information acquired during a waste audit is essential to support many of the planning, and policy decisions that would be required during implementation of the WRS.

10.1.2 Key Performance Indicators

A number of key system performance indicators should be monitored and/or measured on a regular basis to track system performance and the effectiveness of the recommended initiatives. Key performance indicators that should be tracked include:

- Costs gross and net cost/tonne (for garbage, recycling, and organics if the program is implemented)
- Recovery rates recycling (obtain from processor)
- Residue rates recycling (obtain from processor)
- Participation rates in waste diversion programs (via waste audits)
- Promotion and education costs cost/household per year;
- Tonnes of material marketed kilograms/household/year by material type (e.g. ONP, OCC – obtain from processor);
- Tonnes of material collected garbage, recycling, and other wastes
- Marketing revenues for recycling (obtain from processor).

10.2 REPORTING

It is recommended that the results of monitoring initiatives be reported on a regular basis internally and externally to outside stakeholders.

This can typically take the form of an annual report on the WRS. An annual report can provide an overview of the applicable objectives for that year and documentation on how goals were achieved. It should also include a list of issues that arose during the year and how these issues were mitigated. Finally, the report should include a section on future plans related to WRS implementation for the following year.

The annual reporting cycle should be viewed as an opportunity to communicate the success of WRS implementation not just with Council, but also with residents and other stakeholders. The

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annual report should be in a succinct form that clearly identifies successes over the previous year, general performance and also areas where collectively the municipality and residents may need to improve performance.

In addition to an annual report, McNab/Braeside and Horton could also ensure that all waste management related reports produced for Committee and Council, include a section on how the report contents relate to the implementation of the Waste Recycling Strategy. This will assist staff in adhering to the vision of the Strategy and also guarantee that all interested parties understand how each waste management activity relates back to the vision for waste management at RFN.

10.3 PLAN REVIEW

It is recommended that both McNab/Braeside and Horton conduct periodic review and updates to the Strategy at various times throughout the planning period. It is recommended that in 2016, (year five of the WRS) that both McNab/Braeside and Horton complete a comprehensive review and update to the WRS. This review should outline the goals and objectives met in previous years and also outline issues that arose over that period that may have hindered WRS implementation. This document should then be updated to reflect the review completed and provide a detailed implementation plan for the next five years of the planning period.

Respectfully submitted,

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WASTE RECYCLING STRATEGY TOWNSHIP OF MCNAB/BRAESIDE AND THE TOWNSHIP OF HORTON

Appendix A Waste Reduction Tips

WASTE RECYCLING STRATEGY TOWNSHIP OF MCNAB/BRAESIDE AND THE TOWNSHIP OF HORTON

Waste reduction at home⁴³

- Before you replace something old with something new, attempt to have it repaired. This could save you some money as well as reduce waste.
- Use a refillable mug for coffee or other beverages on the go
- Purchase items in bulk whenever possible... bring your own containers to the bulk store if possible
- Buy products that will last; make durability, not price, your primary purchasing decision-making factor
- Instead of buying new toys or tools, try sharing with friends
- Re-upholster worn out furniture instead of buying new often the frame will far outlast the upholstery
- Buy products made from recycled materials whenever possible sometimes these products cost less, making the choice even easier
- When faced with two similar products of different brands, choose the product with the least amount of packaging
- Avoid purchasing disposable products re-usable products are better for the environment, and will save you money in the long run
- Avoid buying single serving or over-packaged foods there is always an alternative with less packaging (and likely more nutritious)
- Whenever possible choose products that are sold in re-fillable or recyclable containers
- Consider purchasing used goods before purchasing new; this is a great re-use and cost-saving option for the consumer
- Use your imagination! Thinking of new ways to reduce the amount of waste you produce can be fun and creative
- Try giving an item a "new life" by using it in an innovative way such as peanut butter jars for storing nuts and bolts or comic strips or colourful paper for gift wrap

⁴³ City of Guelph Solid Waste Services Waste Reduction Tips at www.guelph.ca

WASTE RECYCLING STRATEGY TOWNSHIP OF MCNAB/BRAESIDE AND THE TOWNSHIP OF HORTON

Appendix B Backyard Composting Instructions

WASTE RECYCLING STRATEGY

TOWNSHIP OF MCNAB/BRAESIDE AND THE TOWNSHIP OF HORTON Appendix B – Backyard Composting Instructions November 2011

Backyard Composting⁴⁴

Backyard composting reduces the amount of organic waste requiring collection and processing, and returns important organic matter and nutrients to the soil, improving soil structure and water retention capabilities.

Getting Started

The secret to backyard composting is all in the recipe! All you need is a 50:50 ratio between 'brown' and 'green' materials, a little patience and some help from the sun.

Brown materials are carbon based. They include dried grass and plants, leaves, sawdust, wood chips, straw, dried bread, shredded newspaper and coffee filters.

Green materials are nitrogen based. They include fruit and vegetable peels and cores, coffee grounds, tea bags, eggshells and garden waste.

To set up your backyard composter:

- 1. Choose an area with good drainage, loosen soil underneath so earthworms can move up
- 2. Put down about 4 inches of **brown** material for good air circulation
- 3. Add 2-3 inches of green material and spread evenly
- Cover green material with 4 inches of brown to reduce fruit flies, odours and other pests
- 5. Repeat steps 3 and 4 until your composter bin is full
- 6. Keep mixture about as moist as a wrung-out sponge
- 7. Mix often the more you mix, the quicker the compost!

Do not put in diseased plants, pet manure or litter, meat, fish, dairy products, etc.

When your compost is finished, it will be very dark and crumbly with a distinctive earthy smell. Use it on flower beds, houseplants and starter boxes, vegetable gardens, around trees or shrubs and as a lawn dressing when sifted.



⁴⁴ City of Guelph Solid Waste Services Backyard Composting at www.guelph.ca

WASTE RECYCLING STRATEGY TOWNSHIP OF MCNAB/BRAESIDE AND THE TOWNSHIP OF HORTON

Appendix C Burlington, VA Purchasing Policy

ENVIRONMENTALLY PREFERABLE PURCHASING POLICY City of Burlington, Vermont (Adopted by City Administration June 18, 2009)

1.0 STATEMENT OF POLICY

It is the policy of the City of Burlington to:

• require purchase of products and services that minimize environmental and health impacts, toxics, pollution, and hazards to worker and community safety and to the larger global community to the greatest extent practicable; however

It is not the intent of this policy to require a department, buyer or contractor to take any action that conflict with local, state or federal requirements or to procure products that do not perform adequately for their intended use, exclude adequate competition, or are not available at a reasonable price in a reasonable period of time.

2.0 PURPOSE

This Policy is adopted in order to meet the following goals, which are not limited to:

- minimizing health risks to City staff and residents,
- minimizing the City's contribution to global climate change,
- improving air quality,
- protecting the quality of ground and surface waters, and
- minimizing the City's consumption of resources.

Further, this Policy is adopted in order to:

- purchase products that include recycled content in order to support strong recycling markets,
- institute practices that reduce waste by increasing product efficiency and effectiveness, use products that are durable and long-lasting, and reduce materials that are landfilled,
- purchase products and institute practices that conserve energy and water, use agricultural fibers and residues, reduce greenhouse gas emissions, use unbleached or chlorine free manufacturing processes, and use recycled wood and wood from sustainably harvested forests,

- purchase energy from renewable or green sources in preference to fossil fuels,
- purchase products that are free of mercury and lead and eliminate the use of other persistent bioaccumulative toxic chemicals where possible,
- increase the use and availability of environmentally preferable products, services and distribution systems that protect human health and the environment,
- support emerging and established manufacturers and vendors that reduce environmental and human health impacts in their services and production and distribution systems, and
- create a model for successfully purchasing environmentally preferable products and services that encourages other buyers and consumers in our community to adopt similar goals.

3.0 SPECIFICATIONS

3.1 Source Reduction

- The City of Burlington shall institute practices that reduce waste and result in the purchase of fewer products whenever practicable and cost-effective, but without reducing safety or workplace quality.
- The City of Burlington shall purchase remanufactured products (i.e. for equipment and vehicles) whenever practicable, but without reducing safety, quality or effectiveness.
- The City of Burlington shall require all equipment bought after the adoption of this policy to be specified and delivered so it is compatible with source reduction goals as referred to in this section (3.1), whenever practicable.
- All buyers shall consider short-term and long-term costs in comparing product alternatives, when feasible. This includes evaluation of total costs expected during the time a product is owned, including, but not limited to, acquisition, extended warranties, operation, supplies, maintenance, disposal costs and expected lifetime compared to other alternatives.
- Products that are durable, long lasting, reusable, refillable, recyclable or otherwise create less waste shall be selected whenever possible. The city shall avoid purchasing single use plastic water bottles for city catered events.
- The City of Burlington requires vendors to minimize packaging to the greatest extent practicable.

- Packaging that is reusable, recyclable or compostable shall be selected when suitable uses and programs exist. The City of Burlington shall not purchase any polystyrene foam food packaging and 50% by volume of the food packaging purchased by the City shall be recyclable or degradable.
- Vendors shall be required whenever possible to take back and reuse pallets and packaging materials.
- Suppliers of electronic equipment shall be required to take back equipment for reuse or environmentally safe recycling when the City of Burlington discards or replaces such equipment, unless the City deems it worthwhile to send the equipment to a non-profit organization for reuse.
- All documents shall be printed and copied on both sides to reduce the use and purchase of paper, unless needed to be single sided as per legal requirements.

3.2 Toxics Reduction and Pollution Prevention

No product or service purchased by the City of Burlington shall contain, emit, or create the following in its use, to the extent practicable:

- carcinogens and reproductive toxins,
- persistent bioaccumulative toxicants, including lead, mercury, dioxins and furans for example,
- compounds toxic to humans or aquatic life, corrosive to the skin or eyes, or that are skin sensitizers, and
- substances that contribute to the production of photochemical smog, tropospheric ozone production, or poor indoor air quality.

All cleaning or disinfecting products (i.e. for janitorial or automotive use) shall at a minimum meet Green Seal Standards for environmental preferability and performance, whenever practical.

Purchasing products containing persistent, bioaccumulative and toxic chemicals (PBTs) shall be avoided, where alternatives exist.

The use of chlorofluorocarbon-containing refrigerants, solvents and other products known to contribute to the depletion of the ozone layer shall be phased out and new purchases shall not contain them.

When maintaining buildings, the City of Burlington shall use products with the lowest amount of volatile organic compounds (VOCs), highest recycled content, and low or no formaldehyde when purchasing materials such as paint, carpeting, flooring, adhesives, furniture and casework.

The City of Burlington shall reduce or eliminate its use of products that contribute to the formation of dioxins and furans. Purchases shall be consistent with the City's resolution to eliminate anthropogenic sources of dioxin pollution. This includes, but is not limited to:

- Purchasing paper, paper products, and janitorial paper products that are unbleached or that are processed without chlorine or chlorine derivatives, whenever possible, and
- Prohibiting purchase of products that contain or are packaged in polyvinyl chloride (PVC) such as, but not limited to, office binders, furniture, carpeting/flooring, other building materials and supplies, and medical supplies whenever practicable.

The City of Burlington shall purchase products and equipment with no lead, cadmium or mercury whenever possible. For products that must contain lead or mercury because no suitable alternative exists, the City of Burlington shall give preference to those products with the lowest quantities of these metals available and to vendors with established lead, cadmium and mercury recovery programs.

When replacing vehicles, the City of Burlington shall lease or purchase only the most fuel-efficient models available that are suitable for each task and through carsharing and carpooling, shall minimize the number of vehicles purchased.

To the extent practicable, the City shall use renewably-derived fuels or fuels that are cleaner and less-polluting than gasoline and conventional diesel fuel, including biodiesel, natural gas and electricity.

The purchase of all pentachlorophenol, arsenic and creosote treated wood by the City of Burlington is prohibited.

The City shall avoid purchasing products containing brominated flame retardants (BFRs) wherever possible. In particular, the BFRs "penta" and "octa" will be targeted for phaseout.

3.3 Recycled Content Products

All products purchased for which the United States Environmental Protection Agency (U.S. EPA) has established minimum recycled content standard guidelines shall contain the highest postconsumer content practicable, but no less than the minimum recycled content standards established by the U.S. EPA Guidelines.

Copiers and printers purchased shall be compatible with the use of recycled content and remanufactured products.

The city shall continue to recycle asphalt and concrete that is removed for streets and sidewalks and will use materials containing recycled asphalt and concrete for constructing roads and sidewalks when such materials are available and appropriate for the projects at hand.

The City of Burlington shall specify and purchase recycled content transportation products, including signs, cones, parking stop, delineators, and barricades.

A 10% price preference may be given to recycled content products based on the lowest bid or price quoted by the suppliers offering the competing non-recycled content products.

All pre-printed recycled content papers intended for distribution that are purchased or produced shall contain a statement that the paper has recycled content. Whenever feasible, the statement should indicate the percentage of postconsumer recycled content it contains.

3.4 Energy and Water Savings

New and replacement equipment for lighting, heating, ventilation, refrigeration and air conditioning systems, water consuming fixtures and process equipment and all such components shall meet or exceed Federal Energy Management Program (FEMP) recommended levels, whenever practicable.

All products purchased by the City of Burlington and for which the U. S. EPA Energy Star certification is available shall meet Energy Star certification, when practicable. When Energy Star labels are not available, products shall meet or exceed the FEMP recommended levels.

When energy is purchased, renewable or green sources are preferred. These include solar power or photovoltaics, wind power, geothermal, and hydroelectric energy sources and do not include fossil fuels (coal, oil or natural gas).

Demand water heaters shall be purchased whenever practicable. Where renewable forms of energy are unavailable or not practicable, natural gas shall be used in lieu of electricity for space heating and water heating.

Energy Star and power-saving features for copiers, computers, monitors, printers and other office equipment shall be enabled during the initial installation and shall remain enabled unless these features conflict with the manufacturer's recommended operation and maintenance of the equipment.

3.5 Green Building - Construction and Renovations

All new construction and major renovations^{**} of over 5,000 square feet undertaken by the City of Burlington after January 1, 2010 shall be certified LEEDTM Rating System. ^{**}Major renovation: Exterior walls and ceilings are updated and/or change of the HVAC and lighting equipment.

3.6 Landscaping

All landscape renovations, construction and maintenance by the City of Burlington, including workers and contractors providing landscaping services for the City of Burlington, shall employ sustainable landscape management techniques for design, construction and maintenance whenever possible, including, but not limited to, integrated pest management, grasscycling, drip irrigation, composting, and procurement and use of mulch and compost that give preference to those produced from regionally generated plant debris and/or food waste programs.

When available, the City shall purchase landscaping equipment that is not dependent on the use of fossil fuels.

Plants should be selected to minimize waste by choosing species for purchase that are appropriate to the microclimate, species that can grow to their natural size in the space allotted them, and perennials rather than annuals for color.

Hardscapes and landscape structures constructed of recycled content materials are encouraged.

The City of Burlington shall limit the amount of impervious surfaces in the landscape, wherever practicable. Permeable substitutes, such as permeable asphalt or pavers, are encouraged for walkways, patios and driveways.

3.7 Forest Conservation

To the greatest extent practicable, the City of Burlington shall not procure wood products such as lumber and paper that originate from forests harvested in an environmentally unsustainable manner. When possible, the City of Burlington shall give preference to wood and wood products that are certified to be sustainably harvested by a comprehensive, performance-based certification system. The certification system shall include independent third-party audits, with standards equivalent to, or stricter than, those of the Forest Stewardship Council certification.

3.8 Agricultural Bio-Based Products

Vehicle and equipment fuels made from non-wood, plant-based contents such as vegetable oils are encouraged whenever practicable.

Paper, paper products and construction products made from non-wood, plant-based contents such as agricultural crops and residues are to be purchased and used whenever practicable.

4.0 PRIORITIES

The health and safety of people who live and work in Burlington is of utmost importance and takes precedence over all other City policies. All policies and practices shall be protective of the health of children, the elderly and other vulnerable populations, and the greater global community.

The City of Burlington has made significant investments in developing a successful recycling system and recognizes that recycled content products are essential to the continuing viability of that recycling system and for the foundation of an environmentally sound production system. Therefore, to the greatest extent practicable, recycled content shall be included in products that also meet other environmental specifications, such as chlorine free or bio-based.

Nothing contained in this policy shall be construed as requiring a department, buyer or contractor to procure products that do not perform adequately for their intended use, exclude adequate competition, or are not available at a reasonable price in a reasonable period of time.

Nothing contained in this policy shall be construed as requiring the City of Burlington, department, buyer or contractor to take any action that conflicts with local, state or federal requirements.

5.0 IMPLEMENTATION

Department heads shall implement this policy in coordination with other appropriate City of Burlington personnel.

Implementation of this policy will be phased based on available resources and City priorities.

The Burlington Sustainability Action Team shall advise the departments heads regarding environmentally preferable products that comply with this policy. Recommendations will include input of applicable environmental staff. Whenever possible, the City will use existing eco-labels and standards to make purchasing decisions.

Successful bidders shall certify in writing that the environmental attributes claimed in formal competitive bids are accurate.

Vendors, contractors and grantees shall comply with applicable sections of this policy for products and services provided to the City of Burlington, where practicable. In particular, vendors, contractors

and grantees providing written materials to the City shall do so on recycled content paper meeting minimum standards of the U.S. EPA Guidelines and labeled as such and vendors, contractors and grantees shall be prohibited from using pentachlorophenol, arsenic, and creosote treated wood.

If the buyer making the selection from competitive bids or the requesting department seek to purchase products that do not meet the environmentally preferable purchasing criteria in this Policy, the buyer shall provide a written justification to the department head with a copy forwarded to the Mayor or its designee explaining why the requirements of this policy should not apply, e.g., the product is not technically practical, economically feasible, or available within the timeframe required.

All future vendor contracts shall be negotiated in light of the requirements of this policy. If a vendor that is under contract to the City of Burlington is no longer able to provide a product that meets the

City's environmentally preferable specifications, it shall notify the appropriate city representative and provide written justification for why compliance is not practical. Prior written consent from an authorized City representative shall be required before substituting any alternative product to any City employee.

The Information Technology staff shall be responsible for setting duplexing as the default on each workstation for all capable printers. This includes printing from network connected or stand-alone personal computer printers that are capable of duplexing.

Training of buyers and other relevant city staff, vendors, contractors and grantees shall include instruction on the requirements of this Environmentally Preferable Purchasing Policy.

6.0 PROGRAM EVALUATION

The Mayor or its designee shall evaluate the success of this Policy's implementation by providing a biannual report to the City Council. The report shall relate progress in meeting the goals and objectives of this Policy and note any barriers encountered, recommendations for resolution, and/or description of assistance needed to continuously improve staff's ability to meet this Policy's objectives for the procurement of environmentally preferable products and services.

7.0 DEFINITIONS

"Agricultural Bio-Based Products" means commercial or industrial products (other than food or feed) that utilize agricultural crops or residues but does not include products made from forestry materials.
"Bay Area Green Business Program" is a partnership of governments and businesses that certifies the environmental performance of government agencies and businesses.

"Bay-Friendly Landscaping" means working with the natural ecosystems of the San Francisco Bay Area to foster soil health, to reduce runoff and pollution, prevent and reuse plant waste, and conserve water and other natural resources. Bay-Friendly Landscaping practices are described in the Bay-Friendly Landscape Guidelines, by the Alameda County Waste Management Authority & Recycling Board.

"Buyer" means personnel authorized to purchase or contract for purchases on behalf of the City of Burlington or its subdivisions.

"Chlorine free" means products manufactured or processed without chlorine or chlorine derivatives.

"Contractor" means any person, group of persons, business, consultant, designing architect, association, partnership, corporation, supplier, vendor or other entity that has a contract with the City of Burlington or serves in a subcontracting capacity with an entity having a contract with the City of Burlington for the provision of goods or services.

"Dioxins and furans" are a group of chemical compounds that are classified as persistent, bioaccumulative, and toxic (PBT) by the Environmental Protection Agency.

"Energy Star" means the U.S. EPA's energy efficiency product labeling program.

"Energy-Efficient Product" means a product that is in the upper 25% of energy efficiency for all similar products, or that is at least 10% more efficient than the minimum level that meets Federal standards.

"Federal Energy Management Program" (FEMP) is a program of the Department of Energy that issues a series of Product Energy Efficiency Recommendations that identify recommended efficiency levels for energy-using products.

The "Forest Stewardship Council" is a global organization that certifies responsible, on-the-ground forest management according to rigorous standards for sustainably harvested forests developed by a broad variety of stakeholder groups.

"Green Seal" is an independent, non-profit environmental labeling organization. Green Seal standards for products and services meet the U.S. EPA's criteria for third-party certifiers. The Green Seal is a registered certification mark that may appear only on certified products.

"Integrated Pest Management (IPM)" is an ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties. Pesticides are

used only after monitoring indicates they are needed according to established guidelines, and treatments are made with the goal of removing only the target organism. Least toxic pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and nontarget organisms, and the environment.

"LEED TM Rating System" means the Leadership in Energy & Environmental Design system developed by the U.S. Green Building Council designed for rating new and existing commercial, institutional, and high-rise residential buildings.

"Organic Pest Management" prohibits the use and application of toxic chemical pesticides and strives to prevent pest problems through the application of natural, organic horticultural and maintenance practices. All pest control products shall be in keeping with, but not limited to, those products on the approved list of California Certified Organic Foods (CCOF).

"Persistent Bioaccumulative Toxins" (PBTs) are chemicals and/or pollutants that remain in the environment for a long time (persist) without breaking down, accumulate in the environment and build up in the tissues of humans, fish, and animals (bioaccumulative), and are toxic (causing cancer and other health problems) to living organisms, including humans.

"Postconsumer Material" means a finished material which would normally be disposed of as a solid waste, having reached its intended end-use and completed its life cycle as a consumer item, and does not include manufacturing or converting wastes.

"Practical" and "Practicable" mean whenever possible and compatible with local, state and federal law, without reducing safety, quality, or effectiveness and where the product or service is available at a reasonable cost in a reasonable period of time. For energy and water consuming devices, a reasonable cost shall mean that the product has a life-cycle cost that is reasonably similar to the lifecycle costs of other similar products.

"Preconsumer Material" means material or by-products generated after manufacture of a product is completed but before the product reaches the end-use consumer. Preconsumer material does not include mill and manufacturing trim, scrap, or broke which is generated at a manufacturing site and commonly reused on-site in the same or another manufacturing process.

"Recovered Material" means fragments of products or finished products of a manufacturing process, which has converted a resource into a commodity of real economic value, and includes preconsumer and postconsumer material but does not include excess resources of the manufacturing process.

"Recycled Content" means the percentage of recovered material, including preconsumer and postconsumer materials, in a product.

"Recycled Content Standard" means the minimum level of recovered material and/or postconsumer material necessary for products to qualify as "recycled products."

"Recycled Product" means a product that meets the City of Burlington recycled content policy objectives for postconsumer and recovered material.

"Remanufactured Product" means any product diverted from the supply of discarded materials by refurbishing and marketing said product without substantial change to its original form.

"Reused Product" means any product designed to be used many times for the same or other purposes without additional processing except for specific requirements such as cleaning, painting or minor repairs.

"Source Reduction" refers to products that result in a net reduction in the generation of waste compared to their previous or alternate version and includes durable, reusable and remanufactured products; products with no, or reduced, toxic constituents; and products marketed with no, or reduced, packaging.

"U.S. EPA Guidelines" means the Comprehensive Procurement Guidelines established by the U.S. Environmental Protection Agency for federal agency purchases as of May 2002 and any subsequent versions adopted.

8.0 EFFECTIVE DATES

8.1 This policy shall take effect on July1, 2009.

Stantec

WASTE RECYCLING STRATEGY TOWNSHIP OF MCNAB/BRAESIDE AND THE TOWNSHIP OF HORTON

Appendix D Open House Display Panels & Township Surveys

Township of McNab/Braeside

Waste Recycling Strategy

Cathy Smith, H.B.A. M.A.

Gerry Lalonde, M.Eng., P.Eng

October 17, 2011





Presentation Overview

- Introduction to Stantec
- Waste Recycling Strategy Purpose & Goals
- Continuous Improvement Fund (CIF)
- Current Diversion Rate
- Potential Diversion Rates
- Currently Implemented Waste Diversion Initiatives
- Waste Reduction and Diversion Initiatives for Consideration
- Going Forward
- Questions (15 minutes)



Introduction – Stantec Consulting

- Extensive experience in creation and implementation of Waste Management Plans and Recycling and Diversion Strategies.
- Locally conducting/completed waste diversion/recycling studies for Ottawa, Cornwall, Casselman & Russell Townships.
- Recently completed other large waste management studies for Simcoe County, Cities of Guelph, St. John's, Winnipeg, Hamilton; Peel Region, Halton Region, Brant County and others.
- Work with WDO and CIF to acquire funding for diversion programs.





Waste Recycling Strategy Purpose and Goals

- 1. Provide overall direction for the waste management system.
- 2. Identify opportunities to increase diversion.
- 3. Identify opportunities to reduce the amount of waste needing disposal.
- 4. To gauge the community's understanding of current programs and acceptance of potential program changes.

The strategy is intended to identify:

- Potential improvements aimed at increasing waste reduction, reuse and diversion
- Best Practices that are applicable (or not applicable) to McNab-Braeside
- Community acceptability of recommended programming

The desired results of the strategy is:

• To improve current waste reduction, reuse and diversion programs through increased residential participation by implementing industry "best practices"



Continuous Improvement Fund



CIF was created to help Ontario municipalities undertake best practices initiatives to improve the effectiveness and efficiency of blue box recycling programs.

Relevant funding (for McNab-Braeside) and web-based tools are currently available for various initiatives including but not limited to:

- Communication strategy development and promotion and education (P&E) material
- Best Practices RFP development for blue box collection and processing
- Monitoring & reporting initiatives
- Acquisition of larger blue boxes to support the blue box program
- Funding for infrastructure if needed (e.g. transfer station for recyclables)
- Studies to support new program initiatives



Current Waste Diversion Rate

- Provincial target is 60% diversion of waste through the blue box program – this was established in 2006
- Based on data gathered by WDO in 2009, McNab/Braeside's Generally Accepted Principles (GAP) diversion rate was 27.5%
- The average GAP waste diversion rate for the *Rural Collection – South* municipal grouping was 29.7% making McNab/Braeside's performance only slightly below average for that year
- Note that McNab/Braeside's 2010 diversion rate is 30.4%



Potential Waste Diversion Rates

Based on reasonable participation rates and capture rates it is estimated that implementing additional initiatives in McNab/Braeside could achieve diversion rates of:

- **38%** for curbside single stream recyclable materials only, or
- 47% for curbside recycling and diversion of HHW, leaf & yard waste, tires, and scrap metal, or
- 62% curbside recycling and organics only, or
- **71%** curbside recycling and organics and diversion of HHW, leaf & yard waste, tires, and scrap metal





Current Waste Diversion Initiatives

- Promotion of recycling at Special Events & in Public Spaces
- Diversion programs available for:
 - Blue Box Recycling Program
 - Household Hazardous Waste (HHW) Township of Renfrew
 - Waste Electronic & Electrical Equipment (WEEE)
 - Tires
 - Scrap Metal
 - Brush & Clean Wood
 - Leaf &Yard Waste







Best and Better Practices: Waste Diversion

Best Practice	Achieving Objective			
Best Practices for Program Development and Management				
Up-to-date plan for recycling, as part of an Integrated Waste Management System	 Currently be revised and updated through development of WRS 			
Multi-Municipal planning approach to collecting and processing recyclables	Being considered as part of WRS			
Establish and define performance measures, including targets, monitoring and continuous improvement	Will occur if recommendations of this WRS are implemented			
Establish and enforce policies that induce waste diversion	✓ Set out limits and bag tags for additional garbage collection			
Follow generally accepted principles for effective procurement and contract management	× Could adopt in next contract period			
Train Key Program Staff in core competencies	× As reported in WDO datacall			
Best Practices for Collection				
Degree of sorting	✓ Two-stream collection supports size of current program			
Set-out Recycling Containers – larger the standard boxes	Being considered as part of the WRS			
Use of Recycling Depots	✓ Additional material drop-off available at Landfill			

Stantec

Waste Reduction Initiatives to Consider

- Adopt a Zero Waste Philosophy
- Adopt Green Procurement Policies
- Set Waste Reduction Targets
- Implement a Comprehensive Promotion & Education (P&E) Program aimed at waste reduction and reuse



- Promote reuse of gently used household goods and clothing. Consider siting a collection point at the landfill depot
- Implement Curbside Exchange Events for set out of re-use items like furniture, televisions & other reusable household items



Waste Diversion Initiatives to Consider

- Additional material diversion at landfill e.g. construction and demolition waste
- Clear Bag collection of garbage
- Support for backyard composting

Future Planning

- Increased collection frequency of recyclables
- Use of larger blue boxes or blue/clear bags for collection of recyclables
- Partnership with the Township of Horton for transfer and processing of recyclables if necessary







Key Diversion Initiative – Landfill Depot Construction & Demolition

Many communities have developed effective shingle and drywall recycling programs which can save a significant amount of landfill space.

- Simcoe County for example sent 5355 tonnes of shingles for recycling to TRY Recycling in London at a cost of \$179,890 or \$33.59/tonne
- Simcoe also sent a further 1600 tonnes of drywall for recycling at New West Gypsum in Oakville for a total cost of \$50,046 or \$31.26/tonne

Diversion of this material would significantly increase diversion, but a cost-benefit assessment should be undertaken.



Key Diversion Initiative – Clear Bag Pilot Program

- Would drive up blue box diversion rates assist in increase from 22.3% to potential 38%. In coordination with other diversion initiatives could see potential diversion of 47%
- Clear bags would need to be made routinely available for residents
- Ideally a pilot project takes place to gauge acceptance
- Requires a robust P&E campaign.





Reduction/Diversion Initiative Comparison

Reduction/Diversion Initiative	Potential Change in Diversion	Potential Cost Impacts
Adopt a Zero Waste Philosophy & Setting Reduction Targets	Even a 5% reduction in waste production a year would reduce waste in the order of 142 tonnes per year & would increase diversion to 31.9%	Minimal - integration with P&E initiatives
Re-use Programming	Diversion impact in minimal	Minimal - integration with P&E initiatives
Develop Green Procurement Policies	Diversion impact in minimal	Minimal with potential cost savings through changes in product purchases
Enhance Waste Diversion Depot Program	1-2% not including construction wastes	Cost-benefit analysis required for consturction waste
		Small - coordinate with local charities, incorporate into P&E program
Clear Garbage Bag Program	Potential increase in blue box capture, could increase diversion to 38%	Cost-benefit analysis required, pilot study consideration
Recycling collection - Blue Bags, Larger Containers		Blue bag program – bag costs for residents are comparable to regular garbage bag costs; may increase processing fees
	7% if decide to go with blue carts – no specific study for larger containers or blue bags undertaken but diversion rates higher for those programs	Capital cost of containers (larger blue box) potentially funded 50% by CIF = \$42,812 plus routine long-term replacement
		Cart-based program (e.g. with automated collection) = \$183,480 plus routine long-term replacement
P&E Program	Potential increase in diversion associated with these initiatives is high, at least 1%	Increase in spending but funding available through CIF, seek partnership opportunities
Backyard Composting	Can divert ~1.13kg/hh/wk	As per Reg 101/94 composter are to be provided at cost to residents
Public Open Space & Special Event Recycling Program	Estimated at 2kg/capital, open space dependent	Cost-benefit analysis required, could be incorporated into routine recycling collection
Improved Municipal Facility & Commercial Recycling	Unknown, but potentially high	Review of current practices should be undertaken to identify areas of improvement. Cost-benefit analysis required.
Organic Waste Collection & Processing	Assuming 70% participation, potential increase in diversion by 24%	Cost-benefit analysis required average cost of \$125/tonne for hauling and processing; capital required for purchase of collection bins; changes to collection contract
Increased Frequency of Blue Box Collection/Decrease Garbage Collection	Higher diversion rates associated with more frequent collection of blue boxes and/or SSO	Cost-benefit analysis required, competitive tendering processes should be evaluated
Joint Collection ,Transfer and Processing Option	Potential increase depending on processing facility and programs implemented	Opportunity to realize economies of scale through partnership



Going Forward - Public Consultation & Feedback

Project Team members will analyze the feedback received from the public during this session.

The next steps in the Waste Recycling Strategy process is to:

- Incorporate public consultation results into the WRS.
- Complete the final Waste Recycling Strategy.



The WRS should be monitored and updated every five (5) years.



Questions?



THANK YOU!





Township of McNab/Braeside Waste Recycling Strategy Survey

The following survey is in response to the DRAFT Waste Recycling Strategy (WRS) available on the Township of McNab/Braeside's website. Please take a few moments to answer the following questions. Comments are appreciated.

Completed surveys can be returned the Township of McNab/Braeside, Waste Recycling Strategy, 2508 Russett Drive, R.R. #2, Arnprior, Ontario K7S 3G8 c/o Connie Graham or via email at cgraham@mcnabbraeside.com.

All completed surveys must be received by Friday November 4, 2011

Background Information

- 1. Are you aware of the Township's current waste diversion initiatives?
 - □ Yes □ No

Please provide an example_

Do you know where to find information about current waste management programs?
 Yes
 No
 If yes, where?

Reduction Initiatives

- Do you support the concept of Zero Waste as presented here today?
 □ Yes
 □ No
- Would you like to see this concept incorporated into the Township's Waste Management Plan?
 □ Yes
 □ No
- Would you support the Township adopting a green purchasing policy?
 □ Yes
 □ No
- 6. Do you think the Township should set reasonable waste reduction targets, targeting specific items and providing feedback to residents on the results of that program?

 \Box Yes \Box No

Reuse Initiatives

- 7. Would you participate in a re-use event where you could set out items at the curb for free/exchange (items like furniture, toys, appliances, electronics) on a set date?

 Yes

 No
- 8. Do you currently take household items or clothing to a re-use centre ? □ Yes □ No If yes, where?

If no, would you if a drop off location was made available?

9. Would you support the recycling of construction or demolition waste at the landfill? e.g. drywall or shingles □ Yes □ No

Diversion Initiatives

- 10. Do you currently use a backyard composter? \Box Yes \Box No
- 11. If you don't compost, would a rebate of the purchase of a composter incite you to try it? □ Yes □ No



Township of McNab/Braeside Waste Recycling Strategy Survey

- 12. Would you support a "clear bag for garbage" program if this type of collection is feasible for the Township e.g. through first undertaking a pilot study? □ Yes □ No
- 13. What is your preference for recycling collection? blue bags \Box or blue boxes \Box ?
- 14. Would you prefer larger blue boxes? \Box Yes \Box No
- 15. Do you find recycling options readily available in public spaces? \Box Yes \Box No
- 16. Do you find recycling options readily available at community/special events? □ Yes □ No
- 17. Is there specific waste materials that you would like the Township to target for diversion?
- 18. Would you support any kind of tax increase to improve waste diversion initiatives that would extend the life of the landfill?

 \Box Yes \Box No

19. What increase in the garbage levy or tax would you support to pay for waste diversion initiatives? The current garbage levy is \$150 per residential property.

□ \$10 □ \$20 □ \$50 other____

Communication Initiatives

- 20. What is your preference for communication with the Township Circle all that apply
 - a) Newsletters
 - b) Flyers
 - c) Website
 - d) Social Media, e.g. Facebook, Twitter, etc.
 - e) Door-to-door visits
 - f) Newspaper advertisements
 - g) Public space advertisements

Any other comments on the study of initiatives that you think the Township should pursue or that we may have missed in the study?

If you would like someone to contact you about any items identified above please provide us with your contact information.

Please Print Clearly				
			Do you consent to these comments being	
Name:			included in the public record?	
Address:			□ Yes	
Email:			Yes, but anonymously	
Phone:			🗆 No	
Signature:	Da	ate:		

Township of Horton

Waste Recycling Strategy

Cathy Smith, H.B.A. M.A.

Gerry Lalonde, M.Eng., P.Eng

October 17, 2011





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- Tires
- White Goods
- Scrap Metal
- Brush







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Stantec

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