CIF Project 225

Recycling Program Review
Municipality of Killarney

Final Report

July 2010

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Executive Summary

Under the direction of the Continuous Improvement Fund (CIF), Project 225 was undertaken in the spring of 2010, to recommend blue box program enhancements for the Municipality of Killarney (Killarney) to reflect best practise initiatives within the province and to boost the blue box diversion rate of the municipality.

A common element from reported best practices is that a recycling system is only as effective as the people who use it and use it properly. In summary, the following enhancement opportunities were recommended to Killarney to heighten the overall diversion rate:

- The curbside program represents the largest contributor of blue box tonnages collected from the Killarney program. Expand the curbside program from bi-weekly to weekly collection with consideration to trial the program during the peak season to determine impact on operations.
- Support the expanded curbside program with enforcement mechanisms such as bag limits for waste, mandatory recycling, clear bags for waste, and illegal dumping by-laws.
- Post easy to read signs at the waterfront and marina areas to educate seasonal patrons of proper recycling and waste management procedures. Apply for funding from the CIF to offset capital investment costs of new waterfront signage.
- Remove the existing waste and recycling drop off depots at Channel Street and establish new Public Space Recycling (PSR) containers suitable to manage `day use' litter and recyclables. Apply for funding from the CIF to offset capital investment costs of new PSR containers and supporting signage.
- Post new signs at the rural depot areas located at the disposal sites and use visually appealing graphics instead of wordy text. Apply for funding from the CIF to offset the cost of new signage at the depot sites.
- Enhance residential and seasonal promotional material by using the CIF promotion and education tool kit and apply for funding from the CIF for support in launching a public education campaign.
- Establish a diversion strategy to continually increase blue box tonnage with the assistance of preparing a Recycling Strategy. Apply for funding from the CIF to assist with the preparation and planning of the strategy to meet the needs of your community.

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1.0 Introduction and Project Objectives

Under the direction of the Continuous Improvement Fund (CIF), Project 225 was undertaken in the spring of 2010, by 2cg Inc., to recommend program enhancements for the Municipality of Killarney (Killarney).

To meet the project objective, information was gathered by 2cg from municipal staff, and supported by a site evaluation conducted in May 2010. The objective is to establish practical options and associated costs for mechanisms to enhance the existing recycling program for both the permanent and seasonal residents by conducting the following:

1. Perform a review of Killarney's current recycling program and develop options and recommendations to increase the capture of overall blue box material, reduce contamination from the seasonal depot sites and minimize handling costs associated with the recycling program; and,

2. Establish Best Practices (BP) suitable for the demographics of the area and identify opportunities to access the CIF for funds to assist with recycling program enhancements.

The following report outlines the outcome of the program review and is supported by various enhancement recommendations for the Killarney blue box program.

2.0 Program Background

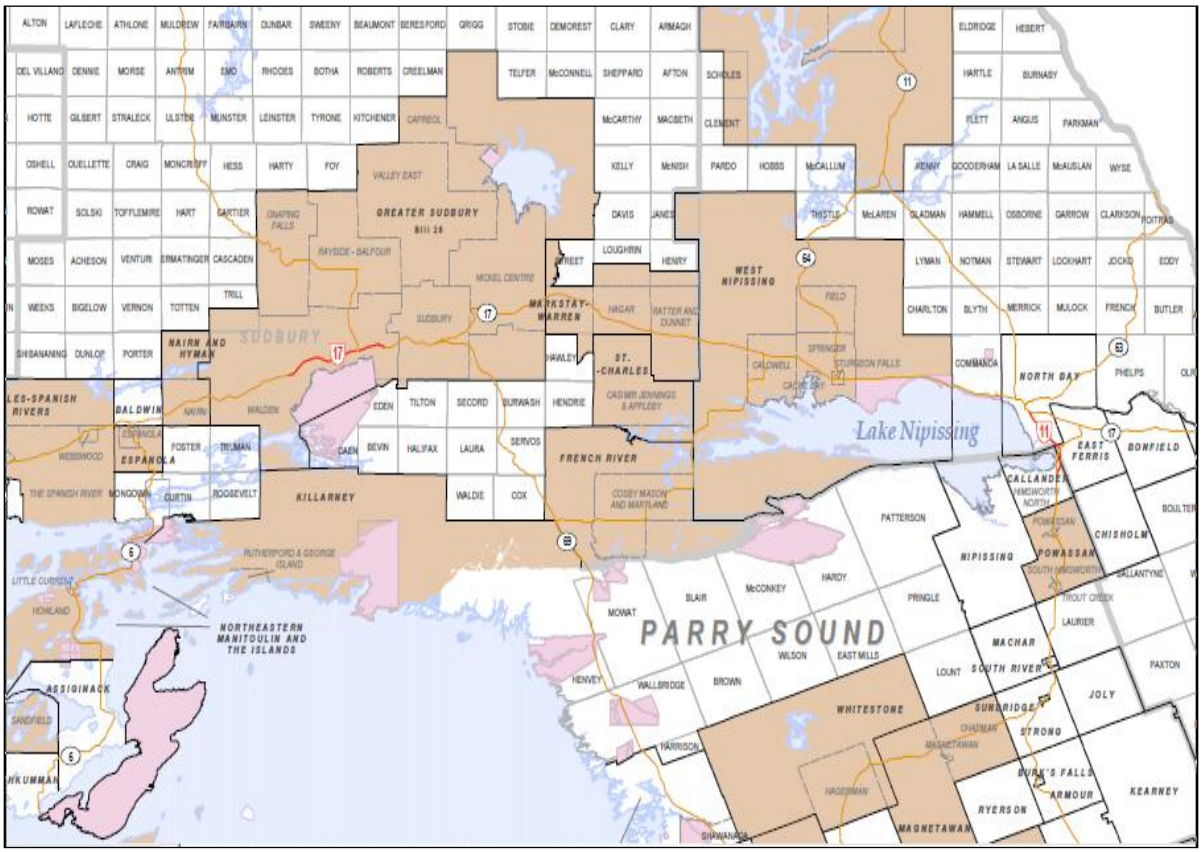
Geographic Information

Killarney is the name of the largest populated area within the municipality representing a population of approximately 424 permanent residents and 196 households. Smaller settlements exist at Hartley Bay and Bigwood. The municipal boundaries of Killarney encompass the geographic townships of Rutherford and George Island, Hansen, Goschen, Sale, Attlee, Kilpatrick, Travers, Struthers, Allen and Bigwood in the District of Sudbury, Killarney and part of Carlyle in the Manitoulin District and the northern part of Henvey in the Parry Sound District.

The Killarney town site is located about 67km west of Highway 69 via Highway 637, along the northern shore of Georgian Bay in the District of Sudbury. Killarney is 100km south of Sudbury and 200km east of North Bay. Travel time to Toronto represents approximately 5 to 6 hours. Killarney is commonly associated with Killarney Provincial Park, located east of the town site which occupies much of the municipality's expanded boundary.

Figure 1 depicts the geographic location of Killarney as it relates to the surrounding districts in Northern Ontario.

Figure 1 Geographic Location of Killarney and Surrounding Districts



Seasonal Population

Killarney's economy relies primarily on summer tourism consisting of wilderness lodges, campgrounds and retail services geared toward campers, cottagers and commercial fishing. Tourist's destinations within Killarney are primarily summer lodges populated along the lake shore, private island cottages, the Provincial Park or the marina along the North Channel.

By water, Killarney is accessible to boaters on both Georgian Bay and Lake Huron. The small channel between George Island and Killarney has several marinas with docking facilities for approximately 250 boats. These marinas are popular during July and August and represent a large proportion of the day tourists visiting the village. Killarney also represents one of the main access points by road from highway 69 for residents owning island cottages along the North Channel. Island cottagers park their vehicles and boats at Killarney marinas for the season and access services (fuel, food, etc.) at the general store within Killarney.

Photo 1 depicts the water access points for the town site of Killarney.

Photo 1 Aerial View of Killarney in July-August (Photo Provided by the Municipality)

A Feasibility Study (Study) conducted by Verburg and Associates, Inc. in support of a proposed Heritage Centre was prepared for Killarney in March 2001. Part of the Study referenced Killarney's resident population as having limited population base and little population growth. Comparatively, the Study highlighted a sizable seasonal population specific to Killarney and surrounding area, with 690 recreational units located within the town site of Killarney (1996 census) representing 2.7 persons per unit or about 1,860 seasonal residents (cottages). [1]

The Study further estimated that a total number of tourists visiting the small town site of Killarney, (including day trips and overnight visits) averaged 55,600 per year with the marinas being responsible for 30,000 person nights during July and August.[2]

Organization of Waste Management

Waste management services for the municipality include the following:

- Weekly garbage collection for the town site of Killarney, conducted by municipal forces and municipally owned pick-up truck and trailer;
- Public access to three waste disposal sites (Killarney Site, Hartley Bay Site and Key River);
- Two blue box recycling depots located at Killarney and Hartley Bay waste disposal sites;
- Seasonal drop off depots for waste and blue box materials along the waterfront at the town site of Killarney (Channel Street Depots) to service transient boat traffic along the channel;
- Bi-weekly curbside blue box collection for the town site of Killarney, for co-mingled blue box materials, collected in clear plastic bags including;

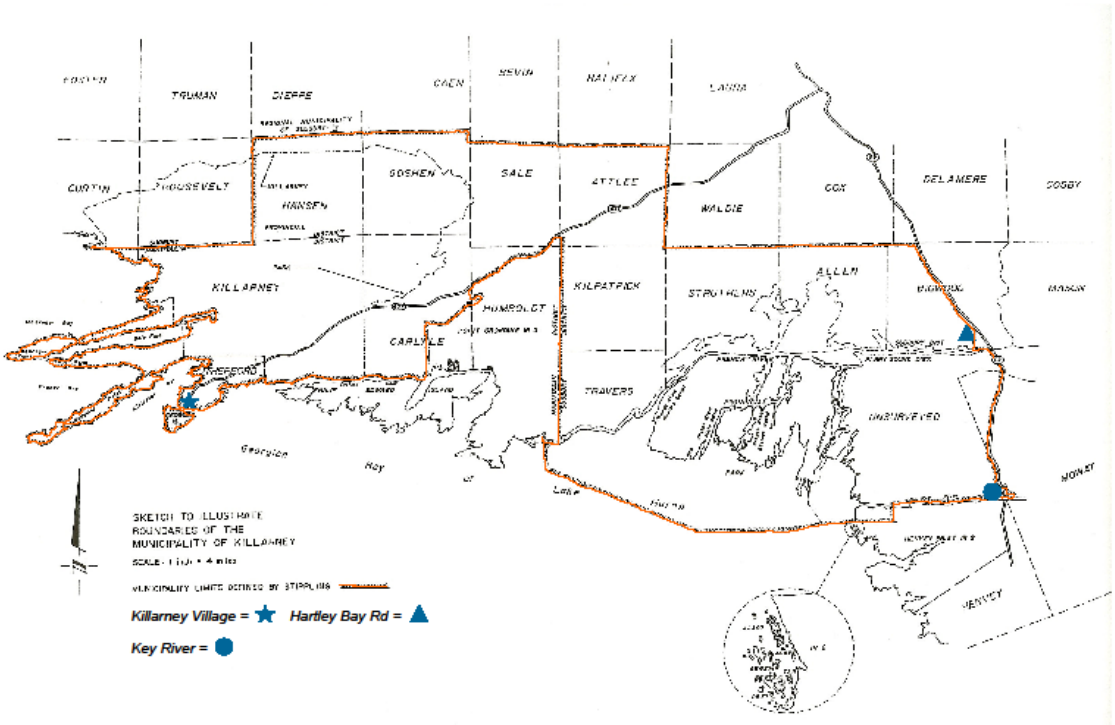
[1] Verburg and Associates, Inc., HOK Urbana Architects, Malone Given Parsons, Terry Heard Designers, March 2001 Page 43.
[2] Verburg and Associates, Inc., HOK Urbana Architects, Malone Given Parsons, Terry Heard Designers, March 2001. Page 44.

- Boxboard, polycoat, plastic bags, recyclable paper (newspapers, glossy magazines, catalogues, flyers, coloured and white paper, telephone books, mixed container #1,#2,#4,#5,and #6 plastics (excluding expanded polystyrene foam), steel & aluminum food and beverage cans,
- Large pieces of corrugated cardboard- to be bundled and flattened beside the bagged material,
- Container glass (clear and coloured)- to be set out in separate containers provided by the resident (boxes, bags) at the curb beside the clear bag.

- Spring bulky waste collection items conducted by municipal forces and municipal pick-up truck and trailer; and
- Scrap Metal and Tire recycling at all waste disposal sites.

Figure 2 depicts the geographic location of the Killarney and Key River recycling depots as well as the Hartley Bay waste disposal site (no recycling).

Figure 2 Geographic Locations of Recycling Depots and Disposal Sites within Killarney.



Blue Box Tonnages and Diversion Rate

There are no weigh scales at the disposal sites subsequently all waste quantities are estimates generated from survey contours that are converted to tonnages for the reporting purposes of the WDO Datacall. Recorded weights are available for the recycling program and are reflected as an overall collected weight in the Datacall. The 2009 WDO Datacall reports 1,600 tonnes of waste disposed by Killarney and 147 tonnes was diverted, yielding an overall waste diversion rate of approximately 8% and a blue the blue box diversion rate of 3%.

Table 2.1 depicts population and waste quantity data for 2009.

Table 2.1 Killarney Population and Waste Quantity Data (2009)

Year	Permanent Population	Permanent Households	Waste Disposed (Tonnes)	Blue Box Marketted (Tonnes)	Blue Box Diversion Rate (%)	Scrap Metal (Tonnes)	Deposit Return (Tonnes)	Overall Diversion Rate (%)
2009	454	196	1,600.00	50.9	3.1	79.96	3	7.5

Overall blue box quantities have been steadily increasing since the program was launched in 2006.

Table 2.2 depicts the estimated blue box tonnages diverted from disposal since program inception.

Table 2.2 Overall Recycling Tonnages

Year	2006	2007	2008	2009
Estimated Tonnages	29	35	40	50

The depot and curbside tonnages are not tracked separately and it is anticipated by staff that the majority of the tonnages are generated by the curbside program. The 2009 WDO Datacall reports that 47 tonnes of total reported 50 tonnes is collected by the curbside program. Observations made by the collection crew for participation at the public space depots (Channel Street) signified single use plastic water bottles and pop cans were the primary material recycled by patrons. It is anticipated that weights from the Channel Street depot sites represents less than 100kgs during July and August.

Reflecting these estimates for 2009, Table 2.3 depicts estimated recycling tonnages diverted from the various collection mechanisms.

Table 2.3 Estimated Blue Box Tonnages (2009)

Year	Curbside (Tonnes)	Rural Depot (Tonnes)	Channel Street Depot (Tonnes)	Total Tonnes
2009	47	3	0.1	50

The Ministry of Environment Regulation 101/94; A Guide to Source Separation of Recyclable Materials and Leaf and Yard Waste Systems (1994), stipulates that a blue box management system is only required for municipalities with populations of 5,000 or more. Under the current Ministry guidelines, Killarney is not legislated to undertake a formal municipal recycling program.

The challenge facing Killarney is the impact the two month surge of seasonal population has on the capacity of their waste disposal site. In 1995, Killarney expanded their disposal site (Killarney Waste Disposal Site) to gain additional disposal capacity for a minimum of 25 years based on their permanent population and projected population growth rate. Recently (2008), the final contours of the disposal site were exceeded and the municipality entered into another expansion application. Observations during the spring site visit noted an apparent contributing factor to the declining disposal capacity originates from the two month surge of seasonal population. This observation has been supported by municipal staff and their council and resulted in the launching of the municipal recycling program in 2006.

3.0 Current Recycling Program

Curbside Program

A crew of two public works staff conduct the bi-weekly recycling collection using a pick-up truck and a tow behind trailer with a dumping mechanism. The same system is used for the weekly collection of waste. Although recyclable material is processed at the Sudbury single stream MRF, residents are instructed to segregate container glass and large pieces of cardboard from the commingled bagged based program. The public works crew collect the segregated container glass (boxes, buckets) and deposit the material directly into barrels positioned inside the trailer. The decision to curbside segregate glass and cardboard was due to earlier problems primarily from bag breakage and as a preventative measure for the collection staff from potential injuries from broken glass.

Photo 2 depicts the configuration of the locally fabricated waste/recycling trailer.

Photo 2 Killarney Collection Trailer (Waste and Recyclables)

During the peak season (July-August), collection crew indicated the trailer often exceeded capacity by volume. Comparably, the weekly waste collection during the same timeframe did not exceed capacity. Further inquiries to staff uncovered that over the last two years during the non-peak season, the collection trailer has continued to reach capacity for bi-weekly bagged recyclables whereas the weekly waste collection never exceeds capacity. Staff pointed out observations made over the past year that the majority of the residents place 1 or 2 bags of waste at the curb per week when they participate in the recycling program and 3 to 5 bags per week of waste if they chose not to participate in the recycling program. Currently, there are no waste bag limits, user fees or recycling by-laws associated with material permitted to be set at the curbside.

Rural Depot Program

All recyclable material is delivered to the Killarney waste disposal site located approximately 2 km from the town site. Recyclables are transferred by hand into a used tractor trailer that doubles as a rural drop off depot for cottagers, generators of larger volumes of recyclables, and remotely located permanent residents near the Killarney disposal site.

Photo 3 depicts the storage trailer for curbside collected and residential dropped off recyclables.

Photo 3 Recyclable Storage Trailer (Killarney Disposal Site)

The trailer is monitored by the waste disposal site attendant with access doors only open during the disposal site hours of operation. During the summer, the sites are open on the weekends to offer an expanded level of service to cottagers. The sites are not open during statutory holidays. The used trailer acts as temporary storage for blue box material until it is hauled by a private contractor to the Sudbury MRF.

Photo 4 depicts the depot attribute of the storage trailer.

Photo 4 Trailer Access for Dropped Off Material

The segregated container glass is dumped into 45 gallon barrels beside the storage trailer. Approximately once per month, the stored recyclables from the trailer and the barrels of glass are transferred by hand into a loader bucket with all material comingled loosely (glass, cardboard and bagged recyclables) into a roll-off truck to be transferred to Sudbury. A similar blue box depot system is located at the Key River waste disposal site.

Photo 5 depicts the segregated glass barrels outside of the storage trailer.

Photo 5 Segregated Glass at Depot Site

Public Space Recycling Depot

To accommodate litter generation at the day use areas along the waterfront of Killarney town site, there are two unattended depots open from May to October.

Photo 6 depicts the enclosure of the depot site prior to peak season.

Photo 6 Channel Street Depot Enclosure

The Channel Street depots have waste and recyclable receptacles that are large enough to manage bagged residential garbage and bulky recyclable material. Public works crew manually removes full barrels of recycling and waste when required.

Photos 7 and 8 depict the structure of the recycling depot bins.

Photo 7 Channel Street Depot

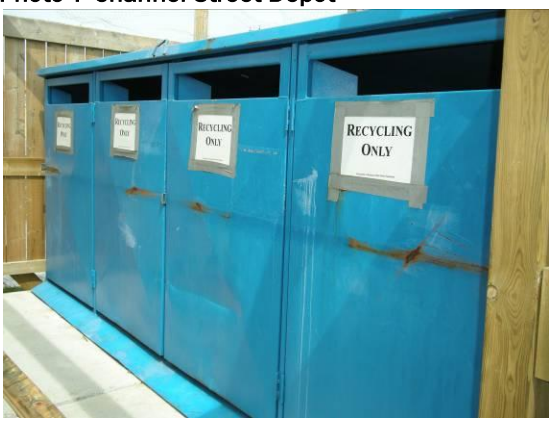


Photo 8 Collection Barrels Inside the Depot

Weights are not recorded from the Channel Street depot sites. Material collected from the two sites is taken to the Killarney recycling depot trailer and comingled with curbside depot material. Table 4.1 depicts available generation data observed by the collection crew based on the average frequency of full recycling bags (36" x 50") removed by the collection crew from the Channel Street depot sites during the season. The majority of the material represents single use water bottles and beverage cans with minimal instances of bulky materials.

Table 3.1 Estimated Frequency of Recycling Bag Generation (Channel Street Depots)

Month	May-Jun.	Jul.-Aug,	Sept - Oct.
Total Bags	3	60-100	3

4.0 Baseline Cost Data

Baseline cost information collected from Killarney municipal staff for the curbside and depot collection programs are outlined in detail in this section.

4.1 Curbside Recycling Costs

Specific to Killarney, the area serviced by curbside is close to the central transfer point, the distances between stops are low and the number of sorts and overall tonnage is low. Efficiency becomes a challenge with the voluminous nature of the recyclables and the capacity limits of the trailer. Material is not compacted and the collection method requires 2 people (driver and collector) with crew throwing the material overhead and into the trailer causing inconsistent loading of the trailer.

Table 4.1 depicts the costs associated with conducting curbside recycling collection for the town site of Killarney.

Table 4.1 Municipal Curbside Collection Costs (2009)

Item		Cost
Municipal BB Curbside Cost (26 weeks)	$	1,968.33
Materials & Supplies (what is this)	$	2,767.30
Total BB Collection Costs	$	4,735.63
Tonnages		47
Households		196
Cost Per Household	$	24.16
Cost Per Tonne	$	100.76

4.2 Depot Collection Costs

The depot collection costs are split between Key River and Killarney Site. The Key River site is serviced by a private contractor with material transferred to Sudbury directly from the site. The Killarney and the Channel Street depots are serviced by the same municipal collection crew and vehicle as the curbside program.

Table 4.2 depicts the costs associated with the depot sites.

Table 4.2 Depot Collection Costs (2009)

Depot	Collection Costs	
Killarney & Channel Street	$	5,096.00
Key River Site (Contractor)	$	3,498.44
Total Depot Collection Costs	$	8,594.44
Tonnages		3.5
Households		730
Operating Cost Per Household	$	11.77
Cost Per Tonne	$	2,455.55

The percentage allocation for depot attendant costs and municipal administration costs are currently not factored into the depot operational costs by Killarney as part of their recycling program costs.

4.3 Recycling Processing and Transfer Costs

The Sudbury MRF charges a processing fee of approximately $89/tonne (plus tax) to process the comingled recyclables collected from Killarney ($0 revenue share).

Table 4.3 depicts the 2009 processing and monthly transfer costs (Roque Trucking)

for curbside and depot collected blue box material managed at the Sudbury MRF.

Table 4.3 MRF Processing and Transfer Costs (2009)

Month	Sudbury MRF Processing Costs ($89/tonne+ tax)	Transfer To Sudbury MRF
January	$ 393.83	$ 3,185.00
February		
March	$ 309.10	$ 3,185.00
April	$ 266.28	$ 3,185.00
May	$ 296.39	$ 3,185.00
June	$ 426.28	$ 3,185.00
July	$ 506.21	$ 3,185.00
August	$ 700.97	$ 3,185.00
September	$ 381.07	$ 3,185.00
October	$ 318.03	$ 3,185.00
November	$ 187.24	$ 3,185.00
December		
Total	**$ 3,785.40**	**$ 31,850.00**

4.4 Overall Recycling Program Costs

The overall costs associated with the recycling program (servicing 930 households) are depicted in Table 4.4.

Table 4.4 Overall Recycling Costs (2009)

Item	Costs
Curbside Collection	$ 4,735.00
Depot Collection	$ 8,594.44
Processing	$ 3,785.40
Transfer	$ 31,850.00
Total	$ 48,964.84
Total Tonnes	50
Cost Per Tonne	$ 979.30
Cost Per Household (930)	$ 52.65

Dispersing overall costs for serviceable households (curbside and depot), Killarney captures 53kg per household(930 households)of recyclable material, for an average cost of $52/household or $980/tonne. Comparably, Provincial program information reported on the WDO website (2008) indicate tonnages collected from northern rural curbside and depot programs are diverting more material.

Northern rural depot programs report an average of 84kg per household per year and northern curbside programs report an average of 133kg per household per year. Similarly, program costs for 31 northern curbside programs report lower costs than Killarney with an average curbside cost of $588/tonne with 37 depot programs reporting costs averages of $580/tonne. It is important to note that these northern provincial costs reflect averages for all participating northern programs. Further, some programs representing 1,000 households or less with tonnages ranging from 50 to 100 tonnes per year reflect program costs similar to Killarney. Details depicting northern program costs and tonnages are reported on the WDO website at www.wdo.ca.

5.0 Applying Best Practices

Unique to Killarney is the dramatic shift in population over a relatively short time period. Similarly, Killarney residents are strongly aware of the positive economic impact tourism has on their community. The North Channel passage is a large attraction not only for transient tourists but for seasonal cottage owners.

After assembling the baseline costs and structure of the current recycling program, the next steps of this report are to offer enhancement recommendations for consideration. The following section offers various suggestions to improve overall capture and quality of blue box recyclables for the:

- The North Channel Depot Sites
- The Rural Depot Sites
- The Curbside Collection Program

5.1 Continuous Improvement Fund

As part of a joint initiative between WDO, the Association of Municipalities of Ontario, the City of Toronto and Stewardship Ontario, the Continuous Improvement Fund (CIF) was formed in 2008. The CIF provides municipalities with an opportunity for financial support in identifying and implementing programs that will result in best practices and/or innovation specific to the blue box program. The overall goal of the CIF is to identify opportunities for a more cost effective blue box program that maximizes material recovery.

In 2008, the CIF began operating under a 3 year mandate to direct grants and loans towards eligible municipal blue box projects. During 2009, approximately $25 million dollars of funding was made available through CIF. Approximately 70% of these funds were allocated to projects that promote efficiency (i.e. geographic optimization, technology improvements), while the remaining 30% was set aside for projects that promote effectiveness (i.e. increase capture of existing and new materials). Priority areas for CIF funding, which have varying funding levels, include:

- Best practices;
- Innovation;
- Emerging technology; and

- Communication and education.

The success of waste diversion and recycling is dependant primarily upon the participation of the residents and businesses that generate the material. A diversion rate provides a measure of the overall success of the efforts aimed at reducing the pressure on landfills for waste disposal. A diversion rate is calculated as follows:

$$\text{Diversion Rate [\%]} = \frac{\text{Waste Diverted}}{\text{Waste Disposed + Waste Diverted}} \text{ X } 100$$

Specific to Killarney, opportunities exist to increase the current blue box diversion rate of 3%. Currently, funds are available from CIF to assist municipal programs with improvements on:

- Signage at Depot Sites and Public Space Recycling Areas
- Promotion and Education Materials
- Capital investments for public space recycling receptacles
- Capital investments to increase capture of curbside recyclables and reduce the overall cost per tonne

The following sections outline possible program enhancements based on current program demographics and geographic location.

5.2 Enhancing Public Space Recycling (PSR)

The Channel Street depot program experiences contamination of recyclables and is shared with a central waste drop off point that is abused by the transient traffic (day boaters) and lodges (overnight guests). The object of this report is to focus on improvements to the recycling program with the understanding that there is overlap of waste and recycling service offered at the Channel Street depots. The original intent of the Channel Street depot was to offer public space litter/recycling drop points for transient tourists using the marina. It appears that the public space area expanded to accommodate transients and seasonal residents using the marina as water access to island cottages. Large receptacles for bagged and bulky waste and recyclables were constructed in 2006. Essentially the current design of the Channel Street depot is an unattended public use transfer station with limited user restrictions or proper MOE licensing. The effect of this depot site is that transient users outside of the municipal boundaries of Killarney have discovered they can dispose of their accumulated residential bagged and bulky waste such as lawn mowers and BBQ's, at the Channel Street depot site at no charge or penalty. Further, water side commercial establishments (marinas and lodges) witness the open accessibility of the Channel street site and direct overnight residents to place their waste in the municipal bins at no charge or penalty.

Photo 9 depicts the large bags and bulky items dropped commonly dropped off by

seasonal users at the Channel Street depot sites.

Photo 9 Channel Street Abuse

Bears are a common risk associated with centrally collected waste in northern rural environments. Municipal forces must empty the waste depot sites once or twice per day during peak season. The concern is that much of the waste material is not generated by Killarney residents and it is also contaminates the recycling material when patrons throwing bagged waste into the recycling bins when the waste bins are overflowing.

The intent of the Channel Street depot was to offer public space recycling and litter management. Public Space Recycling (PSR) by definition is a materials recovery system designed to collect materials from the waste stream for recycling in high-use public areas such as retail, recreational, sporting, tourist and transport sites. Various studies on public litter management indicated that PSR is more than a collection system. It plays an important role in both demonstrating an organization's commitment to triple bottom line objectives (economic, social and environmental), and in extending recycling away from home through behaviour change and community engagement. For both provincial and local government, PSR has a highly visible role in demonstrating leadership in sustainability in public environments.[3]

The CIF commissioned a literature search in the summer of 2009 to identify potential best practices for recycling in public spaces. The search identified abroad range of programs across North America and overseas and is available through the CIF website at http://www.wdo.ca/cif/projects.html Project 159 (Open Space Recycling Literature Search) .

[3] Public Space Recycling, Queensland Australia. Final Report 2006 www.packagingcovenant.org.au/documents

The key points found in the literature search for public space recycling were the need for:

- On-going monitoring of the public space site (remove or add bins where necessary);
- Offer small opening of bins to prohibit abuse from bagged or bulky waste items;
- Offer signage with graphics based messaging instead of text based messaging to reduce language barriers; and,
- Do not hide or enclose a public space depot as it encourages abuse.

Another project (CIF Project 152), partially supported by the CIF, was conducted by Refreshments Canada in partnership with the City of Sarnia in 2009. The report outlined the purpose of public space recycling was to capture `Away from home beverage containers' and when PSR was used properly, it became an integral part of the municipal recycling program to achieve municipal diversion targets of container material. The Sarnia reported the following:

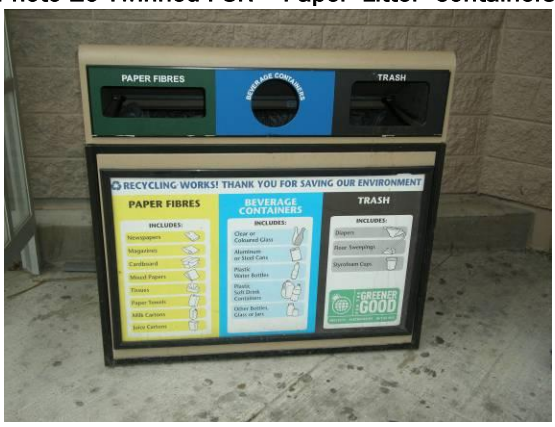
- Beverage container diversion increased by 64%
- It is important to twin garbage and recycling bins to reduce contamination
- Fibre recovery is weak
- Community `champions' or volunteers (Scouts, Seniors Groups) to help monitor the public recycling stations and educate users reduced contamination.

The City of Toronto conducted a waste audit of their public space recycling bins in 2008 and discovered the following:

- Small individual bins that were twinned with garbage and labeled, received 10% less contamination than recycling bins set out individually without labels;
- Small recycling bins with lids had less contamination than recycling bins without lids; and,
- `Inconvenience illegal dumping' by making bins highly visible and with small opening reduced recycling contamination.

Examples of various public space recycling containers are depicted in the following photos.

Photo 10 Twinned PSR – Paper- Litter- Containers



Purchase Price: (2010) approximately $700/unit

Photo 11 Twinned Heritage PSR –Litter- Paper – Containers

Purchase Price: (2009) approximately $900/unit

Photo 12 Twinned PSR -Separate Litter Bin and Separate Wire Mesh Cage for Containers

Purchase Price: (1998) approximately $300/mesh cage

Photo 13 Twinned PSR -Mini-Molok Litter Bin & Wire Mesh Container Cage

Purchase Price: (2010) approximately $1050/Mini Molok, $1,200 Mini Molok with Bear Lid)

Photo 14 Twinned Bear Proof Lid PSR -Hyd-A-Bag for Litter and Hyd-A-Bag for Single Stream Recycling

Purchase Price: (2010-New) approximately $1,500/for dual unit

Photo 15 Twinned Eco Media PSR -Cans, Plastic Bottles -Litter

System designed to have capital cost paid for by advertisers

Specific to the current waste and recycling challenge faced by the private operators along Channel Street (marina, fishing lodges), the following photo (Photo 16) depicts an example of a privately owned central waste and recycling area dedicated to overnight marina users for seasonal marina in the Town of Cobourg. Cobourg is located along the north shoreline of Lake Ontario in Central Ontario. The marina has overnight docking for approximately 80 boats. Overnight marina users are charged a docking fee that includes a disposal fee to use the waste disposal area at the rear of marina. The area is locked at all times and boaters must request the marina attendant to unlock gate. The mesh fencing at the front shows the marina owner when bins are full. The mesh fencing also reduces the instances of abuse. The shed is used for a recycling station and storage area. The bulletin board on the shed offers information to marina patrons and posts the municipal illegal dumping by-law notice to deter abuse. The cost to manage the marina depot is the responsibility of the marina owner and is covered by the user fees collected from the marina patrons.

Photo 16 Enclosed Waste and Recycling Depot for Marina Customers

Recommendations

Remove the larger drop off depots at the Chanel Street locations to prevent abuse from boaters and overnight marina users who are discarding household garbage at this site. Replace the larger bins with PSR receptacles intended for litter control. Since the majority of recyclable material collected at the Channel Street depot consists of beverage containers, design a bin to capture this type of material. To reduce abuse generated from commercial sector fishing lodges and seasonal marina patrons perhaps the commercial sector can erect their privately owned enclosed depots for paying marina customers. Cottage owners on islands within the Killarney municipal boundaries should be treated as other rural seasonal residents and instructed to manage their waste at the rural depot at the MOE licensed Killarney waste disposal site located 2km away from the marina.

Recommended infrastructure supporting the PSR:

- Place signage along frequently used water access points (near LCBO or General Store);
- Provide continual public education in July and August with basic recycling information flyers using visual graphics depicting acceptable recyclables. Distribute the information through the LCBO, gas station/general store, marina and restaurants along the waterfront;
- Consider implementation of enforcement tools such as an illegal dumping by-law with posted fines; and,
- Privately owned waste and recycling areas for the commercial sector fishing lodges.

CIF has recently prepared a promotion and education planning tool kit with available graphics for municipalities to access on line http://www.wdo.ca/cif. Other shared resources for promotion and education include the WDO AD bank located on the WDO website (www.wdo.ca). Another site, www.blueboxmore.ca is a web-based tool for Ontario programs.

5.3 Enhancing the Rural Depot Recycling Program

Participation at the two rural depot sites is relatively low. Currently, the municipality does not have a mandatory recycling by-law or bag restrictions for waste material. Additionally, signage at the depot sites is limited to small text on the side of the bins. The accessibility to the depot (storage trailers) is somewhat awkward for residents and debris collected alongside of the depot may detract residents from using the bin.

A report commissioned by WDO through the Effectiveness and Fund entitled; Best Practices for Rural Depot Recycling (2006), outlines the following key factors for

effective rural recycling depots:

- **Depot Accessibility** – clean, easy to load depot containers with sufficient turning radius for vehicular traffic and an area separate from congestion of waste disposal traffic;
- **Supportive infrastructure to reduce contamination and increase participation**- including provisions of blue boxes to seasonal residents to segregate recyclables at the cottage, illegal dumping and mandatory recycling by-laws, the use of clear bags and bag limits for waste;
- **Entrance signage at the depot site and simple messaging** on the depot container-using graphics and minimal text for easy reading;
- **Depot attendant actively involved in monitoring recycling depot** –hand out literature to new residents, sell blue boxes at the depot site for residents;

When considering the varying levels of financial investment required for improving depot participation, municipal staff outlined there is a very limited budget available to the recycling program. Lack of funds for a small rural municipal program is common across the province. Currently, opportunity exists to enhance rural depot participation through the CIF in the form of public education funding for signage and flyers, as well as capital funding for new recycling depot containers.

Examples of various rural recycling depots are depicted in the following photos.

Photo 17 Central Depot Site at French River-Using Six HL6 Depot Units on Gravel Pad

Purchase Price: (2010-New) approximately $9000/unit, and refurbished approximately $4,500 to $5,000

Photo 18 Collecting from HL6 Depot System Using Haul- All RP240 Truck Body

Purchase Price: (2010) approximately $185,000

Photo 19 Compartmentalized Depot Container serviced by Roll-Off Truck

Purchase Price (2001) approximately $25,000/container

Photo 20- 8 yard Front-End Depot Bin Serviced by Front-End Compacting Truck System

Purchase Price: (2009) Truck Body approximately $200,000 and 8 Yd Bin approximately $950/bin (E&E Program 2009)

Photo 21 Example of Graphic Messaging for Depot Bins

(County of Peterborough- E&E Program 2009)

Photo 22 Example of New Depot Signage
(West Nipissing CIF program 2010)

Recommendations

Improved signage at the depot site along with a` phased in' approach to supporting infrastructure such as waste bag limits, mandatory recycling and illegal dumping by-laws, lead to increase capture of recyclable material. Further, establishing improved collection infrastructures to reduce handling costs at the depot site and transfer costs of the collected material can be eligible for CIF project funding.

5.4 Enhancing Curbside Recycling Program

The curbside recycling program is the largest contributor to the blue box tonnages diverted from disposal in Killarney. Residents understand the program and it appears they are choosing diversion before disposal based on the observed set out rates at the curbside. Municipal staff outlined the steady increase in tonnages and volume of recyclable collected by the curbside program in particular during the summer season.

Currently, curbside collection costs are relatively low ($100/tonne or $24/hh). There are no capital depreciation costs to consider and staffing costs are dispersed over waste, recycling and public works. To increase participation of the recycling program, consider conducting a weekly collection trial from May to September to capture material that may be entering the waste stream. The trail allows for observation of staff time associated with the weekly curbside program to determine if it is feasible to consider weekly recycling collection with existing staff and collection infrastructure. During the trail, observe curbside set out rates and track tonnages sent to Sudbury to determine overall participation in the weekly trail. Support the trail with the use of a promotional flyer mailed to all residents.

Similar to the enhancement recommendations for the depot program, once the collection trail has been observed and proves to be successful, consideration of implementing supporting infrastructures such as mandatory recycling by-laws, and bag limits can be investigated. The current staff costs associated with the curbside recycling program average $4,700 per annum. It is anticipated that staff costs may shift from waste to recycling with supporting increases in waste diversion and overall

diversion rates.

Reduction of curbside handling and double handling of material centrally stored at the depot may be reduced by comingling glass into the clear collection bags. Currently, single stream collection programs do not segregate glass from curbside bag based programs due as a method of efficiency. As an example, the County of Northumberland has operated a single stream bag based program in a rural environment for over 15 years with minimal instance of bag splits due to inclusion of glass in the bag. As a precautionary note, residents could be educated to `nest' glass with paper material to reduce breakage.

Hauling blue box material to the Sudbury MRF is the highest cost associated with the blue box program due to travel distance and low weights of loads. Currently, tonnages are not sufficient enough to consider capital investments of a new collection infrastructure but consideration of reducing overall handling costs is reasonable if tonnages increase based on program enhancements. When tonnages have increased, consider streamlining the collection program and reduce overall handling time/costs by investing in a right-hand drive compaction vehicle capable of collecting waste and recycling simultaneously and service an upgraded depot system. It is important to note that prior to investing in collection infrastructure, it is advisable to examine the long term operating costs (10 years) of co-collecting waste and recyclable material. Opportunities for cost savings exist if a vehicle is capable of managing all facets of the existing program (curbside, depot, PSR, and transfer to Sudbury MRF) to disperse capital depreciation costs over several services.

Specific to the size and tonnage of Killarney a Dual Stream Compaction vehicle manufactured by Haul-All acts as a multi-purposed vehicle capable of servicing the HL6 depot containers depicted in Section 6.2 as well as co-collecting curbside waste and recycling. This vehicle could also be used to haul blue box material to the Sudbury MRF. Recent price inquiries (June 2010) depict capital investment in the range of $185,000 with a delivery timeframe of 4 to 6 weeks.

Photo 23 and 24 depict an example of a co-collection vehicle suitable for smaller quantities of material.

Photo 23 and 24 Truck Body RP240 with attached Dual Stream Compaction Unit

Recommendations

Consider conducting a summer trail of weekly curbside collection to determine feasibility of collecting recyclable weekly. Co-mingle the glass material with other single stream material to reduce handling time and potential of injury from dumping barrels of glass. Implement supporting infrastructure of mandatory recycling by-laws and waste bag limits to encourage participation. Increase the level of promotion for the new curbside program with assistance from the CIF for promotional material and funds to enhance existing promotion program.

5.5 Enhancing Promotion Program

Many municipalities in Ontario distribute calendars to the community as a method of communicating a variety of messages. These calendars often contain recycling information, garbage related information and sometimes many other environmental or civic issues. Some areas mark on the calendar the waste and recycling pickup days, and provide other tips or information in the margins or at the bottom of pages. Some contain a variety of facts, tips and hints.

On the Recyclers Knowledge Network, which is accessed at http://vubiz.com/stewardship/Welcome.asp there is information on Municipal Promotion and Education, including the report, 'Identifying Best Practices in Municipal Blue Box Promotion and Education'. This document outlines information collected from focus groups commenting on recycling education calendars. In sessions where time permitted, the participants were asked to examine some example recycling information calendars.

Comments received from the focus groups on preferred calendars include the following:

- The most popular size – 8.5 x 11
- The most popular images – large nature photos.
- The most popular content – brief facts, tips and general environmental information, recyclable materials lists, pick-up schedules.

In conjunction with the enhancement initiatives outlined for the curbside and depot programs, the Killarney recycling program could effectively be "Re-launched" and supported by an education campaign designed to inform the residents of the new initiatives and reinforce proper recycling procedures. Promotion and Education (P&E) is a key element of a successful blue box program. It was rated as a fundamental Best Practice in the 2007 report Blue Box Program Enhancement and Best Practices Assessment Project. Moreover, municipalities know that the best way to convince residents to recycle and to do it properly is with strong and consistent promotion and education program.

Specific to the Killarney, it is understood that staffing and budgets are constrained. In Ontario, more than 180 programs market less than 5,000 tonnes per year and are considered to be "small" programs. To address budget constraints for smaller communities, the CIF has recently developed a targeted P&E "planning tool " to meet small program Blue Box P&E needs.

The "tool" includes a communications plan template that municipalities can use to develop a basic communications plan (a key best practice), other customizable templates for standard P&E materials and basic information on best practices in communications and monitoring. The tool is complete and available by contacting CIF.

Further suggestions to enhance the Killarney promotion and education program:

- Hand out information flyers at the landfill sites
- Offer information flyers at all commercial establishments in Killarney (LCBO, General Store, resorts, marinas)

Recommendations

Once enhancement initiatives have been determined, consider applying for CIF funding to assist with the `Re-launch' of the current program and use best practice tools such as calendars and graphic signage.

6.0 Summary and Conclusions

This report has presenting detailed information on the following objectives:

1. A review the current recycling program, inclusive of the curbside blue box system, and the permanent and seasonal drop off depots within the municipality;

2. Options and recommendations for the recycling program to increase capture of overall blue box material, reduce contamination from the seasonal depot sites and minimize handling costs associated with the seasonal depots; and

3. Recommend some Best Practices (BP) and identify opportunities to access the CIF for implementation of recycling program enhancements.

When considering increasing recycling participation in areas with high seasonal populations, it is important to remember that many of the seasonal residents originated from urban areas with already established recycling programs. Implementing basic infrastructures such as clear and consistent messaging in the form of visually appealing signage, and public education material, supported by community champions, permanent residents and commercial sector establishments

and enforced by the local municipality in the form of by-laws, and accessible recycling services will ensure a successful program. A common element from all the reported best practices is that a recycling system is only as effective as the people who use it and use it properly. In summary, the following enhancement opportunities are recommended to boost the overall diversion rate:

- The curbside program represents the largest contributor of blue box tonnages collected from the Killarney program. Expand the curbside program from bi-weekly to weekly collection with consideration to trial the program during the peak season to determine impact on operations.
- Support the expanded curbside program with enforcement mechanisms such as bag limits for waste, mandatory recycling, clear bags for waste, and illegal dumping by-laws.
- Post easy to read signs at the waterfront and marina areas to educate seasonal patrons of proper recycling and waste management procedures. Apply for funding from the CIF to offset capital investment costs of new waterfront signage.
- Remove the existing waste and recycling drop off depots at Channel Street and establish new Public Space Recycling (PSR) containers suitable to manage `day use' litter and recyclables. Apply for funding from the CIF to offset capital investment costs of new PSR containers and supporting signage.
- Post new signs at the rural depot areas located at the disposal sites and use visually appealing graphics instead of wordy text. Apply for funding from the CIF to offset the cost of new signage at the depot sites
- Enhance residential and seasonal promotional material by using the CIF promotion and education tool kit and apply for funding from the CIF for support in launching a public education campaign
- Establish a diversion strategy to increase blue box tonnage with the assistance from a Recycling Strategy. Apply for funding from the CIF to assist with the preparation and planning of the strategy to meet the needs of your community for the future.