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# **Municipal Waste Recycling Strategy**

## **CIF Project No. 503.2**

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prepared for

### **THE CORPORATION OF THE TOWNSHIP OF ADDINGTON HIGHLANDS**

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## 1.0 INTRODUCTION

This municipal waste recycling strategy (MWRS) was initiated by the Township of Addington Highlands to develop a plan to increase the efficiency and effectiveness of the recycling program and maximize the amount of blue box material diverted from disposal. This MWRS has been developed with the assistance of Waste Diversion Ontario's Continuous Improvement Fund (CIF), a fund financed by Ontario municipalities and stewards of blue box waste in Ontario. 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. The CIF *Guidebook for Creating a Municipal Waste Recycling Strategy* (Trow, 2010) was used in the development of this MWRS.

It is recommended that this plan be updated at a minimum of every 4 years. The Township of Addington Highlands is undertaking the development of a MWRS to meet the following:

- Maximize Best Practices funding.
- Identify and demonstrate continuous improvements toward Best Practices.
- Clarify long term Blue Box diversion goals for the municipal program.
- Identify cost effective solutions to maximize Blue Box diversion.

Specifically, the MWRS will provide the following:

- Recording decisions taken to recycle blue box waste through concept and design.
- Forecasting waste and recyclable material generation.
- Planning how to optimize recycling of identified materials.
- Implementing and monitoring the plan.
- Reviewing the MWRS and making continuous improvements.

The Township of Addington Highlands is responsible for managing its residential solid waste and operates a full range of waste management services including:

- Waste disposal sites including recycling depots.
- Waste Electronic and Electrical Equipment (WEEE) is accepted free of charge at the landfill sites.
- Tires are accepted free of charge at the landfills sites, at a maximum of four (4) tires per person per day.
- The use of the permanent Household hazardous Waste (HHW) depot at the Renfrew landfill site.

## **2.0 OVERVIEW OF THE PLANNING PROCESS**

This MWRS was prepared by Cambium Environmental Inc. (Cambium) and Township of Addington Highlands municipal staff.

The development of the MWRS included the following steps:

- Planning process, overview, and information review.
- Assess current trends, practices, systems, and future needs.
- Review and evaluation of recycling options, systems design, monitoring, and reporting.
- Completion of the MWRS.

To ensure the public and local stakeholders were able to participate in the preparation of this MWRS, Public Notices were published in local publications inviting the public to review the MWRS in draft format and provide feedback. For more details on the public consultation process, see Section 4.0.

## **3.0 STUDY AREA**

The study area for this MWRS includes the Township of Addington Highlands (Figure 1). The Township of Addington Highlands was established in 1998 as a result of the amalgamation of the former Townships of Abinger, Anglesea, Ashby, Denbigh, Effingham, and Kaladar. The Township of Addington Highlands is located in eastern Ontario, south of Barry's Bay and Renfrew, and north of Belleville (Figure 1).

Within the Township are the communities of Cloyne, Denbigh, Flinton, Kaladar, Northbrook, Vennachar, and Weslemkoon.

This Waste Recycling Plan will address the following sectors:

- Residential single-family.

## **4.0 PUBLIC CONSULTATION PROCESS**

The public consultation process followed in the development of this MWRS consisted of the following activities:

- A discussion with municipal staff to review the current status and planned changes for the blue box program.
- Public Notice in the following newspapers on one (1) occasions during the week of July 4, 2011:
  - The Frontenac News.
  - Bancroft This Week

The public comment period was July 4 to July 29, 2011. A copy of the Public Notice is included in Appendix A.

A total of four (4) documents offering comments with respect to the MWRS were received during the public consultation period of July 4 to July 29, 2011 and carefully considered in the preparation of this MWRS.

The most common comments received, with relevance to the MWRS plan, are as follows:

- Improvements to public space recycling (i.e. paper-only recycling bin should be placed outside the post offices, used clothing drop box outside grocery stores and fire halls, parks charged a levy per overnight guest, improvements to recycling at marinas, etc.).
- Need more information on costs of various alternatives.
- Suggested improvements to depots (i.e. 'reuse' centre, keep all existing depots open, mandatory flattening of plastic beverage containers and pop cans, alternative uses for newspaper or cardboard, etc.).
- More consultation with the public and local stakeholders.

This MWRS has been funded by WDO as part of their mandate to optimize the blue box program. A MWRS does not address all of the waste management issues that have been raised; however, the Township is encouraged to keep all comments received with regard to waste management in mind in future planning initiatives.

## 5.0 STATED PROBLEM

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 municipal blue box recycling endeavours can vary greatly and depends on a municipality's size, geographic location, and population.

The blue box program consists of collection at the depots at the waste disposal sites of the following items:

### Paper Recyclables

- Boxboard (i.e. cereal, tissue, detergent boxes)
- Corrugated cardboard
- Brown paper bags
- Junk mail
- Magazines
- Newspapers, flyers
- Office mixed paper

### Other Recyclables

- Aluminum foil and plates
- Aerosol cans
- Empty paint cans
- Food and drink cans
- Clear and coloured glass
- Milk and juice cartons
- Tetra boxes
- Plastic film (#4)
- Plastic bottles and jugs (#1 to #7)
- Plastic tubs and lids (#2 to #7)
- Styrofoam (polystyrene)



More details on the recycling program are provided in the Township of Addington Highlands Recycling Fact and Recycling Guidelines documents included in Appendix B.

The key drivers that led to the development of this MWRS include:

- Maximize Best Practices funding.
- Increase the efficiency and effectiveness of the recycling program.
- Maximize the amount of blue box material diverted from disposal to extend the life of the landfill sites.

## 6.0 GOALS AND OBJECTIVES

The MWRS has identified a number of goals and objectives for the Township of Addington Highlands. These are presented in Table 1.

**Table 1 Waste Recycling Goals and Objectives**

Goals	Objectives
To maximize diversion of residential/municipal solid waste through the blue box/recycling program	<i>By the end of 2013, aim to increase the diversion rate to 25%.</i>
To improve the cost-effectiveness of recycling in our community	<i>By the end of 2013, maintain a 0% increase in recycling costs.</i>

## 7.0 CURRENT SOLID WASTE TRENDS, PRACTICES, SYSTEM AND FUTURE NEEDS

### 7.1 COMMUNITY CHARACTERISTICS

In 2009, the Township of Addington Highlands had a population of 2,011. The Township of Addington Highlands has an aging demographic with approximately 60% of the residents in the 50+ age category. The municipality is home to 2,640 total single family households or dwellings.

There are also three (3) multi-residential buildings within the municipality: a nursing home in Northbrook, a senior's residence in Northbrook, and a multi-residential building. The waste generated at the nursing home is disposed within the municipality; however, the recyclable material is exported outside of the Township. The North Addington School complex is also located within the municipality; however, the school does not participate in the recycling program and exports all waste generated at the school outside of the municipality.

Of the total household count, 1,553 are seasonal dwellings, generally occupied during the months of May through September. Approximately 400 waterfront properties are located on Weslemkoon Lake and Otter Lake, approximately 80% of which are water access only.

The Lake Weslemkoon Conservation Association provided data from a survey completed in 2010 (Lake Weslemkoon Conservation Association, 2010), a portion of which was related to waste management. With respect to how waste material is disposed, (it is noted that respondents were encouraged to indicate all methods that apply in this question), 72.3% of respondents recycle locally at the marina or recycling depot, 64.5% of respondents take their waste material to a municipal landfill site, 51.8% of respondents take their waste material home with them, and 43.3% of respondents use a backyard composter. Since some residents use more than one method, the total percentage for all responses to this question is greater than 100%. With respect to recyclable material specifically, 91.5% of respondents indicated that they typically recycle all material that is recyclable locally (Lake Weslemkoon Conservation Association, 2010).

## 7.2 CURRENT WASTE GENERATION AND DIVERSION

Currently, the Township of Addington Highlands generates approximately 586 tonnes of residential solid waste per year (The Township of Addington Highlands WDO Datacall, 2009). Of this, 131 tonnes, or 22.4 percent, is diverted through the blue box program.

Table 2 summarizes the current waste generation and blue box diversion rates.

**Table 2 Residential Solid Waste Generated and Diverted Through Blue Box**

Residential Waste Stream/Blue Box Material	Tonnes	Percent of Total Waste
Total Waste Generated	586.3	-
Papers (ONP, OMG, OCC, OBB, and fine papers)	65.2	11.1%
Containers (metals, plastics, and glass)	66.3	11.3%
<b>Total Blue Box Material Currently Diverted</b>	<b>131.5</b>	<b>22.4%</b>

Notes: 1. The Total Waste Generated was calculated using 2010 bag counts from the waste sites and a weight per bag of 30 pounds (13.6 kilograms) and the 2009 non-blue box waste tonnages reported in the 2009 WDO Datacall.  
 2. The recycling values in the above table are as indicated in the 2010 Yearly Summaries for each waste site reported by the municipality.

Waste Diversion Ontario (WDO) groups municipalities based on similar geography, population, and proximity to end-markets for recyclables. The Township of Addington Highlands belongs to the Rural Depot – South municipal grouping. The groupings were established to recognize that rural municipalities and northern remote locations do not have the same amount of competition available to them when tenders are sought for recycling collection and processing of recyclable material that large urban centres have.

As Table 3 indicates, the Township of Addington Highlands’s current diversion rate is **above average** for its WDO municipal grouping.



**Table 3 Average Blue Box Diversion Rate (2009)**

	<b>Diversion Rate</b>
Township of Addington Highlands	22.4%
Municipal Grouping: Rural Depot - South	21.28%

### 7.3 POTENTIAL WASTE DIVERSION

To estimate current waste composition of the Township of Addington Highlands, since no local waste audit data are available, waste audit data were used from the Town of Blue Mountains, as per the CIF Guidebook. The Town of Blue Mountains was used because it best matches the Township of Addington Highlands (i.e. in the Rural - South category). Once a waste audit is performed on waste generated by the Township of Addington Highlands, actual waste composition data will be used.

A total of approximately 218 tonnes of blue box materials are available for diversion, of which approximately 86 tonnes are still currently in the waste stream. Estimates of blue box material available for diversion are listed in Table 4.

**Table 4 Current and Potential Diversion**

<b>Material</b>	<b>Total Available for Diversion<sup>1</sup> (tonnes/year)</b>	<b>Currently Recycled<sup>2</sup> (tonnes/year)</b>	<b>Potential Increase<sup>3</sup> (tonnes/year)</b>
Papers (ONP, OMG, OCC, OBB, and fine papers)	123	65	58
Containers (metals, plastics, and glass)	94	66	28
<b>Total</b>	<b>218</b>	<b>131</b>	<b>86</b>

Notes: 1. The total available for diversion tonnages were calculated from the percentages of each material from the Town of Blue Mountains waste audit multiplied by the total waste generated tonnage multiplied by the target capture rate of 70%.  
2. The currently recycled tonnages are as reported in the Township's 2009 WDO Municipal Datacall.  
3. The potential increase is the currently recycled tonnage subtracted from the total waste available in the waste stream tonnage.

Capturing 70% of blue box material (i.e. an additional 86 tonnes per year) in the Township's waste stream could raise its diversion rate by approximately 14.7% to 37.1% (i.e. from the current 22.4%). However, a local waste audit would confirm potential increase in the Township's diversion rate and these values for potential diversion will be updated to reflect the Township's actual waste composition.

### 7.4 EXISTING PROGRAMS AND SERVICES

Currently, the Township of Addington Highlands has the following policies and programs in place to manage residential solid waste:

- By-law 0121/2003 (Appendix C) which is a bylaw for the use of a defined area for the disposal of garbage.

- Clear bag policy: As of November 1, 2009, disposal of waste in Addington Highlands logo clear bags is mandatory.
- Partial user pay system. For each 17 gallon box of blue box recyclables brought to a depot, one Addington Highlands logo clear bag is given to the resident in return. Additional bags can be purchased for \$2.00 per bag.

Disposal and recycling services are paid for primarily through municipal taxes. All recyclable material is taken to the Beauman Industries facility in Renfrew, Ontario by Addington Highlands trucks using 46 yard roll-off bins. No contract currently exists for the service.

In 2009, the total annual recycling cost for the Township of Addington Highlands was \$200,056 (The Township of Addington Highlands WDO Datacall, 2009). This amounts to \$1,660 per tonne, or \$99 per capita. As Table 5 shows, net annual recycling costs for the Township of Addington Highlands are **above average** for its WDO municipal grouping.

**Table 5 Net Recycling Cost (per tonne per year)**

Net Recycling Cost	
Township of Addington Highlands	\$1,660 per tonne in 2009
Municipal Grouping: Rural Depot - South	\$565.08 per tonne per year

## 7.5 ANTICIPATED FUTURE WASTE MANAGEMENT NEEDS

Solid waste generation rates in the Township of Addington Highlands are expected to increase over the next 16 years (the planning period for this project). Table 6 depicts the expected growth rates for solid waste generation and blue box material recovery, based on projected population growth rates which are based on historical population data from Statistics Canada (2006 Community Profiles).

**Table 6 Anticipated Future Solid Waste Generation Rates and Available Blue Box Material**

	2011	2015	2019	2023	2027
Population	2,048	2,125	2,204	2,286	2,371
Total Waste (tonnes)	586	620	643	667	691
Blue Box Material Available (tonnes)	218	230	238	247	256

- Notes:
1. The population was determined from the 2006 population and appropriately increased as per the change in population (%) from Statistics Canada (2006 Community Profiles).
  2. The Total Waste was determined from the projected population multiplied by the solid waste generated per capita of 292 kg/person/year, which was determined from the data from the 2009 WDO Datacall.
  3. The Blue Box Material Available was the projected population multiplied by the blue box material available per capita of 108 kg/person/year, which was determined from the data from the 2009 WDO Datacall and the Town of Blue Mountains waste audit data.

## 8.0 PLANNED RECYCLING SYSTEM

### 8.1 OVERVIEW OF PLANNED INITIATIVES

The Township of Addington Highlands reviewed a number of options for consideration in its MWRS. The options were then scored based on a number of criteria, which included:

- **% Waste Diverted** – This refers to how much waste an option may potentially help to divert. Some options may divert more waste than others, while other options may not directly divert waste but instead support other programs or initiatives that do.
- **Proven Results** – Some options are considered tried and true, while others may be newer and less proven.
- **Reliable Market/End Use** – Markets should be available for materials collected by municipalities for recycling. This criterion considers if a market is available for the recyclable materials in question or if a suitable end use exists.
- **Economically Feasible** – This refers to whether an option is economically feasible for the municipality considering it. Municipalities will need to weigh the cost of the option against their ability to afford it and the resulting benefit.
- **Accessible to the Public** – This considers if the option will be easy or difficult for the public to access or use. This will depend in large part on how the option interfaces with the target audience. This could also be related to the accessibility of the site (i.e. hours of operation, travel time to/from site), accessibility of the bins (i.e. traffic flow, signage, ease of depositing material in the bins, purchase/lease of additional bins),
- **Ease of Implementation** – Some options are less costly and easier logistically and politically to implement than others. This criterion considers the level of cost and effort involved in implementing the option (Trow, 2010).

A summary of the options reviewed and their scoring is provided in Appendix D.

Once scored, the top ranking waste recycling options were organized into Priority Initiatives (total score of 80 or greater out of 100) and Future Initiatives (total score of 70 to 79 out of 100). The estimated cost for implementing the priority initiatives is estimated to be approximately \$8,000 plus staff time, while the implementation of the future initiatives is estimated at \$4,000. Table 7 presents the Priority Initiatives and Future Initiatives and their estimated costs. A review of these initiatives and their steps for implementation are reviewed on the following pages.



**Table 7 Priority and Future Initiatives**

Initiatives	Implementation Costs	Operation Costs
<b>Priority Initiatives</b>		
Public Education and Training Program <sup>1</sup>	\$8,000	\$2,000
Training of Key Program Staff	Staff Time	Travel Costs to Free Training Sessions (estimated at \$1,000)
<b>Estimated Total Cost (Priority Initiatives)</b>	\$8,000 plus staff time	\$3,000 plus staff time
<b>Future Initiatives</b>		
Enhancement of Recycling Depots <sup>2</sup>	\$4,000	\$3,000
<b>Estimated Total Cost (Future Initiatives)</b>	\$4,000	\$3,000

Notes: 1. The Blue Box Program Enhancement Best Practices Report (KPMG, 2007) recommends spending \$3 to \$4 per household on Promotion and Education when implementing new programs or major program changes and \$1 per household for existing recycling programs.  
 2. The CIF Guidebook (Trow, 2010) recommends an implementation cost of \$1-\$3 per household and an operation cost of \$1-\$2 per household for this initiative. Used an average value of \$2 per household for implementation and \$1.50 per household for operation.

### 8.1.1 PRIORITY INITIATIVES

#### Initiative: Public Education and Training Program

Overview: Public education and promotion programs are crucial for ensuring the success of local recycling programs. Well-designed and implemented education and promotion programs can have impacts throughout the municipal recycling program, including participation, collection, processing, and marketing of materials. Furthermore, having a promotion and education plan contributes toward the amount of WDO funding a municipality receives as identified in the Best Practices section of the WDO municipal datacall. For example, the benefits of public education and promotion programs include:

- Greater participation levels and community involvement.
- Higher diversion rates.
- Less contamination in recovered materials, potentially leading to higher revenues.
- Lower residue rates at recycling facilities.

Implementation: To better publicize the recycling program and capture more blue box materials, an extensive promotion and education program should be considered. This should include some component to help reach the seasonal population. Some specific ideas could include providing promotional material to local cottage owners associations to help reach the seasonal population, including an information kit to give to owners of cottages who

rent their cottages out so that it is simple and convenient for those renting the cottages to participate in the blue box program.

#### Initiative: Training of Key Program Staff

Overview: A well-trained staff can lead to greater cost and time efficiencies and improved customer service. Knowledgeable staff (including both front line staff and policy makers) have a greater understanding of their municipal programs and can perform their responsibilities more effectively. There are a number of low-cost training options available.

Implementation: Key program staff will be provided with access to low-cost training opportunities provided by WDO. The training received can be used to satisfy Best Practices criteria for staff training for completion of the annual WDO Datacall which bodes favourably for funding received. Training specifically for landfill attendants is recommended to ensure all attendants are educated on the Bylaw 0121/2003 (Appendix C) and enforcement and any specific issues related to the recycling depots can be discussed.

### **8.1.2 FUTURE INITIATIVES**

#### Initiative: Enhancements of Recycling Depots

Overview: Where curbside collection programs are not feasible, recycling depots provide an inexpensive means for municipalities to divert recyclable materials from disposal. Enhancements to recycling depots may include (but are not limited to):

- Providing satellite depots to improve public access and convenience.
- Enhancing the conditions at the landfill depot (e.g. landscaping, general cleanliness, maintenance).
- Incorporating friendly, easy-to-read signage.
- Providing additional part-time staff to address seasonal fluctuations and visiting traffic.

Implementation: Consideration should be given to conducting a review of each recycling depot to determine any deficiencies and areas for improvement. This could be related to the accessibility of the site (i.e. hours of operation, travel time to/from site), accessibility of the bins (i.e. traffic flow, signage, ease of depositing material in the bins, purchase/lease of additional bins), installation of satellite depots, etc. One specific possibility is to employ a co-op or summer student to assist at the Kaladar site as it is very busy during the summer months.

#### Enhancement to Recycle Material Transfer

Transfer is an option that should be considered for programs with tonnages of recyclables considered too small to support their own MRF, or for a haul time to a MRF of greater than one hour. How recyclables will be transferred



will depend on the destination MRF: the degree of commingling, receiving hours, and possibly the type of transfer vehicle that can be used are typically items that the MRF will dictate (KPMG, 2007).

The Township should strive to maximize the use of containers to help ensure only full loads are picked up. Hauling full and densely packed containers will reduce transportation costs on a per unit basis. Depot staff should try to move materials around in the bin to help ensure all corners and other space is utilized. Staff can use loaders or hand tools to facilitate this process. The bins currently located at the waste disposal sites within the Township are cover with side panel/windows for the material input and will not allow for the use of heavy equipment for compaction from over-head.

Compacting and co-mingling material reduces the frequency of collection from the depot site and increases the potential for a municipality to haul a greater distance at a lower cost. This in turn increases the range of processing facility alternatives available to the Township. The Township should consider the use of alternate bins (open top or automatic compaction) that will allow for the compaction of materials with equipment.

Front-loader bins can be emptied on an appropriate schedule, driven by the required capacity. Carts and roll off bins are usually used when the depot is close to a processing facility and pick ups can be done more frequently. Appropriate front end containers, roll off bins with compaction, or even highway transfer are used when the haul distances are substantial (KPMG, 2007).

In cases where long distance hauls are needed, such as the Township of Addington Highlands, it is critical to incorporate compaction within the system to minimize transportation costs. This may be accomplished with the use of standard front end containers which utilize the truck compaction system where services are not available at the depot site. When services are available, roll off compactors with a ramp can be used. Where large volumes justify it, transfer trailers with or without compaction may be the best option.

Controlled compaction can be used to maximize payloads. Compaction at a depot can take place in the form of a roll-off compactor unit, where power and a ramp is available or with the use of front-end containers and its associated collection vehicle to collect one or more streams compacted. The compaction needs to be controlled so that the pressure is sufficient to achieve a reasonable amount of volume reduction, without over-compacting the materials. One cost-effective compaction alternative municipalities might consider is to retrofit enclosed containers with an on-site generator to power compaction equipment where access to hydro is not available.

The Township of Seguin, located in the District of Parry Sound, relies on a patented Haul-All depot collection system and Transtores to transfer recycling material from its depot sites to a processing facility. The collection system compacts material to reduce the number of trips required, which is significant since the Township of Seguin has seven depot sites spread out over a 700 square kilometre area. The material is separated into co-mingled fibres and co-mingled containers and is not heavily compacted. It can therefore be processed by MRFs capable of handling a two-stream system. The material compaction does, however, allow the Township of Seguin



the flexibility of hauling at greater distances with a reduced total hauling cost. However, it is important to note this system has not proven as beneficial for the collection of the Township of Seguin's recyclable material, since the central collection bins' tonnage volume is lower than the compaction requirements of many processing MRF's, particularly when container glass is incorporated within the co-mingled material. Moreover, according to Township of Seguin staff, the initial capital investment has a long pay back period (15+ years) and may be cost prohibitive for smaller communities (SGS Lakefield Research Limited, 2006).

A secondary example is the use of solar compactor units at the Township of McKellar Waste Transfer Station. Based on the costs of transporting recyclable materials for processing and the number of trips required to satisfy the materials generated by the Township of McKellar, 2 Stationary Solar Compactors and 4 Forty yard roll-off containers at the Transfer Station were installed. These new additions dramatically increased the efficiency of the Township of McKellar's recycling operations regardless of the fluctuating nature of the waste management variables in the Township of McKellar including a reduction of transportation costs.

A summary of the budgeted versus real costs is as follows:

	<b>Budgeted Costs</b>	<b>Real Costs</b>
<b>Expenses</b>		
Site Preparation	\$18,900.00	\$14,421.84
2-Two yard stationary solar powered compactors	\$59,000.00	\$58,680.00
4-Forty yard receiver bins	\$35,400.00	\$35,380.00
Delivery, installation and training	\$1,700.00	\$1,650.00
Cost	\$115,000.00	\$110,131.84
GST/HST*	\$5,750.00	\$13,202.77
<i>Total Cost</i>	<i>\$120,750.00</i>	<i>\$123,334.61</i>
<b>Revenue</b>		
Requested Funding (CIF)**	\$80,000	\$77,584.83
GST/HST Rebate	\$5,750.00	\$11,415.16
Township of McKellar	\$35,000.00	\$34,334.62
<i>Total Revenue</i>	<i>\$120,750.00</i>	<i>\$123,334.61</i>

As noted below, the total number of loads was reduced post compaction unit installation while the volumes of material transferred increased.

**Pre Compaction Units**

	Mixed Recycling Lifts	Mixed Paper Lifts	Metric Tonnes
December (2009)	3	3	5.74
January (2010)	3	3	3.81
February (2010)	1	1	1.62
Total	7	7	11.17

**Post Compaction Units**

	Mixed Recycling Lifts	Mixed Paper Lifts	Metric Tonnes
December (2010)	0	1	4.73
January (2011)	0	0	0
February (2011)	1	1	9.12
Total	1	2	13.83

Over a sample three month period during 2009/2010 without the compactors and the same sample period during 2010/2011 with the compactors the benefits of the new equipment was a financial benefit. When the two periods are compared, the Township of McKellar moved significantly more recycling material with fewer lifts with the new equipment installed. During the months without the compactors and new bins the Township of McKellar's costs for recycling totaled \$7,757.55, contrasted by the three months with the compactors the Township of McKellar's recycling costs totaled \$2,675.81 for a net savings during the period of \$5,081.74 (Waste Diversion Ontario and Stewardship Ontario, 2011).

**8.1.3 CONTINGENCIES**

Even the best planning can be delayed by a variety of foreseen and unforeseen circumstances. Predicting and including contingencies can help to ensure that these risks are managed for minimum delay. Table 8 identifies contingencies for possible planning delays.

**Table 8 Waste Recycling Strategy Contingencies**

Risk	Contingency
Insufficient funding	Delay lower-priority initiatives
Public opposition to planned recycling initiatives	Improve public communications, engage community/stakeholders to discuss initiatives/recycling plan
Lack of available staff	Prioritize municipal goals and initiatives

**9.0 MONITORING AND REPORTING**

The monitoring and reporting of the Township of Addington Highlands' recycling program is considered a Blue Box program fundamental best practice and will be a key component of this MWRS. Once implementation of the



strategy begins, the performance of the Waste Recycling System will be monitored and measured against the baseline established for the current system:

- The baseline recycling diversion rate is 22.4% and it represents the 2009 blue box diversion rate for the Township of Addington Highlands.
- Recycling tonnages will be analysed annually and compared to the previous year's performance taking into account recycling program changes, new provincial legislation, and any new municipal program changes that could impact program recovery targets.

Once the results are measured, they will be reported to Council and the public. The approach for monitoring the waste recycling program for the Township of Addington Highlands is outlined in Table 9.

**Table 9 Recycling System Monitoring**

Monitoring Topic	Monitoring Tool	Frequency
Diversion rates achieved (by type and by weight)	Formula: (Blue Box materials + other diversion) ÷ Total waste generated *100%	Annually
Planning activities	Describe what initiatives have been fully or partially implemented, what will be done in the future	Annually
Program participation	Customer survey (i.e. car counts at recycling depots)	Every 2 years
Customer satisfaction	Customer survey (i.e. telephone, online); tracking calls/complaints received to the municipal office	Every 2 years
Review of MWRS	A periodic review of the MWRS to monitor and report on progress, to ensure that the selected initiatives are being implemented, and to move forward with continuous improvement	Every 4 years

## 10.0 CONCLUSION

The Township of Addington Highlands currently has an average blue box diversion rate of 22.46% and high cost (\$1,660/tonne) when compared to the average diversion rate (21.28%) and cost (\$565.08/tonne) for the municipal grouping.

A staged process to increase the capture of blue box material and reduce cost per tonne is recommended.

Firstly, it is recommended that by the end of 2013, the Township of Addington Highlands aim to divert an additional 2 % (compared to the 2009 diversion rate of 22.4 %) of municipal solid waste through the blue box program by the implementation of simple measures (i.e. priority initiatives). The following low-cost priority initiatives are recommended to increase the capture rate: increase public education and training and training of key program staff.



The following future initiatives are recommended for consideration to further increase the effectiveness of the blue box program: enhancements of recycling depots.

It is recommended that the Township of Addington Highlands explore opportunities to reduce the cost of the recycling programs, whether it be through the initiatives described above, partnerships with neighbouring municipalities, or other means.

It is also recommended that the Township of Addington Highlands perform periodic participation surveys through tracking of usage at the recycling depots to gauge progress towards the annual diversion targets. It is recommended that this MWRS be fully updated in 2 years (i.e. in 2013) and then every 4 years thereafter.

## REFERENCES

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- Lake Weslemkoon Conservation Association. (2010, October 15). Retrieved March 14, 2011, from LWCA 2010 Community Survey – Results : <http://www.weslemkoon.com>
- SGS Lakefield Research Limited. (2006). *Evaluation of Best Practices of Rural Recycling Depot Programs*.
- The Township of Addington Highlands WDO Datacall. (2009). *Waste Diversion Ontario Municipal Datacall*.
- Trow. (2010). *Guidebook for Creating a Municipal Waste Recycling Strategy*.
- Waste Diversion Ontario and Stewardship Ontario. (2011). *Township of McKellar Solar Compactors Project*.



## QUALIFICATIONS AND LIMITATIONS

### Limited Warranty

In performing work on behalf of a client, Cambium Environmental relies on its client to provide instructions on the scope of its retainer and, on that basis, Cambium Environmental determines the precise nature of the work to be performed. Cambium Environmental undertakes all work in accordance with applicable accepted industry practices and standards. Unless required under local laws, other than as expressly stated herein, no other warranties or conditions, either expressed or implied, are made regarding the services, work or reports provided.

### Reliance on Materials and Information

The findings and results presented in reports prepared by Cambium Environmental are based on the materials and information provided by the client to Cambium Environmental and on the facts, conditions and circumstances encountered by Cambium Environmental during the performance of the work requested by the client. In formulating its findings and results into a report, Cambium Environmental assumes that the information and materials provided by the client or obtained by Cambium Environmental from the client or otherwise are factual, accurate and represent a true depiction of the circumstances that exist. Cambium Environmental relies on its client to inform Cambium Environmental if there are changes to any such information and materials. Cambium Environmental does not review, analyze or attempt to verify the accuracy or completeness of the information or materials provided, or circumstances encountered, other than in accordance with applicable accepted industry practice. Cambium Environmental will not be responsible for matters arising from incomplete, incorrect or misleading information or from facts or circumstances that are not fully disclosed to or that are concealed from Cambium Environmental during the provision of services, work or reports.

Facts, conditions, information and circumstances may vary with time and locations and Cambium Environmental's work is based on a review of such matters as they existed at the particular time and location indicated in its reports. No assurance is made by Cambium Environmental that the facts, conditions, information, circumstances or any underlying assumptions made by Cambium Environmental in connection with the work performed will not change after the work is completed and a report is submitted. If any such changes occur or additional information is obtained, Cambium Environmental should be advised and requested to consider if the changes or additional information affect its findings or results.

When preparing reports, Cambium Environmental considers applicable legislation, regulations, governmental guidelines and policies to the extent they are within its knowledge, but Cambium Environmental is not qualified to advise with respect to legal matters. The presentation of information regarding applicable legislation, regulations, governmental guidelines and policies is for information only and is not intended to and should not be interpreted as constituting a legal opinion concerning the work completed or conditions outlined in a report. All legal matters should be reviewed and considered by an appropriately qualified legal practitioner.

### Site Assessments

A site assessment is created using data and information collected during the investigation of a site and based on conditions encountered at the time and particular locations at which fieldwork is conducted. The information, sample results and data collected represent the conditions only at the specific times at which and at those specific locations from which the information, samples and data were obtained and the information, sample results and data may vary at other locations and times. To the extent that Cambium Environmental's work or report considers any locations or times other than those from which information, sample results and data was specifically received, the work or report is based on a reasonable extrapolation from such information, sample results and data but the actual conditions encountered may vary from those extrapolations.

Only conditions at the site and locations chosen for study by the client are evaluated; no adjacent or other properties are evaluated unless specifically requested by the client. Any physical or other aspects of the site chosen for study by the client, or any other matter not specifically addressed in a report prepared by Cambium Environmental, are beyond the scope of the work performed by Cambium Environmental and such matters have not been investigated or addressed.

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

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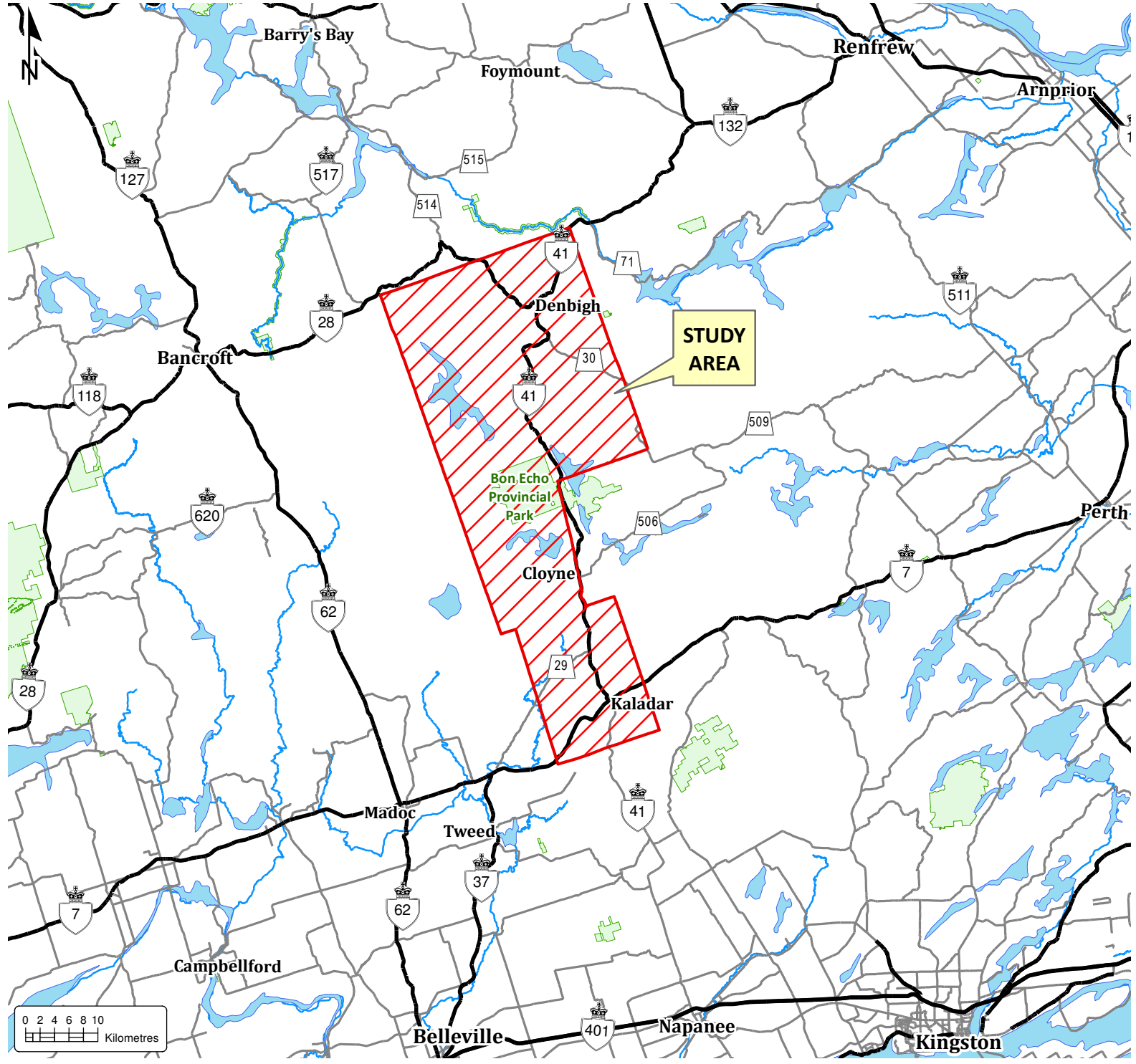
## **Appended Figures**

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TOWNSHIP OF  
ADDINGTON HIGHLANDS  
MUNICIPAL WASTE  
RECYCLING STRATEGY

Legend

-  Municipal Boundary
-  Highway
-  Major Road
-  River
-  Water Body
-  Provincial Park



Source: © Queen's Printer of Ontario, 2010  
*(this does not constitute an endorsement by the MNR or the Ontario Government)*



P. O. Box 325, 52 Hunter Street East  
Peterborough, Ontario, K9H 1G5  
Tel: 1 (705) 742.7900  
Fax: 1 (705) 742.7907  
www.cambium-env.com

REGIONAL LOCATION PLAN

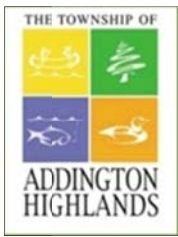
Project No.:	1860-001	Date:	March 2011
Scale:	1:750,000	Projection:	NAD 1983 UTM Zone 18N
Created by:	GMH	Checked by:	CMT
Figure:	<b>1</b>		



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**Appendix A**  
**Public Notice**

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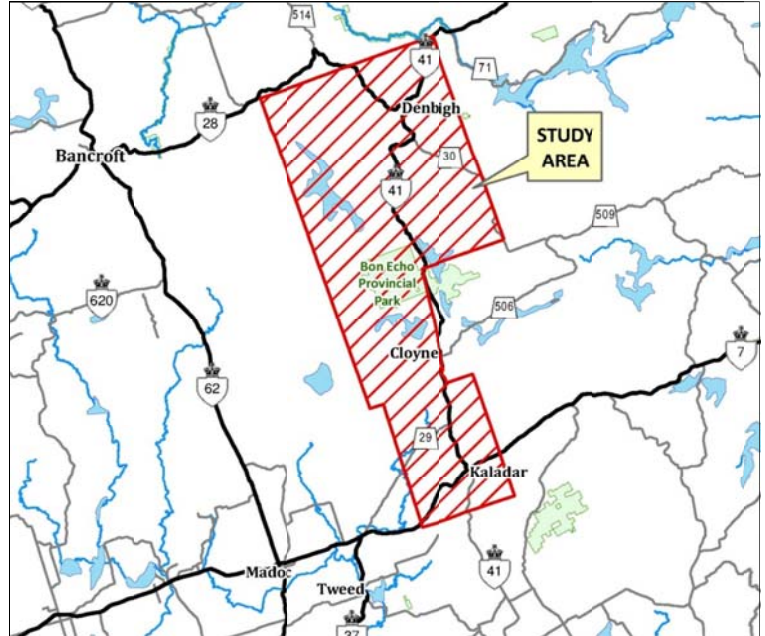
## NOTICE OF PUBLIC CONSULTATION FOR THE TOWNSHIP OF ADDINGTON HIGHLANDS MUNICIPAL WASTE RECYCLING STRATEGY

The Township of Addington Highlands is completing a Municipal Waste Recycling Strategy (MWRS), which is an essential tool in the achievement of Best Practices in the management of recycled materials.

The development of the MWRS will include several stages, from policy to implementation, monitoring, and improvement. The stages cover:

- Where are we now? (i.e. policy, administration details)
- Where do we want to go? (i.e. waste forecasts, diversion targets)
- How do we get there? (i.e. system design, infrastructure requirements)
- How do we track and measure our progress? (i.e. evaluation, reporting)

The Township of Addington Highlands invites interested parties to submit comments or inquiries with respect to the MWRS. Comments will be accepted until **July 29, 2011**.



Information regarding the MWRS is available at the municipal website listed below. Comments and inquiries may be directed to the following:

The Township of Addington Highlands:

Mr. Jack Pahl  
(613) 336-2286 ext. 204  
clerk@addingtonhighlands.ca  
For info: <http://www.addingtonhighlands.ca/>

**Dated at the Township of Addington Highlands on the 30<sup>th</sup> day of June, 2011**

**Mr. Jack Pahl, Clerk Treasurer**  
**Township of Addington Highlands**  
**P.O. Box 89**  
**72 Edward Street**  
**Flinton, Ontario**  
**K0H 1P0**  
Phone: (613) 336-2286  
Fax: (613) 336-2847  
Email: clerk@addingtonhighlands.ca







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**Appendix B**  
**Township of Addington Highlands Recycling Information**

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**TOWNSHIP OF ADDINGTON HIGHLANDS**

**P.O. BOX 89, FLINTON, ON K0H 1P0**

**(613) 336-2286 PH (613) 336-2847 FX**

**Email: [jpauhl@mazinaw.on.ca](mailto:jpauhl@mazinaw.on.ca)**

**RECYCLE GUIDELINES**

**Please ensure accuracy when sorting your recyclables!**

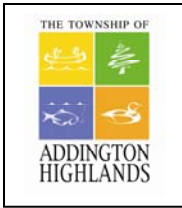
**ITEMS**

**INSTRUCTIONS**

DRINK CANS FOOD CANS ALUMINUM PLATES ALUMINUM FOIL AEROSOL CANS (DANGER IF NOT EMPTY) PAINT CANS (NO PLASTIC, MUST BE EMPTY, LIDS REMOVED & PLACE IN BLUE BOX)	RINSED CLEAN AND PLACED IN BLUE BOX FLATTEN IF YOU PREFER CLEAN – NO FOOD SCRAPS (ALL TYPES) MUST BE EMPTY (ALL TYPES) MUST BE EMPTY
#1 PLASTIC BOTTLES	PLACED IN BLUE BOX FOOD & BEVERAGE BOTTLES ONLY
#2 PLASTIC BOTTLES #2, #3, #5, #7 & JUGS	FOOD & BEVERAGE, HOUSEHOLD LIQUIDS, WINDSHIELD WASHER <b>NO OIL CONTAINERS</b>
#6 STYROFOAM	(ALL TYPES) CLEAN FOOD & BEVERAGE, OTHER PIECES 10" ONLY
PLASTIC TUBS & LIDS #2 TO #7 FILM PLASTICS (e.g. GROCERY BAGS, SARAN WRAP)	CLEAN
NEWSPAPER FLYERS MAGAZINES HOUSEHOLD, JUNK MAIL CATALOGUES WRITING (BOND) PAPER TELEPHONE DIRECTORIES	THESE ITEMS MUST BE TIED OR BAGGED TOGETHER (NOT LOOSE)  SMALL AMOUNTS SMALL AMOUNTS SMALL AMOUNTS
BOXBOARD EGG CARTONS (CARDBOARD)	FLATTENED & PLACED INSIDE A LARGE BOXBOARD CONTAINER WITH ONLY BOXBOARD DO NO TIE WITH CARDBOARD
CARDBOARD ALL BROWN PAPER (KRAFT) BAGS e.g. DOG AND CAT FOOD, FARM PRODUCTS, CEMENT MIX, CHEMICALS, ETC. MILK CARTONS & TETRA PAKS	FLATTENED TOGETHER 24" X 24" 8"  RINSED & LOOSE WITH TIN & PLASTIC
CLEAR & COLOURED GLASS	PLACED IN BLUE BOX FOOD & BEVERAGE BOTTLES (ONLY) NO DRINKING GLASSES NO CERAMIC CUPS NO WINDOW PANE NO DINNER PLATES/CUPS NO MIRROR NO CARLIGHTS OR LIGHTBULBS
OFFICE MIXED PAPER	IN CLEAR PLASTIC BAGS (EVERYTHING USED IN OFFICE (e.g. PAPER & FILE FOLDERS) ( <u>NO</u> CARBON OR CONSTRUCTION PAPER)

**ITEMS NOT ACCEPTABLE/RECYCLABLE**

NO TEXTILES/CLOTHES  
NO CARBON PAPER  
NO POCKET NOVELS/HARDCOVER BOOKS



# ADDINGTON HIGHLANDS

## RECYCLING FACTS

ITEMS ACCEPTED	EXAMPLES	INSTRUCTIONS
Aluminum Foil & Plates	Rigid Foil containers (eg: pie plates), fast food trays, aluminum foil wrap	Flatten if you prefer. Clean – no food scraps. Place with cans & plastic. No foil with paper or plastic lamination, no cardboard lids, no butter, candy or cigarette wrap, no peel off lids, no metalized chip bag
Aerosol Cans	Paint, hairspray, room fresheners, etc.	Cans must be <b>EMPTY</b> . You can leave spray nozzles and paper labels on the can. Place with plastics & cans.
Boxboard	Boxes from cereal, cookies, tissue, detergent, shoes, paper egg cartons, empty paper towel rolls, toilet paper rolls	Empty & flatten the boxes & rolls, etc. and tie in bundles of 24" x 24" x 8" or smaller. Can be placed in a larger boxboard. Can be put with Newspapers, magazines & junk mail.
Corrugated Cardboard & Brown Paper Bags	Heavy cardboard boxes, empty bags from dog/cat food, farm products, etc.	Empty & flatten the boxes and bags and tie in bundles of 24"x24"x8" or smaller. Can be placed together in a larger box.
Empty Paint Cans	Up to 4 litre or 1 gallon size. <b>NO PLASTIC PAINT CANS</b>	Make sure the can is <b>empty</b> . <b>Remove lid &amp; place with plastics &amp; cans</b> . It should have no liquid paint in it & no more than 1/4inch of dried paint on the bottom.. <b>(If paint remaining in can it is Hazardous Waste)</b>
Food & Drink Cans	Pop, Soup, Vegetable Cans, etc.	Rinse cans. You don't have to remove labels or flatten cans. Place metal lids from cans in the bottom of can & pinch the top of the can to trap lid inside (safety measure) & place with plastics & cans
ITEMS ACCEPTED	EXAMPLES	INSTRUCTIONS

Glass	Clear & Coloured Glass	Rinsed and placed in blue box. <b>Food &amp; Beverage bottles ONLY.</b> <i>NO DRINKING GLASSES</i> <i>NO CERAMIC CUPS</i> <i>NO WINDOW PANES</i> <i>NO DINNER PLATES /CUPS</i> <i>NO MIRRORS</i> <i>NO CARLIGHTS OR LIGHTBULBS</i>
Milk & Juice Cartons & Tetra Boxes		Rinse and place with plastics and cans
Newspaper, Magazines & Junk Mail	Newspapers, flyers, magazines, catalogues, envelopes, computer/printer paper, paper cups, paper plates, tissue paper, greeting cards	Items must be tied together or bagged together (not loose). <i>No novels or hardcovered books.</i>
Office Mixed Paper		In clear plastic bag, everything used in office (eg. Paper & file folders) <b>NO CARBON OR CONSTRUCTION PAPER</b>
Styrofoam (Polystyrene)	Packaging from TV's, etc., packaging pellets, cups, plastic knives, forks, spoons, meat trays, bakery trays (clam shells), flower pots, packaging pellets	<b>Must be CLEAN.</b> Place all types in clear plastic bag. Do NOT place with plastics and cans. <b><i>NO "SPONGE / RUBBER LIKE" STYROFOAM.</i></b> <b>NO PINK OR BLUE (SM type) CONSTRUCTION STYROFOAM</b>
Plastic Film #4	<b>GROCERY BAGS ONLY</b>	Clean, no labels, cash receipts out of bag. Put together in a plastic bag – <b><i>do not place with plastics and cans.</i></b>
Plastic Bottles & Jugs #1-7	Beverage Containers (pop, water, etc.), cleaner bottles (Windex, Mr. Clean, dish soap, etc.)	Drain, rinse and discard caps and place with plastics & cans. <b>NO VEGETABLE OIL CONTAINERS UNLESS WASHED INSIDE TO REMOVE OIL RESIDUE.</b> <b>NO MOTOR OIL CONTAINERS</b>
Plastic tubs & lids #2-7	Margarine, yogurt, sour cream, ice cream containers	Clean, lids removed and placed with plastics and cans.

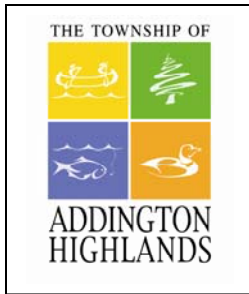


## ***AH CLEAR LOGO BAGS***

***EFFECTIVE AUGUST 1, 2009***

- As of July 1/09 AH Clear Logo Bags are available at the Waste Sites and from those outlets which currently sell bag tags
- Ratepayers may exchange bag tags for AH Logo bags in anticipation of the August 1/09 switch-over date to clear bags
- *Effective Nov 1/09 AH Clear Logo Bags will be mandatory*
- AH Clear Logo Bags will replace bag tags
- Clear bags are to be used for **GARBAGE ONLY**
- The Recycling Process will remain the same: 1 box of recyclables in exchange for 1 AH Logo Bag
- Kitchen Catcher bags are permitted inside of AH Clear Logo Bag
- It is the responsibility of 3<sup>rd</sup> parties to ensure that waste/recycling are sorted appropriately before going to the waste site

**ABSOLUTELY NO BLACK/GREEN OR COLOURED  
GARGAGE BAGS FOR GARBAGE ACCEPTED**



## ***WEEE MATERIALS***

### ***PHASE 1 & 2 ITEMS ACCEPTED***

***EFFECTIVE APRIL 1, 2010***

The following is a list of items now being accepted, free of charge, at the Waste Sites run by the Township of Addington Highlands:

- Televisions
- Professional display devices
- Desktop computers
- Scanners
- Desktop multi-function devices
- Fax machines
- Typewriters
- Answering machines
- Digital Projectors
- Home Stereo systems
- DVD players & recorders
- Home theatre in a box includes home theater image audio/video equipment & speakers
- After market vehicle audio & video devices
- Turntables (Record Players & gramophones)
- Speaker systems, including computer speakers
- Portable computers (eg. LCD, Plasma, LED)
- Mice, Keyboards, Hard drives, Optical drives
- Desktop printing, copying & multi-function devices
- Point of Sale (POS) receipt printers
- Floor-standing printers & photocopiers
- Calculators with printing capabilities or label makers
- Computer Monitors
- All-in-one computers
- Desktop printers
- Handheld printers
- Modems
- Cordless Phones
- Rotary & Touch-tone telephones
- Digital Photo frames
- Home Stereo amplifiers
- AM/FM Radios
- VCRs and/or video projectors

# ***IMPORTANT HOUSEHOLD HAZARDOUS WASTE DISPOSAL INFORMATION***

The Town of Renfrew in co-operation with the Town of Arnprior, Townships of McNab-Braeside, Greater Madawaska, Admaston/Bromley, Addington Highlands, Horton and the Village of Cobden residents are invited to bring their household hazardous waste to the Renfrew Landfill Site. The 376 Bruce Street location is open to receive your hazardous waste on:

**SATURDAY, MAY 20th to Saturday, August 19<sup>th</sup>**  
**Tuesdays through Saturdays inclusive**

**From 8:00 a.m. – 4:00 p.m.**

A permanent Household Hazardous Waste Depot has been established at the Renfrew Landfill Site for Renfrew and area residents to dispose of potentially dangerous wastes in your home. Household Hazardous Wastes include a variety of products. Check the list below. If you have old containers in the basement, garage or shed, bring them to the depot on one of the above dates. These items should NOT go into the local landfill site, as they will leach into our water stream, the soil and into the air. By bringing these items to our new facility, you can be assured they will be handled in an environmentally safe manner.

## **WHAT TO BRING**

Bring items in their original containers, if possible.

PAINTS, TURPENTINE, STAINS, PROPANE TANKS, DISINFECTANTS, HOUSE-HOLD CLEANERS, WEED KILLER, SMALL HOME BATTERIES, HERBICIDES, POOL CHEMICALS, CAR BATTERIES, VARNISH, FURNITURE STRIPPER, ANTIFREEZE, SOLVENTS, INSECTICIDES, USED OIL, AMMONIA, BBQ STARTER, BLEACH, OVEN CLEANER, DRAIN CLEANER, PESTICIDES, BRAKE FLUID.

New – Accepting cell phones and personal digital assistants (PDAs – for example, Palmpilots) –  
SORRY - No car phones, pagers or accessories.

*Sponsored by Renfrew South District W.I.*



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**Appendix C**  
**Waste Bylaw 0121/2003**

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## **By-Law No 0121/2003**

### **A Bylaw to regulate the disposal of garbage in the Corporation of The Township of Addington Highlands**

And to repeal By-Law No. 0107/2002

Whereas it is deemed expedient to regulate the use of a defined area for the disposal of garbage:

And whereas the authority to do so is conveyed by the Municipal Act, 2001 S.O. 2001, Chapter 25, as amended;

And whereas authority to penalize and enforce such a By-Law is conveyed by the Municipal Act 2001 S. O. 2001, Chapter 25, Part XIV;

Therefore, the Corporation of the Township of Addington Highlands, enacts as follows, together with the attached Schedules:

1. That the areas in Schedule "A" be designated as Township Waste Disposal Sites.
2. That the following regulations shall apply to the disposal of garbage or refuse.
  - 2.1 That the Municipal Corporation of the Township of Addington Highlands shall regulate the operations and use of the Waste Disposal sites. No person shall trespass on Waste Site property during non-operational hours.
  - 2.2 That the Waste Disposal Sites be available for the depositing of waste produced by the residents and/or ratepayers of the Municipality of Addington Highlands only, or other persons or parties granted permission by Council. No person shall dump at non-designated areas at waste sites including the gates.
  - 2.3 That material being conveyed to the sites must be transported in such manner as not to blow with the wind or leave deposits along Municipal roads. No person shall litter on public property or on private property.
  - 2.4 That the said Waste Disposal Sites shall be accessible through gates, which shall be locked at all times, with exception of those hours of the week authorized by the Township Council, for the purpose of disposing of garbage. Access to the sites shall be limited to such times as an attendant or other authorized personnel are on duty and the use of the site for waste disposal shall be restricted to persons eligible to deposit waste in the fill area. Contractors, consultants or other authorized persons shall have access to the sites, as required. No person shall otherwise have access to the sites.

- 2.5 That the hours for waste disposal for each site are set out in schedule "B". No person shall dispose of waste outside of the dump hours as posted.
- 2.6 That waste and recyclables as per Schedule "C" must be deposited only at designated areas in the Waste Disposal Site under supervision of the site attendant.
- 2.7 That littering viz. garbage discarded in an open or public place, in the Township will be subject to fines.
- 2.8 That some articles that are waste will require a tipping fee as per Schedule "D".
- 2.9 That at such waste disposal sites, no person shall dispose of restricted materials outlined in Schedule "E".
- 2.10 That, from time to time, Council will decide as to the time, site and method for the disposal of restricted materials (see Schedule "E")
- 2.11 That only the Council for the Township of Addington Highlands, The Ministry of the Environment or duly appointed representatives, shall have access to the area to ensure that there has been proper compliance with these regulations.
- 2.12 That control over blowing papers or other material shall be maintained by the respective attendant.
- 2.13 That on-site roads shall be maintained by Council so that traffic and landfill operations will not be interrupted.
- 2.14 No person shall salvage without permission from the Municipal Council.
3. That the waste disposal sites shall at all times be operated in accordance with the provisions of all applicable laws governing such sites.
4. That site attendants and/or Municipal authorities or their designates, have the power to cite an individual or individuals for and infringement of this By-Law.
5. That all By-Laws inconsistent with or antedating this By-Law are hereby repealed and By-Law No 0104/2002 is repealed
6. Any person, firm or Corporation contravening any provisions of this by-law shall be guilty of an offence and upon conviction thereof shall be subject to a fine as set out in a schedule of fines as provided for in the Provincial Offences Act.

This By-Law received the FIRST, SECOND, and THIRD READINGS this 7TH day of April, 2003.

This By-Law comes into force and effect this 7TH day of April, 2003.

By-Law No. 0121/2003

Schedule "A" [Waste Disposal sites](#)  
Schedule "B" [Dump hours](#)  
Schedule "C" [Waste and Recyclables](#)  
Schedule "D" [Tipping Fees](#)  
Schedule "E" [Restricted Materials](#)



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**Appendix D**  
**Waste Recycling Option Scores**

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