



WASTE RECYCLING STRATEGY

**TOWNSHIP OF KILLALOE, HAGARTY AND RICHARDS
COUNTY OF RENFREW, ONTARIO**

Prepared for

THE CORPORATION OF THE TOWNSHIP OF KILLALOE, HAGARTY AND RICHARDS

Greenview File: 107.10.005

Version 1.0

December 2010

Prepared with assistance from

Continuous Improvement Fund and Waste Diversion Ontario



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ACKNOWLEDGEMENT

The Township of Killaloe, Hagarty and Richards acknowledges the support of Waste Diversion Ontario's Continuous Improvement Fund for their technical and financial assistance in the development of this Waste Recycling Strategy.

While the Township has made every attempt to achieve accuracy in the initial stages of development of the various aspects of this Strategy, the Township states that this version of the Strategy is a foundational document for review and updating/improvement in 2011.

With a municipal election undertaken in the fall of 2010, it is the anticipated intent of the municipality to continue with the baseline work summarized in this version of the Strategy, for continuous improvement in the municipality's Blue Box recycling programs in the future.

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1.0 INTRODUCTION

1.1 BACKGROUND

The Township of Killaloe, Hagarty and Richards (Township) is situated in rural eastern Ontario, approximately 60 kilometres (km) west of Renfrew, Ontario, in the County of Renfrew (Figure 1). The Township is considered rural, with the exception of the Village of Killaloe which is regarded as urban, and has been reporting annual Blue Box recycling statistics to Waste Diversion Ontario (WDO) since 2002 under program code 552.

Currently, the Township operates three (3) waste disposal sites (WDS), of which only the Killaloe WDS accepts domestic and Industrial, Commercial and Institutional (IC&I) waste for disposal. The Round Lake and Red Rock WDS operate as waste transfer stations only, with domestic waste and recycling transferred to the Killaloe WDS for waste disposal and recycling transfer from the Township to a local Material Recovery Facility (MRF) for processing. The Red Rock and Round Lake sites do not accepted Old Corrugated Cardboard (OCC) at their respective transfer stations, and must be delivered to the Killaloe WDS for recycling. In 2008, the Township began an organic waste pilot project at the Killaloe WDS in order to increase waste diversion and decrease waste landfilled at the site. The Killaloe WDS also stockpiles leaf and yard waste, white goods, refrigerants, scrap metal, tires, and ashes as part of the Township's waste diversion programs. The Township operates a Curbside collection program for domestic and IC&I recycling and domestic waste within the Village of Killaloe, including 323 single family households, one (1) multi-family household, and 30 IC&I stops. Each Garbage bag must have an affixed sticker approved by the Township, and the fee per bag tag is \$1.00. All IC&I Garbage within the Township is taken by the generator directly to the Killaloe WDS for disposal; similarly, IC&I OCC is not collected as part of Curbside collection within the Village, and IC&I generators are instructed to deliver all OCC directly to the Killaloe WDS.

All Blue Box recycling tonnages, costs, and related data discussed in this Waste Recycling Strategy (WRS) are Residential only, unless otherwise stated.

The Township would like to thank WDO and the Continuous Improvement Fund (CIF) for the funding support and resource material made available to help with the formulation of this WRS.

1.2 PURPOSE AND SCOPE

This WRS was initiated by the Township to develop a plan to increase the efficiency and effectiveness of its recycling programs and maximize the amount of Blue Box material diverted from disposal. Specifically, the

purpose of this WRS is to maximize waste diversion from disposal to the most feasible extent possible within the Township.

The Township intends to provide waste and recycling services to all residents, property owners, and IC&I generators within the Township limits in the most cost-effective and efficient manner as possible, as part of the long-term sustainability and self-sufficiency of the Township.

The Township faces a number of waste management challenges, which this WRS will help address. In particular, the priority factors and drivers for the Township's development of a WRS are maximizing the shrinking disposal capacity at the Killaloe waste disposal site, as an integral part of the Township's Municipal Solid Waste Management Strategic Plan (MSWMSP) which is currently in development, and to maximize available Best Practice funding from WDO.

This Waste Recycling Strategy was developed with support from the Council of the Township of Killaloe, Hagarty and Richards, WDO, and the CIF and using the CIF's *Guidebook for Creating a Municipal Waste Recycling Strategy (Guidebook)*.

2.0 OVERVIEW OF THE PLANNING PROCESS

2.1 WASTE RECYCLING STRATEGY PLANNING PARTICIPANTS

This WRS was prepared through the efforts of:

- Township of Killaloe, Hagarty and Richards (Municipality).
- Waste Management Committee (Municipality)
- Greenview Environmental Management Limited (Consultant).
- Continuous Improvement Fund (CIF).
- Waste Diversion Ontario (WDO).

2.2 WASTE RECYCLING STRATEGY METHODOLOGY AND TIMELINE

The first step towards the formulation of a WRS for the Township began on April 27, 2010 where the Township attended the CIF Waste Recycling Strategy Working Session in Huntsville, Ontario, which reviewed the need for municipal WRS as part of WDO's Best Practice questions and examined the CIF WRS templates and the *Guidebook*. Following this workshop, the Township recognized its own need for a WRS in order to maximize funding from WDO and as a means to promote increased diversion of Blue Box material within the municipality. Consequently, the Township included the preparation of a WRS as part of its 2010 waste management planning activities.

On April 30, 2010, the Township submitted its annual 2009 Datacall to WDO, and which was subsequently amended by WDO at a later date. The final Generally Accepted Principles (GAP) Diversion Rate for the Town in 2009, as calculated and amended by WDO, was reported as 41% (WDO, 2010).

On May 11, 2010, the Township was approved for funding for the preparation of a *Township of Killaloe, Hagarty and Richards - CIF #262 - Blue Box Recycling Program Best Practice Assessment Report (Report; Genivar Consultants LP, 2010)*. Discussions related to the *Report* were on-going throughout the summer of 2010 between the Township, the Township's consultants Greenview Environmental Management Limited (Greenview), and the representative of CIF, and a final *Report* was published by the representative of CIF on August 11, 2010. The *Report* concluded that, with respect to WDO Best Practices, the three areas of focus for the Township should be related to increasing Promotion and Education (P&E) spending, optimization of collection operations and Multi-municipal planning (Genivar Consultants LP, 2010).

On May 20, 2010, the Township was approved by for funding by WDO and CIF for the formulation of a WRS, and discussions between the Township and Greenview for the preparation of the WRS began in June

2010 and continued through December 2010. From June to December 2010, the WRS worksheets and WRS document were prepared, with the assistance of CIF's *Guidebook*. The Township was approved for 75% of the cost of the WRS, up to \$15,000.

On June 3, 2010, the Township was approved for funding from WDO and CIF for the distribution of Large Blue Boxes to households within the Township. The order of Large Blue Boxes was received by the Township on August 27, 2010 and distribution of the Blue Boxes was completed on October 6, 2010.

On July 5, 2010, the Township received approval of their application for funding for a Communications (P&E) Plan from WDO and CIF. Finalization of the Communications (P&E) Plan is anticipated for early 2011.

The WRS is considered a dynamic strategy, and revisions and updates to the WRS are anticipated by the Township as per the Township's commitment to continuous improvement.

The next steps in the WRS process may include, but are not limited to:

- Continued discussion, amendments, and implementation of the WRS.
- Implementation of Priority Initiatives.

3.0 STUDY AREA

The study area for this WRS includes the entire Township (Figure 1), County of Renfrew, which encompasses a total land area of 395.91 square kilometres (km²) and a population density of 6.4 people per km² (Statistics Canada, 2006). The population of the Township in 2009 was estimated to be 2,586 (Statistics Canada, 2006), with a seasonal population of 1,628, and equivalent population of 2,993 based on an average population increase of 0.46% per year (Statistics Canada, 2006).

The Township is reported to have 1,574 single family households, one (1) multi-family household, and 360 seasonal dwellings. Based on information provided by the Township, the number of households per serviced road kilometre (hh/km) was reported in 2009 to be 10.3 hh/km.

This WRS will address the Residential sector; however, the Township also provides waste and Blue Box recycling services to the IC&I sector including small business, commercial, institutional, and industrial enterprises operating within the Township's limits. Any improvements with regards to waste diversion in the Township that are attained with this WRS are interpreted to benefit both the Residential and IC&I sectors, despite the focus being on Residential waste diversion.

All residents of the Village of Killaloe receive full Curbside collection for waste and Blue Box recycling, while IC&I generators receive Curbside collection for Blue Box recycling with the exception of OCC. IC&I generators are required to drop off OCC at the Depot located at the Township's Killaloe WDS. All IC&I-related waste is required to be disposed of by the generator at the Killaloe WDS. All residents and IC&I generators in the Township are permitted to bring waste and Blue Box recycling to the Township's Depot at the Killaloe WDS, located at 1049 Mask Road. The total number of Residential households serviced by Curbside collection (urban) in 2009 was 324, while the total number of Residential households serviced by Depot collection (rural) in 2009 was 1,251. In 2009, there were 30 reported IC&I stops in the Village of Killaloe.

Table 1 and Table 2 (below), indicate the interpreted split between the Residential and IC&I Blue Box recycling percentages, for both Curbside and Depot collection (WDO, 2010).

Table 1 Curbside Collection Percentages of Total Blue Box Recycling

Curbside Collection	
Residential	90%
IC&I [Containers (Commingle), Mixed Fibres] <i>* No IC&I OCC is collected with Curbside collection</i>	10%
Total	100%

Table 2 Depot Collection Percentages of Total Blue Box Recycling

Depot Collection			
	Mixed Fibre	Containers (Commingle)	OCC
Residential	90%	90%	90%
IC&I	10%	10%	10%
Total	100%	100%	100%

4.0 PUBLIC CONSULTATION PROCESS

To date, the Township has conducted three (3) Public Consultation Events (PCE) as part of the Township's overall MSWMSP, and which are applicable to the formulation of this WRS. The first PCE occurred on August 8, 2009 and was used as a public introduction to the MSWMSP and to allow for initial comments relative to the MSWMSP from the public. The second PCE occurred on October 24, 2009 and focused on an update to the preliminary studies of the MSWMSP, to outline the scope of the General Work Plan (GWP), and to present the results of a questionnaire that was issued to the public in order to establish the general alternatives with regards to future waste management activities in the Township. The third, and most recent, PCE event took place on August 14, 2010 and focused on waste management alternatives for the Township as established by the GWP. The August 14, 2010 PCE was the most applicable PCE to the formulation of this WRS, and details of the event are discussed below.

The August 14, 2010 PCE discussed the structure and role of the Public Liaison Committee (PLC), which consists of several public members in addition to Council members and staff from the Township. The PLC had four working meetings and focused its efforts on the effective dissemination of information and direct communication to the ratepayers of the Township of Killaloe, Hagarty and Richards with regards to the MSWMSP and the GWP. The August 14, 2010 PCE also discussed the use of press releases and newspaper articles as a way of educating the public on the current MSWMSP and GWP. The PCE meeting focused on the scope of the GWP and the alternatives being considered for future waste management in the Township are identified in Table 3 (below):

Table 3 General Work Plan – Summary of Project Alternatives and Related Options

Alternative	Options
1. Waste Diversion	Maximization of waste diversion by the most feasible extent possible
2. Waste Landfilling	<ul style="list-style-type: none"> • Expansion of Killaloe WDS • Utilization of Round Lake WDS
3. Waste Export	<ul style="list-style-type: none"> • Export to Ottawa Valley Waste Recovery Centre • Export to LaFlèche Environmental Inc.
4. Waste Incineration	<ul style="list-style-type: none"> • Township-based facility (Municipally-owned/operated) • Township-based facility (Privately-owned/operated) • Export to Outside facility

The only alternative of the GWP that is applicable to this WRS is “Waste Diversion”, and during the meeting some details of the alternative were discussed including the maximizing of the “3-R’s”, the need for developing a WRS, integration of the WRS into the MSWMSP, the necessity to discuss a complete overhaul of the Township’s Blue Box program, the long-term goal of initiating a Multi-municipal approach to waste management activities, and the pressing need for increasing P&E activities in order to achieve the Township’s long-term waste management objectives. The Township regards Waste Diversion as an integral part to any long-term, solid waste management planning project.

Specific short-term details relative to the Waste Diversion alternative were identified, including the imminent change in Blue Box processing service provider due to the anticipated closure of Beauman Waste Management (Beauman) in 2011, discussion on proposing Blue Box material lists changes, and if additional diversion tools like an implementation of a Clear Bag policy, Bag Limits, or increased collection of Blue Box materials are required within the Township.

Finally, the PCE identified the Township’s long-term goal of attaining a GAP Diversion Rate of 50% and Capture Rate of 70%.

The Township is committed to continuous improvement and the involvement of the public in municipal decision making. The role of future PCEs as part of the MSWMSP will be discussed by the Council of the Township of Killaloe, Hagarty and Richards in 2011.

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 priority drivers that led to the development of this WRS include:

1. Shrinking disposal capacity at the Killaloe WDS.
2. Establishment of a Municipal Solid Waste Strategic Plan (MSWMSP).
3. Maximize Best Practice Funding from Waste Diversion Ontario (WDO).

6.0 GOALS AND OBJECTIVES

This WRS has identified a number of goals and objectives for the Township. These are presented below:

Table 4 Waste Recycling Goals and Objectives

Goals	Objectives
To maximize diversion of Residential/IC&I solid waste through the Blue Box and bulk recycling programs	<ul style="list-style-type: none"> • Attain a GAP Diversion Rate of 50% by 2015 (WDO Datacall) • Attain a Blue Box Diversion Rate of 37% by 2015 (Worksheet 7c)
To maximize the Capture Rate of Blue Box materials through existing and future programs	<ul style="list-style-type: none"> • Attain a 70% Capture Rate by 2015 • Increase Capture Rate of Blue Box recyclables by 20% within three (3) years (2013)
To improve the cost-effectiveness of recycling in our community	<ul style="list-style-type: none"> • Reduce recycling costs per tonne by 10%
To increase participation in the recycling program	<ul style="list-style-type: none"> • Raise participation in Blue Box program to 90% • 2009 Participation Rate = 80%
To expand the lifespan of the Killaloe WDS	<ul style="list-style-type: none"> • Extending the existing capacity allows for additional planning time for future waste management requirements
To increase community knowledge/awareness of the current Blue Box recycling program	<ul style="list-style-type: none"> • Increase Blue Box Promotion and Education (P&E) spending by 25% per year for five (5) years; integrated with "Communications Plan"

An additional aspect of the WRS may consider broader community goals and objectives. To date, this has not been reviewed in detail as part of the WRS development.

7.0 CURRENT SOLID WASTE MANAGEMENT PROGRAM

7.1 COMMUNITY CHARACTERISTICS

In 2009, the Township was estimated to have a permanent population of 2,586 based on 2006 data from Statistics Canada (Statistics Canada, 2006). The municipality is home to 1,575 Total Households or dwellings. Of these, 1,574 are single-family households and one (1) is a multi-family household. There are also an additional 360 seasonal dwellings, which are generally occupied during the months of June to September. The Equivalent Population of the Township of Killaloe, Hagarty and Richards, based on full-time and seasonal Residential populations, was estimated to be 2,993 in 2009.

7.2 CURRENT WASTE GENERATION AND DIVERSION – RESIDENTIAL (TOTAL - 2009)

In 2009, the Township of Killaloe, Hagarty and Richards generated approximately 691.16 tonnes of Residential solid waste per year. Of this, 183.69 tonnes, or 26.6% percent, was diverted through the Blue Box program. In 2009, 58.50 tonnes of Containers (commingle), 58.68 tonnes of OCC, and 66.51 tonnes of Fibres were collected by the Township. IC&I solid waste and Blue Box recycling tonnages are not included in the reported data above.

Since the Township of Killaloe, Hagarty and Richards offers Curbside Blue Box services to residents of the Village of Killaloe and Depot services to all other residents of the Township, the following is a further breakdown of Residential Blue Box recycling activities in 2009.

7.3 CURRENT WASTE GENERATION AND DIVERSION – RESIDENTIAL (CURBSIDE - 2009)

Based on the assumption that 30% of the total waste generated within the Township is collected by Curbside activities in the Village of Killaloe, approximately 207.35 tonnes of Residential solid waste can be attributed to the Curbside Residential waste stream in 2009. Of this, 56.43 tonnes, or 27.2% percent, was diverted through the Blue Box program. In 2009, approximately 17.55 tonnes of Containers (commingle), 18.93 tonnes of OCC, and 19.95 tonnes of Fibres were collected by Curbside collection.

7.4 CURRENT WASTE GENERATION AND DIVERSION – RESIDENTIAL (DEPOT - 2009)

Based on the assumption that 70% of the total waste generated within the Township is collected by Depot activities, approximately 483.81 tonnes of Residential solid waste can be attributed to the Depot Residential waste stream in 2009. Of this, 127.26 tonnes, or 26.3% percent, was diverted through the Blue Box program. In 2009, approximately 40.95 tonnes of Containers (commingle), 39.75 tonnes of OCC, and 46.56 tonnes of Fibres were collected by Depot collection.

Table 5 (below) summarizes the current waste generation and Blue Box Diversion Rates.

Table 5 Residential Solid Waste Generated and Diverted Through Blue Box (2009)

Residential Waste Stream/Blue Box Material (2009)	Tonnes	Percent of Total Waste
Total Waste Generated	691.16	-
Fibres (ONP, OMG, OCC, OBB and fine papers)	125.19	18.1%
Containers (commingle)	58.50	8.5%
Total Blue Box Material Currently Diverted (2009)	183.69	26.6%

As Table 6 (below) indicates, the Township's 2009 Blue Box Diversion Rate was above average for its WDO municipal grouping.

Table 6 Average Blue Box Diversion Rate (2009)

Location	Blue Box Diversion Rate (2009)
Township of Killaloe, Hagarty and Richards	26.6%
Municipal Grouping: Rural Collection - South	21.4%

7.5 POTENTIAL WASTE DIVERSION

To determine the Township's 2009 waste composition, the composition of the Blue Box recycling stream was estimated using the approximations from the CIF *Guidebook*.

Based on the *Guidebook* and CIF worksheets, a total of approximately 256.42 tonnes of Blue Box recyclable materials were available for diversion in 2009, of which approximately 72.73 tonnes remained in the waste stream. Estimates of Blue Box material available for diversion are listed in Table 7 (below).

Table 7 Current (2009) and Potential Diversion

Material	Total Available in Waste Stream (2009) (tonnes/year)	Currently Recycled (2009) (tonnes/year)	Potential Increase (tonnes/year)
Fibres (ONP, OMG, OCC, OBB and fine papers)	145.14	125.19	19.95
Containers (commingle)	111.28	58.50	52.78
Total	256.42	183.69	72.73

Based on Table 5 and Table 7 (above), 10.5% of the Total Residential Waste Generated remains available for recycling, which would raise the Township's Blue Box Diversion Rate to 37.1% (Appendix A; Worksheet 7c).

7.6 EXISTING PROGRAMS AND SERVICES

In 2009, the Township had the following policies and programs in place to manage Residential solid waste:

- 1) User Pay
- 2) Tipping Fees
- 3) Mandatory Recycling (By-Law Number #46-2008)

For this WRS, Waste and Recycling Coverage is defined as the percentage of Total Households that are serviced by Curbside or Depot collection. Curbside collection services of regular waste are provided to the residents of the Village of Killaloe 52 weeks per year, with a Waste Coverage Percent of 20.57%; 324 of the 1,575 Total Households are serviced by a contractor for Curbside waste collection. Curbside Blue Box recycling services are provided to residents of the Village of Killaloe 26 weeks per year, with a Recycling Coverage Percent of 20.57%; 324 of the 1,575 Total Households are serviced by Township staff for Curbside Blue Box recycling collection.

Depot collection services for both Residential solid waste and Blue Box recycling is available for the remaining 79.43% Total Households within the Township of Killaloe, Hagarty and Richards not serviced by Curbside collection. The Killaloe WDS is the primary Depot for the Township; however, mobile Depots are available to rate-payers at the Red Rock and Round Lake WDS on select days.

Disposal and recycling services are paid for primarily through municipal property taxes and through User Fees at the Killaloe WDS. Once recyclable materials have been collected from Curbside collection and mobile Depots at the Round Lake and Red Rock WDS, they are taken to the transfer station located at the Killaloe WDS. All Blue Box recyclables from the Killaloe WDS are then transferred to Beauman in Renfrew, Ontario for processing.

Upcoming important collection-related milestones that may affect how collection services are administered are included in Table 8 (below).

Table 8 Collection Service Milestones

Material	Service Provider	Contract Start	Contract End
Waste (Garbage)	Ken Kuehl	April 1, 2010	March 31, 2012
Blue Box Recycling (MRF)	Beauman Waste Management	No Contract	MRF Closure in 2011

In 2009, the total net annual recycling costs for the Township were \$70,354.92. This amounts to \$383.01 per tonne, or \$23.40 per capita. As Table 9 (below) shows, net annual Blue Box recycling costs for the Township are below average for its WDO municipal grouping.

Table 9 Net Recycling Cost (per tonne per year - 2009)

Location	Cost per Tonne (2009)
Township of Killaloe, Hagarty and Richards	\$ 383.01
Rural Collection - South	\$ 419.64

7.7 ANTICIPATED FUTURE WASTE MANAGEMENT NEEDS

Solid waste generated rates in the Township of Killaloe, Hagarty and Richards are expected to grow over the next 20 year planning period, based on a 0.46% increase in population in the Township from 2001 to 2006 (Statistics Canada, 2006). Table 10 (below) depicts the expected growth rates for solid waste generation and Blue Box material recovery (based on projected population growth rates).

Table 10 Anticipated Future Solid Waste Generation and Available Blue Box Material

	2009 (Current)	2014 (+5 Years)	2019 (+10 Years)
Equivalent Population	2,993	3,062	3,133
Total Waste (tonnes)	691.16	707.06	723.32
Blue Box Material Available (tonnes)	256.42	262.32	268.35

8.0 SELECTED INITIATIVES OF THE WASTE RECYCLING STRATEGY

8.1 OVERVIEW OF PLANNED INITIATIVES

The Township reviewed a number of options for consideration in the development of its WRS. The options were then scored based on a Priority Level:

Table 11 Planned Initiative Priority Levels

Priority Level	Description
5	High
4	Medium High
3	Medium
2	Medium Low
1	Low

A detailed overview of the options reviewed and their scoring are provided on Worksheet 8 in Appendix A, and a summary of the options are included in Worksheet 9 in Appendix A and Table 12 and Table 13 (below).

Once scored, the top ranking WRS options were organized into Priority Initiatives and Future Initiatives. The estimated cost for implementing the Priority and Future Initiatives are listed in Table 12 and Table 13 if available; however, if no cost is listed, the value is to be determined as part of the continuous improvement and evaluation of the WRS. An assessment of these initiatives and their steps for implementation are reviewed on the following pages.

Table 12 Priority Initiatives

Priority Initiatives	Priority Level	Approximate Total Costs	Anticipated Start Date	Anticipated Completion Date
Public Education and Promotion Program (P&E)	5	2010 to 2015 = \$21,115	January 2011	December 2015
Provision of Free Blue Boxes	5	Completed		
Diversion Incentive Program	4	Costs Covered in P&E Program	Spring 2011	Summer 2011
Enhancement of Recycling Depots	4	Depot Enhancements = \$8,000 to \$10,000	Spring 2011	Fall 2011
Optimization of Collection Operations	3	New Collection Vehicle = >\$200,000	To be Determined	To be Determined
Training of Key Program Staff	1	Variable; Course Specific	Spring 2011	On-going

Table 13 Future Initiatives

Future Initiatives	Priority Level	Approximate Total Costs	Anticipated Start Date	Anticipated Completion Date
Following GAP for Effective Procurement and Contract Management	4	To be Determined	2011 = New MRF Contract 2012 = Curbside Garbage Collection Contract	On-going
Collection Frequency	3	Curbside Collection = ~ \$27,000	Spring 2012 (contract dependent)	Summer 2012
Multi-Municipal Planning Committee, Collection, and Transfer of Recyclables	3	To be Determined	2011	On-going

8.2 PRIORITY INITIATIVES

The following is a review the Priority Initiatives identified during the formulation of the WRS, and as identified on Worksheets 8 and 9 in Appendix A. Each Priority Initiative is listed below, in order of Priority Level:

Initiative: Public Education and Promotion (P&E) Program (Priority Level = 5)

Overview:

- Increase Blue Box-specific P&E spending in Township (2009 P&E Spending = \$1500)
- Proposed increase in P&E spending = 25% per year until 2015

Implementation:

- Develop budget and schedule for P&E Program.
- Determine P&E materials/concepts/tools to be utilized.
- Hire specialist(s) to assist with selected promotional aspects of P&E Program.

- Initiate P&E Program.

Initiative: Provision of Free Blue Boxes (Priority Level = 5)

Overview:

- By providing free large Blue Boxes (20+ Gallon) to residents, increases in Capture Rate and Blue Box Diversion Rate are anticipated.
- Helps ensure residents have sufficient storage capacity for Blue Box Recyclables.
- Maximizes sorting at source and minimizes sorting at Curbside.

Implementation:

- Completed in Fall 2010 (one (1) large Blue Box to each household)
- Completed with 50% funding from CIF and 50% funding from Township

Initiative: Diversion Incentive Program (Priority Level = 5)

Overview:

- Encourage Residents towards increased diversion of Blue Box recyclables.
- Incentives being considered as part of Municipal Solid Waste Management Strategic Plan (MSWMSP)

Implementation:

- Initiate discussion with Township on specific Diversion Incentive options.
- Implementation of Bag Limits, a Clear Bag Policy, and/or no bag tags required if participating in Blue Box recycling to be discussed
- If Diversion Incentive Program is approved, include new Diversion Incentives in P&E Program, and on concepts/materials/tools.

Initiative: Enhancement of Recycling Depots (Priority Level = 4)

Overview:

- In comparison to Curbside collection, recycling Depots provide an inexpensive means to divert Blue Box recycling from disposal.
- A clean, well maintained, and visually communicative Depot improves site effectiveness.

Implementation:

- Review option to upgrade site to include “Visual” signage.
- Review option of enhancing site conditions (landscaping, general cleanliness, maintenance).
- Review option of providing additional part-time staff to assist in user education; Co-op programs and government programs are options.

Initiative: Optimization of Collection Operations (Priority Level = 3)

Overview:

- Optimizing Collection operations can reduce financial, capital and human resources involved in waste diversion management.
- Could be reviewed concurrently with discussions on Collection Frequency.

Implementation:

- Negotiate more favourable Blue Box recycling contract with MRF; Beaman (MRF) to be closed in 2011, alternate MRF required for Blue Box processing, possible expansion of acceptable Blue Box materials list.
- Meetings with neighbouring municipalities; Multi-municipal participation to be reviewed by Council.
- Review Township capital expenditure requirements for municipal Collection.

Initiative: Training of Key Program Staff (Priority Level = 1)

Overview:

- As courses become available, Waste Management Chair (Council) and Public Works Superintendent are most appropriate candidates for additional training.
- Applicable associations/organizations for training: WDO, Municipal Waste Association (MWA), Association of Municipalities of Ontario (AMO), Stewardship Ontario (SO), and Solid Waste Association of Ontario (SWANA).

Implementation:

- Include potential training program costs in municipal budget.
- Monitor training programs available each year and evaluate applicability/benefit to Township Blue Box recycling program.

8.3 FUTURE INITIATIVES

The following is a review the Future Initiatives identified during the formulation of the WRS, and as identified on Worksheets 8 and 9 in Appendix A. Each Future Initiative is listed below, in order of Priority Level:

Initiative: Following GAP for Effective Procurement and Contract Management (Priority Level = 4)

Overview:

- Tender tool available to municipalities to ensure completeness and accuracy.
- New Blue Box recycling MRF contract will be required for 2011 – Beauman is anticipated to close in August 2011.

Implementation:

- Management of new Request for Proposals (RFP)/contracts will use the Stewardship Ontario Model Tender Tool.
- RFP process anticipated to begin in early 2011.
- Completion of RFP process anticipated for summer 2011.

Initiative: Collection Frequency (Priority Level = 3)

Overview:

- When Blue Box recycling collection frequency is greater than Garbage frequency, greater diversion of Blue Box materials is anticipated.
- 2009 bi-weekly Curbside Blue Box collection costs = \$9,126.16
- 2009 weekly Curbside Garbage collection costs = \$13,695
- Potential weekly Curbside Blue Box collection costs = ~ \$20,000; change dependent on Township mandate
- Potential bi-weekly Curbside Garbage collection costs = ~\$7,470; change dependent on Garbage collection contract – contract end date = Spring 2012

Implementation:

- Investigate and discuss weekly Blue Box recycling and bi-weekly Garbage collection prior to finalization of new Blue Box recycling (MRF) contract (2011)

- If change to collection schedule is viable, propose changes to Council of the Township of Killaloe, Hagarty and Richards for decision.
- Include collection schedule changes in P&E Program and on concepts/materials/tools.

Initiative: Multi-municipal Planning (Priority Level =3)

Overview:

- Multi-municipal planning and collaboration can increase economies of scale and help reduce costs for smaller municipalities for their recycling programs.
- Potential municipal partners: Madawaska Valley (MV), Killaloe, Hagarty and Richards (KHR), South Algonquin (SA), Greater Madawaska (GM), Bonnechere Valley (BV), Brudenell, Lyndoch and Raglan (BLR)

Implementation:

- The initiation of discussions to be investigated by Council in early 2011.

8.4 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 minimal impact or delay. Table 14 (below) identifies a set of contingencies for possible planning delays.

Table 14 Waste Recycling Strategy Contingencies

Risk	Contingency
Insufficient funding	<ul style="list-style-type: none"> • Explore and apply for other funding sources • Delay lower-priority initiatives • Increase proportion of municipal budget to solid waste management • Raise/implement user fees
Public opposition to planned recycling initiatives	<ul style="list-style-type: none"> • Improve public communications • Engage community/stakeholders to discuss initiatives/recycling plan
Lack of available staff	<ul style="list-style-type: none"> • Prioritize department/municipal goals and initiatives • Hire summer students to help with planning (may be available funding) • Co-op programs with local educational institutions?
Permit requirements	<ul style="list-style-type: none"> • Identify permit requirements early on in process • Establish a “permit requirements” checklist
Public apathy and non-compliance	<ul style="list-style-type: none"> • Increase P&E spending • Create reward structure for compliance/participation • Increase enforcement – Fines
Enforcement of recycling policies	<ul style="list-style-type: none"> • Use Township Waste Management By-Law #46-2008

9.0 MONITORING AND REPORTING

The monitoring and reporting of the Township's recycling program is considered a Blue Box program fundamental Best Practice and will be a key component of this WRS. Once implementation of the strategy begins, the performance of the WRS will be monitored and measured against the baseline established for the current system. Once the results are measured, they will be reported to Council and the public.

The approach for monitoring the Township's WRS is outlined in Table 15 (below).

Table 15 Waste Recycling Strategy Monitoring

Monitoring Topic	Monitoring Tool	Frequency
Diversion Rates Achieved (by type and by weight)	<p><u>Blue Box Diversion Rate:</u></p> <ul style="list-style-type: none"> (Blue Box materials ÷ Total Waste Generated) * 100% <p><u>GAP Diversion Rate:</u></p> <ul style="list-style-type: none"> Calculated by WDO in annual Datacall [(All Diversion) ÷ Total Waste Generated] * 100% 	<ul style="list-style-type: none"> Annually Annually
Program Participation	<ul style="list-style-type: none"> Monitoring Curbside and Depot Participation Rates MRF Tonnages Tracking – spreadsheets/graphs 	<ul style="list-style-type: none"> On-going
Ratepayer Satisfaction / Opportunities for Improvement	<ul style="list-style-type: none"> Ratepayer survey (by mail in tax mailings) Tracking calls/complaints received to the municipal office/Depot site (Killaloe WDS) 	<ul style="list-style-type: none"> Every 1 to 3 years On-going
Planning Activities	<ul style="list-style-type: none"> Prepare "Annual Waste Diversion Monitoring Report" for Township 	<ul style="list-style-type: none"> Annually (Winter)
Review of WRS	<ul style="list-style-type: none"> A periodic review of the WRS to ensure that the selected initiatives are being implemented and to move forward with continuous improvement 	<ul style="list-style-type: none"> Annually
Waste Disposed (Garbage)	<ul style="list-style-type: none"> Capacity surveys (integral for determining Total Waste Generated) 	<ul style="list-style-type: none"> Annually
Depot Participation	<ul style="list-style-type: none"> Waste Site Records (record book) Depot Participation Rates 	<ul style="list-style-type: none"> Daily On-going

10.0 CONCLUSIONS AND RECOMMENDATIONS

This WRS was initiated by the Township to develop a plan to increase the efficiency and effectiveness of its Blue Box recycling program and maximize the amount of Blue Box material diverted from disposal. Specifically, the purpose of this WRS is to maximize Blue Box diversion from disposal to the most feasible extent possible within the Township. The WRS was prepared with assistance from CIF using the *Guidebook* and worksheets made available by CIF to municipalities in order to facilitate continuous improvement of municipal Blue Box recycling programs in accordance with Best Practices, as identified by WDO.

Currently, the Township provides Curbside Garbage and Blue Box recycling services to Residents within the Village of Killaloe and Depot Garbage and Blue Box recycling services to the remaining Residents within the Township. IC&I generators within the Village of Killaloe receive Curbside Blue Box recycling services for Mixed Fibres and Containers (commingle); however, IC&I generators are required to deliver Garbage and OCC directly to the Depot at the Killaloe WDS. The Priority Factors/Drivers that led to the development of the WRS is the shrinking disposal capacity at the Killaloe WDS, as an integral part of the Township's MSWMSP, and the WDO Best Practice requirements.

In 2009, the Township was determined by WDO to have a GAP Diversion Rate of 41% (WDO, 2010), and using Worksheet 7b (Appendix A) was determined to have a Blue Box Diversion Rate of 26.6%. A WDO-calculated Capture Rate of 43.44% was identified in the 2009 WDO Datacall for the Township for the 2008 calendar year (WDO, 2010); a 2009 Capture Rate will be available following completion of the 2010 Datacall in April 2011.

The Township has identified that the main areas of improvement for the Blue Box recycling program include:

- Increasing Blue Box-specific P&E spending.
- Discussion on the implementation of a Clear Bag and enforcement of mandatory Blue Box recycling policies (Township By-Law #46-2008).
- Negotiating a new Blue Box recycling MRF contract (Beauman closure = 2011).
- Investigations related to increasing current staff levels.
- Increasing Blue Box and GAP Diversion Rates within the Township.
- Increasing Capture Rate within the Township.

In order to achieve improvement in the Blue Box recycling program, the Township has identified Priority Initiatives as a means to achieve their diversion goals including:

- Development of a comprehensive P&E Program

- Provision of free Blue Boxes for Residents in 2011 (if available)
- Development of a Diversion Incentive Program
- Enhancement of Recycling Depots (Killaloe/Red Rock/Round Lake WDS)
- Optimization of Collection Operations
- Training of Key Program Staff

Future Initiatives will be reviewed consistent with continuous improvement activities and review of the WRS on an on-going basis. The Township intends to develop a detailed work plan in order to meet the goals of the Priority Initiatives of the WRS. By 2015, the Township aims to achieve a Blue Box Diversion Rate of 37% and a GAP Diversion Rate of 50%.

11.0 CLOSING

Greenview has prepared this *Waste Recycling Strategy* in accordance with Blue Box Best Practice Activities, Section 3.4 of the 2009 WDO Municipal Datacall for the Township of Killaloe, Hagarty and Richards.

This report is governed by the attached Statement of Service Conditions and Limitations (Appendix D).

All respectfully submitted by,

GREENVIEW ENVIRONMENTAL MANAGEMENT LIMITED

Dan Hagan, B.Sc. (Geology)
Project Technologist

Tyler H. Peters, P.Eng.
Project Manager

12.0 REFERENCES

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Genivar Consultants LP, 2010. *Township of Killaloe, Hagarty and Richards - CIF #262 - Blue Box Recycling Program Best Practice Assessment Report*. August 2010.

Statistics Canada, 2006. <http://www.statcan.gc.ca/>.

Trow Associates Inc., 2010. *Continuous Improvement Fund (CIF) - Guidebook for Creating a Municipal Waste Recycling Strategy*. March 2010.

Waste Diversion Ontario, 2010. *2009 Waste Diversion Ontario Municipal Datacall Summary Report (Revised) – Township of Killaloe, Hagarty and Richards*. June 23, 2010.

FIGURES



Source: MTO Road Maps

Greenview
ENVIRONMENTAL MANAGEMENT

Greenview Environmental Management Limited
69 Cleak Avenue, P.O. Box 100
Bancroft, Ontario K0L 1C0
tel: (613) 332-0057
fax: (613) 332-1767
email: solutions@greenview-environmental.ca

CREATED BY:	ESD
CHECKED BY:	THP
DATE:	DECEMBER 2010
SCALE:	NTS

CLIENT:	TOWNSHIP OF KILLALOE, HAGARTY AND RICHARDS
TITLE:	REGIONAL LOCATION PLAN

PROJECT NO.:	107.10.001
FIGURE:	1

APPENDIX A

Continuous Improvement Fund Waste Recycling Strategy Worksheets



Worksheet 1
Introduction Summary
Municipal Waste Recycling Strategy
Township of Killaloe, Hagarty and Richards

Introduction Elements	
Municipalities Involved	Township of Killaloe, Hagarty and Richards (TKHR) County of Renfrew, Ontario
Description of municipal obligation for managing municipal waste	The Township of Killaloe, Hagarty and Richards intends to provide waste and recycling services to all residents, property owners and IC&I generators within the township limits in the most cost-effective and efficient manner as possible, as part of the long-term sustainability of the township.
Purpose and goals of Waste Recycling Plan	To maximize waste diversion from disposal to the most feasible extent possible within the Township of Killaloe, Hagarty and Richards.
Reasons for developing Waste Recycling Strategy (summarize from worksheet 5)	The priority factors/drivers for the Township of Killaloe, Hagarty and Richards to formulate a Waste Recycling Strategy (WRS) are to maximize the shrinking disposal capacity at the Killaloe WDS, as an integral part of the Township's Municipal Solid Waste Management Strategic Plan (MSWMSP), and to maximize available Best Practice funding from Waste Diversion Ontario (WDO).
Support received to prepare the plan	The Council of the Township of Killaloe, Hagarty and Richards Continuous Improvement Fund (CIF) <ul style="list-style-type: none"> • Funding approval received from CIF



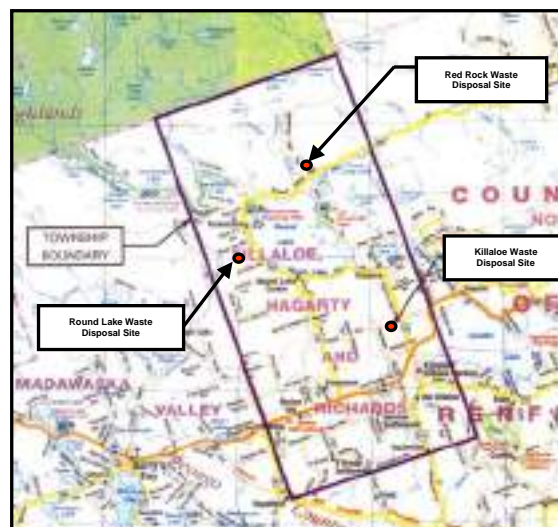
Worksheet 2
Planning Process
Municipal Waste Recycling Strategy
Township of Killaloe, Hagarty and Richards

Planning Process	
Plan Development Participants	<ul style="list-style-type: none"> • Township of Killaloe, Hagarty and Richards (Municipality) • Greenview Environmental Management Limited (Consultant) • Continuous Improvement Fund (CIF) • Waste Diversion Ontario (WDO)
Completed Steps	<ul style="list-style-type: none"> • Secured funding for WRS development • Completion of WRS Worksheets • Meetings with Township staff • PCE Events (2009 and 2010) • Draft of WRS Report
Next Steps	<ul style="list-style-type: none"> • Meeting with Township Staff to Discuss Implementation / Amendments
Public Engagement (may include information from worksheet 4)	<ul style="list-style-type: none"> • Public consultation (PCE) to be considered for 2011



Worksheet 3
Study Area
Municipal Waste Recycling Strategy
Township of Killaloe, Hagarty and Richards

Study Area Characteristics	
<p>Our study area includes the following municipalities/areas:</p>	<p>Township of Killaloe, Hagarty and Richards County of Renfrew</p> <p><u>Land Area</u> = 395.91 km² (Stats Canada, 2006) <u>Population Density</u> = 6.4 per km² (Stats Canada, 2006) <u>Equivalent Population</u> = 2,993 (estimated; Stats Canada, 2006) <u>Households</u> = 1,574 Single Family / 1 Multi-family <u>Seasonal Dwellings</u> = 360 <u>IC&I Stops</u> = 30</p>
<p>Our Recycling Plan will consider the following sectors:</p>	<p><u>Sectors:</u></p> <p>Residential Single Family & Multi-Family IC&I – small business, institutional, industrial <u>Township Data (www.CountyofRenfrew.on.ca)</u> Services = 46 Commercial = 25 Tourism = 21 Manufacturing = 7 Social Organizations = 7</p>



Source: MapArt – Ontario Road Atlas



Worksheet 4
Public Consultation Options
Municipal Waste Recycling Strategy
Township of Killaloe, Hagarty and Richards

Applicable? Y/N	Public Consultation Options	Comments
To be determined	Stakeholder Outreach	<p>Interview key local stakeholders (e.g., resident associations, community groups, small business associations or leaders, etc) to identify key issues, concerns, and opportunities.</p> <ul style="list-style-type: none"> • To be completed as part of PLC events • Including: Residents/Ratepayers, IC&I generators, Small Business Association?, Golden Lake Property Owners Association, Round Lake Property Owners Association, Other Associations, First Nations
To be determined	Public Consultation Events (PCE) <ul style="list-style-type: none"> • Waste Management Committee (w/ public members) • Public Liaison Committee (PLC) 	<p>Public Consultation Events (PCE) are excellent ways to update the public on your planning activities and to obtain their feedback. PCE's to be completed as part of the Municipal Solid Waste Management Strategic Plan (MSWMSP) and integrated into the WRS</p> <ul style="list-style-type: none"> • Diversion • Best Practices (WDO) • Promotion and Education (P&E)
To be determined	Website Feedback (Township Website)	<p>Township of Killaloe, Hagarty and Richards Website: http://www.killaloe-hagarty-richards.ca/</p> <p>The Township website is used to publish important information regarding the MSWMSP and will be used to promote the WRS and disseminate information to the public.</p> <p>Please see the above link for available information.</p>
To be determined	Meetings <ul style="list-style-type: none"> • Waste Management Committee (WMC) • Public Liaison Committee (PLC) 	<p>WMC meetings are conducted regularly, and will be used as a forum for discussion on the WRS, as part of the MSWMSP.</p> <p>The purpose would be to engage members of the public in the development of the WRS. WMC meetings will be open to the public.</p> <p>PLC meetings will be used in a similar manner.</p>
To be determined	Notices and Mail-outs	<p>Notices/mail-outs are regularly sent to residents in tax mailings, and will be used as part of the WRS to inform the public on diversion-related subjects.</p>
To be determined	Surveys (mail)	<p>Surveys/questionnaires could be used to consult the public with regards to the WRS. The surveys/questionnaires could be sent by mail to residents across the Township.</p> <p>Surveys/questionnaires have previously been observed to be effective at determining public opinion within the Township.</p>



Worksheet 5
Waste Diversion Factors and Drivers
Municipal Waste Recycling Strategy
Township of Killaloe, Hagarty and Richards

Relevant in our case? Yes/No	Factor/Driver	Comments
Yes	WDO requirements	WDO requires municipalities to have a Waste Recycling Plan in place (Best Practice Funding).
Yes	Shrinking disposal capacity	A successful WRS can help to expand the lifetime of existing landfills.
No	Population growth	Population growth can lead to increases in waste generated
Yes	Council direction	Council Resolution = #3 (March 16, 2010)
Yes	Public pressure	<ul style="list-style-type: none"> • Increased environmental awareness of public • Municipal service demands
Yes	Improving cost/service efficiencies	<ul style="list-style-type: none"> • The cost per cubic metre of landfill volume is a driving factor towards a WRS • Collection (Curbside) costs are low in comparison to similar municipalities • Depot costs are high in comparison to similar municipalities
Yes	Restricting factors (e.g., a lack of local markets or MRFs)	<p>Minimal service available from local MRFs</p> <ul style="list-style-type: none"> • Beauman closing in 2011 <p>Available MRFs after 2011</p> <ul style="list-style-type: none"> • Ottawa Valley Waste Recovery Centre (OVWRC) • Waste Management (WM)
Yes	Municipal Solid Waste Management Strategic Plan (MSWMSP)	A municipal Waste Recycling Strategy (WRS) is identified as a valuable part of the MSWMSP that TKHR is currently undertaking

Priority Factors/Drivers
1. Shrinking Disposal Capacity (Killaloe Waste Disposal Site)
2. Municipal Solid Waste Management Strategic Plan (MSWMSP)
3. WDO Requirements – Best Practices (maximize funding)



Worksheet 6
Waste Recycling Goals and Objectives
Municipal Waste Recycling Strategy
Township of Killaloe, Hagarty and Richards

Recycling Specific Goals and Objectives			
Relevant? Yes / No	Goals	Objectives	Comments
Yes	To maximize diversion of residential/municipal solid waste through the blue box/recycling program	<p>Attain a GAP Diversion Rate of 50% within the Township by 2015</p> <ul style="list-style-type: none"> A progressive Diversion Rate <p>Attain a Blue Box Diversion Rate of 37% by 2015 (Worksheet 7c)</p>	<p>2009 GAP Diversion Rate = 41%</p> <ul style="list-style-type: none"> The GAP Diversion Rate must increase by 2% per year in order to meet target. <p>2009 Blue Box Diversion Rate (Worksheet 7c) = 27%</p>
Yes	To maximize capture rates of blue box materials through existing and future programs	<p>Attain a 70% Capture Rate within the Township</p> <p>2008 Capture Rate = 43% (WDO, 2010)</p> <ul style="list-style-type: none"> Increase capture of blue box municipal solid waste by 20% within 3 years (2013) Attain 70% Capture Rate by 2015 	<p>A 70% Capture Rate within the Township appears to be an achievable target.</p> <ul style="list-style-type: none"> Increased P&E as part of a Communications Plan Increase enforcement of Waste Management Bylaw #46-2008 Clear Bags?
Yes	To improve the cost-effectiveness of recycling in our community	<ul style="list-style-type: none"> Reduce recycling costs per tonne by 10% 	<ul style="list-style-type: none"> Compaction? Red Rock WDS – partial closure (winter)
Yes	To increase participation in the recycling program	<ul style="list-style-type: none"> Raise participation in blue box program to 90% 2009 = Participation Rate of 80% 	<ul style="list-style-type: none"> Additional P&E Campaigns Schools, etc – demonstrations, education Penalties/Rewards (Bylaw)
Yes	To expand the lifetime of our landfill	<ul style="list-style-type: none"> Extending the existing capacity allows for additional planning time for future waste management needs 	<ul style="list-style-type: none"> Extensive BB P&E campaign required
Yes	To manage our waste in our community or as close to home as possible	<ul style="list-style-type: none"> Dispose of all locally generated waste within municipal borders 	<p>Long-term plausibility? (MSWMSP)</p>
Yes	To increase community knowledge/awareness of current Blue Box Recycling programs	<ul style="list-style-type: none"> Increase BB P&E spending by 25% per year for 5 years from 2009; integrated with "Communications Plan" 	<p>2009 = \$ 1,500 2010 = \$ 1,875 2011 = \$ 2,344 2012 = \$ 2,930 2013 = \$ 3,663 2014 = \$ 4,579 2015 = \$ 5,724</p>



Table 7a
Community Characteristics (for municipalities working individually)
Municipal Waste Recycling Strategy
Township of Killaloe, Hagarty and Richards

Characteristic	Value
Permanent Population (2009) ¹	2,586
Seasonal Population (2009) ²	1,628
Equivalent Population (2009)	2,993
Total Households/ Dwellings	1,575
Single-Family Households	1,574
Multi-Family Households	1
Total Seasonal Dwellings	360
Month of Seasonal Increase	June to September
Municipal Grouping	Rural Collection - South

Notes:

1. From Statistics Canada - Township of Killaloe, Hagarty and Richards; calculated from 2006 data and using average of 0.46% per year population increase.

2. Seasonal Population is estimated to be 63% of Current Population.



Table 7b
Waste Generated and Blue Box Materials Diverted (for municipalities working individually)
Municipal Waste Recycling Strategy
Township of Killaloe, Hagarty and Richards

Residential Waste Stream - TOTALS		
Residential Waste Stream/ Blue Box Material	Tonnes Currently Diverted	Percent of Total Waste
Total Waste Generated ¹	691.16	-
Papers (ONP, OMG, OCC, OBB and fine papers)	125.19	18.1%
Containers - commingle (aluminum, steel, mixed metal, plastic, glass)	58.50	8.5%
Total Blue Box material diverted	183.69	26.6%

Residential Waste Stream - CURBSIDE		
Residential Waste Stream/ Blue Box Material	Tonnes Currently Diverted	Percent of Total Waste
Total Waste Generated ²	207.35	-
Papers (ONP, OMG, OCC, OBB and fine papers)	38.88	18.8%
Containers - commingle (aluminum, steel, mixed metal, plastic, glass)	17.55	8.5%
Total Blue Box material diverted	56.43	27.2%

Residential Waste Stream - DEPOT		
Residential Waste Stream/ Blue Box Material	Tonnes Currently Diverted	Percent of Total Waste
Total Waste Generated ³	483.81	-
Papers (ONP, OMG, OCC, OBB and fine papers)	86.31	17.8%
Containers - commingle (aluminum, steel, mixed metal, plastic, glass)	40.95	8.5%
Total Blue Box material diverted	127.26	26.3%

Residential - TOTAL; amended (tonnes)	
Papers (ONP, OMG, OCC, OBB and fine papers)	125.19
Containers - commingle (aluminum, steel, mixed metal, plastic)	58.50

Residential - CURBSIDE; amended (tonnes)	
Papers (ONP, OMG, OCC, OBB and fine papers)	38.88
Containers - commingle (aluminum, steel, mixed metal, plastic)	17.55

Residential - DEPOT; amended (tonnes)	
Papers (ONP, OMG, OCC, OBB and fine papers)	86.31
Containers - commingle (aluminum, steel, mixed metal, plastic)	40.95

Residential - TOTAL (tonnes)		
OCC ⁴	58.68	183.69
Fibres ⁴	66.51	
Containers (commingle) ⁴	58.50	

Residential - CURBSIDE (tonnes)		
OCC ⁴	18.93	56.43
Fibres ⁴	19.95	
Containers (commingle) ⁴	17.55	

Residential - DEPOT (tonnes)		
OCC ⁴	39.75	127.26
Fibres ⁴	46.56	
Containers (commingle) ⁴	40.95	

Notes:
 1. From 2009 Waste Diversion Ontario Municipal Datacall Summary Report (Revised) - Township of Killaloe, Hagarty and Richards - Section 7.
 2. Assumed 30% of Total Waste Generated = Curbside Collection.
 3. Assumed 70% of Total Waste Generated = Depot Collection.
 4. From 2009 Waste Diversion Ontario Municipal Datacall Summary Report (Revised) - Township of Killaloe, Hagarty and Richards - Section 6.1.
 * All tonnages are Residential only.



Table 7c
Calculating Material Available for Recycling (for municipalities working individually)
Municipal Waste Recycling Strategy
Township of Killaloe, Hagarty and Richards

Reasonable Blue Box Diversion Goals		
Municipal Grouping	Capture Rate Target for Blue Box Materials	Net Cost Target (\$/tonne)
Rural Collection – South	70%	\$410.00
Rural Depot – South	70%	\$390.00

Potential Future Blue Box Diversion Rate - TOTAL								
Waste/Resource Material	Composition (%) (from local or sample audit)	Total Residential Waste Generated (tonnes)	Total Blue Box Material in Waste Stream (tonnes)	Target Blue Box Capture Rate (%) (see Table 1, above)	Blue Box Material Available for Diversion (tonnes)	Blue Box Material Currently Diverted (tonnes)	Blue Box Material Remaining in waste Stream (tonnes)	Material Remaining in Waste Stream for Diversion (% of total waste stream)
Papers (ONP, OMG, OCC, OBB and fine papers)	30.00%	691.16	207.35	70%	145.14	125.19	19.95	2.9%
Containers -commingle (aluminum, steel, mixed metal, plastic, glass)	23.00%		158.97					7.6%
Total Blue Box Materials	53.00%	-	366.31	70%	256.42	183.69	72.73	10.5%
<i>Current Blue Box Diversion Rate</i>						26.6%		
<i>Additional Blue Box Diversion Rate</i>								10.5%
<i>Potential Future Blue Box Diversion Rate</i>								37.1%

Potential Future Blue Box Diversion Rate - CURBSIDE								
Waste/Resource Material	Composition (%) (from local or sample audit)	Total Residential Waste Generated (tonnes)	Total Blue Box Material in Waste Stream (tonnes)	Target Blue Box Capture Rate (%) (see Table 1, above)	Blue Box Material Available for Diversion (tonnes)	Blue Box Material Currently Diverted (tonnes)	Blue Box Material Remaining in waste Stream (tonnes)	Material Remaining in Waste Stream for Diversion (% of total waste stream)
Papers (ONP, OMG, OCC, OBB and fine papers)	30.00%	207.35	62.20	70%	43.54	38.88	4.66	2.2%
Containers -commingle (aluminum, steel, mixed metal, plastic, glass)	23.00%		47.69					7.6%
Total Blue Box Materials	53.00%	-	109.89	70%	76.93	56.43	20.50	9.9%
<i>Current Blue Box Diversion Rate</i>						27.2%		
<i>Additional Blue Box Diversion Rate</i>								9.9%
<i>Potential Future Blue Box Diversion Rate</i>								37.1%

Potential Future Blue Box Diversion Rate - DEPOT								
Waste/Resource Material	Composition (%) (from local or sample audit)	Total Residential Waste Generated (tonnes)	Total Blue Box Material in Waste Stream (tonnes)	Target Blue Box Capture Rate (%) (see Table 1, above)	Blue Box Material Available for Diversion (tonnes)	Blue Box Material Currently Diverted (tonnes)	Blue Box Material Remaining in waste Stream (tonnes)	Material Remaining in Waste Stream for Diversion (% of total waste stream)
Papers (ONP, OMG, OCC, OBB and fine papers)	30.00%	483.81	145.14	70%	101.60	86.31	15.29	3.2%
Containers -commingle (aluminum, steel, mixed metal, plastic, glass)	23.00%		111.28					7.6%
Total Blue Box Materials	53.00%	-	256.42	70%	179.49	127.26	52.23	10.8%
<i>Current Blue Box Diversion Rate</i>						26.3%		
<i>Additional Blue Box Diversion Rate</i>								10.8%
<i>Potential Future Blue Box Diversion Rate</i>								37.1%

Notes:
* All tonnages are Residential only; from 2009 Waste Diversion Ontario Municipal Datacall Summary Report (Revised) - Township of Killaloe, Hagarty and Richards.



**Worksheet 7d
Existing Programs and Services
Municipal Waste Recycling Strategy
Township of Killaloe, Hagarty and Richards**

What policies or programs are currently in place at the local or regional level for managing residential solid waste in your area?			
<input checked="" type="radio"/> User Pay <input checked="" type="radio"/> Tipping fees <input type="radio"/> Bag limits ____ /week		<input checked="" type="radio"/> Mandatory recycling (By-Law Number 46-2008) <input type="radio"/> Solid Waste utility <input type="radio"/> Take backs	
How are waste and recycling collection services provided to the residential sector?			
Collection Service	Waste Coverage (%)	Recycling Coverage (%)	Upcoming Milestones (e.g., contracts, etc)
Municipal collection	-	20.57%	
Contracted service	20.57%	-	<u>Garbage Collection - New Contract</u> (March 24, 2010 – Ken Kuehl) <ul style="list-style-type: none"> Start Date = April 1, 2010 End Date = March 31, 2012 <u>Blue Box Recycling – Contract (MRF)</u> <ul style="list-style-type: none"> No current contract with Beaman Beaman closure = 2011
Drop-off (at landfill or depot)	79.43%	79.43%	Beaman Waste Management Closure = 2011
How are waste and recycling services financed?			
	Waste	Recycling	
Payment Type (fixed or variable user fees, tax base, a mix of above, etc)	Tax Base (variable) User Fees	Tax Base (variable)	
Where are recyclable materials taken after collection?			
<input checked="" type="radio"/> Transfer Station (Location: Killaloe waste disposal site) <input type="radio"/> Directly to Materials Recycling Facility			



Table 7e
Program Costs (for municipalities working individually)
Municipal Waste Recycling Strategy
Township of Killaloe, Hagarty and Richards

Blue Box Recycling Costs	\$/Year
Total Net Residential Recycling Costs ¹	\$70,354.92
Net Residential Recycling Costs per tonne	\$383.01
Net Residential Recycling Costs per capita	\$23.51
Net Residential Recycling Costs per household	\$44.67
Net Residential Recycling Costs per \$100,000 of Assessment	\$28.12

Notes:

1. From 2009 Waste Diversion Ontario Municipal Datacall Summary Report (Revised) - Township of Killaloe, Hagarty and Richards - Section 6.2.

* All tonnages are Residential only.



Table 7f
Anticipated Future Waste Management Needs (for municipalities working individually)
Municipal Waste Recycling Strategy
Township of Killaloe, Hagarty and Richards

	Current Equivalent Population (2009)	Total Waste Generated (2009;tonnes)	Waste per Person (kg/person/year)
Solid Waste Generated per Capita (kg/person/year)	2,993	691.16	230.93

	Current Equivalent Population (2009)	Blue Box Material Available (tonnes)	Blue Box Material per Person (kg/person/year)
Blue Box Material Available per Capita (kg/person/year)	2,993	256.42	85.67

	Current Year (2009)	Current Year + 5 (2014)	Current Year + 10 (2019)
Equivalent Population	2,993	3,062	3,132
Total Waste (tonnes) ¹	691.16	707.06	723.32
Blue Box Material Available (tonnes) ²	256.42	262.32	268.35

Notes:

1. Total Waste (tonnes) - Current Year +5/+10 calculated using ("Equivalent Population" x "Waste per Person" / 1000).

2. Blue Box Material Available (tonnes) - Current Year +5/+10 calculated using ("Equivalent Population" x "Blue Box Material per Person"/1000).

* All tonnages are Residential only; from 2009 Waste Diversion Ontario Municipal Datacall Summary Report (Revised) - Township of Killaloe, Hagarty and Richards.



Worksheet 8
 Overview of Recycling Plan Options
 Municipal Waste Recycling Strategy
 Township of Killaloe, Hagarty and Richards

Suitable? Y/N	Description of Options/Best Practices	Priority Level	Estimated Costs	Schedule for Completion		
		5 – High 4 – Medium High 3 – Medium 2 – Medium Low 1 – Low		Anticipated Start Date	Anticipated Completion Date	Actual Completion Date
Yes	<p>Public Education and Promotion Program</p> <p>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 P&E plan contributes toward the amount of WDO funding a municipality receives as identified in best practice section of the WDO municipal datacall. For example, benefits of public education and promotion programs include:</p> <ul style="list-style-type: none"> • 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 <p>Stewardship Ontario has prepared a Recycling Program Promotion and Education Workbook and other materials, which are available on Stewardship Ontario's Recyclers' Knowledge Network (http://vubiz.com/stewardship/Welcome.asp).</p>	5	<p>2009 P&E = \$1,500</p> <p>-----</p> <p>Proposed Budgets</p> <p>2010 = \$1,875</p> <p>2011 = \$2,344</p> <p>2012 = \$2,930</p> <p>2013 = \$3,663</p> <p>2014 = \$4,579</p> <p>2015 = \$5,724</p>	Jan. 2011	Dec. 2015	
Yes	<p>Training of Key Program Staff</p> <p>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. The CIF holds periodic Ontario Recycler Workshops that discuss recycling program updates (www.wdo.ca/cif/orw.html). The MWA, Waste Diversion Ontario (WDO), the association of Municipalities of Ontario (AMO), Stewardship Ontario and the Solid Waste Association of Ontario (SWANA) can also be sources of information guides, workshops, or training on recycling or solid waste management.</p> <ul style="list-style-type: none"> • Waste Management Chair (Council) • Public Works Superintendant (Staff) <p>(The TWP currently has 1 full time and 1 part-time waste management staff. The municipality uses staff from the roads department to do recycling in the Village of Killaloe every two weeks)</p>	1	<p>Variable</p> <p>* Course Specific</p>	Spring 2011	On-going	



Worksheet 8
 Overview of Recycling Plan Options
 Municipal Waste Recycling Strategy
 Township of Killaloe, Hagarty and Richards

Suitable? Y/N	Description of Options/Best Practices	Priority Level	Estimated Costs	Schedule for Completion		
		5 – High 4 – Medium High 3 – Medium 2 – Medium Low 1 – Low		Anticipated Start Date	Anticipated Completion Date	Actual Completion Date
Yes	<p>Optimization of Collection Operations</p> <p>The purpose of optimizing collection operations is to collect more recyclables using fewer financial, capital and human resources. This requires critically assessing both collection and processing operations (as the two are closely linked) and making changes that reduce costs while at the same time increases capture of blue box materials. The relevant options for optimization vary according to the size, composition and location of municipalities, as well as their available processing options.</p> <ul style="list-style-type: none"> • Negotiating more favorable recycling contract with MRF? • Curbside Collection costs already amongst lowest cost in province (bi-weekly collection) • Multi-municipal approach? • Ergonomics of Curbside Collection – Health and Safety • Curbside containers/sorting • Curbside Organics? 	3	New Collection Vehicle = ~ >\$200,000	To be determined	To be determined	
Yes	<p>Diversion Incentive Program</p> <p>Bag limits restrict the number of bags of garbage a resident can dispose of per collection. This encourages residents to divert more recyclable materials in order to not exceed the bag limit.</p> <p>Bag limits can also be used in conjunction with bag tags (e.g., user fees). For example, some municipalities allow residents to dispose of a number of bags for free, with additional bags requiring a purchased bag tag.</p> <p>Clear Bags can help with determining Capture Rate/Blue Box recycling in waste stream.</p> <ul style="list-style-type: none"> • Being considered in MSWMSP • Clear Bags? • Bag Limits? • If recycling, no Bag Tags required? 	4	Costs covered with P&E Program	Spring 2011	Summer 2011	



Worksheet 8
Overview of Recycling Plan Options
Municipal Waste Recycling Strategy
Township of Killaloe, Hagarty and Richards

Suitable? Y/N	Description of Options/Best Practices	Priority Level	Estimated Costs	Schedule for Completion		
		5 – High 4 – Medium High 3 – Medium 2 – Medium Low 1 – Low		Anticipated Start Date	Anticipated Completion Date	Actual Completion Date
Yes	<p>Enhancement of Recycling Depots</p> <p>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):</p> <ul style="list-style-type: none"> • 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, visual signage • Providing additional part-time staff to address seasonal fluctuations and visiting traffic. • Upgrading Signage • Co-op Program with local Educational Institutions (High School/College/University)? (Waste Audits?) 	4	<p>Depot Enhancements = ~ \$8,000 to \$10,000</p> <p>-----</p> <p>Part-Time Staffing = Government Subsidized Programs for Summer Students</p>	Spring 2011	Fall 2011	
Yes	<p>Provision of Free Blue Boxes</p> <p>Providing free blue boxes helps to ensure that residents have sufficient storage capacity for recyclables. While this is initially done at the roll-out of the blue box program, many municipalities offer free boxes to new residents or residents moving into new homes. Some municipalities also offer one extra free box or bin for residents per year. However, in municipalities offering only basic recycling services, one blue box container may be sufficient.</p> <ul style="list-style-type: none"> • 2010 – CIF Funding approved to supply one (1) free large box to all residents (50% of costs to be paid by CIF) 	5		Completed – Fall 2010		



Worksheet 8
 Overview of Recycling Plan Options
 Municipal Waste Recycling Strategy
 Township of Killaloe, Hagarty and Richards

Suitable? Y/N	Description of Options/Best Practices	Priority Level	Estimated Costs	Schedule for Completion		
		5 – High 4 – Medium High 3 – Medium 2 – Medium Low 1 – Low		Anticipated Start Date	Anticipated Completion Date	Actual Completion Date
Yes	<p>Collection Frequency</p> <p>The efficiency of curbside collection of recyclables is dependent on a number of factors, including the rural nature of the community, the types of recyclable materials included in the recycling program, the type of equipment used to collect the recyclables, among other things. In some circumstances, bi-weekly collection of recyclables can be more cost-effective than weekly collection, assuming that collected tonnages remain the same overall and residents have enough storage capacity to accommodate storing their blue box materials for two weeks.</p> <p><u>Collection Long-Term Goals</u></p> <ul style="list-style-type: none"> Garbage – every two (2) weeks BB – every week <p>Neighbouring municipality partnership(s)?</p> <p>2009 Bi-Weekly Curbside Collection Costs (Gross) = \$ 9,126.16</p> <p>2009 Weekly Curbside Garbage Collection Costs (Gross) = \$13,695</p> <p>Possible expansion of Curbside Collection – Round Lake Centre / Golden Lake ?</p>	3	<p>Potential Weekly Curbside Blue Box Recycling Collection Cost = ~ \$20,000</p> <p>-----</p> <p>Potential Bi-Weekly Curbside Garbage Collection = ~ \$7,500</p>	Spring 2012 (contract dependant)	Summer 2012	
Yes	<p>Multi-Municipal Planning Committee, Collection and Transfer of Recyclables</p> <p>Small and medium-sized municipalities often face considerable cost and capital challenges when looking to collect and transfer recyclables from its residents. However, working collaboratively with other municipalities to provide these services can increase economies of scale and allow for the sharing of resources.</p> <p>A committee comprised of representatives from local municipalities can help municipalities work toward common regional goals. Committee members can identify opportunities for beneficial collaborations between municipalities and can provide support and feedback on each other's waste diversion programs.</p> <ul style="list-style-type: none"> Potential Municipal Partners = Madawaska Valley, Brudenell, Lyndoch, and Raglan, Bonnechere Valley, South Algonquin, Greater Madawaska, Killaloe, Hagarty and Richards 	3	To be determined	2011	On-going	



Worksheet 8
 Overview of Recycling Plan Options
 Municipal Waste Recycling Strategy
 Township of Killaloe, Hagarty and Richards

Suitable? Y/N	Description of Options/Best Practices	Priority Level	Estimated Costs	Schedule for Completion		
		5 – High 4 – Medium High 3 – Medium 2 – Medium Low 1 – Low		Anticipated Start Date	Anticipated Completion Date	Actual Completion Date
Yes	<p>Following Generally Accepted Principles for Effective Procurement and Contract Management</p> <p>A considerable number of municipalities in Ontario contract out the collection and processing of recyclables. To ensure that municipalities obtain good value for money, Municipalities should follow generally accepted principles (GAP) for effective procurement and contract management. Key aspects of GAP include planning the procurement well in advance, issuing clear RFPs, obtaining competitive bids, and including performance-based incentives.</p> <ul style="list-style-type: none"> All future tenders/RFPs should use the <u>Stewardship Ontario Model Tender Tool</u> (Best Practice Questions WDO Datacall) 	4	To be determined	2011 = New MRF Contract ----- 2012 = Curbside Garbage Collection	On-going	



Worksheet 9
Summary of Priority and Future Initiatives
Municipal Waste Recycling Strategy
Township of Killaloe, Hagarty and Richards

Priority Initiatives	Score	Approximate Total Cost
Public Education & Promotion Program	5	<ul style="list-style-type: none"> 2010 = \$1,875 2011 = \$2,344 2012 = \$2,930 2013 = \$3,663 2014 = \$4,579 2015 = \$5,724 <p style="text-align: right;">Total (2010 to 2015) = \$21,115</p>
Provision of Free Blue Boxes	5	<i>Completed</i>
Diversion Incentive Program	4	<ul style="list-style-type: none"> Costs covered with P&E Program
Enhancement of Recycling Depots	4	<ul style="list-style-type: none"> Depot Enhancements = \$8,000 to \$10,000
Optimization of Collection Operations	3	<ul style="list-style-type: none"> New Collection Vehicle = ~ > \$200,000
Training of Key Program Staff	1	<ul style="list-style-type: none"> Variable; Course Specific
Future Initiatives	Score	Approximate Total Cost
Following GAP for Effective Procurement and Contract Management	4	<ul style="list-style-type: none"> To be Determined
Collection Frequency	3	<ul style="list-style-type: none"> Proposed Curbside Collection = ~ \$27,000 (Weekly Blue Box/Bi-Weekly Garbage)
Multi-Municipal Planning Committee, Collection & Transfer of Recyclables	3	<ul style="list-style-type: none"> To be Determined



Worksheet 10
Contingencies
Municipal Waste Recycling Strategy
Township of Killaloe, Hagarty and Richards

Risk	Contingency
Insufficient Funding	Explore and apply for other funding sources
	Delay lower-priority initiatives
	Increase proportion of municipal budget to solid waste management
	Raise/implement user fees
Public Opposition to Planned Recycling Initiatives	Improve public communications
	Engage community/stakeholders to discuss initiatives/recycling plan
Lack of Available Staff	Prioritize department/municipal goals and initiatives
	Hire contract staff (students) to help with planning (may be available funding)
	Co-op students from local educational institutions?
Permitting and Approval Requirements	Identify permit requirements early on in process
	Establish a “permit requirements” checklist
Public Apathy/Non-compliance	P&E education
	Create reward structure for compliance/participation
Enforcement of Recycling Policies	Use Township Waste Management By-Law #46-2008 (up-to-date; amended as necessary for flexibility)



Worksheet 11
Monitoring and Reporting Program Outline
Municipal Waste Recycling Strategy
Township of Killaloe, Hagarty and Richards

Monitoring Item / Criteria	Monitoring Tools	Frequency
Diversion Rates Achieved (by type and by weight)	Formulae: <u>Blue Box Diversion Rate:</u> <ul style="list-style-type: none"> (Blue Box Materials ÷ Total Waste Generated) X 100% <u>GAP Diversion Rate:</u> <ul style="list-style-type: none"> Calculated by WDO in annual Datacall [(All Diversion) ÷ Total Waste Generated] X 100% 	<ul style="list-style-type: none"> Annually Annually
Program Participation	<ul style="list-style-type: none"> Ratepayer survey (e.g., by mail in tax mailings) Monitoring Curbside and Depot set-out rates MRF Tonnages Tracking – using spreadsheets/graphs 	<ul style="list-style-type: none"> On-going
Ratepayer Satisfaction / Opportunities for Improvement	<ul style="list-style-type: none"> Customer survey (e.g., by mail in tax mailings); Tracking calls/complaints received to the municipal office / Depot sites 	<ul style="list-style-type: none"> Every 1 to 3 years On-going
Planning activities	<ul style="list-style-type: none"> Prepare an “Annual Waste Diversion Monitoring Report” for Township 	<ul style="list-style-type: none"> Annually (Winter)
Review of Waste Recycling Plan (WRS)	<ul style="list-style-type: none"> A periodic review of the WRS to monitor and report on progress, to ensure that the selected initiatives are being implemented, and to move forward with continuous improvement 	<ul style="list-style-type: none"> Annually
Waste Disposed (garbage)	<ul style="list-style-type: none"> Capacity Surveys (integral for determining Total Waste Generated) 	<ul style="list-style-type: none"> Annually
Depot Participation	<ul style="list-style-type: none"> Waste Site Records (record book) Set-out rates 	<ul style="list-style-type: none"> Daily On-going

APPENDIX B

Township of Killaloe, Hagarty and Richards – CIF #262 Blue Box Recycling Program Best Practice Assessment Report

Genivar Consultants LP, August 2010

**Township of Killaloe, Hagarty and
Richards
CIF # 262**

**Blue Box Recycling Program Best
Practice Assessment Report
August 2010**

Prepared for:
The Continuous Improvement Fund
c/o Clayton Sampson, Project Manager
92 Caplan Avenue, Suite 511
Barrie, ON L4N 0Z7

Prepared by:
GENIVAR Consultants LP
600 Cochrane Drive, 5th Floor
Markham, Ontario L3R 5K3

Project No. MA-10-194-00-MA



Project No. MA-10-194-00-MA

August 11, 2010

The Continuous Improvement Fund
c/o Clayton Sampson, Project Manager
92 Caplan Avenue, Suite 511
Barrie, ON L4N 0Z7

Re: Blue Box Recycling Program Best Practice Assessment Report – Killaloe, Hagarty and Richards CIF Project # 262

Dear Mr. Sampson:

On behalf of GENIVAR Consultants LP I am pleased to submit the attached Blue Box Recycling Program Best Practice Assessment Report for the Township of Killaloe, Hagarty and Richards (KHR). Based on the program research and a visit to the municipality on June 2nd, 2010, I am able to make a number of program recommendations which, if implemented, should begin a process that helps the municipality address WDO best practice questions and program performance.

In addition to Township staff I also received assistance and input from Greenview Environmental Management, a consulting firm based in Bancroft which provides environmental management assistance to the Township. Their knowledge of local factors and waste management background in the area was extremely helpful.

Overall the Township has taken a prudent and intelligent approach to recycling, but based on program size and location face a number of challenges. Costs that are under direct control, such as curbside collection, are well managed. Other costs, however, and specifically those subject to contracted or third party agreements such as transfer/haul, require attention. In this respect KHR has issues similar to neighbouring municipalities and may find it useful to confer with those neighbours when seeking solutions to the high cost of transfer/haul of recyclables.

I hope the attached report meets the needs of both the CIF and the Township, and invite you to call me at (905) 475-7270 extension 214 should you have any questions about this report.

Yours truly,
GENIVAR Consultants LP

Phil Jensen, Manager
Solid Waste

Executive Summary

On behalf of the Continuous Improvement Fund (CIF), a recycling program assessment was conducted for the Township of Killaloe, Hagarty and Richards (KHR). The assessment approach was developed by CIF and is used to systematically review program status against the best practices questions found in the WDO Municipal Datacall. Program performance is also reviewed since this too is a factor that influences WDO funding.

Observations, conclusions and potential opportunities for improvement were developed primarily as a result of a one-day interview and site visit, which was conducted on June 2, 2010. The output of the process is a high-level analysis: prior to implementing any of the potential opportunities it may be necessary to examine their appropriateness and practicality in more detail. Where initiatives call for capital investment, a cost/benefit and/or payback analysis is required, as might be a feasibility review.

A preliminary comparison to municipalities within its WDO municipal grouping was performed. KHR recycling collection costs were well below the average but depot and transfer costs are considerably higher than the average. A second comparison to selected Ontario municipalities was made where KHR was shown to have a higher gross and net cost per tonne than the comparator programs. A number of factors were considered and strategies suggested to address these high costs. The performance measure E&E Factor is also relatively high (the lower the number the better) but not the highest, but more than enough to present a funding threat in a system that will use performance as a relative measure against which funding is allocated.

A review against each of the following best practices questions was performed. In the case of KHR, a number of questions are being addressed. Best practice questions 1 and 2, for instance, are being addressed through an Integrated Waste Management Planning process and, as part of that, a Waste Recycling Strategy Plan.

1. Blue box recycling plan as part of an integrated waste management plan
2. Established performance measures
3. Multi-municipal planning approach
4. Optimization of collection and processing operations
5. Training of staff in key competencies
6. Appropriately planned, designed and funded communications program
7. Established and enforced policies that induce waste diversion

Questions 3 through 7 represent areas of opportunity for KHR. In general it was concluded that KHR operates an efficient and economical recycling program, and that program operators are aware of potential opportunities as well as issues of related cost. A number of recommendations are offered in the report, all of which can be considered in the spirit of prudent management already exercised by KHR.

Recommendations target both the administrative and report requirements that will help KHR secure a maximum share of the best practice funding available, but also improve material recovery and cost efficiency aspects that are used to measure program performance. These take several forms: annual reporting, staff training, enhanced program promotion, operating adjustments, potential economies of scale, and changes to contractual or third party agreements. Specific recommendations include:

- Complete the Waste Recycling Strategy in 2010
- Generate an annual report that addresses WDO review requirements for monitoring, reporting and review

- Make changes to the curbside collection system to reduce the physical requirements created by the loading height
- Develop a recognizable and consistent approach to program promotion and create or adopt an icon or identifier to “brand” communication materials
- Initiate discussions with other neighbouring programs about opportunities for cooperation including joint strategies to deal with high depot/transfer costs
- Examine strategies to increase material recovery using incremental enhancements and measuring their impact on program cost and effectiveness prior to implementing additional measures
- Adopt a communications plan and a plan to measure the effectiveness of P&E strategies
- Separate transfer/haul and processing costs in future agreements
- Consider assuming responsibility for revenues from recyclables in order to eliminate potential risk for processors that result in higher cost.
- Study the potential for ownership of transfer capital and the use of controlled compaction to reduce transportation costs.
- Take advantage of training opportunities that meet the WDO requirement

By following up with the noted recommendations it is hoped that KHR will be in a position to attain the goals of the CIF program assessment, namely the implementation of program improvements and strategies that improve recycling program effectiveness and efficiency.

This Project has been delivered with the assistance of Waste Diversion Ontario's Continuous Improvement Fund, 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.

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1 Introduction

1.1 Killaloe, Hagarty and Richards

The Township of Killaloe, Hagarty and Richards (KHR) operates a mixed collection system, with curbside service provided to 324 households in the village of Killaloe. The remaining 1,251 households are serviced by three depots.

Blue box materials are collected in a multi stream system, with containers, fibres and old corrugated cardboard collected bi-weekly at curbside, and received continuously at depots. Garbage is collected weekly, at cost to residents of \$1.00 per bag, with no bag limit. All Municipal Datacall blue box material categories are accepted for collection in the recycling program. The Township owns and operates the collection system, including curbside collection and the three recycling depots at the Killaloe, Round Lake and Red Rock waste disposal sites. Blue Box materials collected at the depots are hauled and processed by Beaman Waste Management in Renfrew, Ontario. Beaman has indicated that it will be closing as of August, 2011.

The Township marketed a total of 163 tonnes of blue box recyclables in 2009. Killaloe, Hagarty and Richards is categorized as a “Rural Collection – South” municipality by the WDO, and the Township reported an impressive 39% residential diversion rate in 2009, well above the 27% average in 2008 for the municipal grouping.

1.2 Best Practice Questions and the WDO Municipal Datacall

Starting in 2010 the answers to the “best practice” questions in the Waste Diversion Ontario (WDO) Municipal Datacall will have a bearing on the amount of funding made available to individual municipal programs. Over a three year period the percentage value relative to overall funding will escalate from a starting point of 5%, to 15% and finally to 25% in 2012. Under the model being implemented by the WDO, funding will be awarded based on a three part formula, with the Best Practice questions forming the first, a performance factor (possibly the E&E Factor) forming the second, and program cost making up the final portion.

Given the increasing significance of the Best Practices portion of the funding distribution model, the Township of Killaloe, Hagarty and Richards (KHR) asked the Continuous Improvement Fund (CIF) to fund an assessment of their program against each of the Best Practice question categories. The objective is to position KHR to maximize their performance against each question, since each will have a point value and will be tabulated to arrive at an overall score that will determine how much of the Best Practice question portion will be made available to the municipal program operator. CIF retained GENIVAR to perform the assessment.

The values for each of the best practice sections in the Datacall are as follows:

Blue box recycling plan as part of an integrated waste management plan	12.5%
Established performance measures.....	25.0%
Multi-municipal planning approach.....	8.3%
Optimization of collection and processing operations	12.5%
Training of staff in key competencies	8.3%
Appropriately planned, designed and funded communications program	8.3%
Established and enforced policies that induce waste diversion.....	25.0%

TOTAL 100.0%

More detail is provided in Appendix A, a PowerPoint presentation made at the October 15, 2009 Municipal Waste Association Fall Workshop held in Toronto. The best practice questions as published by the WDO appear in Appendix B.

The main WDO best practice questions are divided into a series of sub questions, each worth a proportionate share of the total question. More specifically, sub-questions that are in bold print count against the total. Theoretically, if a question worth 12.5% has five bolded sub questions, the answers to those sub questions would count for 2.5% each.

In practice, however, there are a number of issues with respect to the sub questions that make it difficult to advise with accuracy the exact financial impact of each sub question. Inquiries were made of the WDO and of the Municipal Support person for municipal MIPC members to try and clarify, but it is evident that the application of the questions is still a works in progress (this is the first Datacall in which the questions will actually be applied against funding).

Despite the fact that there may be a few questions for which the financial implications of the sub-questions is unclear, parties associated with the best practice questions and how they are evaluated are aware of the concerns and working to develop a fair approach, It is still prudent therefore to work towards meeting the best practice questions, where appropriate, given their increasing significance within the funding allocation formula.

2 The Program Assessment and Best Practices Review

The approach used in this report was developed by CIF and is used to systematically assess program status against those best practices, with which the Township is unable to comply as noted in the Township's Datacall submission. The exercise is more than a strict assessment of KHR practices: question 6 calls for a program review, making it necessary also to discuss program performance as well.

In order to assess both practices and performance, the Continuous Improvement Fund (CIF) program assessment model uses the best practice questions to examine all areas of program performance. The CIF developed a recycling program assessment to provide an objective and thorough assessment of the participating program's blue box program. This approach is partly based on the site visit and assessment process utilized as part of the Blue Box Program Enhancement and Best Practices Assessment Project (Best Practices Project).

There are a number of goals and objectives associated with the CIF approach, including:

- Recommending, for implementation, recycling program effectiveness and efficiency improvements through examination of program components , and
- Providing municipal recycling programs with timely and objective input to aid decision making about program improvements, upgrades, contracts, tenders and any other program development issues.

Observations, conclusions and potential opportunities for improvement outlined in this report are developed primarily as a result of a one-day interview and site visit, which was conducted on June 2, 2010. The output of the process is a high-level analysis: prior to implementing any of the potential opportunities it may be necessary to examine their appropriateness and practicality in more detail. Where initiatives call for capital investment, a cost/benefit and/or payback analysis is required, as might be a feasibility review.

3 Preliminary Review and Analysis

The overall blue box recycling funding formula employed by the WDO contains two elements other than the best practice questions. Funding is distributed according to a 3 part model: best practice questions, a performance factor (possibly the E&E factor or a modified version of same), and program cost. The WDO funding allocation model* for 2010 through 2012 is as follows:

Table 3-1 WDO Funding Allocation Model

Allocation Method	2010	2011	2012
Datacall Best Practice Questions	5%	15%	25%
Program Performance	30%	40%	45%
Net Cost	65%	45%	30%

* Taken from the *Guidebook for Creating a Municipal Waste Recycling Strategy*, produced by Trow for CIF in March, 2010.

By 2012 70% of WDO funding eligibility will be dependent on factors other than net cost. The average funding amount received by KHR for 2008 through 2010 WDO was \$20,202. By 2012, by applying the cost allocation model above to the funding, approximately \$5,050 of this amount will be dependent on the answers to the best practices questions. \$9,090 would be the maximum available to the program based on program performance, but could be subject to reduction if the program is deemed a poor performer.

It is important for all program operators to assess and improve program cost and performance measures in a system where *relative* position regarding program performance may have a direct bearing on funding. This means that the broad assessment undertaken here is much more than an exercise to confirm practices; programs will be driven to examine cost and recovery in order to maximize funding eligibility.

KHR has no control of the process or rationale used by WDO to categorize the program within a WDO municipal grouping, which in this case is referred to as the Rural Collection – South category. There are municipalities in this grouping with widely divergent characteristics in terms of population, geographic size, location, and program delivery. Reporting of data also varies depending on contract structures and operating relationships. Regardless, WDO uses municipal groupings for comparative reasons and as part of funding allocation strategies where poor performers within a municipal grouping can lose a portion of their funding.

When compared to municipalities within the WDO municipal grouping, KHR is seen to have collection costs well below the average. The collection figure likely reflects the small geographic size of the curbside collection area, a collection frequency that is half that of most programs and a system that does not rely on expensive capital.

Depot and transfer costs, on the other hand, are considerably higher than the average. Even when it is understood that this includes processing costs (reported as \$0 in the Municipal Datacall) the figure is high and is not totally explained by either transportation or processing costs. Other factors, and quite possibly a lack of competition in the area for these services, may come into play here. According to the WDO information, blue box recovery for KHR is about 10% lower than the average.

Consideration should be given to defining specific processing and transfer costs, preferably within the next contract. This will allow KHR to more accurately identify exact costs, and take appropriate action.

Table 3-2 Comparative Analysis: KHR within its WDO Municipal Grouping

		KHR	KHR	Group Average ¹	Group Range*
	Year	2009 (reported)	2008	2008	2008
	Households	1,575	1,575	4,291	230 – 19,199
	Tonnes Reported or Calculated	165	163	582	3 – 3,017
Residential	Collection Cost / Tonne	\$ 55	\$ 51	\$ 224	\$ 0 - 453
	Processing Cost / Tonne	\$ 0	\$ 0	\$ 40	\$ 0 - 381
	Depot-Transfer Cost / Tonne	\$ 354	\$ 363	\$ 63	\$ 0 - 631
	Promotion and Education Cost / Tonne	\$ 0	\$ 9	\$ 6	\$ 0 - 40
	Calculated Administrative and Interest on Municipal Capital / Tonne	\$ 20	\$ 21	\$ 23	\$ 2 - 263
	Gross cost / Tonne	\$ 430	\$ 444	\$ 451	\$ 72 - 5,524
	Net Cost / Tonne	\$ 401	\$ 435	\$ 451	\$ 72 - 5,524
	% Recovery	Unavailable	43	53	7 - 94
	E&E Factor ²	Unavailable	10.01	7.98 ³	\$ 0.62 - 34.45

¹ The WDO Municipal Grouping for KHR is the “Rural Collection – South” grouping which includes 69 Municipalities.

² The Efficiency and Effectiveness Factor (E&E Factor) is expressed by dividing a recycling program’s efficiency (net cost per tonne) with its effectiveness (percent of materials recovered). Better performing programs have a relatively low cost per tonne in the numerator combined with a relatively high recovery rate in the denominator, resulting in a low E&E Factor. The figure of record with the WDO at the time of this report was prepared was from the previous year. While the E&E Factor is considered to be a reasonable measure, it has limitations. For instance, a poor performing program with a very low cost per tonne could possess a low E&E factor.

³ Calculated excluding outliers w/ E&E factors > 100

To obtain another perspective, a number of other Ontario municipalities were selected for the purpose of comparison. The attributes used to make the selection included mixed depot / curbside collection system, number of households served, population, geography and program tonnage.

Table 3-3 Comparative Analysis: KHR versus selected Townships in Ontario (2008)

Program Name	Calculated Blue Box Tonnes Marketed	Total Gross Costs	Gross Costs Per Tonne	Total Gross Revenue
Township of Bonnechere Valley	289	\$ 60,302	\$ 209	\$ 663
Township of Front of Yonge	108	\$ 36,881	\$ 342	\$ 1,393
Township of Madawaska Valley	416	\$ 159,532	\$ 383	\$ 5,794
Township of Killaloe, Hagarty and Richards	163	\$ 72,519	\$ 444	\$ 1,519

Program Name	Material Revenue Per Tonne	Other Revenue Per Tonne	Total Net Cost	Net Cost Per Tonne	E&E Factor
Township of Bonnechere Valley	\$ 1.95	\$ 0.31	\$ 59,650	\$ 207	2.58
Township of Front of Yonge	\$ 11	\$ 1.42	\$35,489	\$ 329	10.30
Township of Madawaska Valley	\$ 13	\$ 1.33	\$ 153,738	\$ 369	6.05
Township of Killaloe, Hagarty and Richards	\$ 8	\$ 1.18	\$ 70,999	\$ 435	10.01

In general recycling performance is measured as cost per tonne, and the limited comparison above reveals that KHR has a higher gross and net cost per tonne than the comparator programs. The performance measure E&E Factor is also relatively high but not the highest, but more than enough to present a funding threat in a system that will use performance as a relative measure against which funding is allocated.

4 Program Analysis using the Best Practice Question Review

The best practices questions appear in Appendix B. In the following section, a general finding is documented for all WDO headings, with additional narrative offered on those questions and specific sub-questions that either require attention by KHR, or have been identified in the program assessment.

4.1 Development and implementation of an up-to-date blue box recycling plan as part of a Waste Diversion System or Integrated Waste Management System

- a) Does the municipality have a blue box recycling plan that has been prepared or revised between the years of 2005 and 2009?
- e) 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?
- f) Does the plan set Blue Box diversion targets?
- h) Does the plan require performance monitoring against Blue Box diversion targets?
- j) Is there a review process (e.g. quarterly, annual reviews) to monitor and evaluate performance against the Blue Box Program goals and objectives stated in the Waste Diversion System Plan or the Integrated Waste Management Plan?

KHR is proactively addressing this deficiency. Representatives have attended a CIF sponsored workshop which offers guidance with respect to the development of an appropriate plan, and is engaged in the development of an Integrated Waste Management Plan. If KHR is able to complete the basic elements as outlined in the CIF *Guidebook for Creating a Municipal Waste Recycling Strategy*, and report on same to their Council, they should be in a position to answer the Best Practices questions affirmatively. The main planning steps to be addressed in 2010 would be to:

- quantify the current state of the program, for instance the current recovery and cost situation
- determine a future state including objectives and goals for the program
- provide a plan on what actions would be taken to get to the future state, and
- indicate how progress will be measured
- report publicly (ie to Council) or post the plan on KHR's website

Completion of these elements by KHR will comply with the WDO best practice section.

The development of the plan should not affect the overall IWMP process, and in fact it is not necessary for the IWMP process to be complete in 2010 to qualify for the funding. The Waste Recycling Plan can be treated as a sub-plan and revised as part of the ongoing IWMP process even after 2010 if KHR decides to do so.

4.2 Establishing defined performance measures including diversion targets, monitoring objectives and a continuous improvement program

- a) Does your program set defined objectives and targets for recycling programs that are implemented and evaluated within a defined time period, and part of a defined recycling plan?
- b) Does your program collect specific program data to evaluate the effectiveness of recycling programs before and after implementation?
- c) Have the results of the monitoring been used to identify and analyze the factors that influence your program's ability to meet established objectives and targets within the years of 2005 to 2009.

The planning process discussed for the previous question should allow KHR to answer affirmatively sub-questions a) and b) for Best Practice question #2. Attention should be given to defining objectives and targets and solidifying data collection processes in order to address these questions. In the case of b), the question is not whether the municipality has actually done an evaluation, but whether data is collected to support an evaluation if and when program implementations occur.

An example of this would be the development of an enhanced Promotions and Education (P&E) program. It is helpful at the outset to inventory what sources of information would be used to determine the effectiveness of a promotions campaign. This could include invoices that track processing costs, weigh slips, participation studies or set out studies. The type of information collected should reflect the objectives of the campaign, which could target:

- participation
- material recovery (general or a specific item)
- material contamination
- how boxes are placed at the curb or what is an acceptable container
- any combination of the above

The data collected should first be used to establish a baseline for the objective prior to the implementation, and then revisited over time to measure progress. In the case of KHR, a natural starting point might be the measurement of material recovery and data sources might be processing invoices, haulage records and Datacall reporting. After initiating a program to increase recovery these sources would be reviewed and compared to baseline to determine whether there has been an increase that can be attributed to the P&E program. Processing volumes are a natural starting point, but frequency of haulage may also provide insight as might a participation study.

With respect to the latter, a curbside participation study can be done quite easily and inexpensively. Participation is a measure over time and measures the percentage of households who put their blue box (or equivalent) out for collection. In weekly collection systems a household is considered to participate if they place their blue box out *once per month*. In the case of KHR which collects once every two weeks, one out of four collection opportunities equates to once within an eight week period. For each of the four collection days a staff person would be asked to drive down a number of streets, based on a representative sample, to record which addresses have placed their blue box out for collection. This route would be exactly the same for all four collection days. After the fourth survey all homes recorded will have placed the blue box out at least once. If there were 40 homes in the sample area (about 10% of the households getting curbside collection in KHR) and 28 put recyclables at the curb at least once in the four collection period, KHR would have a curbside blue box participation rate of 70%.

KHR may also want to monitor recycling participation at the depot sites. This may be as simple as recording whether users bringing garbage to the site also brought separated recyclables over a fixed period of time and repeating the exercise after implementation of the communications plan.

4.3 Multi-municipal planning approach to collection and processing of recyclables

- b) Does your municipality deliver and/or provide recyclable material collection services jointly with one more other municipalities through an agreement?
- c) Does your municipality deliver and/or provide Blue Box recyclable material processing services jointly with one more other municipalities through an agreement?
- d) Does your municipality deliver and/or provide Blue Box recyclable material transfer/depot services jointly with one more other municipalities through an agreement?
- e) Does your municipality deliver and/or provide Blue Box recyclable material marketing services jointly with one more other municipalities through an agreement?
- f) Does your municipality deliver and/or provide Blue Box recyclable material public education services jointly with one more other municipalities through an agreement?
- g) If none of these services (collection, processing, depot/transfer, marketing, and promotion and education) are currently being delivered and/or provided jointly with another municipality, has your program synchronized the expiry date of its recycling contract with the recycling contracts of neighbouring municipalities?

The WDO requirement is intended to place a dollar value on efforts by municipalities to seek opportunities to gain economies of scale by partnering with their neighbours. This approach is uncommon in some parts of the province, and in fact the notion of pooling resources or services may occasionally meet with resistance. On the other hand, some municipalities have banded together in order to develop collective systems that pool recyclables and services in an effort to obtain efficiencies. A number of the municipal partnerships have created board or authority structures to manage waste, such as the Bluewater Recycling Association, the Essex Windsor Solid Waste Authority, the Ottawa Valley Waste Recovery Centre, or Quinte Waste Solutions. Each has evolved to meet the needs of a collective group, and in some cases beyond just delivery of blue box service.

Regardless, there are local sensitivities to the approach. Some decision makers worry that consideration of co-operative tendering for waste services or recycling may usurp local authority or promote amalgamation. There are enough examples to demonstrate that municipalities can easily maintain their authority and still work collectively to enhance their recycling programs. The most obvious example is the case of the six municipalities in York Region who joined together to issue a collection tender for regionalized three stream collection. These participants maintained their autonomy throughout the process, structuring a request for proposals that allowed them to stay within the joint project if they realized a benefit and opt out if the collective service package for cost and service was not seen as an improvement. The “York Region North Six” successfully worked together to secure a garbage collection and waste diversion services contract that saved the partners, collectively, about \$900,000 annually for seven years (an average of \$150,000 each annually) while increasing the frequency and number of waste diversion programs.

The development of the “York Region North Six” was funded, in part, by the E&E Fund (predecessor of the CIF) under project #214. E&E Fund reports are available for viewing on the Recycling Knowledge Network, at <http://vubiz.com/stewardship/Welcome.asp>.

At the very least the local options should be explored since the WDO questions on multi-municipal collection will continue to drive home the point. At 8.3% of the total best practice questions, the overall value to Killaloe assuming the current funding average of \$20,202 remains relatively steady would be about \$400 in 2012, when the Best Practice questions represent 25% of the WDO funding allocation. This amount is not likely to create much pressure to act purely for the sake of meeting the WDO Best Practice questions; on the other hand, failure to at least initiate the process is in effect a failure to investigate possibilities that might improve KHR recycling performance in a number of other areas, and in 2012 a considerable portion of the funding allocation (45%) will be based on program performance likely measured using the E&E Factor.

Currently KHR is not working with other municipalities but in discussion on June 2nd recognized some advantages. The nature of the WDO question is such that not all sub-questions can be answered positively immediately and not all are appropriate. A starting point is required, and that starting point is as basic as inviting neighbouring municipalities to discuss potential opportunities. Given that KHR does not have a formal agreement with their current processor, and further that this processor has signalled the intention to close in August 2011, a potential and immediate opportunity for multi-municipal co-operation exists by exploring processing of recyclables by the Ottawa Valley Waste Recovery Centre.

An inaugural meeting on the matter can focus on developing an inventory of practices and timelines. Issues for discussion could include:

- Contracting versus municipal service for recycling, including who uses municipal capital
- collection, transfer and processing contracts, including expiration dates and opportunities to harmonize contract periods in a manner that at least allows consideration of a collective operating approach
- Program particulars: who collects what materials, how often and how much. Are programs similar enough, or could they be, to permit collective P&E approaches, such as pooling of P&E efforts through the development of common materials?
- How do service costs compare? Are there any particular cost elements, for instance depot and haulage costs, that could be brought forward for a common solution? Is there any way to explain cost variations?

General comparisons between cost and recovery will help each municipality identify operational priorities and the general information sharing may lead to program improvements even before coordinated, collective actions are taken.

The process of coordinating contracts and operations takes time, and the first and most immediate step for KHR and its neighbours is to document their meeting invitations or e-mails, meeting times, related resolutions or letters, and agendas such that the municipality can continue to demonstrate and prove if asked that it has approached or worked with others. Cooperative operational arrangements, such as joint procurement of services and regional transfer points will follow over time where appropriate and workable.

4.4 Optimization of operations in collections and processing by following generally accepted principles (GAP) for effective procurement and contract management

- a) Are any of your collection services municipally operated?

If so, has your program conducted a comprehensive assessment of collection inefficiencies within the past two years?

If so, have the recommendations been documented and assessed, or are the recommendations being added to a future collection contract?

Have you worked with, or applied for funding through the Effectiveness and Efficiency Fund or the Continuous Improvement Fund pertaining to collection optimization projects?

Has your municipality undertaken a review of your Blue Box program in relation to the Blue Box Program Enhancement and Best Practices Assessment Project Report?

The driving principal for this question is the desire by WDO (responsible to the Minister of the Environment for reaching Blue Box Program Plan targets) and industrial stewards (responsible for 50% of net system costs) to be assured that municipal recycling operations are subject to a regular cycle of continuous improvement.

For the 2010 Municipal Datacall KHR will, as a result of this report, be in a position to report that they have assessed collection inefficiencies within the past two years, and that they have worked with the CIF (which sponsored this report) pertaining to optimization, and that the assessment was based in part on the Blue Box Program Enhancement and Best Practices Assessment Project Report.

From a cost perspective, there is no issue with the KHR collection system. Unit costs, measured per tonne or per household, are low and compare favourably with other programs. In some respects this is likely due to the frequency of collection, which does not meet the best practice (more about this in the discussion related to best practice question #7) where garbage collection frequency is less than recycling collection frequency. KHR also uses a specialized, adapted collection trailer with blue 90 gallon totes, a low cost alternative which in some respects is a reasonable approach but may in the long term create workplace related issues. It might be prudent to obtain an opinion from a health and safety or ergonomics professional.

Options are somewhat limited in that KHR garbage and recycling collection are performed by separate parties: a contractor collects garbage while the Township collects recycling. This limits the ability to explore shared truck models, such as the allocation of the same truck on different collection days for recycling and garbage, or split truck models (co-collection on the same day), that might also resolve other handling issues.

The issue of potential expansion of the curbside collection program to additional households was discussed during the visit. The decision to expand curbside service is often a politically challenging one since it is difficult to determine exactly what the curbside service cut-off should be. More specifically, those who do not receive curbside service might ask why others do, and there will likely be some debate as to why a firm line was drawn where it was.

In this case KHR provides garbage and Blue Box collection services to 323 of the 1575 households within the Township, with the remaining households serviced by three depot sites. Curbside collection is provided in the urban area of the Township (Village of Killaloe), and the depots are provided for the low-density rural population. This arrangement is typical of many smaller rural municipalities with low population densities in Ontario, as shown in Table 4-1.

Table 4-1 Mixed Curbside/Depot Rural Collection Systems ¹

Program Name	Reported and/or Calculated Marketed Tonnes	HH Serviced by Curbside/ Depot Collection	Collection Frequency: Weekly (W), Every other week(EOW) or Alternating Weeks (AW)	Kgs per HH	Collection Cost per Curbside HH ²
Highlands East (Municipality)	347.56	260/4,292	W	76.35	\$66.34
Madawaska Valley (Township)	416.29	751/2,234	AW	139.46	\$56.01
Lanark Highlands (Township)	322.70	441/3,100	W	91.13	\$62.04
Armour (Township)	258.70	494/2,255	W	94.11	\$54.25
Merrickville-Wolford (Village)	188.03	427/713	EOW	164.93	\$39.81
KHR	163.21	324/1,251	EOW	103.63	\$25.75
West Elgin (Municipality)	169.64	1,041/1,410	EOW	69.21	\$42.57
Bonnechere Valley (Township)	288.70	511/1,217	EOW	167.07	\$47.55
Front of Yonge (Township)	107.97	150/1,068	W	88.64	\$38.20

¹ Based on the 2008 WDO Municipal Datacall

² Calculated as 'Total Collection Cost' divided by 'HH Serviced by Curbside Collection'

There are no examples of municipalities with population densities somewhat similar to that of KHR (6.4 per km²) that have implemented full curbside collection. A preliminary look at WDO and Statistics

Canada data, shown in Table 4-2, reveals that there are no full curbside collection systems in communities with population densities less than 10 per km². When looking at the Best Practice Report measure of 10 hhlds/km of road as the line between depot and curbside collection, it would appear that KHR, which reports this figure at 10.3 hhlds/km, is on the cusp of the recommended density limit with respect to expansion to additional or full curbside collection.

Table 4-2 Population Density and Collection System for Select Ontario Municipalities ¹

Program Name	Reported and/or Calculated Marketed Tonnes	HH Serviced by Curbside Collection	HH Serviced by Depot Collection	Collection Cost per Curbside HH ²	Kgs per HH	Population Density (per km ²) ³
Papineau-Cameron (Township)	39.61	467	70	\$51.35	73.76	1.9
Highlands East (Municipality)	347.56	260	4,292	\$66.34	76.35	4.4
Lanark Highlands (Township)	322.70	441	3,100	\$62.04	91.13	5.0
Bonnechere Valley (Township)	288.70	511	1,217	\$47.55	167.07	6.2
KHR	163.21	324	1,251	\$25.75	103.63	6.4
Madawaska Valley (Township)	416.29	751	2,234	\$56.01	139.46	6.5
Armour (Township)	258.70	494	2,255	\$54.25	94.11	7.6
Mulmur (Township)	313.87	1,609	0	\$54.30	195.07	11.6
Montague (Township)	215.29	1,367	0	\$62.13	157.49	13.0
North Stormont (Township)	418.38	2,638	0	\$38.17	158.60	13.1
Front of Yonge (Township)	107.97	150	1,068	\$38.20	88.64	21.9

¹ Based on the 2008 WDO Municipal Datacall

² Calculated as 'Total Collection Cost' divided by 'HH Serviced by Curbside Collection'

³ Statistics Canada, 2006

In the case of KHR the interest in expanding curbside collection stems from the desire to recover more material. There is some guidance that may be helpful to the Township in this regard: the answer is not a simple yes or no but instead a suggestion on how expansion might be implemented if a decision is made to extend the curbside service.

Guidance is available in the Blue Box Program Enhancement and Best Practices Assessment Project Final Report (2007) for both northern and southern small rural Blue Box programs. It says:

Use of drop-off depots for recovering recyclables is a Best Practice in low density rural areas, where curbside recycling is cost prohibitive. It is more cost effective to employ the use of depots in areas where curbside collection costs exceed \$50 per household per year. This is almost always the case for rural communities generating less than 2,000 tonnes per year.

It is interesting to note that KHR has kept annual household curbside collection costs to \$25 to \$28 but collects far less than the 2,000 tonnes noted in the Best Practices report. The report notes that with respect to obtaining higher participation and capture rate, curbside collection is preferred over depot systems and suggests that when it is feasible, curbside blue box collection should be offered to every eligible household. Small rural communities that elect to provide curbside collection should:

- employ measures that increase the amount of material collected per stop and maximize collection efficiency;
- for curbside programs, provide sufficient rigid collection containers free of charge; and
- schedule collection of Blue Box materials to be at least as frequent as waste collection.

The per household curbside collection costs for KHR were \$25.75 and \$28.16 in 2008 and 2009 respectively. The best practices report suggests that collection costs should be maintained below \$50 per household. The average per household collection cost for rural Ontario municipalities in WDO's Rural Collection - North and Rural Collection - South categories reporting separate collection/processing costs is just above \$42 per household.

The best practices report identifies the number of households per km of road as a criterion in determining when curbside collection may not be feasible. Less than 10 hhld/km may be too dispersed for full curbside collection services. Household per road km density data is not available for all communities, but KHR has reported 10.30 hhld/km in 2009.

These factors allow KHR to consider the possibility of extending curbside collection and remain within the best practice guidelines. Based on the high-level WDO numbers, KHR might approach the discussion from a number of angles. The Township has exercised good judgement when assuming recycling costs and the same conservative approach might be employed to improve recovery performance. There may be other program adjustments that help KHR to reach recycling recovery goals, and based on current curbside collection levels KHR might incrementally move towards their objectives.

The current annual per/household expense for recycling collection is very reasonable and in fact is the lowest for any of the examples cited. At the same time KHR recovery levels measure favourably against the selected comparators but is still a bit low when compared to their municipal grouping. There are a number of options that might be exercised by KHR to increase recovery while maintaining a watchful eye on related cost. The Township could:

- implement a promotional campaign to address recovery and review and enforce policies that support recycling
- engage in a program "refresh" that includes the distribution of new blue boxes, either for the curbside area or across the entire municipality. This strategy is currently underway as there are plans to provide free new blue boxes to each household, which should be executed in conjunction with well designed promotional support.
- consider increasing service frequency to the existing curbside collection area while enhancing the promotion and enforcement support for recycling by depot users.
- offer the existing level of curbside service (once every two weeks) to all residents
- offer increased level of curbside service (weekly) to all residents

While it is difficult to predict the overall impact on cost and recovery, a monitoring plan should be devised that will allow KHR to regularly check their performance in both areas. There will be additional discussion about program promotion below, however for the purposes of this section it is noted that any changes to service frequency, availability of curbside collection or depot recycling should be preceded and supported by a meaningful educational and promotional campaign, part of which may be funded by the CIF.

d) Do you own your own collection capital?

If so, have you worked with, or applied for funding through the Effectiveness and Efficiency Fund or the Continuous Improvement Fund pertaining to collection optimization projects?

As noted in the introduction of this report, this document provides a high-level analysis: prior to implementing any of the potential opportunities it may be necessary to examine their appropriateness and practicality in more detail. Where initiatives call for capital investment, a cost/benefit and/or payback analysis is required, as might be a feasibility review. Question 4d) above represents an opportunity to engage the CIF for just such a purpose, specifically the implementation of the collection system improvements

Clearly it is difficult to argue with the low collection cost reported by KHR. The Township has been successful in keeping costs down and compares quite favourably to other programs in the same WDO

municipal grouping, but low collection cost is also due partly to the frequency of collection, which is once every two weeks. There are a number of potential pressures that could impact the current approach to collection:

- the current model of once every two weeks is not a best practice, where garbage collection frequency is less than recycling collection frequency. At the very least the two services would be offered with equal frequency. From the perspective of the garbage contract, the end date for the current contract is March 31, 2012, the next opportunity for change. It should be noted, however, that changes in garbage collection frequency should be balanced by offsetting changes in recycling frequency and other waste diversion tactics.
- From a labour perspective the current system is not sustainable. Curbside labour is required to hoist materials over their heads and into the rolling bins situated in the trailer. From an ergonomic standpoint this has the potential to lead to shoulder and back issues, and almost all modern systems are designed to accommodate low loading heights and minimize lifting. The need to raise fibres, the heavier of the two material streams (the other being containers), over one's head is of particular concern.
- There is consideration being given to increasing blue box material recovery. Regardless of how this is accomplished, whether from increased collection frequency, an expanded curbside collection area, an enhanced promotional campaign to encourage recycling, or any combination of these measures, inefficiencies in the collection system will become more pronounced as a result. Despite the current low cost the current system may not survive these potential pressures if some adjustments are not made:
 - o The current loading height does not lend itself to efficient handling. The desire to improve recovery and divert more recyclables will require streamlined curbside loading. If KHR wants to minimize collection time (maintain a one-day schedule, for instance) but collect more material and/or increase the geographic scope of collection, the current approach will be very limiting.
 - o The use of a trailer is limiting and there is an element of double-handling at the depots. Material is dumped out of the rolling bins and pushed into haulage bins. If at all possible efforts should be made to accommodate a direct transfer from collection vehicle to transfer bins.
 - o Time at the curb is also lost to sort through material at the curb. While this aspect will be discussed more thoroughly later in this report, there are potential measures that would also help to mitigate time lost during the collection activity.

Collectively these elements represent limitations on collection time (loading height, curbside sorting) and turnaround time (handling at the depot) as well as potential long-term lost time for labour due to poor ergonomics. Experienced and knowledgeable collection crews are a great asset to any collection program, and other programs have altered their collection systems to insure that their experienced collectors will not lose time for injuries related to lifting stress or strain.

None of this, however, is meant to suggest that KHR can't employ the same local ingenuity it did in arriving at what is otherwise a collection system of proper scale to meet the need of the program. There are some limitations to the Township that may prevent a fix, such as the separation of garbage collection service as a contracted service versus recycling as a municipal operation. This limits opportunities for vehicle sharing at least until a new contract term approaches. KHR may wish to apply for CIF funds for the purpose of implementing changes that will increase material recovery and improve collection ergonomics.



The collection trailer and material totes, which are loaded from the top.



Looking down into the totes. Material quality was generally good but is achieved in part as a result of curbside sorting by crews

e) Are any of your processing services provided by a contractor?

If so, was your last tender/RFP developed using a recycling tender/procurement tool such as the Stewardship Ontario Model Tender Tool?

WDO figures for KHR show processing costs to be \$0, but in fact the cost of processing is hidden within an “all-in” cost for transfer and haulage from the recycling depot sites. The contractor has indicated that it will cease to operate in August 2011, and this may present KHR with opportunities to reduce associated costs related to both transfer and haul as well as processing. This is also an opportunity to obtain pricing which, as previously mentioned, clearly separates transfer and processing costs.

For the purpose of examining the reported cost the previous comparators were used again using reported costs for 2008:

Program Name	Calculated Blue Box Tonnes Marketed	Residential Depot/Transfer Costs Per Tonne
Township of Bonnechere Valley	289	\$111.91
Township of Front of Yonge	108	\$254.32
Township of Madawaska Valley	416	\$256.95
Township of Killaloe, Hagarty and Richards	163	\$362.75

KHR is not alone with respect to the fact that the biggest cost per tonne impact on their program is the depot/transfer cost. Part of the cost can be attributed to long distances and light loads, but further evaluation is required to address this high cost.

One area that may be impacting the cost is the nature of the agreement with the processor who is transporting the material to the MRF. If the agreement stipulates that the processor keeps all revenues for the recyclables, then the processor has taken on the risk of marketing recyclables in a volatile commodities market. In this case it is highly possible that the haulage price has been established to mitigate this risk such that losses are minimized. One way to know what the risk premium might be is to ask for two prices: a price where the municipality receives the revenues (or most of the revenues) and a price where the contractor receives the revenues. The difference between the first, in which the processor is quoting purely on the price for providing a service, and the second in which the contractor is actually assuming market risk, will be what the municipality is being asked to pay to cover the risk.

A report prepared with input from the Ontario Waste Management Association, entitled [*Blue Box Residential Recycling Best Practices: A Private Sector Perspective*](#), states:

Risk must reside with the party who has the power and authority to manage that risk. Consultants have a tendency to encourage their municipal clients to offload as much risk as possible on their contractor. If a contractor accepts risks he cannot control then he will either make provisions in his price and the municipality will pay a premium or he will not make such provisions and leave himself vulnerable to serious financial loss. Furthermore, it is the smaller, less sophisticated, operator who is most vulnerable. This serves nobody's best interests, not the contractor's nor the municipalities.

Examples of risks which should not be assigned to the contractor are: fuel price fluctuation, changes in law, weather, force majeure, international border closure (residue disposal from a MRF), major maintenance of the municipality's MRF (if caused by normal wear and tear) and market risk on sale of products.

Best Practices related reports can be found at: <http://www.stewardshipontario.ca/stewards/library/ee-fund-approved-projects>

While Killaloe does not own the depot capital, it may wish to investigate the potential for controlled compaction of recyclables at the site. At the June 17, 2010 Ontario Recycler Workshop sponsored by the CIF, McDougall Township shared details around the implementation of their new depot collection compaction system. The Township, which has a permanent population of 2,700 but a seasonal population approaching 34,000, was being charged about \$600 per pick-up of non-compacted recyclables at two collection sites. While initial capital costs were high (\$112,000 for 2 compactor bins at the transfer station and \$133,000 for 2 compactor bins at the landfill) annual savings in the realm of \$30,000 are expected from implementation. Load weights have increased by 4 or 5 times, based on a compaction limit of 2.5:1. The limit is required to prevent processing problems caused by over compacted material.

In the case of McDougall Township, a portion of the expense includes the installation of a solar powered system backed up by a generator, which seems to be working effectively.

In the case of KHR, which does not currently own the depot haulage equipment, a cost/benefit analysis would be required to determine the potential for compaction at the depot sites.

Depot Best Practices

KHR will likely continue to operate recycling depots, even if curbside collection services are extended to an increased number of households within the Township. It is therefore recommended that KHR consider best practices applicable to the operation of recycling depots, in order to maximize the effectiveness and material recovery potential of existing resources. A review of recycling depot best practices is provided here for the Township's consideration.

As with all municipal recycling programs there are a variety of factors and issues that will affect the performance of rural recycling depot collections systems. Strategies to address these issues vary widely, and are not all appropriate for every rural depot system. However, several themes arise in the best practices literature, and most depots are able to increase recovery rates by implementing strategies in these areas:

- Depot attendants
- Site conditions and accessibility
- Promotion and education
- Depot capacity

The role of the attendant is very important. The 2006 Quinte Waste Solutions report states that “a responsible attendant is the best defence against contamination.” The report authors drew a strong connection between responsible attendants with a good rapport with the public and high recovery rates. Attendants can be crucial to an effective public education strategy, reduce illegal dumping and encourage better material sorting. Support and training for depot attendants is recommended.

The conditions on the ground at the depot site itself will also affect the overall effectiveness of the recycling depot program. Conveniently located, well maintained, organized, clean, uncluttered sites encourage participation. Site design elements such as sheltered recycling areas, adequate parking, signage and traffic flow all help to increase material recovery rates. In addition, health and safety considerations such as no idling and no smoking policies can make depots more attractive to the public.

In all municipal recycling programs, the importance of public education and promotion can not be underestimated. For rural depot systems, best practices literature identifies the need for integrated, municipally supported promotional efforts, and greater public education resources.

Issues relating to how materials are managed at the site can affect the efficiency and effectiveness of rural depot systems. Having adequate capacity to handle recyclables during peak seasons, especially where there is a large seasonal population, prevents bin overflow onto the depot grounds. Compaction and co-mingling of recyclables at rural depots can result in increased cost effectiveness.

The 2006 report “Evaluation of Best Practices of Rural Recycling Depot Programs” prepared by SGS for Quinte Waste Solutions produced the following recommendations for maximizing diversion of blue boxes materials in rural recycling depot systems:

- Increase capture rate of existing Blue Box material by promoting the depot program in high traffic areas (i.e. waste disposal site, grocery store, convenience stores, seasonal bait shops, hardware stores, libraries, schools, banks, post offices, etc.).
- Municipalities that rely on the same contractor to provide collection and processing services should require costs to be itemized according to lift fees, hauling fees, and processing fees. Such cost itemization allows municipalities to review specific costs associated with the program and hence to consider changes to improve efficiency.
- Encourage revenue sharing or a revenue rebate from the processing contractor or negotiate a reduction of processing costs for materials that have higher market values such as corrugated cardboard, aluminum beverage cans, and clean newspaper. Information on price trends for post consumer metals, glass, plastic and fibre is available on a monthly basis from Corporations Supporting Recycling’s web site (www.csr.org) and Waste Diversion Ontario’s website (www.wdo.ca). Based on WDO data, revenue from the sale of PET plastic and aluminum cans represents 33% of the residential Blue Box revenue stream.¹
- A responsible depot attendant is the best defense against material contamination. An attendant who promotes the program and encourages proper material separation contributes to the

¹ CSR site is no longer in effect

program's success and increases its perceived and actual effectiveness. This in turn, results in higher community participation and overall capture rate. The provision of a depot attendant also supports mandatory recycling by-laws and/or user pay programs as the attendant can regulate and monitor inbound material.

- 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 municipality. Indeed, depot programs located in areas where there are many hauling and processing contractor options can get bids from several contractors which will reduce the risk of inflated costs since the contractors want to remain competitive. It is important, however, to ensure that the processing MRF is equipped with the necessary infrastructure to handle the change in the material preparation.
- 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.
- Consider leasing or renting collection containers if initial purchase of capital equipment is cost prohibitive. Municipal programs currently renting roll-off containers have the convenience of not incurring any maintenance cost and having low monthly payments (\$100 to \$200/month, depending on length of the contract period).
- Ensure the depot site is well maintained to reduce contamination and to increase participation from the public.
- Diversion policies such as mandatory recycling or user pay systems directly impact recycling depot program capture rates. Depot programs can exceed curbside Blue Box collection capture rates by implementing community programs that support the use of the recycling depot site.

4.5 Training of key program staff in core competencies

- a) Within 2007, 2008 and 2009, have staff responsible for Blue Box recycling attended recycling-specific workshops or courses totalling 4 days or more, individually or collectively?
- b) Was the training received from a workshop/course provided by an industry association, post-secondary educational institution or recognized body which, based on successful completion of the course and/or course assessment, offers a certificate of completion or certification?
- c) Was the course/workshop primarily dedicated to blue box recycling (minimum 50% by content and/or time)?

This is a particularly onerous requirement for small municipalities, however represents a fundamental best practice within the Best Practices Project. In order to assist municipalities in obtaining the required funding, the E&E Fund supported the development and implementation of a training program that meets the requirement and which, at least until the end of 2011, is offered free of charge to recycling program operators and decision makers in Ontario municipalities.

All aspects of best practice question 5 are addressed in the training. The fundamental training is a 4 day course and the additional specialized courses in data management, promotion and education, contract management and material markets are two days each. The course has been built to an academic standard and would be suitable as part of a certification program, and includes an assessment aspect: a 2 hour exam for the 4 day course and a post-course assignment for the specialized two-day courses. The content, in this case, is 100% blue box recycling and far exceeds the 50% required in the WDO question.

The course is currently organized by the Municipal Waste Association (MWA), which is now publicizing a course offering in Ottawa, September 27 to October 1, 2010. More details are available by contacting the MWA at (519) 823-1990. Other opportunities for training include SWANA courses, and less formal approaches including the Ontario Recyclers Workshop (CIF) and MWA workshops, however the latter two workshop approaches do not qualify against all best practice training questions, most notably 5 b) which requires the completion of a course assessment.

4.6 Appropriately planned, designed, and funded promotion and education program

- a) Does your program currently have a communications plan (either a stand-alone plan or as part of a larger plan document) with identified goals and measurable objectives that is regularly updated?
- b) Does your plan include a monitoring and evaluation component (an example would be: identification of 'spikes' in recovery or overall annual tonnages coinciding with specific P&E efforts)?

It is generally acknowledged that a promotion and education (P&E) program is a necessary component of a healthy recycling system. P&E can be a very cost effective way to improve program performance by increasing participation and recovery, and decreasing contamination of recycling streams.

Research suggests that the public's perception of a recycling program's effectiveness is closely tied to the program's actual effectiveness (Gamba and Oskamp 1994 in SGS 2006). Effective P&E, along with a well-designed program, leads to a perception of increased effectiveness and better program performance.

There are four key factors to consider in developing an appropriate P&E program (Best Practices Project 2007):

- Design – the main idea here is to create a strong icon or identifier, to “brand” communication materials so residents instantly recognize the information as relevant to recycling or waste management. Based on observations made during the visit, and on the information available on the KHR website, P&E materials for KHR are highly narrative and do not use graphics or a consistent, branded approach.
- Funding – the best practices reports that those municipalities reaching 60% recovery of available blue box material spend in the area of \$1 per household per year on promotion and education. This amount represents a floor spending level and in 2008 KHR approached this level of spending, yet in 2009 reported spending nothing on program promotion.
- Deployment – it is generally recommended that programs be promoted consistently and repeatedly to get and keep public attention.
- Monitoring and evaluation – an ongoing record of program performance can be reviewed to determine whether a promotional approach or campaign has made a difference. Monitoring and evaluation is difficult for small programs with limited resources. However, it is important to have a way to assess the effectiveness of P&E strategies. One suggestion provided in the literature is simply to look for spikes in material recovery or reductions in contamination based on material tonnages.

In a practical sense it is a challenge for small programs like KHR to dedicate the time and resources to accomplish all these things, but there are a number of options that would allow the municipality to consider upgrading its P&E efforts. KHR should inquire about CIF Project #192, Small Program P&E Plans, which is in place to help small municipalities develop P&E Plans as well as develop communication materials using templates, through on-line resources.

Appendix D also includes sample communications and communications monitoring plans that may be adapted to the KHR situation, or might be useful as KHR reviews options noted in Section 4 (Optimization), especially in conjunction with a chosen strategy to increase recovery, and issues related to poor separation at the curb. A well conceived and targeted P&E program may be helpful in attaining local targets and improving curbside sorting issues, namely lost time cause by the need to sort through mixed material at the curb. .

The remaining discussion in this section will focus on P&E best practices for recycling depots, including recommendations and observations made in both the Best Practices Project (2007) and Quinte (2006, 2008) reports. During the June 2, 2010, site visit the depot sites were closed to the public and observations about the interaction of site staff with the public unavailable. The following is offered to assist KHR in evaluating management of recyclables at depots.

Best practices in P&E program design boil down to having a well-organized communications plan. This is stated clearly in the Best Practices Project report and echoed in the Quinte reports. A review of rural recycling depot programs revealed that most “promotional work was generally done in bits and pieces by various staff members.” In order to obtain the greatest effect and operate a cost effective P&E program, two elements should be in place: a communications plan outlining objectives, target audiences, key messages, tactics, timing and a monitoring mechanism; and, a designated person to oversee the communications plan.

The Phase 2 Quinte report provides several recommendations that address deployment issues in P&E for rural recycling depots. The recommendations highlight the importance of making depots accessible and easy to use for residents. Some of these recommendations were even pilot tested by Quinte Waste Solutions to determine their effectiveness.

Good signage is very important in a rural recycling depot, where residents are sorting and depositing materials themselves. Best practices for depot signage identified in Best Practices Project report include the following:

- The use of universally recognizable graphics and symbols, photos or displays of acceptable / unacceptable materials. Pilot tests conducted as part of the Quinte report showed that graphics, as opposed to text-only signage, resulted in a reduction in sorting errors made by the public.
- Clear, visible lettering and bright colours.
- Styles and fonts consistent with the rest of the municipal recycling program.
- Clear labelling of individual bins to increase ease of use and reduce contamination.
- Large, visible signs near depot entrance indicating acceptable / unacceptable materials.
- Signs prohibiting illegal dumping in appropriate locations.
- Clear directional signs, where depots aren’t visible from main roads.
- Weatherproof information area at the site with take-away pamphlets.

Recycling depot attendants can also play a central role in communicating key messages to residents. Attendants, supported with training and dedicated time to interact with residents, are able to make recycling depots more accessible, improve understanding of how to use the program, and enforce illegal dumping and municipal recycling policies. The Best Practices Project and Quinte reports further recommend that printed P&E materials should be made available to the public at recycling depots, either through a weatherproof display area, or to be distributed directly by depot attendants.

4.7 Established and enforced policies that induce waste diversion

- a) Does your program provide Blue Boxes (or the equivalent) free of charge, or below cost?

One of the practices recognized in the best practices report is the provision of free blue boxes to residents. There is a correlation between household recycling capacity and participation in that a lack of capacity – more specifically meaning that when the household blue box or boxes are full – will result in recycling materials being placed in the garbage. The provision of free replacement blue boxes is seen to both assure that recycling capacity if available in the household and act to promote the program.



Curbside containers, June 2, 2010. Eager participants have purchased covered containers. Unfortunately the covers require handling and add another step for collectors at the curbside

A third benefit, as noted in the picture, is that the provision of containers by the municipality improves the compatibility of containers to the collection operation: functionally and ergonomically. The picture above is a perfect example of what can happen if a municipality does not maintain control over the containers used. The covered containers pictured will add time and effort to the collection process.

b) Does your program have any of the following policies in place?

- Bag limits
- Garbage collection frequency less than recycling collection frequency
- Recycling incentive program for households that rewards increased recycling, set-out and participation
- Has your program commenced a reduction in garbage collection frequency or requirement for clear bags in the past year?

The policies noted above represent only those WDO noted policies that KHR currently does not employ. KHR, in fact, has tackled the most ambitious of the policy areas by implementing a pay-as-you-throw (PAYT) program. Having done so, there are at least two of the remaining policy areas that might feasibly be implemented by the Township. The most obvious policy, one that the Best Practices identifies as having meaningful impact on recycling recovery and for which much of the groundwork would have been done when the PAYT policy was enacted is bag limits. In general this is a policy that, with enough

advance notice for residents, would be enforced with the same type of curbside and depot based enforcement practices used to uphold other waste by-laws and policies.

A second policy objective will depend on the approach chosen in Section 4 (Optimization of Collection and Processing) to increase recovery. One option is to offer recycling collection as often as garbage collection.

In general, however, the adoption of any one of the policies noted in the question qualifies KHR when being assessed against the question, and KHR is currently able to confirm two of the six policy approaches mentioned (PAYT, tag and leave).

5 Conclusions and Recommendations

5.1 Conclusions

KHR operates an efficient and economical recycling program, with a collection system designed in-house to meet the needs of a small municipality. During the site visit for this report it appeared that program administrators were interested in improving the recovery level of the program, and subsequent review of program data would suggest that there is some room for improvement in this area.

There are a number of recycling program areas to be reviewed by KHR staff, including multi-municipal co-operation, collection and transfer optimization, and improved P&E. A coordinated approach that accounts for all three of these best practice areas could lead to improved recovery, and while the cost conscious approach taken by KHR is to be commended and encouraged, the Township will want to move forward with the understanding that recycling performance, being the second and eventually most significant factor in the WDO funding allocation model, is measured not only by cost but also by recovery. Prudent and strategic investments in the program can be targeted at recovery and collection efficiency.

Most notably, while the curbside collection system has been scaled to meet the needs of a small municipality, the need for the collector to pitch materials over his/her head may, if left unchecked, lead to ergonomic issues and potential injury over time. While collection costs are low, depot/transfer costs are very high. In general, overall program net cost per tonne is below the average for the comparable municipal grouping but high related to select comparator programs. Recovery levels are below the average for the municipal grouping as well, and the E&E factor performance measure indicates that the overall performance is also sub-average.

Opportunities for improvement, however, are available and include the closure of the current processing contractor in August 2011. This will allow KHR to develop a strategy, possibly with neighbouring municipalities, to attack high depot/transfer costs, which currently have the largest single impact on program costs.

5.2 Recommendations

Complete the Waste Recycling Strategy in 2010: In order to qualify for the funding associated with WDO best practice questions 1 and 2, KHR must complete the Waste Recycling Strategy (WRS) by the end of 2010. For this reason the development of the plan, which has been initiated, should be given priority.

Generate an annual report that addresses WDO review requirements: There are several instances within the best practice questions where monitoring, reporting and review are required. KHR is encouraged to develop an annual reporting regime that includes monitoring program for all best practice elements that require monitoring and reporting: plan review, blue box targets and performance, effectiveness of P&E, and operational reviews.

Make changes to the curbside collection system: the current practice for the collector to pitch materials over his/her head is not sustainable. KHR should review the current collection process and implement changes that will reduce the physical requirements and possibly the double handling of materials at the depots. The aim of the review would be to bring the loading height down to a reasonable level and reduce stop time. A secondary aim will be to employ methods that reduce double handling at the depots.

Develop a recognizable and consistent approach to program promotion: create or adopt a strong icon or identifier to “brand” communication materials. Inquire about CIF Project #192, Small Program P&E

Plans, which is in place to help small municipalities develop P&E Plans as well as develop communication materials using templates, through on-line resources.

Initiate discussions with other neighbouring programs about opportunities for cooperation: The WDO best practice requirement for municipal cooperation places a value on cooperative efforts. In order to examine potential opportunities for cooperation and economies of scale KHR should consider organizing a discussion with neighbouring municipalities and particularly those affected by the announced Beauman closure in August 2011. A discussion agenda for potential partners would include joint strategies to deal with high depot/transfer costs, common collection contracts and pooling of recyclables for the purpose of attracting more and better bids for processing and haulage services.

Examine strategies to increase recovery: Specifically, KHR is in a position to develop an implementation plan that would allow the Township to make incremental enhancements, particularly with respect to material recovery, measuring their impact on program cost and effectiveness prior to implementing additional measures. These program enhancements could include increased or expanded curbside recycling, a starting point might be to increase recycling collection frequency within the existing curbside zone that matches garbage collection frequency.

Adopt a communications plan and a plan to measure the effectiveness of P&E strategies: Samples have been attached and the CIF has also initiated a project to assist small municipalities in the development of these plans. KHR should also apply to CIF for P&E support for the development of professional support materials and a communications plan.

Given the upcoming closure of the processor:

Use the opportunity to restructure future contracts starting with a requirement to separate transfer/haul and processing costs.

Consider assuming responsibility for revenues from recyclables in order to eliminate potential risk for processors. Ask for separate pricing under two revenue scenarios: 1) all revenue goes to the municipality, and 2) all revenue goes to the contractor. Contractors may resist because KHR materials are collected as a "mix" and specific composition by marketable material is not known, but enough data exists with other sources, including most processing contractors, to feasibly allocate material quantities to the mix and negotiate a fair revenue.

Consider ownership of transfer capital and especially the use of controlled compaction to reduce transportation costs, based on a feasibility study.

Take advantage of training opportunities that meet the WDO requirement: an opportunity exists in late September for training in Ottawa.


By following up with the noted recommendations it is hoped that KHR will be in a position to attain the goals of the CIF program assessment, namely the implementation of program improvements and strategies that improve recycling program effectiveness and efficiency.

Appendix A

Blue Box Program Plan Update on Funding for Municipal Programs [Presentation]

Blue Box Program Plan

Update on Funding for Municipal Programs




Shirley Arnold
Manager, Environmental Services
County of Peterborough

Blue Box Program Plan -How does it work?

Industry pays 50% of municipal net operating cost of Blue Box Program

- Municipal Industry Program Committee (MIPC) responsible for reviewing annual Municipal Council results
- Make recommendations to Waste Resources Ontario (WRO) and Sustainability Canada (SC) for distribution of funds
- Any proposed changes to allocation funding model are made by MIPC to WRO Board of Directors




2007 Funding Year

- Following consultation with municipalities and stakeholders, MIPC recommended a best practices funding distribution methodology
- Blue Box Best Practices were established:
 - Distribute funding based on a percentage of net program costs
 - 80% of the industry funding was shared by all municipal programs
 - Remaining 20% deducted for efficiency and effectiveness (E&E) from (now known as CIP)



2008 & 2009 Funding Years



- Distribute funding (total \$700,000) based on a percentage of net program costs
- Deduction of \$200,000 from programs with E&E Factors above their cost band to provide incentive for improvements
- Distribute \$700,000 to remaining programs, prorated, to their funding, to provide a reward for better performance

2010 Cash Distribution

- 5% of funding based on responses to the best practice questions in the Datacall
 - 15% in 2011 and 25% in 2012
- 30% of funding based on Effectiveness and Efficiency Factor
- Remaining 65% of funding distribution based on net municipal program cost

What does this mean?

If a municipality is unable to answer "yes" to all Best Practice questions in the Datacall, the following financial deductions will occur:

Annual Tonnes	2010 (2009 Factor)	2011 (2010 Factor)	2012 (2011 Factor)
A 500	\$2,000	\$6,000	\$10,000
B 1,000	\$4,000	\$6,000	\$44,000
C 10,000	\$40,000	\$120,000	\$200,000
D 50,000	\$130,000	\$390,000	\$650,000
E 100,000	\$330,000	\$900,000	\$1,500,000

The Best Practice Questions for your 2009 Datacall.

- Development and implementation of an up-to-date Blue Box recycling plan as part of a Waste Diversion System or Integrated Waste Management System (25% weighting)
 - Must be current - 2005 to 2009
 - Clearly defined goals and objectives
 - Blue Box diversion targets
 - A review process to monitor and evaluate

Requires only one response to be marked as public information

- Establishing defined performance measures including diversion targets, monitoring objectives and a continuous improvement program (25% weighting)
 - Defined ongoing participation and involvement rates that are evaluated
 - The collection of specific data to evaluate effectiveness
 - Results used to identify, analyze ability to meet targets

- Multi-municipal planning approach to collection and processing of recyclables (8.3% weighting)
 - Is your York County approach multi-based?
 - Define or process the following services jointly with one or more other municipalities:
 - Collection
 - Processing
 - Transfer/haul
 - Blue Box material recovery
 - Public education
 - How do you get around your weight-based recycling waste limit or high-cost recycling?
- Has your municipality approached or sought to help local government get help doing services?

- Optimization of operations in collection and processing by following GAP for effective procurement and contract management (12.5% weighting)
 - Are performance objectives clearly specified?
 - Contract documents contain all the details for a complete 12-month term
 - Applied for collection and processing
 - Process of use for new regions or areas is detailed in contract documents
 - Are processing services clearly specified?
 - Same question as above
 - Are collection used or provided by a contractor or market monitoring?
 - Do you work 2008-11 to do "blue box public"?

- Training of key program staff in core competencies (8.3% weighting)
 - 2007-2009 recycling staff in waste program training (22% of total staff in 2009)
 - Who was the training provided by?
 - Minimum 12% Blue Box specific training
- Appropriately planned, resourced and funded PWE program (8.3% weighting)
 - Communication plan with goals and measurable objectives
 - Monitoring and evaluation
- Established and enforced policies that include waste diversion (25% weighting)
 - Free or below cost recycling containers
 - Bag limits, 14-17 inches in height etc.

What can you do?

- Review and understand Best Practices questions
- Make sure staff are able to answer "yes" to all questions in the Blue Box Datacall
- Take appropriate action through proper planning and appropriate monthly reports
- Seek support (and possible financial assistance) from the CIF
- Interact and seek assistance from other municipalities and MWA

Appendix B

WDO Municipal Datacall Best Practice Questions

Best Practice Questions for Inclusion in 2009 Municipal Datacall

Note: Responses to questions in bold will be used for purposes of best practice funding in 2011.
Remaining questions solicit supporting details and will not be used to calculate best practice funding.

1. Development and implementation of an up-to-date blue box recycling plan as part of a Waste Diversion System or Integrated Waste Management System	12.5%				
a. Does the municipality have a blue box recycling plan that has been prepared or revised between the years of 2005 and 2009? ¹	NO	--	--	--	YES
b. Title of recycling or waste management plan	Text Box				
c. By-law / Council resolution or board report reference number / link to public document of this plan	Text Box				
d. By-law / Council resolution / board report reference date	Text Box				
e. 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?	NO	--	--	--	YES
f. Does the plan set Blue Box diversion targets?	NO	--	--	--	YES
g. What is the Blue Box diversion target for 2009?	Numerical Box				
h. Does the plan require performance monitoring against Blue Box diversion targets?	NO	--	--	--	YES
i. Date of most recent Blue Box recycling plan where performance monitoring is tracked	Numerical Box				
j. Is there a review process (e.g. quarterly, annual reviews) to monitor and evaluate performance against the Blue Box Program goals and objectives stated in the Waste Diversion System Plan or the Integrated Waste Management Plan?	NO	--	--	--	YES
k. Was a monitoring report presented to Council/Committee/board in 2009?	NO	--	--	--	YES
l. Please provide the by-law resolution, committee or board report, or council resolution number of the document or link to public document of this monitoring report	Text Box				
2. Establishing defined performance measures including diversion targets, monitoring objectives and a continuous improvement program	25%				
a. Does your program set defined objectives and targets for recycling programs that are implemented and evaluated within a defined time period, and part of a defined recycling plan? ²	NO	--	--	--	YES
If so, provide the by-law resolution, committee or board report, or council resolution number of the document, or link to public document	Text Box				

¹ Key elements of this plan must include: (1) collection method rationale/ efficiencies (2) processing method rationale/efficiencies (3) promotion and education plan (4) methods of enforcement for diversion policies (5) capture rate targets (6) diversion targets.

² Defined performance measurements include capture rates, participation rates, residue rates, set-out rates, and waste audits/compositions. **Set-out Rate** is the percentage of households that put Blue Boxes (or specified collection containers) out for collection on a given collection cycle. It is calculated by dividing the total number of Blue Boxes set out for collection in the area by the total number of residential units in the area that could possibly have set out a recycling container. **Participation Rate** is the percentage of households that put Blue Boxes (or specified collection containers) out for collection during the study period in the study area. **Capture Rate** is the percent of the total waste stream that is collected in Blue Box collection system. **Residue Rate** is the percent of residual waste left over after Blue Box materials have been processed at the MRF.

Best Practice Questions for Inclusion in 2009 Municipal Datacall

Note: Responses to questions in bold will be used for purposes of best practice funding in 2011.
Remaining questions solicit supporting details and will not be used to calculate best practice funding.

b. Does your program collect specific program data to evaluate the effectiveness of recycling programs before and after implementation?	NO	--	--	--	YES
If so, provide the by-law resolution, committee or board report, or council resolution number of the document, or link to public document	Text Box				
c. Have the results of the monitoring been used to identify and analyze the factors that influence your program's ability to meet established objectives and targets within the years of 2005 to 2009?	NO	--	--	--	YES
3. Multi-municipal planning approach to collection and processing of recyclables					
a. Is your municipality a(n) _____ tiered municipality		Upper	Lower	Single	
b. Does your municipality deliver and/or provide recyclable material collection services jointly with one or more other municipalities through an agreement?	NO	--	--	--	YES
If so, with what municipality(ies) do you share the collection services with? List one example.	Text Box				
If so, provide the agreement, contract, by-law resolution, committee or board report, or council resolution number of the document containing the agreement	Text Box				
c. Does your municipality deliver and/or provide Blue Box recyclable material processing services jointly with one or more other municipalities through an agreement?	NO	--	--	--	YES
If so, with what municipality(ies) do you share the processing services with? List one example.	Text Box				
If so, provide the agreement, contract, by-law resolution, committee or board report, or council resolution number of the document containing the agreement	Text Box				
d. Does your municipality deliver and/or provide Blue Box recyclable material transfer/depot services jointly with one or more other municipalities through an agreement?	NO	--	--	--	YES
If so, with what municipality(ies) do you share the transfer/depot services with? List one example.	Text Box				
If so, provide the agreement, contract, by-law resolution, committee or board report, or council resolution number of the document containing the agreement	Text Box				
e. Does your municipality deliver and/or provide Blue Box material marketing services jointly with one or more other municipalities through an agreement?	NO	--	--	--	YES
If so, with what municipality(ies) do you share the marketing services with? List one example.	Text Box				
If so, provide the agreement, contract, by-law resolution, committee or board report, or council resolution number of the document containing the agreement	Text Box				

Best Practice Questions for Inclusion in 2009 Municipal Datacall

Note: Responses to questions in bold will be used for purposes of best practice funding in 2011.
Remaining questions solicit supporting details and will not be used to calculate best practice funding.

f. Does your municipality deliver and/or provide Blue Box public education services jointly with one or more other municipalities through an agreement?	NO	--	--	--	YES
If so, with what municipality(ies) do you share the public education services with? List one example.	Text Box				
If so, provide the agreement, contract, by-law resolution, committee or board report, or council resolution number of the document containing the agreement	Text Box				
g. If none of these services (collection, processing, depot/transfer, marketing, and promotion and education) are currently being delivered and/or provided jointly with another municipality, has your program synchronized the expiry date of its recycling contract with the recycling contracts of neighbouring municipalities?	NO	--	--	--	YES
h. Has your municipality approached other municipalities about jointly providing recycling (collection, processing, depot/transfer, marketing, and/or promotion and education) services?	NO	--	--	--	YES
If not, provide the By-law/Council resolution reference number and date wherein the other municipality(ies) rejected the concept of providing recycling services jointly with your municipality	Text Box				
4. Optimization of operations in collections and processing by following generally accepted principles (GAP) for effective procurement and contract management	12.5%				
a. Are any of your collection services municipally operated?	NO	--	--	--	YES
If so, has your program conducted a comprehensive assessment of collection inefficiencies within the past two years?	NO	--	--	--	YES
If so, have the recommendations been documented and assessed, or are the recommendations being added to a future collection contract?	NO	--	--	--	YES
Have you worked with, or applied for funding through the Effectiveness and Efficiency Fund or the Continuous Improvement Fund pertaining to collection optimization projects?	NO	--	--	--	YES
Has your municipality undertaken a review of your Blue Box program in relation to the Blue Box Program Enhancement and Best Practices Assessment Project Report?	NO	--	--	--	YES
If so, provide the by-law resolution, committee or board report, or council resolution number of the document containing the review of your Blue Box program	Text Box				
b. Are any of your processing services municipally operated?	NO	--	--	--	YES
If so, has your program conducted a comprehensive assessment of MRF inefficiencies within the past two years?	NO	--	--	--	YES
If so, have the recommendations been documented and assessed, or are the recommendations being added to a future processing contract?	NO	--	--	--	YES
Have you worked with, or applied for funding through the Effectiveness and Efficiency Fund or the Continuous Improvement Fund pertaining to MRF optimization projects?	NO	--	--	--	YES

Best Practice Questions for Inclusion in 2009 Municipal Datacall

Note: Responses to questions in bold will be used for purposes of best practice funding in 2011.
Remaining questions solicit supporting details and will not be used to calculate best practice funding.

Has your municipality undertaken a review of your Blue Box program in relation to the Blue Box Program Enhancement and Best Practices Assessment Project Report?	NO	--	--	--	YES
If so, provide the by-law resolution, committee or board report, or council resolution number of the document	Text Box				
c. Are any of your collection services provided by a contractor?	NO	--	--	--	YES
If so, was your last tender/RFP developed using a recycling tender/procurement tool such as the Stewardship Ontario Model Tender Tool?	NO	--	--	--	YES
If so, provide the tender/RFP number or the council resolution number of the latest tender/RFP successfully issued	Text Box				
If so, provide the award date of the latest RFP successfully tendered using the Stewardship Ontario Model	Numerical Box				
d. Do you own your own collection capital?	NO	--	--	--	YES
If so, have you worked with, or applied for funding through the Effectiveness and Efficiency Fund or the Continuous Improvement Fund pertaining to collection optimization projects?	NO	--	--	--	YES
e. Are any of your processing services provided by a contractor?	NO	--	--	--	YES
If so, was your last tender/RFP developed using a recycling tender/procurement tool such as the Stewardship Ontario Model Tender Tool?	NO	--	--	--	YES
If so, provide the tender/RFP number or the council resolution number of the latest tender/RFP successfully issued	Text Box				
If so, provide the award date of the latest RFP successfully tendered using the Stewardship Ontario Model	Numerical Box				
f. Do you own your own MRF?	NO	--	--	--	YES
If so, have you worked with, or applied for funding through the Effectiveness and Efficiency Fund or the Continuous Improvement Fund pertaining to MRF optimization projects?	NO	--	--	--	YES
5. Training of key program staff in core competencies					
8.3%					
a. Within 2007, 2008 and 2009, have staff responsible for blue box recycling attended recycling-specific workshops or courses totaling 4 days or more, individually or collectively?	NO	--	--	--	YES
b. Was the training received from a workshop/course provided by an industry association, post-secondary educational institution or recognized body which, based on successful completion of the course and/or course assessment, offers a certificate of completion or certification?	NO	--	--	--	YES

Best Practice Questions for Inclusion in 2009 Municipal Datacall

Note: Responses to questions in bold will be used for purposes of best practice funding in 2011.
Remaining questions solicit supporting details and will not be used to calculate best practice funding.

c.	Was the course/workshop primarily dedicated to blue box recycling (minimum 50% by content and/or time)?	NO	--	--	--	YES
d.	On the basis of the training profile described in questions 5a through 5c, namely blue box recycling-specific, industry or post secondary level, and certificate based, which of the following areas of training were received.	Check Mark Box (list all) ³				
	If any fields checked: who provided the training? How many days of training were taken by staff collectively? Certificate of training received?	Text Box				
6.	Appropriately planned, designed, and funded promotion and education program	8.3%				
a.	Does your program currently have a communications plan⁴ (either a stand-alone plan or as part of a larger plan document), with identified goals and measurable objectives that is regularly updated ?	NO	--	--	--	YES
b.	Does your plan include a monitoring and evaluation component (an example would be: identification of 'spikes' in recovery or overall annual tonnages coinciding with specific P&E efforts)?	NO	--	--	--	YES
7.	Established and enforced policies that induce waste diversion	25%				
a.	Does your program provide Blue Boxes (or the equivalent) or replacement Blue Boxes (or the equivalent) free of charge, or below cost?	NO	--	--	--	YES
b.	Does your program have <u>any</u> of the following policies in place					
	Bag limits	NO	--	--	--	YES
	Pay As You Throw (PAYT) program	NO	--	--	--	YES
	Garbage collection frequency less than recycling collection frequency	NO	--	--	--	YES
	Recycling incentive program for households that rewards increased recycling, set-out, and participation	NO	--	--	--	YES
	Has your program commenced a reduction in garbage collection frequency or requirement for clear bags in the last year?	NO	--	--	--	YES
	A tag and leave policy for unacceptable blue box (or the equivalent) set-outs?	NO	--	--	--	YES
Total Best Practice Funding Distribution Points		100%				

³ Check mark box will include: broad based training, planning, collection, processing, depot/transfer, material marketing, promotion and education, municipal policy support, data management, contract management, system optimization, other (please specify).

⁴ Key elements of a communications plan must include: (1) a multi-tiered approach to promotion and education which includes radio components, TV, calendars, or website offerings, (2) measurements of the effectiveness of the communications plan, (3) a work plan that will be monitored and revised annually.

Appendix C

Small Rural Southern Blue Box Program Profile, from the *Program Enhancement and Best Practices Assessment Project Final Report*

Program Profile

Use of Program Profile

This document is intended to provide general guidance, not detailed prescriptive recommendations, on how any given program should be structured.

The Project Team believes that by adopting Best Practices outlined in this document, recycling coordinators will improve the performance of their Blue Box program. However, the degree of improvement will vary across municipalities, as multiple factors contribute to overall program performance. Furthermore, more-detailed guidance may be needed by some communities to ensure that practices are truly implemented in a Best Practices fashion.

Small Rural Southern Blue Box Program

Overview

This Program Profile, paired with the Fundamental Best Practice and Spotlight summaries, is designed to provide general guidance to municipalities on how to design, manage, and operate their Blue Box programs under Best Practices. It is specifically tailored to programs of defined size, density, and geography in order to enhance applicability of Best Practices and increase the likelihood of their adoption.

Program Characteristics

The following characteristics were used to define this Program Profile:

- Geographical Region: Southern community
- Size of Program: Generating less than 10,000 tonnes per year
- Residential Density: Less than 10 homes per kilometre of road (more than 80% rural)

Programs in this profile are rural in nature, with only a small portion of households located in urban areas. These programs may be managed by a Township or a County, with very little urban development. The challenge in this group is to achieve diversion goals and provide efficient, cost-effective curbside and depot service to rural households.

Applicable Best Practices

Each of the Fundamental Best Practices listed in the table below applies to all Blue Box programs. These practices are introduced in the text below, and described in greater detail in the separate Fundamental Best Practice summaries.

Conditional Best Practices that apply to every program in this profile are also listed in the table. Several other Conditional Practices are best for some, but not all programs in this profile. These practices and the specific conditions under which they apply are discussed below. Leading practices are presented in bold type, for ease of reference. Additional guidance regarding practices that may be best under certain circumstances is also provided for consideration. Lastly, supplementary best practices guidance for specific program areas (e.g., collection, processing, depot and multi-residential recycling) can be found in the "Spotlight" summaries.

FUNDAMENTAL BEST PRACTICES – applicable to all programs in all profiles	
<input type="checkbox"/>	Development and implementation of an up-to-date plan for recycling, as part of an integrated waste management system
<input type="checkbox"/>	Multi-municipal planning approach to collection and processing recyclables
<input type="checkbox"/>	Establishing defined performance measures including diversion targets and monitoring and a continuous improvement program
<input type="checkbox"/>	Optimization of operations in collections and processing
<input type="checkbox"/>	Training of key program staff in core competencies required
<input type="checkbox"/>	Following generally accepted principles for effective procurement and contract management
<input type="checkbox"/>	Appropriately planned, designed, and funded promotion and education program
<input type="checkbox"/>	Established and enforced policies that induce waste diversion
CONDITIONAL BEST PRACTICES – applicable to programs fitting this profile	
<input type="checkbox"/>	Expanded list of Blue Box materials accepted

Program Planning and Design

Limited resources, lack of landfill space, and the need to focus on priorities and be resourceful are the main reasons for **maintaining and implementing an up-to-date plan for recycling as part of an integrated waste management system**. Such a plan will ensure a strategic management focus that, when combined with complementary waste reduction, organics, reuse, energy from waste, and waste diversion incentives (bag limits, user pay), will result in a robust Blue Box program. Additional elements of a plan for recycling as part of an integrated waste management system can be found in the corresponding Fundamental Best Practices section.

This profile group offers considerable potential for multi-municipal cooperation. A **multi-municipal planning approach** enables participating jurisdictions to evaluate opportunities to work together in making the most efficient use of limited personnel and equipment resources, to generate economies of scale, and to improve market leverage when contracting and moving recyclable materials into the marketplace. In addition, communities can work together in a region to establish a common list of target materials and similar collection programs. This will create consistency among neighbouring municipalities, which facilitates public understanding regarding what and how to recycle. A further benefit is the ability to develop contingency plans with neighbouring jurisdictions. Aggregation of blue box tonnage through shared use of processing facilities will result in higher throughput, thereby lowering per-tonne net costs for all participating communities. Additional discussion of the details of a multi-

municipal planning approach can be found in the corresponding Fundamental Best Practices section.

Having a plan is of only limited benefit if there are no **defined diversion targets and performance measures, supported by data collection and analysis that measure the effectiveness of the plan and its implementation**. Performance measures and data to be obtained include monitoring of diversion amounts, conducting waste audits, and conducting participation studies. It is with such program monitoring that sound decisions can be made based on local program data, within a framework of a continuously improving the program. Additional discussion of performance measures and program monitoring can be found in the corresponding Fundamental Best Practices section.

Performance data, once obtained and analyzed, will allow for the **optimization of operations**. The benefits of optimization include balanced routes and payloads, reduced collection time (and therefore reduced collection costs), and less costly processing. Specific opportunities that apply to programs of this profile are further discussed in the Collection and Processing sections of this Program Profile and in the corresponding Fundamental Best Practices section.

For communities within this profile, programs designed to achieve 60% diversion of Blue Box materials would need to **collect the five mandatory Blue Box materials as well as some of the “supplementary” Blue Box materials** that: comprise a significant portion of the waste stream (as determined by waste audits), have reliable markets, and can be practically recovered for recycling. For programs within this grouping that do not presently have their own MRF, choices regarding designated materials to be included in collection and the degree of commingling of these materials will be determined by the characteristics of the MRF where their materials are currently, or potentially, processed.

Collection

Use of **drop-off depots for recovering recyclables is a Best Practice in low-density rural areas**, where curbside recycling is cost prohibitive. It is more cost-effective to employ the use of depots in areas where curbside collection costs exceed \$50 per household per year. **This is almost always the case for rural communities generating less than 2000 tonnes per year**. (See the text box at the end of the document for specific information on collection and processing best practices for programs of this size.)

Even when curbside collection is provided, **drop-off depots are the Best Practice to collect overflow Blue Box materials and additional recyclable materials, for which curbside collection is not practical or cost-effective**. Supporting Best Practices related to drop-off depots are discussed in the corresponding Best Practice Spotlight. **Where feasible, if anywhere, curbside collection of recyclables should be used to service all available curbside-eligible households in the community**. Best Practices for curbside recycling in jurisdictions of this profile type are discussed

in the Collection section below, with more information on curbside collection provided in the corresponding Best Practice Spotlight.

Communities of this profile will likely have a minimal multi-family population. **Multi-family recyclables collection, if performed, should be incorporated into curbside collection service routes wherever possible to minimize collection costs.** Because of the unique challenges of multi-family recycling, associated Best Practices are further discussed in the corresponding Best Practice Spotlight.

To increase the economic feasibility of curbside recycling, it is a Best Practice to **employ measures that increase the amount of material collected per stop and maximize collection efficiency.** This is particularly important in areas of low-density population, as it is more challenging to perform curbside recycling at an annual per-household cost below \$50.

For curbside programs, providing sufficient rigid collection containers free of charge to residents will ensure that overflow materials are not disposed. Selection of the size and/or number of containers needs to take into consideration estimated set out volume of recyclables, based on the frequency of collection. Most programs will provide weekly or bi-weekly collection of recyclables. **When curbside collection service is provided, collection of Blue Box materials should be at least as frequent as waste collection.**

The number of streams collected will be dictated by the processing options available to the program, as discussed in the next section. Single stream collection can benefit small rural programs because of the reduced collection and transfer costs when a single stream MRF is located within a one-hour's drive. Furthermore, because transfer of recyclables may be cost-effective for transporting materials, handling Blue Box materials in a single stream can minimize glass breakage due to the cushioning properties of paper and plastic products as materials are tipped, loaded into a transfer trailer, and tipped again.

Other opportunities for improving collection efficiencies and reducing costs that apply to programs matching this profile include the use of increased commingling and controlled compaction, where applicable and reducing non-productive operator time.. These and other Best Practices are expanded upon in the corresponding Best Practice Spotlight.

Processing

Our research and various studies have come to the same conclusion with respect to operating a material recovery facility (MRF) with less than 10,000 tonnes per year. The results show that it is extremely difficult to justify the capital expense to build the facility and keep it operated on a full-time basis, typically resulting in operating costs in excess of \$100 per tonne processed.

Whenever possible, all programs with this profile should **explore partnership opportunities and/or use larger MRFs available in neighbouring jurisdictions,**

located within an hour's drive. Such arrangements can provide for efficient processing of recyclables and usually offer a broader range of materials.

If a neighbouring larger MRF is not available within reach, partnership opportunities should be explored for all programs, especially those in the lower tonnage range. The aggregation of blue box tonnage will result in a larger MRF's requirement of higher throughput, thereby lowering per-tonne processing costs for all participating communities. With enough cooperation, it may be possible to break through the 10,000 tonnes "barrier" and/or \$100 per tonne threshold and maximize economies of scale.

In the absence of multi-municipal cooperation, the program's next best option may be to transfer and ship materials to a more distant MRF. Any community with more than a one hour haul distance to a MRF should consider the use of transfer facilities to potentially reduce system costs. **Preference should be given to MRFs that can handle single stream materials** to maximize collection and transfer savings.

As a last option, some programs have been successful at keeping costs low by sorting most or all the materials at the curb and performing rudimentary processing, usually limited to monitoring for contaminants and baling for material shipment. This typically results in higher collection costs and a somewhat limited target material range. One additional alternative is to provide alternating week collection, combined with a basic manual sorting line that can be used for both fibres and containers, as needed. Other optimization strategies for MRFs are more fully discussed in the corresponding Best Practice Spotlight.

Training

Best Practices include **ensuring key program staff are adequately trained** in the core competencies required for each duty. This is discussed in detail in the corresponding Fundamental Best Practices section.

Procurement and Contract Management

Best Practices include following **generally accepted principles for effective procurement and contract management**. This is discussed in detail in the corresponding Fundamental Best Practices section.

Promotion and Education

An **effective promotion and education (P&E) program** leads to higher resident participation rates, improved material quality, lower residue rates, and increased customer satisfaction. A variety of P&E strategies can be employed by municipal programs to achieve desired program goals, as described in the corresponding Fundamental Best Practices section.

Furthermore, to increase program effectiveness, municipalities may need to coordinate P&E activities with their neighbours. Multi-municipal P&E enables participating communities to have a common list of target materials and similar collection programs in neighbouring jurisdictions. When combined with the

availability of mass media for programs of this profile, a multi-municipal mass media campaign can be employed that allows for consistent promotion of messages, as residents continually relocate between neighbouring jurisdictions.

Policies and Incentives

In order to achieve the 60% diversion target set by the Province, programs in this category will need to **use incentives and policies that promote waste diversion**. Such tools may include solid waste bag limits, user pay program for waste, and/or enforced mandatory recycling bylaws. Each community needs to evaluate its waste diversion plans and initiatives to determine the right balance of economic and non-monetary incentives. A detailed discussion of policies and incentives that, when established and enforced, serve to induce waste diversion can be found in the corresponding Fundamental Best Practices section.

Spotlight: Rural Communities with less than 10 homes per km of roads (80% Rural) where curbside collection is cost prohibitive

Collection

For some rural communities in Ontario, curbside recycling service is cost prohibitive, meaning it is likely to exceed \$50 per household per year. It is often logistically impractical, given the limited resources of communities of that size. The Best Practice for collection of recyclables in these small communities is **use of drop-off depots to collect Blue Box materials**.

Whenever possible (meaning if there is a suitable MRF within a reasonable haul distance), **collection should be conducted with the greatest degree of commingling in order to result in significant savings in transfer costs**. Furthermore, **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. Supporting Best Practices related to establishment and operation of drop-off depots are discussed further in the corresponding Best Practice Spotlight.

Processing

Partnership and transfer opportunities should be explored for such small rural programs. Operating a material recovery facility in this volume range is not feasible. Whenever possible, programs handling less than 2,000 tonnes should **use a larger MRF available in neighbouring jurisdictions**.

In the absence of a neighbouring MRF, the program's next best option is to transfer and ship to a more distant MRF. Any community with more than a one hour haul distance to a MRF should consider the use of transfer facilities to potentially reduce system costs. **Preference should be given to MRFs that can handle single stream materials** to minimize transfer costs. Supporting Best Practices related to transfer of recyclable materials are discussed further in the corresponding Best Practice Spotlight.

Appendix D

Communications and Communications Monitoring Plan Samples



Communication Plan Outline

Subject: Promotion and Education of Ottawa Valley Waste Recovery Centre's Waste Management Program

Date: January to December 2010

Purpose: To educate residents and Industrial, Commercial & Institutional (IC&I) generators in the Ottawa Valley Waste Recovery Centre's participating municipalities on all aspects of their waste management program (recycling, organics, hazardous waste, electronic waste, construction and demolition material and landfill).

Background

- Ottawa Valley Waste Recovery Centre is primarily responsible for the promotion and education of Petawawa, Pembroke, Laurentian Valley, North Algona Wilberforce and Sebastopol Ward of Bonnechere Valley's waste management programs. Promotion of non-partner municipal programs (i.e. Madawaska Valley) is also completed by OVWRC in conjunction with those municipalities.

Audiences

- Residents
IC&I Generators
Internal Communications (Inter-Municipal Group, OVWRC Staff, Depot/Transfer Staff)
School/Community Groups

Objectives

- To ensure participants of OVWRC's waste management programs are aware of and have been provided the tools required to divert as much material as possible from landfill.
Increase diversion rates in the IC&I sector by 5% and residential sector by 2%.

Strategic Considerations

- Different message for curbside and transfer stations users.
Significant seasonal population.
Ensure all groups are kept informed (Inter-Municipal Group, OVWRC Staff, Depot/Transfer Staff); especially with respect to any changes/updates to the program.

Key Messages

- What is Acceptable in Each Waste Stream
Importance of Diverting Material from Landfill
Overall operation of OVWRC (mainly school/community groups)

Strategies

- Through extensive promotion and education users will be made aware/reminded of the tools they have available to divert material from landfill.

Overall Action Plan

- This chart outlines the various overall public education methods to be used. Specific projects/programs are detailed after:



Ottawa Valley Waste Recovery Centre
 900 Woito Station Road
 Pembroke, Ontario
 K8A 6W5
 (613) 735-7537
www.ovwrc.com

Tactic	Description	Staff/Resource	Cost/Source
Newspaper and Radio Advertising	Promotion of overall program aspects such as operating hours, tipping fees, compost sales, etc. Detailed in Budget 2010 Spreadsheet (R:\Communications\Budget\2010 Budget Items.xls)	J.Rose	Total Budget: \$26,904
Printing	Printing of Valley Recycler Spring and Fall, Collection Schedules, IC&I Newsletter, Flyer to be Inserted into Depot Green Bins Detailed in Budget 2010 Spreadsheet (R:\Communications\Budget\2010 Budget Items.xls)	J. Rose	Total Budget: \$15,800
Promotional Material	Prizes for school contest, green boxes for transfer station organics, new vehicle decal wrap Detailed in Budget 2010 Spreadsheet (R:\Communications\Budget\2010 Budget Items.xls)	J. Rose	Total Budget: \$22,200
Special Events and Presentations	Various community activities/events, homeshows, supplies for presentations, etc. Detailed in Budget 2010 Spreadsheet (R:\Communications\Budget\2010 Budget Items.xls)	J. Rose	Total Budget: \$3,500
Household Hazard Waste Program	Newspaper and Radio advertising and HHW flyer Detailed in Budget 2010 Spreadsheet (R:\Communications\Budget\2010 Budget Items.xls)	J. Rose	Total Budget: \$7,080

Project Specific Action Plan

- This chart outlines specific aspects of the overall program in more detail. Projects listed here are likely new or have had significant changes and it is beneficial to describe these in more detail; separate from the overall Action Plan identified above.

Tactic	Description	Staff/Resource	Evaluation	Cost/Source
Waste Reduction Week School Contest	Annually the Centre hosts a WRW Contest. In 2009, a teacher survey was included in the package. Before designing the 2010 Contest and Distributing; staff will review surveys, number of entries, etc. and make applicable changes.	J. Rose	-# of entries -Teacher Survey	Included in overall 2010 Budget above.
School Outreach Program	The Centre continues to provide outreach to partner and non-partner schools. In 2010 staff will continue to develop curriculum based programs and start a binder/file with specific presentation outlines. An evaluation form is also provided to teachers.	J. Rose	-# of tours ..\School Stuff\Records of Tours Presentations -review evaluation forms	Included in overall 2010 Budget above.
Community Outreach	The Centre continues to provide outreach to local community groups and organizations (i.e. church groups, Brownies, etc.). Evaluation forms can also be provided to these groups.	J. Rose	-# of presentations ..\School Stuff\Records of Tours Presentations -review evaluation forms	Included in overall 2010 Budget above.



Ottawa Valley Waste Recovery Centre
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www.ovwrc.com

Project Specific Action Plan Continued

Tactic	Description	Staff/Resource	Evaluation	Cost/Source
Echo Eco MyFM Radio Ad Campaign	In 2010 the Centre will implement a new radio ad campaign with MyFM radio. It will include a 90 second information segment and then a 30 second advertisement from OVWRC.	J. Rose	-survey residents at Fall Homeshow (familiar with campaign, useful information, etc.)	Included in overall 2010 Budget above.
IC&I Waste Assessments	The Centre will continue to provide Waste Assessments to the IC&I sector to recommend suggestions on diversion opportunities for local businesses. Work should continue with the Pembroke Downtown Development Commission, networking with the Chamber of Commerce, etc.	J. Rose/ S.McCrae	-monitor number of waste assessments ..\School Stuff\Records of Tours Presentations -monitor IC&I tonnages	Included in overall 2010 Budget above.
E-Waste Phase 2	Advertising and promotion of Phase 2 E-Waste will occur in the Spring.	J. Rose	-track number of users/weight at E-waste Depot	Included in overall 2010 Budget above.

Evaluation

- Overall staff will monitor and track incoming tonnages which may correlate to various outreach projects.

Communications staff should meet regularly with Diversion Leadhands to receive feedback on incoming quality. Can use this information to develop content for website, e-newsletters, Valley Recyclers, etc.

Additional evaluation will be conducted as outlined above.

Proposed Communication Plan – Measuring Effectiveness

Subject: Measuring the effectiveness of promotion and education approaches used by the Ottawa Valley Waste Recovery Centre for elements of the Communication Plan relating to the Blue Box Recycling Program.

Date: Annual

Purpose: To track and measure the effectiveness of promotional and educational material, and specifically materials related to the blue box program, to meet the requirements as set out in the WDO municipal datacall question 6b), Does your plan include a monitoring and evaluation component?

Background: As do all Ontario municipalities, OVWRC is required to fill in the WDO Municipal Datacall each spring. As part of the Datacall the WDO asks municipalities to answer a number of program related “best practice” questions including a set of questions concerning program promotion and education. Question 6 b) asks “Does your plan include a monitoring and evaluation component?”

Method: Since OVWRC has always tracked program performance for the purpose of informed decision making, the tools for tracking promotion and education impacts are in place. The model adopted for direct measurement is based on the process developed by Stewardship Ontario, for use by local partners, to measure impacts from both television and radio advertising campaigns. This approach consists of three steps:

- 1) populating worksheets to track program performance (which is already done at OVWRC),
- 2) completing an annual report that provides comment on the information, and
- 3) providing a summary of other measures – call in centre data, website hits, user surveys – generated during and after any discrete promotional event.

OVWRC will consolidate annual data, starting for 2009, tracked in an excel spreadsheet, for tonnes collected, and will also review for the reporting period the number of households served, for the purpose of analyzing the impact of the various approaches described in the OVWRC annual communications plan.

Analysis: The data will be reviewed to determine whether there is any impact at a household level: OVWRC tonnage data in the worksheet will be converted into kilograms per household.

The worksheet will contain:

- Annual tonnage collected data
- A conversion of this data, based on the input of total households served, into kilograms per household
- A calculated percentage change in kg/hhld
- Spreadsheet data (both tonnes collected and kilograms per household) will be charted for comparison against the previous two years (by quarter) of similar data.

Data will be reviewed to determine whether any trends are evident, including data spikes noted during and after any discrete recycling promotional campaign elements (radio ads, print advertising). The analysis will address quarter-to-quarter and year-to-year trends against the previous two years, and account for other influences and seasonal factors that result in spikes or increases appearing in the data. These could include:

- other P&E programs or major campaigns
- introduction or revision of any OVWRC policies that support recycling, such as bag limits
- addition of households, single family or multi family, or new subdivisions
- addition of materials to the program
- media driven events
- collection or processing system changes

On the basis of this review the analysis will strive to determine measurable effects generated by the promotion and education program.

Beginning in 2010, OVWRC will dedicate a proportion of the promotion and education budget, up to 5% or approximately \$3,800, to evaluate the effectiveness of the communications strategy. The 3 Year Ontario Blue Box Recyclers Training program, P&E Course, recommends that 5 to 10 percent of P&E budget be dedicated to monitoring and evaluation. Staff will select an appropriate measuring tool, such as public surveys, media analysis, waste studies and/or other available methods to augment the annual data review.

In 2010 OVWRC will also send a staff member to take the P&E training offered through the E&E Fund (currently offered free of charge) in order to receive additional training in communications and communications evaluation.

A final report will provide commentary on all inputs – spreadsheet data, website hits, survey results (if any), call in traffic – to determine whether any trends in the data are directly attributable to OVWRC promotion and education efforts.

APPENDIX C

Waste Management By-Law #46-2008

Corporation of the Township of Killaloe, Hagarty and Richards

By-law # 46-2008

Being a by-law to regulate the disposing of refuse at the Waste Disposal Sites within the Township of Killaloe, Hagarty and Richards, the collection of household refuse and recycling materials within the Village of Killaloe, and to establish a schedule of fees for the disposal of items at the Waste Disposal Sites.

WHEREAS Sections 11(1)(3), 20, 74 and 469 of the Municipal Act, 2001 and amendments thereto, authorizes a municipality to establish and regulate a waste management system;

NOW THEREFORE the Council for the Township of Killaloe, Hagarty and Richards enacts as follows:

1) DEFINITIONS:

In this by-law:

- a) "Township" shall mean the Corporation of the Township of Killaloe, Hagarty and Richards
- b) "Waste Disposal Site Attendant" means the person(s) who has(have) been hired by the Corporation of the Township of Killaloe, Hagarty and Richards for this purpose.
- c) "Waste Disposal Site(s)" means any land, buildings or structure(s) owned or leased by the township, at which waste and/or recyclables are deposited or processed and any machinery or equipment or operation required for the treatment or disposal of waste and/or recyclables.
- d) "Waste" shall include and mean all animal, mineral and vegetable matter, sweepings of floors, discarded wearing apparel, waste paper, cartons and boxes, packing materials, glass, crockery and metals in any form or state abandoned, discarded or thrown out by any occupant of and generated from a residential property or dwelling. Garbage shall be separated into recyclables, waste and other.
- e) "Other Waste" means waste other than:
 - i) regular household waste
 - ii) that which can be recycled
 - iii) that which may be placed in designated areas
- f) "Recyclables" are defined in Schedule "A" attached hereto and forming part of this by-law.
- g) "Occupant" shall include and mean any occupant, owner, lessee or tenant of any residential dwelling.
- h) "Street" shall mean any public highway, private road, lane, thoroughfare or way within the Township of Killaloe, Hagarty and Richards.
- i) "Council" shall mean the Council of the Corporation of the Township of Killaloe, Hagarty and Richards.
- j) "Contractor" shall mean the Township Operated Service or the person(s) awarded a contract for the collection, transportation and/or disposal of household waste and refuse and recyclables.
- k) "Resident" shall mean a person or persons living or owning property within the township.
- l) "Commercial/industrial owner or occupant" shall mean a person(s) or corporation(s) owning or occupying property in the Township of Killaloe, Hagarty and Richards, and being assessed at the commercial/industrial rate for taxation purposes.

2) WASTE DISPOSAL SITES:

The following sites are designated areas determined to be Waste Disposal Sites, and no other lands in the township shall be used for this purpose. No person shall deposit or dispose of waste/recyclables/other waste referred to Section 1(d)(e)(f) of this by-law, other than in compliance with the rules and regulations contained herein:

LOCATIONS:

Part Lot 7 Concession 8, Hagarty Township
1049 Mask Road (Killaloe Site)

Part Lot 11 Concession 7, Richards Township
36 Beechnut Lake Road (Red Rock Site)

Part Lot 27 Concession 3, Richards Township
168 Sunrise Road (Round Lake Site)

3) GENERAL REGULATIONS FOR THE OPERATION OF WASTE DISPOSAL SITES:

- a) The Council for the Corporation of the Township of Killaloe, Hagarty and Richards shall be responsible for the operation and use of the Waste Disposal Sites, and may contract from time to time, for the removal and
- b) disposal of garbage or other refuse and recyclables from the Waste Disposal Sites.
- c) No person(s) shall dispose of garbage at any of the Waste Disposal Sites unless such garbage or recyclables were generated within the Township of Killaloe, Hagarty and Richards.
- d) All garbage being disposed of at any of the Waste Disposal Sites must be separated in accordance with the rules and regulations established by council, and instructions of the Waste Disposal Site Attendant or his/her designate.
- e) The Waste Disposal Site Attendant shall supervise the disposal of waste and recyclables at the Waste Disposal Site(s), and shall document and conduct record keeping duties as assigned by council from time to time.
- f) No person or persons shall discharge any firearms on any part of the Waste Disposal Sites, unless authorized by council to do so.
- g) Access to the Waste Disposal Sites shall be on such days and during such hours as are set out in Schedule "A", hereto attached and forming part of this by-law, and no person shall enter onto any Waste Disposal Site in the township except in accordance with the provisions of this by-law.
- h) Salvaging may be permitted by persons authorized by council. Scavenging shall not be permitted.
- i) All garbage shall be placed in approved receptacles as described in Schedule "B" hereto attached and forming part of this by-law, and all paper shall be wrapped or tied to prevent scattering, before being
- j) deposited into the Waste Disposal Site. Materials to be conveyed to the Waste Disposal Site must be transported in such a manner so as not to blow with the wind or leave deposits along the road.
- k) Commercial users may either pay the \$1.00 per bag fee, or use a bin to collect their garbage and transport it to the Waste Disposal Site at a fee and subject to the conditions as outlined in Schedule "B" hereto attached and forming part of this by-law.

- l) Waste and recyclables must be deposited only at designated areas in the Waste Disposal Sites, and are subject to the conditions as outlined in Schedule "B" hereto attached.
- m) The disposal of motor vehicles or motor vehicle parts shall not be permitted in the townships' Waste Disposal Sites.
- n) Large bulky, non-compactable items such as furniture shall be disposed of in the site. Furniture and appliances may be deposited in the "Second Chance" facility at the Killaloe Waste Disposal Site, subject to the conditions outlined in Schedule "B" hereto attached. Appliances containing freon shall be disposed of as outlined in Schedule "B" hereto attached and forming part of this by-law.
- o) Charges for Waste Disposal (Tipping fees) as set out in Schedule "B" hereto attached and forming part of this by-law, shall be paid to the Waste Site Attendant upon entry to the site, and before disposing of chargeable items.
- p) Burning of solid waste shall not be allowed in the Waste Disposal Site trenches. Segregated brush and other clean wood products and clean wood by-products shall be disposed of in a separate part of the disposal site under supervision and in accordance with applicable Ministry of Environment regulations and guidelines.
- q) The Waste Disposal Sites shall be operated within the regulations and guidelines of the Ministry of Environment.
- r) Hazardous Waste, as defined by the Ministry of Environment from time to time and listed in Schedule "C" hereto attached and forming part of this by-law, shall not be deposited at any municipal Waste Disposal Site at any time.

4) GENERAL REGULATIONS FOR THE COLLECTION OF HOUSEHOLD WASTE WITHIN THE VILLAGE OF KILLALOE:

- a) All occupants shall place garbage in approved bags or a plastic or aluminum garbage can of equal size to an approved bag.
- b) The garbage bags or cans shall be placed for pick up in a manner so as not to impede pedestrians or traffic, and shall be at the end of the occupant's driveway.
- c) Household garbage shall be placed at the curbside for pick-up no later than Wednesdays at 8:00 AM.
- d) No person shall spill, scatter, deposit, throw, lay or cause to be thrown, lain, deposited, scattered or spilled, garbage on any street or public property.
- e) Spillage from garbage bags or cans caused by animals or persons shall not be gathered up by the township, it's agent or independent contractor, and shall be the responsibility of the occupant to clean up.
- f) No person shall place out for collection any hazardous waste, grass clippings, leaves, brush, garden waste, scrap lumber or other building materials, stumps or logs, metal, stone, brick, concrete, ashes, appliances, water heaters, furniture or other such large items.
- g) Items not contained in an approved receptacle shall not be set out for collection.
- h) Garbage from industrial, commercial or institutional property or premises shall not be set out for collection. The disposal of garbage or refuse from industrial, commercial or institutional properties or premises shall be the sole responsibility of the occupant of such establishment, and the

Township of Killaloe, Hagarty and Richards shall bear no responsibility for collection and disposal of same.

- i) The collection of garbage in the Village of Killaloe shall be made as per Schedule "A" hereto attached and forming part of this by-law.
- j) The garbage that shall be collected by the Township, its agent or independent contractor shall be only that which is defined in this by-law.
- k) For each bag of garbage, there shall be affixed a sticker as approved by the township. The sticker shall be affixed to each bag in a clearly visible location.
- l) No person shall set out any bag of garbage, without an affixed sticker.

5) RECYCLING:

- a) All occupants are required to recycle any refuse that can be recycled.
- b) The list of recyclable materials that shall be accepted by the township shall be only that material as set out in Schedule "A" attached hereto and forming part of this by-law, such Schedule "A" as may be amended from time to time subject to the availability of markets for the processing of recyclable material.
- c) Recyclables, except within the Village of Killaloe, shall be transported by the occupant to the townships designated Waste Disposal Sites. Recyclables, with the exception of commercial cardboard, shall be picked up from residential and commercial users in the Village of Killaloe, and shall be transported to a designated waste disposal site by the municipality or an agent acting on behalf of the municipality.
- d) Recyclables within the Village of Killaloe shall be picked up when placed in approved recycling containers, at the end of the occupants' driveway, as per the pick up schedule outlined in Schedule "C" hereto attached and forming part of this by-law.

6) PRIVATE CONTRACTORS:

Persons collecting waste from customers within the Township of Killaloe, Hagarty and Richards, and depositing such waste in the Waste Disposal Sites, shall have an appropriate Certificate of Approval or such certificates as may be required by the Province of Ontario, or agency thereof, for the hauling of waste materials. Persons collecting waste from customers within the Township of Killaloe, Hagarty and Richards shall furnish proof of liability insurance to the Township of Killaloe, Hagarty and Richards, the amount of which shall be determined by Council. Persons collecting waste from customers within the Township of Killaloe, Hagarty and Richards shall, upon request, show proof of conformance, failing which will result in collected materials not being allowed to be deposited in the townships Waste Disposal Sites.

7) PENALTIES AND/OR FINES:

Any person who violates any of the provisions of this by-law is guilty of an offence, and shall, upon conviction, be liable for a fine as provided for under the Provincial Offences Act.

8) INVALIDITY UNENFORCEABLE:

If any provisions or requirements of this by-law, or the application thereof to any person shall to any extent be held to be invalid or unenforceable, the remainder of this by-law or the application of such provision or requirement to all persons other than those to which it is held to be invalid or unenforceable, shall not be affected thereby and each provision and requirement of this by-law shall be separately valid and enforceable to the fullest extent permitted by law.

9) All other by-laws, resolutions, motions or actions of council that are inconsistent with this by-law are hereby repealed.

10) This by-law replaces by-law 18-2004 and shall come into force and effect upon final reading thereof.

Read a first and second time this day of , 2008.

Read a third time and finally passed this day of , 2008.

Mayor

CAO/Clerk-Treasurer

**Schedule "A"
to By-Law 46-2008
Recycling List**

Please Note: Commercial Users Cannot Place Cardboard in their Blue Boxes for Pick-Up in the Village of Killaloe

CURRENT RECYCLING LIST

ITEMS

INSTRUCTIONS

Drink and food cans, aluminum plates, foil
Aerosol cans
Paint Cans

- Rinsed, cleaned, flatten if your prefer
(Empty/Insecticides/Herbicides)
(No Plastic, empty, lids removed and placed in
blue box)

#1, #2 Plastic Bottles
2, 3, 5, 7 & Jugs

- Food & beverage bottles ONLY
- Food & Beverage household Liquids,
Windshield washer
- NO OIL CONTAINERS

#6 Styrofoam
Styrofoam Used for Packing

- Clean Food & Beverage Containers, Meat
Trays
- Styrofoam packaging from electronics,
appliances, etc. – Must be broken down to 10”
lengths

Plastic tubs/lids #2, 5

- Clean

Newspaper, flyers, magazines, junk mail
Catalogues, writing paper, telephone directories
Boxboard, Egg Cartons (Cardboard)
Cardboard
Brown paper bags, dog/cat kraft food bags

- Tied or Bagged Together
- Small amounts
- Flattened, tied or placed inside a larger box
- Flattened, tied together 24”x24”
(No chemical bags)

Clear/Coloured glass (food & beverage bottles
only)

- No drinking glasses, ceramic cups, window
panes
Dinner plates/cups, mirrors, carlights,
lightbulbs

Office mixed paper

- In clear plastic bags - everything used in office
(No carbon and/or construction paper)

Plain wrapping paper and tissue paper

- No Christmas or wrapping paper with a printed
pattern on it

Plastic Film (including grocery bags, bread bags)

Cartons (including milk and juice cartons)
Tetra Packs (including drinking boxes)

- Rinsed
- Rinsed

Items Not Accepted: Textiles(clothing), carbon
paper, pocket novels

Schedule "A"
to By-Law 46-2008 – Continued

KILLALOE, HAGARTY AND RICHARDS
WASTE SITE HOURS

Killaloe Site (1049 Mask Road) Wednesday 7:30 AM to 11:30 AM
Saturday 8:00 AM to 4:00 PM
Friday 12:00 Noon to 4:00 PM

Round Lake Site (168 Sunrise Road) Thursday 8:30 AM to 12:00 Noon
Sunday 8:30 AM to 12:00 Noon

Red Rock Site (36 Beechnut Lake Road) Thursday 12:30 PM to 4:00 PM
Sunday 12:30 PM to 4:00 PM

***May to October Holiday Long Week-Ends: Both Round Lake and Red Rock Sites will be CLOSED on Sundays.**

Holiday Mondays (May – Oct.): Red Rock Site Only is Open From 2:00 PM to 6:00 PM

Sites are CLOSED Christmas Day, Boxing Day, New Year's Day, Good Friday, Easter Sunday and Easter Monday.

Recycling and Garbage Pick-Up Schedule for the Village of Killaloe

Recycling Pick-Up shall be every second Wednesday. The designated time for pick-up shall be 8:00 AM.

The designated time for placing garbage at the curbside shall be every Wednesday, by 8:00 AM.

Mayor

CAO/Clerk-Treasurer

Schedule "B"
to By-Law 46-2008

TIPPING FEES

ALL GARBAGE MUST BE PROPERLY BAGGED AND SECURED IN 26"X36" GARBAGE BAGS, WITH THE APPROPRIATE STICKER ATTACHED. PAPER BAGS, GROCERY BAGS, ETC., WILL NOT BE ACCEPTED UNLESS PLACED INSIDE A REGULAR (26"X36") GARBAGE BAG.

Tags for Bagged Household Waste: \$1.00/Bag

Commercial Users: Commercial Users may either pay the \$1.00 per bag fee or a \$7.00 per cubic metre bulk fee effective upon the passage date of this by-law. The Township's Works Superintendent shall determine the capacity of the commercial users bulk container. Commercial Users may pay their tipping fees on a monthly basis rather than with each trip to the Waste Disposal Site, however failure to pay the fees billed by the Township within thirty days will result in immediate suspension of their access to any of the municipality's Waste Disposal Sites. The Waste Site Attendant shall submit to the municipal office, on a weekly basis, a record of the commercial users who are to be billed for the month, and the municipal staff shall issue an invoice accordingly.

Commercial Dumpster: \$7.00 cubic
metre

Sorted Demolition Material: (Clean – No nails)

Utility Trailer 5'x8' \$7.00/load
½ Ton Truck \$7.00/load

Sorted Demolition Material: Clean – No Nails)

Single Axle Truck \$30.00/load
Tandem Truck \$120.00/load

• **Trailers and Vehicles with racks – Fee Doubles**

UNSORTED Demolition Material:

Utility Trailer 5'x8' \$60.00/load
½ Ton Truck \$60.00/load
Single Axle Truck \$240.00/load
Tandem Truck \$360.00/load
Triaxle \$540.00/ load

Brush: (Up to a Maximum 6" Top – No Tree Stumps or Logs)

Utility Trailer 5'x8' \$30.00/load
Half Ton Truck \$30.00/load
Single Axle Truck \$50.00/load
Tandem Truck \$125.00/load

Tires:

Passenger & Light Truck (No Rim) \$5.00/tire
Passenger & Light Truck (With Rim) \$20.00/tire
Truck (No Rim) \$10.00/tire
Truck (With Rim) \$40.00/tire
Oversized Tractor, Skidder, Grader (No Rim) \$20.00/tire
Oversized Tractor, Skidder, Grader (With Rim) \$80.00/tire
ATV or Trailer Tire (No Rim) \$5.00/tire
ATV or Trailer Tire (With Rim) \$20.00/tire

Contaminated Soil:

Utility Trailer	5'x8'	\$260.00/load
½ Ton Truck		\$260.00/load
Single Axle Truck		\$440.00/load
Tandem Truck		\$560.00/load
Triaxle Truck		\$840.00/load

Furniture: \$5.00/piece

Major Appliances: No Charge (subject to market value for scrap metal)
(e.g. stoves, washers, dryers)

- **At the discretion of the Waste Site Attendant, some furniture pieces (sofas, chairs, bedroom dressers, dining buffets, etc.) may be placed in the “Second Chance” building at the Killaloe Waste Disposal Site. If the furniture items are in reasonable shape and acceptable to the waste site staff, there is no charge to leave them at the “Second Chance” building. If they are not acceptable for the “Second Chance” building, the furniture disposal fee of \$5.00 applies. Due to safety concerns, no car seats or baby/child furniture will be accepted at the “Second Chance” building.**

Refrigerators and Other Appliances Containing Freon or other refrigerants: Will be accepted at the Killaloe Waste Site only. The unit's door must be removed (this is a requirement of the Ministry of the Environment) and a fee of \$25 for a fridge and \$12.50 for an air conditioning unit will be charged for disposal.

Accepted Without Charge: Scrap Metal, Pine Needles, Leaves, and Recyclables (glass, paper, tin cans, etc.)

Red Rock Site Accepts:

Household Waste
Recyclables (Excluding Cardboard)

Round Lake Site Accepts:

Household Waste
Recyclables (Excluding Cardboard)

Killaloe Site Accepts:

Household Waste
Recyclables (Including Cardboard)
Pine Needles, Grass Clippings, Leaves
Scrap Metal
Brush (No Stumps or Logs)
Demolition Material
Furniture
Painted Wood
Tires

****None of the Waste Disposal Sites in the Township of Killaloe, Hagarty and Richards accepts Hazardous Waste Material.****

Mayor

CAO/Clerk-Treasurer

Schedule "C"
to By-Law 46-2008

HAZARDOUS WASTE

Nothing considered to be hazardous waste is allowed to be left or deposited at any of the municipal waste disposal sites located in the Township of Killaloe, Hagarty and Richards. Hazardous Waste is identified as, but is not limited to, the following:

Motor Oil	Herbicides
Insecticides	Paint
Acids (muratic, etc.)	Caustics (Iye)
Glues	Gasoline
Drain and Oven Cleaners	Pool Chemicals
Bleach	Aerosol Cans
Solvents (nails polish remover, varsol)	Pesticides
Pharmaceuticals	Batteries
Antifreeze	Ammonia
Cleaning Fluids	

Metal gas containers, propane tanks and all other fuel tanks/containers are considered hazardous and will not be accepted at any of the Waste Disposal Sites operated by the Township of Killaloe, Hagarty and Richards.

Mayor

CAO/Clerk-Treasurer

APPENDIX D

Statement of Service Conditions and Limitations



GREENVIEW ENVIRONMENTAL MANAGEMENT LIMITED - STATEMENT OF SERVICE CONDITIONS AND LIMITATIONS

Provision of Services and Payment

Upon documented acceptance of Greenview's proposed services, costs and associated terms by the client, Greenview may commence work on the proposed services directly. Upon retention of Greenview's services related to this project, the client agrees to remit payment for the services rendered for the specified period within (30) days of receipt as invoiced by Greenview on a typical monthly basis, unless otherwise arranged between the client and Greenview. In the event of non-payment by the client, Greenview reserves the right, without external influence or expense, to discontinue services and retain any documentation, data, reports, or other project information until such time as payment is received by Greenview.

Warranty, Limitations, and Reliance

Greenview relies on background and historical information from the client to determine the appropriate scope of services to meet the client's objectives, in accordance with applicable legislation, guidelines, industry practices, and accepted methodologies.

Greenview provides its services under the specific terms and conditions of a specific proposal (and where necessary formal contract), in accordance with the above requirements and the *Limitations Act 2002*, only.

The hypotheses, results, conclusions, and recommendations presented in documentation authored by Greenview are founded on the information provided by the client to Greenview in preparation for the work. Facts, conditions, and circumstances discovered by Greenview during the performance of the work requested by the client are assumed by Greenview to be part of preparatory information provided by the client as part of the proposal stage of the project. Greenview assumes that, until notified or discovered otherwise, that the information provided by, or obtained by Greenview from, the client is factual, accurate, and represents a true depiction of the circumstances that exist related to the time of the work.

Greenview relies on its clients to inform Greenview if there are changes to any related information to the work. Greenview 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. Greenview 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 Greenview during the period that services, work, or documentation preparation was performed by Greenview.

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

When preparing documentation, Greenview considers applicable legislation, regulations, governmental guidelines and policies to the extent they are within its knowledge, but Greenview 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.

Greenview's services, work and reports are provided solely for the exclusive use of the client which has retained the services of Greenview and to which its reports are addressed. Greenview is not responsible for the use of its services, work or reports by any other party, or for the reliance on, or for any decision which is made by any party using the services or work performed by or a report prepared by Greenview without Greenview's express written consent. Any party that uses, relies on, or makes a decision based on services or work performed by Greenview or a report prepared by Greenview without Greenview's express written consent, does so at its own risk. Except as set out herein, Greenview specifically disclaims any liability or responsibility to any third party for any loss, damage, expense, fine, penalty or other such thing which may arise or result from the use of, reliance on or decision based on any information, recommendation or other matter arising from the services, work or reports provided by Greenview.

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 Greenview's work or report considers any locations or times other than those from which information, sample results and data were 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 based on extrapolations.

Only conditions, and substances, 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 that were not chosen for study by the client, or any other matter not specifically addressed in a report prepared by Greenview, are beyond the scope of the work performed by Greenview and such matters have not been investigated or addressed.

Confidentiality

Greenview provides proposals, reports, assessments, designs, and any other work for the sole party identified as the client or potential client in the case of proposals.

For proposals specifically, the information contained therein is confidential, proprietary information, and shall not be reproduced or disclosed to any other party than to that of the addressee of the original proposal submission, without prior written permission of Greenview.

