

**City of Brantford**  
**Waste Recycling Strategy**

**CIF Project 406**

**Final Report**

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*Notwithstanding this support, the views expressed are the views of the author(s), and Waste Diversion Ontario and Stewardship Ontario accept no responsibility for these views.*

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## Background

**Preamble** As part of the objectives of the CIF, which include a proactive approach to assisting municipalities to implement best practices in blue box recycling, the CIF has provided financial assistance for the development of a waste recycling strategy plan.

In accordance with WDO/CIF guidelines, the City of Brantford has produced a waste recycling strategy plan for the blue box recycling program that is a public document and will meet best practices as outlined by Waste Diversion Ontario.

**Project Description** The CIF funding support for this project was provided under the following conditions:

1. The Municipality shall devote a sufficient amount of staff time and other resources to carry out the Project in accordance with parameters set out in Guidelines for CIF Support.
2. The Municipality assumes the full responsibility for the production and completion of a public waste recycling plan. A final copy of the plan is to be submitted to the CIF, (copies attached). The CIF will have the right to post or use, in whole or in part, the document produced.
3. The Municipality shall recognize and state in an appropriate manner, the support offered by WDO and Stewardship Ontario, through the CIF, concerning the Project.
4. The Municipality shall provide a final report summarizing the highlights of the plan as adopted by council. (appendix "A" attached)

## WRS Plan Highlights Summary

Following public input and final revisions, the WRS plan was delivered to staff/committee for final review and presentation to council for adoption.

### Adoption Dates

The final plan was adopted by Brantford council December 19, 2011 and a copy of the adopted WRS plan is attached to this report.

Brantford plan highlights follow:

### Goals and Objectives

| Brantford Waste Recycling Goals and Objectives   |  |   |
|--|--|---|
| Goals  | Objectives   | Potential Results   |
| To maximize diversion of residential solid waste through the blue box/recycling program. | Divert 40% of residential curbside solid waste through the blue box program.   | Capture up to 8,500 tonnes per year, increased from 6,334 tonnes. |
| To maximize capture rates of blue box materials through existing and future programs.    | Increase capture of recyclable materials from residential solid waste by 5-10% within 5-7 years.                     | Divert an additional 2,200 tonnes per year.                       |
| To improve participation in the blue box recycling program.                              | Increase average participation in the curbside recycling program to 85% or above                                     | Increase communication and education.                             |
| To extend overall operating lifespan of the Mohawk Street Landfill.                      | Increase the operating lifespan of the Mohawk Street Landfill Site through enhanced or new waste diversion programs. | Save landfill costs and delay landfill closure.                   |

### Planned Initiatives

The following priority initiatives have been identified:

1. Investigate the possible addition of plastic food and beverage containers #3, #4, #6 and #7 to the program.
2. Distribute 22 gal. (83 litre) blue boxes to increase convenience and storage space for additional materials.
3. Enhanced public education and promotion program especially in multi-residential buildings.

4. Training of key program staff
5. Review the timing of a reduction in bag/container limits as enhanced or new diversion programs are implemented.
6. Enhanced Monitoring and Measurement of program participation and satisfaction reported to Council on an annual basis and made available to residents.
7. Follow GAP for effective procurement and contract management.

**Future Initiatives**    The following future initiatives have been identified:

1. Exploration of a multi-municipal approach to the development of future waste diversion programs.
2. Optimization of collection operations.
3. Regular updates to the Long Term Sustainable Solid Waste Plan including the included recycling and diversion components as part of Brantford's Integrated Waste Management System.

## Best Practices

This project fits within the following fundamental best practices as identified by the Blue Box Program Enhancement and Best Practices Assessment Project (2007).

- Development of an up-to-date plan for recycling, as part of an Integrated Waste Management System.
- Establishing defined performance measures, including diversion targets and monitoring and a continuous improvement program.
- Established and enforced policies that induce waste diversion
- Multi-municipal planning approach to collection and processing recyclables.

## Appendix “A”

# City of Brantford Updated Recycling Plan

Prepared by  
**The Emerald Group**

with assistance from  
**Waste Diversion Ontario**

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## **Executive Summary**

The City of Brantford's 2008 Long Term Sustainable Solid Waste Plan (LTSSWP) requires an update to the recycling portion in order to comply with Waste Diversion Ontario (WDO) funding requirements.

This updated recycling plan forms a part of the LTSSWP and together they are designated as an Integrated Waste Management Plan for WDO funding purposes.

This updated recycling plan moves Brantford's recycling program toward compliance with WDO best practices and helps to preserve/optimize WDO annual funding contributions.

This updated recycling plan reaffirms Brantford's commitment to optimizing the recycling program in an efficient and cost effective manner by setting goals, continuous improvement, adoption of best practices, promoting and monitoring the ongoing program operations. WDO program funding is not contingent on achieving the target goals.

There are no budget impacts resulting from this updated plan.

## 1.0 INTRODUCTION

In June of 2008, Brantford City Council received the final report for the Long Term Sustainable Solid Waste Plan prepared in consultation with Gartner-Lee Ltd. Subsequent to the submission of the plan, public consultation activities were undertaken to determine the level of support for the proposed changes to the City's waste diversion programs, development of new programs and identify any issues or concerns that could be addressed prior to program implementation.

Upon completion of the public consultation activities, a Recommendation and Implementation Strategy Report, summarizing the recommendations from the Long Term Sustainable Solid Waste Plan and the results from the public consultation activities, was submitted to Council in May 2009 for review and consideration. The Recommendation and Implementation Strategy Report was then adopted by Council in June 2009 and direction was provided to staff to begin working on implementing short and long term program enhancements.

At that time, a strategic action was added to the City's Strategic Plan which outlines Council's long term commitment to achieving a residential diversion rate of 60% or higher and which strives to maximize the remaining waste disposal capacity available at the Mohawk Street Landfill Site.

As of 2009, Waste Diversion Ontario (WDO) requires municipalities to develop and implement an up to date blue box recycling plan as part of an overall Waste Diversion System or Integrated Waste Management System. Significant portions of funding for the blue box program are contingent on municipalities updating and maintaining their plans.

This project is a result of the WDO plan update requirements and has been delivered with the assistance of WDO's Continuous Improvement Fund, a fund financed by Ontario municipalities and stewards of blue box waste in Ontario. Notwithstanding this support, the views expressed in this report are the views of the author(s), and Waste Diversion Ontario and Stewardship Ontario accept no responsibility for these views.

## **2.0 CURRENT RECYLING PROGRAM**

### **2.1 Community Characteristics and Current Services**

The City of Brantford has a total population of about 95,600 residents with approximately 26,700 single family households and 13,200 multi-family households currently participating in the curbside recycling collection program.

All recycling collection and processing operations are contracted out to the private sector under multiple year contracts. Contracts for these services are in effect until October 31, 2013.

The following sectors within the community are currently eligible to receive recycling collection services from the City's collection contractor;

- Residential single-family;
- Residential multi-family, such as apartment buildings, townhouses or condominiums;
- Small businesses, such as in the downtown area;
- Small institutions, for example schools or small community centres.

Weekly curbside recycling collection services are provided to the majority of residents complimented by a depot located at the Public Drop Off Area at the Mohawk Street Landfill Site. The downtown area receives an increased level of service with daily collections Monday through Saturday.

The City operates a two stream collection program for blue box materials. One stream includes corrugated cardboard, newsprint (including newspapers, inserts, telephone books, magazines, household fine paper and envelopes), and boxboard (including, but not limited to, cereal boxes, tissue boxes, shoe boxes, etc.). The second stream includes all clear and coloured glass (food and beverage containers), steel (food and beverage containers), aluminum (food and beverage containers), P.E.T. (#1 plastics, including water bottles, pop bottles), H.D.P.E. (#2 plastics, including detergent bottles, bleach bottles etc.), and P.P. (#5 plastics, including cottage cheese containers, yogurt containers, etc.) and polycoat (including milk cartons, juice containers etc.).

Materials are delivered to a local recycling facility where fibre materials are processed and shipped to markets. Container materials including metals, plastics and glass are bulked in Brantford at a local recycling facility and then transported to Burlington for processing prior to distribution to markets.

Recycling boxes are provided free of charge to residential properties. Blue boxes can be picked up at the City's Works Department or Tourism Centre. Roll carts for multi-family locations are delivered free of charge by the City's collection contractor on a request basis.

Enforcement of set out activities and preparation requirements is provided through Chapter 440 of the Brantford Municipal Code.

A set out limit of 5 bags per week per household is in place to help encourage participation in the blue box and other diversion programs although the limit could be lowered as future diversion programs are developed. Residents may set out unlimited recyclable materials provided they are properly prepared and/or set out using approved containers.

The City enforces garbage and recycling rules through public information notices, non-compliance stickers and direct contact by staff. Currently, mandatory participation in curbside diversion programs is not included in the Solid Waste By-law.

## 2.2 Waste Generation and Diversion

Table 1 summarizes the current waste generation and blue box diversion rates. It should be noted that waste composition is based on that of a typical municipality in Southern Ontario and data from Waste Diversion Ontario.

| Material                         | Typical Waste Composition (%)<br>(1) | Estimated Waste Generation by Material (tonnes) | Actual Collection in 2007(tonnes)<br>(2) | Actual Collection in 2010 (tonnes)<br>(3) | Actual Brantford Current Recovery by Material (%) | Best Practices Recovery (%) |
|----------------------------------|--------------------------------------|---|--|---|---|-----------------------------|
| <b>Recyclables (Containers)</b>  | <b>8.9%</b>                          | <b>3,678</b>                                    | <b>1,393</b>                             | <b>1,186</b>                              | <b>32</b>   | <b>80-85</b>                |
| ▪ Aluminum                       | 0.7%                                 | 289   | 115                                      | 106                                       | 37  |                             |
| ▪ Coloured Glass                 | 2.0%                                 | 826   | 323                                      | 86  | 10  |                             |
| ▪ Flint Glass                    | 3.1%                                 | 1,281   | 395                                      | 292                                       | 23  |                             |
| ▪ HDPE                           | 0.6%                                 | 248   | 108                                      | 143                                       | 58  |                             |
| ▪ PET                            | 1.2%                                 | 496   | 163                                      | 302                                       | 61  |                             |
| ▪ Plastic #5                     | 0.2%                                 | 83  | 19                                       | 52  | 63  |                             |
| ▪ Steel                          | 1.1%                                 | 455   | 270                                      | 204                                       | 45  |                             |
| <b>Recyclables (Fibres)</b>      | <b>20.2%</b>                         | <b>8,347</b>                                    | <b>4,139</b>                             | <b>5,148</b>                              | <b>62</b>   | <b>80-85</b>                |
| ▪ Boxboard                       | 8.0%                                 | 3,306   | 544                                      | 842                                       | 25  |                             |
| ▪ OCC                            | 3.0%                                 | 1,240   | 657                                      | 1,119                                     | 90  |                             |
| ▪ ONP                            | 9.2%                                 | 3,802   | 2,938                                    | 3,188                                     | 84  |                             |
| <b>Household Organics</b>        | <b>32.5%</b>                         | <b>13,430</b>                                   | <b>0</b>                                 | <b>0</b>                                  | <b>0</b>  | <b>70-80</b>                |
| <b>Leaf &amp; Yard Waste</b>     | <b>12.0%</b>                         | <b>4,959</b>                                    | <b>3,860</b>                             | <b>4,372</b>                              | <b>88</b>   | <b>85-95</b>                |
| <b>Household Hazardous Waste</b> | <b>0.5%</b>                          | <b>207</b>                                      | <b>194</b>                               | <b>166</b>                                | <b>80</b>   | <b>80-90</b>                |
| <b>Electronic Waste</b>          | <b>1.25%</b>                         | <b>517</b>                                      | <b>55</b>                                | <b>421</b>                                | <b>82</b>   |                             |
| <b>Tires</b>                     | <b>&lt; 0.15%</b>                    | <b>71</b>                                       | <b>80</b>                                | <b>33</b>                                 |   | <b>100</b>                  |
| <b>Garbage</b>                   | <b>24.5%</b>                         | <b>10,124</b>                                   | <b>30,126</b>                            | <b>29,997</b>                             |   | <b>30-40</b>                |
| <b>Total (tonnes)</b>            | <b>100%</b>                          | <b>41,323</b>                                   | <b>39,993</b>                            | <b>41,323</b>                             |   |                             |

(1) Waste composition data based on typical municipality

(2) Original tonnage information from Long Term Sustainable Solid Waste Plan

(3) Includes residential tonnage collected at curbside and received at the public drop off area at the landfill site

The City generated approximately 29,997 tonnes of residential solid waste in 2010 down slightly from 2007 figures. Also shown is that approximately 6,334 tonnes of recyclable materials were diverted through the blue box program. Recovery rates vary significantly depending on material type.

Typically, overall waste generation rates are temporarily reduced during economic slowdowns as experienced over the last few years. Recycling rates have been increasing steadily Province wide due to increased recyclability of packaging on retail goods along with enhanced promotion and education efforts

which result in greater local program participation. In comparison to other communities, Table 2 below indicates, Brantford’s diversion rate (2009) is below average for its WDO municipal grouping.<sup>1</sup>

| <b>Table 2<br/>Residential Blue box Diversion Rate 2009</b> |               |
|---|---------------|
| City of Brantford   | <b>29.59%</b> |
| Municipal Grouping Average:<br><b>Medium Urban</b>          | <b>37.58%</b> |

### **2.3 Promotion and Education Program**

The City’s current Promotion and Education Program includes a variety of media sources including radio, local newspapers, hydro inserts, billboard, bench and bus ads, and the City’s Engineering Commission calendar.

The Promotion and Education Program encourages residents to participate in the blue box program and informs them on what materials can and cannot be included in their blue box.

The City’s website is another information source available to residents. It provides ongoing information on the blue box program as well as all other diversion programs the City operates.

### **2.4 Current Recycling Program Plan**

As mentioned above, the City completed a Long Term Sustainable Solid Waste Plan in 2008 which provided a comprehensive review of the City’s waste diversion programs and provided recommendations to improve program performance and increase residential waste diversion to 60% or greater. For recycling operations, the plan recommended a number of program enhancements, relating to the published WDO eight fundamental recycling Best Practices (BP), explained in more detail below, including;

- a) **Enhanced Promotion and Education Materials** – Enhance the current P&E materials to focus on the recyclable materials still being disposed of in the garbage such as metal, glass and plastic containers and fibres. (BP 7)
- b) **Increase Capacity and Convenience** – The capacity and convenience of storing recyclables is a factor in increased diversion. Subsidizing the cost or providing residents with an additional free blue box may be an effective way to provide additional storage capacity. Additional capacity will also be necessary to store the increased capture of recyclables. (BP 4)
- c) **Enhanced Plastics Diversion** – The current program collects all plastic food and beverage containers labelled #1, #2 and #5. Increasing the types of plastic collected to include food and beverage containers labelled #3, #4 #6 and #7 (excluding plastic film and expanded Styrofoam) has been shown to increase the recovery of all plastics. Markets now exist for these materials. (BP 8)
- d) **Garbage Bag or Container Limits** – The current limit of up to five bags or containers of garbage weekly should be reduced to a limit of three in conjunction with an enhancement of the blue box program. This should be done at the same time additional collection container capacity is provided. (BP 8)

<sup>1</sup> WDO municipal datacall published analysis: <http://www.wdo.ca/content/?path=page82+item35931> (2010 municipal group data is not available from WDO as of the date of this report.)

- e) **Recycling By-law** – Implement a City by-law mandating all residential households participate in the available diversion programs. (BP 8)
- f) **Material Bans** – Implement bans on the disposal of materials through the garbage collection program including blue box recyclables, grass clippings, leaf and yard materials and renovation materials. (BP 7)
- g) **Enhance Multi-residential Recycling** – Target increased participation of these households through more directed promotion and education, and enhanced access to the blue box program. (BP 4)

In addition to the above noted program enhancements, the following recycling operations guiding principles were also adopted, to ensure continuous improvement to the blue box program;

- a) Expand the existing blue box collection program when economically feasible,
- b) Advocate to the Provincial government on the promotion of waste reduction initiatives and product stewardship initiatives,
- c) Explore partnerships with neighbouring municipalities to promote the sharing of waste facilities and infrastructure supporting waste diversion.

Although the Long Term Sustainable Solid Waste Plan should guide the City to an increased level of diversion, Waste Diversion Ontario funding requirements mandate that an update to the recycling program component be completed in order to comply with best practices standards.

Waste Diversion Ontario has identified a number of best practices which are considered fundamental to the operation of an efficient and effective blue box Diversion program. <sup>2</sup> A full discussion of the WDO Best Practices requirements is provided in Section 3.

## **3.0 WDO Best Practices and Provincial Funding Distribution**

### **3.1 WDO Best Practices**

In late 2006, the Municipal-Industry Programs Committee (MIPC) of WDO directed a consultant to identify best practices in Ontario municipal blue box recycling and to determine 2006 net system costs.

Best practices were defined 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 cost-effective way possible.

In order to glean best practices and identify opportunities for improvement among the province's recycling programs, detailed questionnaires were completed by program staff followed by site visits at 32 Ontario municipal recycling programs. Programs were selected on the basis of cost and recovery performance, size, geography, program type, and contract structure.

Information gathered from site visits and industry research was subsequently used to formulate best practices, analyze issues and barriers, and identify opportunities for improvement.

<sup>2</sup> Full Best Practices Report is available at the following link:  
[http://www.stewardshipontario.ca/bluebox/pdf/eefund/KPMG\\_final\\_report\\_voll.pdf](http://www.stewardshipontario.ca/bluebox/pdf/eefund/KPMG_final_report_voll.pdf)

Following a significant analytical exercise eight (8) fundamental best practices, (practices that apply to all Ontario programs) were developed as listed below:

1. Development and implementation of an up-to-date plan for recycling, as part of an integrated Waste Management System.
2. Multi-municipal planning approach to collection and processing of recyclables.
3. Establishing defined performance measures, including diversion targets, monitoring and a continuous improvement program.
4. Optimization of operations in collections and processing.
5. Training of key program staff in core competencies.
6. Following generally accepted principles for effective procurement and contract management.
7. Appropriately planned, designed, and funded Promotion and Education program.
8. Established and enforced policies that induce waste diversion.

WDO has included a number of questions in its annual data call related to waste recycling planning that will be used for purposes of best practice funding in 2011 and beyond.

Municipalities will be required to answer the following questions on future WDO submissions regarding the development and implementation of an up to date blue box recycling plan as part of a Waste Diversion System or Integrated Waste Management System:

- Does the municipality have a blue box recycling plan that has been prepared or revised between the years of 2007 and 2011?
- Does the plan define and establish blue box program goals and objectives that are in line with the overall waste diversion system plan or the overall integrated waste management system?
- Does the plan set specific blue box diversion targets with timelines?
- Does the plan require performance monitoring against blue box diversion targets?
- Does your program set defined objectives and targets for recycling programs that are implemented and evaluated within a defined time period, and are part of a defined recycling plan?

It should be noted that although diversion targets must be adopted by Council there is no mandatory requirement to achieve the targets in order to be eligible to receive continued program funding.

The monitoring and reporting of any recycling program is considered a blue box program fundamental best practice and will be a key component of this updated recycling plan.

### 3.2 Provincial Funding Distribution Methodology

WDO is responsible for verifying blue box system data reported by municipalities, calculating the gross and net best practice system cost for each calendar year and determining the obligation of blue box stewards (businesses selling packaged goods in Ontario) to municipalities for the next funding year.

The 2009 blue box best practice system cost and 2011 blue box steward obligation are set out in the following table:

| <b>Table 3</b>   |                      |
|--|----------------------|
| <b>Blue Box Provincial System Costs</b>                            |                      |
| 2009 Blue Box Best Practice Gross System Cost                      | \$269,299,020        |
| Less Three-Year Average Revenue (Including Prior year Adjustments) | - \$87,404,260       |
| <b>2009 Blue Box Best Practice Net System Cost</b>                 | <b>\$181,894,760</b> |
| Plus 50% of Prior Year Cost Adjustments                            | \$1,786,447          |
| 2009 Blue Box Best Practice Net System Cost                        | \$183,681,207        |
| <b>2011 Blue Box Steward Obligation (50% of net system cost )</b>  | <b>\$91,840,603</b>  |

### 2011 Funding Distribution Summary

Cash payments to municipal recycling programs of up to 50% of their costs are based on the following distribution factors in 2011:

| <b>Table 4</b>  |      |
|---|------|
| <b>WDO Funding Distribution</b>                             |      |
| Based on Responses to 2009 Datacall Best Practice Questions | 15%  |
| Based on Performance Factors                                | 40%  |
| Based on Net Cost   | 45%  |
| Total   | 100% |

Considering all three components of the funding distribution methodology, Best Practice Questions, Performance Factors and Net Cost, municipal recycling programs received funding between 19.2% and 52.8% of their reported net cost.

If all municipal programs were paid on the basis of net cost only, each program would have received 36.1% of its reported net cost. Programs that received only 19.2% of their net cost answered 'no' to all 2009 Datacall Best Practice questions and had the lowest Performance Factor relative to all other programs in their municipal group.<sup>3</sup>

### 2012 Municipal Funding Distribution

| <b>Table 5</b>  |      |
|---|------|
| <b>2012 Municipal Funding Distribution</b>                  |      |
| Based on Responses to 2010 Datacall Best Practice Questions | 25%  |
| Based on Performance Factors                                | 45%  |
| Based on Net Cost   | 30%  |
| Total   | 100% |

<sup>3</sup> WDO, 2011 Municipal Blue Box Funding Distribution report.



It is important to note that a minimum of 25% of program funding will be based on recycling best practices going forward and based on historical trends, this funding factor is likely to increase. Therefore, it is important for municipal recycling programs to continuously move toward WDO defined best practices to preserve optimum program funding payments.

### Funding Distribution Based on Performance Factors

The performance factor calculates the efficiency and effectiveness of a municipal program by calculating a ratio of the program’s net cost per tonne and its recycling rate.

Performance of the range of municipal programs reporting in the municipal datacall cannot be compared without consideration of the different types of programs, such as large densely populated urban municipalities and sparsely populated and/or remote northern townships.

To facilitate program performance comparison, WDO has separated programs into 9 municipal groups based first on population and population density and, for programs with less than 50,000 population and 4 people per hectare, collection type (curbside and depot) and location (northern and southern). Brantford is currently allocated to the southern medium urban municipal group.

Each municipal group includes better, average and poorer performers that yield a range of Performance Factors. A small range suggests that members of the municipal group are achieving about the same level of performance. A large range suggests that the municipal group includes better performers that should be rewarded for their innovation as well as poorer performers that should not be similarly rewarded.

### 3.3 Brantford Municipal Group Cost Comparison

In 2010, the total net annual recycling costs for Brantford were \$1,389,091.69. This amounts to \$217.14 per tonne or \$14.87 per capita. As the table below shows, the net annual recycling cost for the City is above average for its WDO municipal grouping.<sup>4</sup>

| Table 6<br>2010 Net Recycling Cost Group Comparison (per tonne per year) |          |
|--|----------|
| City of Brantford  | \$217.14 |
| Medium Urban Municipal Group Average                                     | \$205.24 |

The seven municipalities in the medium urban municipal group reported costs per tonne ranging from a low of \$110.34 to a high of \$479.36.

<sup>4</sup> WDO municipal datacall published financial gap analysis:  
<http://www.wdo.ca/content/?path=page82+item35932>

## **4.0 UPDATED RECYCLING PLAN**

A blue box waste recycling plan is just one component of a complete integrated waste management plan. While diversion of household organics, commercial waste, household hazardous waste and other types of waste are all important topics, they are not covered by this recycling plan update.

This recycling plan update was initiated by the City of Brantford to increase the efficiency and effectiveness of the recycling program and maximize the amount of blue box material diverted from disposal and to provide guidance and direction for recycling programs and operations for the next five to seven years.

### **4.1 ISSUES AND DRIVERS**

Management of municipal solid waste, including the diversion of blue box materials, is an essential responsibility for all municipal governments in Ontario. The factors that encourage or hinder municipal blue box recycling programs can vary greatly and depend on a City's size, geographic location and population.

Brantford faces a number of waste management challenges, that this recycling plan update will help address. These challenges are expressed as issues and drivers of the program as set out below including:

1. WDO requires municipalities to have an up to date recycling plan in place to maintain optimal program funding levels.
2. A successful recycling plan can help to extend the operating lifespans of existing landfills
3. Population/consumer growth can lead to increases in waste generated.
4. Opportunities for cost savings and service level improvements can be identified when updating recycling and/or waste management plans
5. The Provincial target diversion rate is 60% and the City currently diverts less than this target rate.

### **4.2 POTENTIAL DIVERSION**

As noted previously on Table 1, the current waste composition was estimated using the comparable municipality estimates provided by WDO. Table 7 below provides a summary of blue box materials according to collection stream and the potential increase in diversion in tonnes per year. A total of approximately 12,025 tonnes of blue box recyclable materials are calculated to be available for diversion, of which approximately 5,691 tonnes are still estimated to be in the waste stream.

**Table 7  
Current and Potential Diversion**

| Material                         | Typical Waste Composition (%) | Estimated Waste Generation by Material (tonnes) | Actual Collection in 2010 (tonnes) | Potential Tonnage Available for Recovery |
|----------------------------------|-------------------------------|---|------------------------------------|--|
| <b>Recyclables (Containers)</b>  | <b>8.9%</b>                   | <b>3,678</b>                                    | <b>1,186</b>                       | <b>2,492</b>                             |
| Aluminum                         | 0.7%                          | 289   | 106                                | <b>183</b>                               |
| Coloured Glass                   | 2.0%                          | 826   | 86                                 | <b>740</b>                               |
| Flint Glass                      | 3.1%                          | 1,281   | 292                                | <b>989</b>                               |
| HDPE                             | 0.6%                          | 248   | 143                                | <b>105</b>                               |
| PET                              | 1.2%                          | 496   | 302                                | <b>194</b>                               |
| Plastic #5                       | 0.2%                          | 83  | 52                                 | <b>31</b>                                |
| Steel                            | 1.1%                          | 455   | 204                                | <b>250</b>                               |
| <b>Recyclables (Fibers)</b>      | <b>20.2%</b>                  | <b>8,347</b>                                    | <b>5,148</b>                       | <b>3,199</b>                             |
| Boxboard                         | 8.0%                          | 3,306   | 842                                | <b>2,464</b>                             |
| OCC                              | 3.0%                          | 1,240   | 1,119                              | <b>121</b>                               |
| ONP                              | 9.2%                          | 3,802   | 3,188                              | <b>614</b>                               |
| <b>Household Organics</b>        | <b>32.5%</b>                  | <b>13,430</b>                                   | <b>0</b>                           | <b>13,430</b>                            |
| <b>Leaf &amp; Yard Waste</b>     | <b>12.0%</b>                  | <b>4,959</b>                                    | <b>4,372</b>                       | <b>587</b>                               |
| <b>Household Hazardous Waste</b> | <b>0.5%</b>                   | <b>207</b>                                      | <b>166</b>                         | <b>41</b>                                |
| <b>Electronic Waste</b>          | <b>1.25%</b>                  | <b>517</b>                                      | <b>421</b>                         | <b>95</b>                                |
| <b>Tires</b>                     | <b>&lt; 0.15%</b>             | <b>71</b>                                       | <b>33</b>                          | <b>38</b>                                |

#### **4.3 CURRENT AND PLANNED DIVERSION INITIATIVES**

The following diversion initiatives are currently either underway or are planned as part of the Long Term Sustainable Solid Waste Plan;

##### **Additional Material Types**

The City's current blue box collection program only accepts a standard selection of recyclable plastics including P.E.T. (#1 plastics, including water bottles, pop bottles), H.D.P.E. (#2 plastics, including detergent bottles, bleach bottles etc.), and P.P. (#5 plastics, including cottage cheese containers, yogurt containers, etc.)

As a recommendation of the LTSSWP, City staff are currently investigating, with the assistance of the City's collection contractor, the possible addition of plastic food and beverage containers #3, #4, #6 and #7 to the curbside collection program. It should be noted, however, that foam plastic packaging, plastic bags, plastic wrap and blisterpak packing are excluded from these categories as the materials are typically heavily contaminated and the markets for these materials tend to be small or difficult to access.

This initiative will directly increase the amount of recyclable materials captured (i.e. increase diversion) and should also increase program participation.

##### **Additional Convenience and Capacity**

The City currently purchases and provides residents with 16 gal. (60 litre) blue boxes to set out recyclable materials at curbside. As a recommendation of the Long Term Sustainable Solid Waste Plan, the capacity and convenience of storing recyclables should be expanded. City staff are currently planning a distribution program to provide residents with 22 gal. (83 litre) blue boxes to increase convenience and storage space for additional materials including new material types (i.e. plastics).

##### **Increased Multi-Residential Recycling**

As a recommended enhancement to the existing recycling program, increasing participation of multi-residential buildings is fundamental to capturing additional materials. Increased participation would be achieved through a targeted promotion and education program addressing issues specific to multi-residential locations.

##### **Garbage Bag or Container Limits**

Currently, residents are permitted to set out up to five bags or containers per week. As a supporting element to the operation of an effective diversion program, City staff are reviewing the timing of a reduction in garbage or container limits as enhanced or new diversion programs are implemented. A decreased need for existing set out limits should occur once residents are provided with new or expanded diversion programs.

##### **Enhanced Education and Promotion Materials**

As a supporting element to the operation of an effective diversion program, City staff are reviewing current promotional and educational materials to provide focus on recyclable/reusable materials which have lower capture rates and are still being placed in garbage.

#### **4.4 GOALS AND OBJECTIVES**

Goals and objectives are a key component of a recycling plan and a WDO best practice.

Goals are defined as broad spectrum, high level statements that outline what the City or the recycling program is trying to achieve. Objectives are measurable, defined statements that describe specific, tangible outcomes.

Establishment of broad goals and objectives sets the perspective for the plan. They also provide direction for municipal actions and targets against which progress can be measured.

As noted in table 7 above, approximately 12,025 tonnes of recyclables are calculated to be available for diversion from City garbage. It is currently estimated that approximately 5,691 tonnes are still in the waste stream going to landfill.

The seven recommendations set out in the LTSSWP (section 2.4 above) are designed to increase the capture of this available tonnage and divert it from landfill.

Table 8 below sets out four goals and objectives of the future waste recycling program:

| <b>Table 8<br/>Waste Recycling Goals and Objectives</b>                                     |   |
|---|---|
| <b>Goals</b>  | <b>Objectives</b>   |
| 1. To maximize diversion of residential solid waste through the blue box/recycling program. | 1. Divert 40% of residential curbside solid waste through the blue box program.   |
| 2. To maximize capture rates of blue box materials through existing and future programs.    | 2. Increase capture of recyclable materials from residential solid waste by 5-10% within 5-7 years.                     |
| 3. To improve participation in the blue box recycling program.                              | 3. Increase average participation in the curbside recycling program to 85% or above                                     |
| 4. To extend overall operating lifespan of the Mohawk Street Landfill.                      | 4. Increase the operating lifespan of the Mohawk Street Landfill Site through enhanced or new waste diversion programs. |

**It should be noted that although diversion targets must be included in an updated recycling plan there is no mandatory requirement to achieve the targets in order to be eligible to receive continued program funding.**

#### **4.5 Monitoring and Reporting Program Performance**

The monitoring and reporting of a recycling program is considered a blue box program fundamental best practice and is be a key component of this updated recycling plan. Staff currently monitor all key elements of the program as part of routine activities.

Formal reporting of program activities is done through the annual WDO datacall submission. Going forward, the performance of the program will be monitored and measured against the baseline established

for the current system and routine operating reports will be provided to Council and then made available to the public as part of compliance with WDO best practices.

Currently, all recycling trucks are weighed at the landfill site on a daily basis and monthly tonnages are recorded. Additionally, the processing contractor provides tonnage data for specific material categories and provides a monthly report for comparison purposes.

The recommended approach for monitoring the recycling program is outlined in the table below. It should be noted that most of these activities are currently in routine use. Additional monitoring and diversion calculations can be performed as required without any budget increase.

Extensive customer survey and public consultation was done during the LTSSWP process and can be performed in future by staff on a smaller scale as required.

**Table 9  
Recycling Program Monitoring**

| <b>Topic</b>                                     | <b>Tools</b>  | <b>Frequency</b>   |
|--|---|--------------------|
| Total waste generated (by type and by weight)    | Measuring of wastes and recyclables at transfer station/disposal site (e.g. weigh scale records)  | Each load          |
| Diversion rates achieved (by type and by weight) | Formula: (blue box materials + other diversion) ÷ Total waste generated * 100%  | Semi Annually      |
| Waste disposed (by type and by weight)           | Reconciliation of weigh scale tickets   | Monthly            |
| Program participation                            | Monitoring set-out rates, web site viewer statistics  | Every 1 to 3 years |
| Customer satisfaction                            | Customer survey (e.g. telephone, internet); tracking calls/complaints received to the municipal office  | Every 1 to 3 years |
| Opportunities for improvement                    | Tracking calls/complaints received to the municipal office  | On-going           |
| Planning activities                              | Describe what initiatives have been fully or partially implemented, what will be done in the future   | Annually           |
| Review and Update of Recycling Plan              | A periodic review of the recycling plan to monitor and report on progress, to ensure that the selected initiatives are being implemented, and to move forward with continuous improvement | Every 5 to 7 years |

## **4.6 PUBLIC CONSULTATION**

Public consultation is required by WDO for the completion of an integrated waste management plan or a stand-alone recycling plan. Since this updated recycling plan will form a part of the long term sustainability solid waste plan, which together, for purposes of the WDO datacall, qualify as an Integrated Waste Management Plan, additional public input is deemed unnecessary.

## **5.0 CONCLUSIONS**

The City is making steady progress toward increased diversion and recycling efficiency. As with many smaller municipalities, budgetary and staff resources dedicated to recycling and diversion activities are limited, however, Brantford has shown a steady increase in recycling rates over the last 5 years.

The Long Term Sustainability Solid Waste Plan provides a framework for enhancing the City's existing waste diversion programs, developing new diversion programs, and extending the operating lifespan of the Mohawk Street Landfill Site.

Best practice requirements implemented by Waste Diversion Ontario (WDO) require the City to update the Recycling Plan component of the Long Term Sustainability Solid Waste Plan. A reasonable timeframe for these updates is every 5-7 years.

Investigations completed as part of this study indicate that the City should be able to achieve proposed recycling participation rates and diversion targets through the implementation of current and planned diversion initiatives.

Implementation of proposed monitoring and reporting guidelines outlined in this updated recycling plan will provide staff with important performance measures to determine the effectiveness and efficiency of existing, future and enhanced diversion plan components.

Development of an enhanced Promotion and Education Plan should increase overall participation rates and program satisfaction in the curbside blue box collection program.

Ongoing training of staff is a WDO best practice requirement and should be continued or enhanced if possible.

Exploration of a multi-municipal approach to the development of future waste diversion programs should be continued.

## **6.0 RECOMMENDATIONS**

The following recommendations are provided for immediate consideration;

1. The updated Recycling Plan should be declared as integrated into the existing Long Term Sustainable Solid Waste Plan and updated regularly going forward.
2. Proposed diversion targets and timelines should be submitted to Council for adoption. It should be noted that although diversion targets must be a part of an updated recycling plan, there is no mandatory requirement to achieve the targets in order to be eligible to receive continued program funding.

3. Monitoring and Measurement of program participation and satisfaction should be undertaken and reported to Council on an annual basis and made available to residents.
4. Continue to contact neighbouring municipalities to explore opportunities for co-operation.