# A Waste Recycling Strategy for The Township of McKellar Final

May 2011

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Prepared with assistance from
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## 1.0 Introduction and Background

This Waste Recycling Strategy (Strategy) was initiated by the Township of McKellar (Township) to develop a plan to increase the efficiency and effectiveness of its recycling program and to maximize the amount of Blue Box material diverted from disposal. As recommended by the Continuous Improvement Fund (CIF), this Strategy should be reviewed annually and updated at least every five years.

The intent of the Strategy is to provide Township staff with a baseline (2010) of the Blue Box program and compare it to upcoming years (2011-2015) to monitor the effectiveness of the Township's program.

**It should be noted that this Strategy is specific to the Blue Box only.** All reference to diversion rates is explicit to residential Blue Box diversion rates and does not incorporate overall waste diversion rates from other diversion programs supported by the Township. This document highlights best practices suited for the Township's municipal grouping of Rural Depot North.

Specifically, this Strategy addresses the following:

- Sets a short term Blue Box diversion rate of 10% for next year and 15% for 2013-2015;
- Establishes methods to monitor the effectiveness of the Blue Box program;
- Offers examples of Best Practices suitable for Rural Depot North Programs;
- Assists with securing Best Practice funding for upcoming 2011 WDO Datacall once the Strategy is adopted and monitoring is in place; and
- Clarifies Blue Box diversion goals/targets for the Township.

The Township faces some waste management challenges that this Strategy can address including:

- Lack of staff (multi-municipal duties of administration staff and a part-time depot attendant);
- High operating cost of depot program; and
- 65% of the population is seasonal.

This Strategy was developed with financial support from the CIF. The CIF's *Guidebook for Creating a Municipal Waste Recycling Strategy* was used to help develop this Strategy.

*Background*

Blue Box programs in Ontario are partly funded by Waste Diversion Ontario (WDO). In return the Township must report to WDO (i.e. annual Datacall) on its current recycling

program, including Blue Box diversion rates and Blue Box program costs. The results of the Datacall influence the amount of funding that a municipality receives for its Blue Box program.

All municipalities are divided into a number of different groupings of similar municipalities by WDO. The performance of municipalities in each grouping is compared by WDO and WDO uses the results as part of their funding allocation strategy, where poor performers within a municipal grouping can lose a portion of their funding.

The Township was assigned to the Rural Depot North municipal grouping by WDO and like all other municipal programs, has no control over this designation. It is apparent that there are programs within the Rural Depot North group with different characteristics in terms of permanent and seasonal population, proximity to processing facilities, geographic size and density as well as overall program delivery and available staffing.

The Blue Box Performance Factor (previously Efficiency and Effectiveness Factor), which is calculated from the results of the Datacall, plays a significant role in determining funding that a township or municipality in a particular grouping will receive from WDO to fund their Blue Box programs. This factor is based on the fixed and variable costs to operate a Blue Box program; the capture rate of Blue Box wastes and adherence to Best Practices as reported in the most recent Datacall.

Table 1.1 depicts WDO Performance Factors of the Rural Depot North Municipal Group (2011), to which the Township belongs.

Table 1.1 2011 Blue Box Performance Factors for Rural Depot North Programs

| Program Name-Small Urban | Blue Box Tonnes Marketed[1] | Net Costs | Recycling Rate[3] | Net Costs per Tonne[2] | Performance Factor within Group |
|---|---|---|---|---|---|
| BONFIELD, TOWNSHIP OF | 49 T | $26,072 | 17.7% | $531.74 | 48% |
| CALVIN, MUNICIPALITY OF | 62 T | $14,378 | 72.5% | $232.77 | 97% |
| CARLING, TOWNSHIP OF | 104 T | $119,682 | 22.5% | $1,147.37 | 21% |
| CASEY, TOWNSHIP OF | 51 T | $8,322 | 90.0% | $163.22 | 98% |
| CHARLTON AND DACK, MUNICIPALITY OF | 4 T | $9,314 | 4.9% | $2,469.40 | 20% |
| COCHRANE TEMISKAMING WASTE MANAGEMENT BOARD | 1,630 T | $571,331 | 30.3% | $350.49 | 84% |
| CONMEE, TOWNSHIP OF | 10 T | $3,992 | 12.7% | $383.48 | 48% |
| EMO, TOWNSHIP OF | 46 T | $12,260 | 29.5% | $268.44 | 88% |
| FRENCH RIVER, MUNICIPALITY OF | 148 T | $43,213 | 45.2% | $291.46 | 92% |
| GILLIES, TOWNSHIP OF | 20 T | $15,003 | 35.4% | $739.47 | 66% |
| HARLEY, TOWNSHIP OF | 55 T | $8,077 | 90.0% | $147.78 | 98% |
| HILLIARD, TOWNSHIP OF | 24 T | $15,688 | 62.6% | $658.42 | 86% |
| HUDSON, TOWNSHIP OF | 27 T | $9,158 | 29.6% | $337.45 | 85% |
| HURON SHORES, MUNICIPALITY OF | 151 T | $24,056 | 39.4% | $159.29 | 95% |
| JOHNSON, TOWNSHIP OF | 83 T | $8,623 | 63.9% | $104.22 | 98% |
| KEARNEY, TOWN OF | 94 T | $178,152 | 30.9% | $1,894.40 | 20% |
| KERNS, TOWNSHIP OF | 18 T | $6,122 | 52.6% | $337.83 | 92% |
| KILLARNEY, MUNICIPALITY OF | 41 T | $45,644 | 14.8% | $1,102.50 | 20% |
| MACDONALD, MEREDITH & ABERDEEN ADDITIONAL, TOWNSHIP OF | 76 T | $9,085 | 34.8% | $119.55 | 96% |
| MACHAR, TOWNSHIP OF | 71 T | $15,416 | 28.2% | $218.49 | 90% |
| MCDOUGALL, MUNICIPALITY OF | 143 T | $166,734 | 27.6% | $1,167.77 | 29% |
| MCKELLAR, TOWNSHIP OF | 73 T | $96,564 | 17.2% | $1,322.82 | 20% |
| MCMURRICH/MONTEITH, TOWNSHIP OF | 47 T | $52,100 | 21.6% | $1,101.70 | 21% |
| NEEBING, MUNICIPALITY OF | 55 T | $31,168 | 15.2% | $570.17 | 36% |
| OCONNOR, TOWNSHIP OF | 21 T | $9,847 | 26.8% | $475.53 | 72% |
| OLIVER PAIPOONGE, MUNICIPALITY OF | 127 T | $64,470 | 20.4% | $509.12 | 58% |
| PERRY, TOWNSHIP OF | 159 T | $156,072 | 37.9% | $981.52 | 56% |
| RAINY RIVER, TOWN OF | 29 T | $11,519 | 27.4% | $395.37 | 79% |
| SAGAMOK ANISHNAWBEK FIRST NATION | 58 T | $48,184 | 57.9% | $829.72 | 79% |
| SEGUIN, TOWNSHIP OF | 439 T | $195,448 | 31.4% | $445.67 | 80% |
| SHUNIAH, MUNICIPALITY OF | 82 T | $41,979 | 11.9% | $510.59 | 28% |
| SIOUX NARROWS NESTOR FALLS, TOWNSHIP OF | 15 T | $35,893 | 4.5% | $2,352.00 | 20% |
| ST. JOSEPH, TOWNSHIP OF | 90 T | $26,615 | 32.9% | $295.41 | 88% |
| ST.CHARLES, MUNICIPALITY OF | 63 T | $52,587 | 23.9% | $831.24 | 40% |
| STRONG, TOWNSHIP OF | 152 T | $116,122 | 47.6% | $761.80 | 76% |
| TARBUTT & TARBUTT ADDITIONAL, TOWNSHIP OF | 174 T | $24,572 | 24.7% | $141.12 | 93% |
| THE ARCHIPELAGO, TOWNSHIP OF | 156 T | $381,673 | 15.9% | $2,449.14 | 20% |
| WHITESTONE, MUNICIPALITY OF | 100 T | $92,134 | 20.5% | $920.91 | 26% |
| | | | | Average > | 62% |

This data collected from the 2009 WDO Datacall reporting year determines 2011 WDO funding for this group. The Township's 2011 Blue Box Performance Factor is **20%** which is significantly lower than the group average of **62%**. This is why it is important to implement and report Best Practices in the 2010 and 2011 Datacall as this will have a positive impact on the Township's Performance Factor allocation for the 2012 and 2013 reporting years.

A township or municipality can influence its Performance Factor different ways. Adhering to Best Practices is one way to improve the Performance Factor.

Table 1.2 depicts the values for each of the questions within the Best Practice section of the Datacall.

Table 1.2 Overview of Best Practices Assess in Datacall

| Initiative | Impact on Best Practices Score |
|---|---|
| Blue box recycling 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% |

This Strategy will put the Township in a position to better meet WDO's Best Practices funding requirements.

## 2.0 Overview of the Planning Process

This Strategy was prepared by environmental consulting firm 2cg Inc in conjunction with Township staff.

The development of the Strategy included the following steps:

- Respond to a formal RFP submitted by the Township;
- Gather relevant data from Township;
- Submit draft Strategy format and information to the Township;
- Gather and compile additional comments from Township to prepare Final Strategy; and
- Prepare final Strategy to meet requirements of CIF.

The next steps include:

- Council endorsement of this Strategy; and
- Council decision on which initiatives to implement.

## 3.0 Study Area

The study area for this Strategy is the Township of McKellar. The Township is located on Highway 124 approximately 20 km northeast of the Town of Parry Sound with adjacent municipalities of Seguin, Magnetawan, Whitestone, and McDougall, all within the District of Parry Sound. The area of the Township is 17,634 hectares and consists of 209 lane kilometres of roadways.

The geographic area of the Township is depicted in Figure 1.

This Strategy addressed the following sectors:

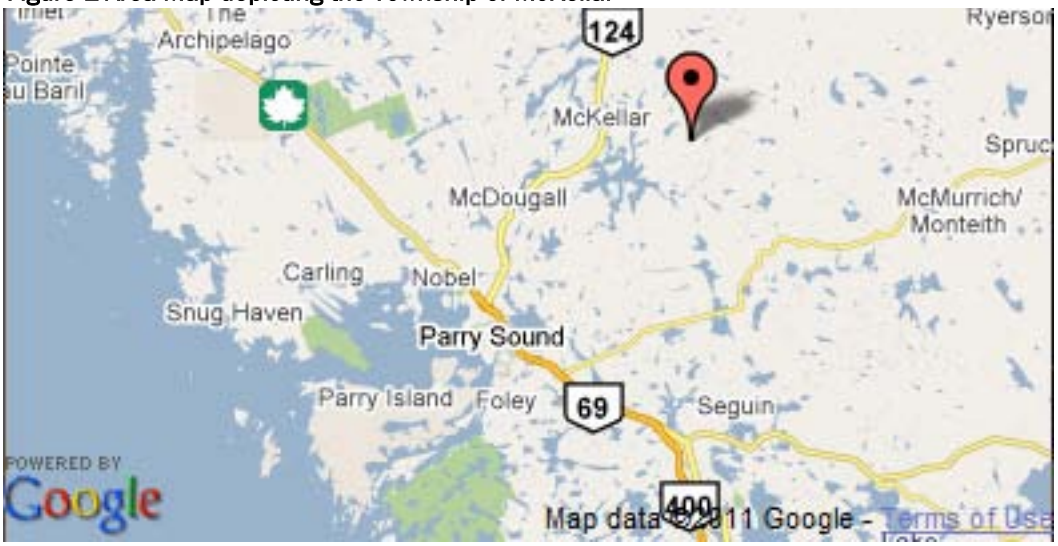
- Residential single family; and
- Seasonal cottagers.

## 4.0 Public and Stakeholder Consultation Process

The public and stakeholder consultation process followed the development of this Strategy and consisted of the following activities:

- Notification of the Strategy on the Township web-site, local library, post office and municipal office;
- Placed an advertisement in the Parry Sound North Star;
- Placed notification of the Strategy on the Cottage Association Website and McKellar Conservation Association;
- Review of the Draft Strategy with staff; and
- Posting of Final Report on the municipal website and submission of Final Report to municipal council for endorsement.

Figure 1 Area Map depicting the Township of McKellar




## 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 endeavors can vary greatly and depends on a municipality's size, geographic location and population.

The challenges facing the Township are:

- Transportation Costs (112 Km one way to closest facility);
- Minimal promotion and education (part of tax bill);
- Low population density with high seasonal fluctuations; and
- Low staffing (Multidisciplinary duties for administration staff and a part-time depot attendant).

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

- Maximize Best Practices funding for the Blue Box program; and
- Increase overall Blue Box capture rate in a cost effective manner.

## 6.0 Goals and Objectives

This Strategy development process identified a number of goals and objectives for the Township. These are presented in Table 6.1.

Table 6.1 Township's Recycling Goals and Objectives

| Waste Recycling Goals and Objectives | |
|---|---|
| **Goals** | **Objectives** |
| To reduce Rural Depot Costs | In 2011-2012, reduce current depot costs closer to the reported Rural Depot North WDO group average ($982/tonne). Beyond 2012, strive toward the CIF recommended target cost for Rural Depot North programs as set out in the Guidebook ($720/tonne). |
| Increase Promotion and Education (P&E) | Increase awareness of the depot program with a P&E program to increase tonnes and subsequently reduce overall costs per tonne and increase Blue Box diversion rate. In 2011-2012, apply for funds from CIF to offset P&E costs. |
| To maximize capture and diversion of residential Blue Box | In 2015, aim to **divert 15%** of municipal solid waste through the Blue Box program and consider striving toward the CIF suggested target to capture **65%** of the available blue box material from the waste stream with preliminary milestones of **25%, 35%, 45%.** Similarly, in 2013-15, aim to strive to divert **15%** of the municipal solid waste through the Blue Box depot program. |

## 7.0 Current Solid Waste Trends, Practices and System and Future Needs

*Community Characteristics*

The population for the Township is 929 and there are 1,527 households. Approximately 65% of the households are reported as seasonal.

*Existing Recycling Programs and Services*

Current waste management programs include:

- Drop off service for waste (depot) and Blue Box material at the McKellar Transfer Site (Site);
- Shared municipal household hazardous waste program (MHSW) with the Town of Parry Sound;
- Transfer of municipal residential waste to the McDougall Disposal Site; and
- Administration of waste management program (bylaw, enforcement, budget and promotion and education).

Blue Box depot materials are collected and processed by Waste Services Inc (WSI). Currently, there is no long term hauling contract for this service.

The Township depot site collects the following material:

| Containers | Fibres |
|---|---|
| • Glass bottles and jars<br>• Metal food and beverage containers & foil/pie plates<br>• Plastic containers (1-2)<br>• Mixed Plastics<br>• Film Plastic | • Newspaper, flyers, magazines, inserts and office paper.<br>• Boxboard, corrugated cardboard, brown paper bags |

The Township provides Blue Boxes (14 gallon) on a cost recovery basis ($5/box). McKellar Township residents must present a McKellar Township User's Permit, to access the Transfer Site and rural depot services.

Photo 1 depicts the Transfer Site.

Photo 1 Transfer Site

*Current Waste Generation and Diversion*

Table 7.1 depicts total waste quantities managed by the Township in 2010 as reported in the WDO 2010 Datacall.

Table 7.1 2010 Total Residential Waste Quantities

| Waste Material | Quantities (Tonnes) |
|---|---|
| Waste Depot | 1,023 |
| Blue Box Depot | 61 |
| Scrap Metal | 68 |
| **Total** | **1,152** |

In 2010, the Township managed 1,152 tonnes of waste at the Township Transfer Site. The following should be noted:

- The commercial sector is not permitted to use the Township Site;
- Household Hazardous waste quantities from the Township are not tracked at the Town of Parry Sound depot; and
- Municipal Parks and Beaches use 45 gallon drums for public space waste collection in the summer. These bins are collected by Township staff and their contents taken to the Transfer Site.

For the purposes of this Strategy, residential Blue Box diversion rates were calculated using the baseline total residential waste tonnes of 1,084 tonnes (garbage and diverted Blue Box wastes). Scrap metal has been removed from the calculation as it is anticipated that much of the material is generated from the commercial sector. Of this, 61 tonnes (5.6%) was diverted through the Blue Box program.

Table 7.2 summarizes the current waste generation and the **Blue Box** diversion rate. The Blue Box tonnes are broken into the categories of papers, metals, plastics and glass to reflect the composition of material collected at the recycling depot, as reported in the 2010 WDO Datacall. WSI provides the Township with a monthly breakdown of material collected as part of their collection service.

Table 7.2 Township's Residential Blue Box Diversion Rate (2010)

| Residential Solid Waste Generated and Diverted Through Blue Box | | |
|---|---|---|
| **Residential Waste Stream/ Blue Box Material** | **Tonnes** | **Percent of Total Waste** |
| Total Waste Generated | 1,084 | - |
| Papers (ONP, OMG, OCC, OBB and fine papers) | 37 | 3.4% |
| Metals (aluminum, steel, mixed metal) | 8 | 0.7% |
| Plastics (containers, film, tubs and lids) | 10 | 0.9% |
| Glass | 6 | 0.6% |
| **Total Blue Box material diverted** | **61** | **5.6%** |

It is important to note that the Strategy focus is on the Blue Box program and reference to diversion rates and capture rates is specific to Blue Box recyclables and does not incorporate overall waste diversion rates from other sources (MHSW, Scrap Metal, etc).

Table 7.3 indicates that the Township's current Blue Box diversion rate (2010) is well below its WDO municipal grouping of Rural Depot North as reported in the available data for the 2009 WDO groupings (2010 averages were not available at the time of this report).

Table 7.3 Township Blue Box Diversion Rate (2010) Compared To Rural Depot North Rate (2009)

| Average Blue Box Diversion Rate | |
|---|---|
| Township of McKellar | 5.6% |
| Municipal Grouping: Rural Depot North | 19% |

In 2010 the total program costs to manage the depot Blue Box tonnes collected at the Township Site was $113,367. This amounts to $1,858 per tonne, $122 per capita or $74 per household. The Township does not receive revenue rebate from the sale of Blue Box material. It is important to note that the Township received partial funding from CIF to offset the costs to purchase and install two compacting depot bins (summer 2010). The capital and infrastructure costs are incorporated into the 2010 depot costs and reflect an overall higher cost per tonne. In 2011 daily operational costs will be reflected in Township Site costs, lowering overall site costs reported in the Datacall.

In support of this Strategy, the Township will continue to monitor the frequency of depot collection in 2011 and compare it to 2010 to assess operational savings and payback period for the capital investment. Photo 2 depicts the newly installed solar powered compaction bins at the McKellar Township.


Photo 2 Solar Powered Depot Bins

As table 7.4 shows, the current net annual recycling costs for the Township are well **above average** for the WDO Rural Depot North municipal grouping program costs.

Table 7.4 Township Blue Box Costs vs. Rural Depot North Costs

| Recycling Cost (per tonne per year) | |
|---|---|
| McKellar (Net Costs) | $ 1,858 |
| Grouping: Rural Depot North (2009) | $ 733 |

The Rural Depot North WDO municipal grouping encompasses 38 municipal programs. Programs where costs are below average tend to capture more tonnages per capita, have revenue rebate and have not had recent capital investments/upgrades to their program.

*Potential Waste Diversion*

The Township's current waste composition was estimated using data provided in the CIF Waste Recycling Strategy Guidebook for Small Urban and Rural Programs (Worksheet 7c page 32 of the Guidebook). This composition includes the average percentage of Blue Box material typically found in these programs.

The Guidebook does not offer specific data pertaining to Rural Depot North programs because this information is either not current or is unavailable. As part of the follow up to this Strategy, the Township may choose to request a formal audit be conducted by WDO from a sampling of Rural Depot North programs (inclusive of McKellar Township) to generate an accurate representation of waste composition for the area. Referencing audit data from similar size programs will be useful for future comparisons (2012-2015) of the Township's Blue Box performance.

It is estimated, as depicted in Table 7.5, that approximately 34% of the waste stream is potentially Blue Box material. It is estimated that 369 tonnes/year of Blue Box materials are available in the waste stream based on a total waste tonnage of 1,084/year. Currently about 61 tonnes/year is captured in the Township for a capture rate of about 16%.

Table 7.5 Potential Available Blue Box Material in the Township

| Current and Potential Diversion | | | |
|---|---|---|---|
| Waste/Resource Material | Composition (%) (from Small Rural sample audit) | Total Residential Waste Generated (tonnes) | Total Blue Box Material in Waste Stream (tonnes) |
| Papers (ONP, OMG, OCC, OBB and fine papers) | 22 | 1,084 | 238 |
| Metals (aluminum, steel, mixed metal) | 2 | | 22 |
| Plastics (containers, film, tubs and lids) | 6 | | 65 |
| Glass | 4 | | 43 |
| Total Blue Box Materials | 34 | 1,084 | 369 |

The CIF Guidebook suggests a target capture rate of 65% of Blue Box material of municipalities in the Rural Depot North grouping. It is anticipated that this target is a challenge for the Township as it is a rural depot based program with a high seasonal population, both in the summer and the winter.

As depicted in Table 7.6 (a), to meet the 65% capture rate the Township would need to collect 241 tonnes of material through its program. This represents an additional 180 tonnes of Blue Box material through the depot program to achieve this target (i.e. 241-180=61 tonnes).

Capturing 65% of Blue Box material from the Township's residential waste stream would raise its Blue Box diversion rate to close to **22%** (i.e. 61 Current Blue Box tonnes + 180 additional tonnes / total residential waste of 1,091 tonnes). The 180 new tonnes would increase Blue Box diversion by about 16 percentage points.

Table 7.6 Capturing 65% of Available Blue Box Material from the Township's Residential Waste Stream

| Current and Potential Blue Box Diversion | | | |
|---|---|---|---|
| Waste/Resource Material | Total Available in Waste Stream (tonnes/year) | Currently Recycled (tonnes) | Potential Increase (tonnes/year) |
| Papers (ONP, OMG, OCC, OBB and fine papers) | 156 | 37 | 119 |
| Metals (aluminum, steel, mixed metal) | 14 | 8 | 6 |
| Plastics (containers, film, tubs and lids) | 43 | 10 | 33 |
| Glass | 28 | 6 | 22 |
| Total Blue Box Materials | **241** | **61** | **180** |

Perhaps a more realistic short term goal (2013) for the Township depot program is to strive toward a 45% capture rate of Blue Box material from the waste stream which represents approximately 165 tonnes of available Blue Box material from the waste stream. This represents an additional 106 tonnes of Blue Box material from the depot program to achieve this target (i.e. 166-105=61 tonnes), as depicted in Table 7.6 (b).

Table 7.6 (b) Capturing 45% of Available Blue Box Material from the Township's Residential Waste Stream

| Current and Potential Blue Box Diversion | | | |
|---|---|---|---|
| Waste/Resource Material | Total Available in Waste Stream (tonnes/year) | Currently Recycled (tonnes) | Potential Increase (tonnes/year) |
| Papers (ONP, OMG, OCC, OBB and fine papers) | 107 | 37 | 70 |
| Metals (aluminum, steel, mixed metal) | 10 | 8 | 2 |
| Plastics (containers, film, tubs and lids) | 29 | 10 | 19 |
| Glass | 20 | 6 | 14 |
| **Total Blue Box Materials** | **166** | **61** | **105** |

Capturing 45% of Blue Box material from the Township's residential waste stream would raise its Blue Box diversion rate to close to **15%** (i.e. 61 Current Blue Box tonnes + 105 additional tonnes/total residential wastes of 1,084 tonnes). The 105 new tonnes would increase Blue Box diversion by about 10 percentage points.

*Anticipated Future Waste Management Needs*

It is estimated that the Township's growth rate is approximately 1% per annum over the next 10 year planning period.

Table 7.7a depicts the expected growth rates for solid waste generation and Blue Box material recovery. The data reflects a projected population growth rate of 1% but offers a more realistic Blue Box capture rate of 45% to reflect the current depot structure of the Township. Over the longer term, the Township can strive toward 65% Blue Box capture rate as recommended for Rural Depot North programs and as depicted in Table 7.7b.

Table 7.7a Forecasting 45% Capture of Blue Box Material from Residential Waste Stream

| Anticipated Future Solid Waste and Blue Box Recovery Rates | | | |
|---|---|---|---|
| | Current Year | Current Year + 5 | Current Year + 10 |
| | | | |
| Population | 929 | 976 | 1,026 |
| Total Waste | 1,084 | 1,139 | 1,197 |
| Blue Box Material Available | 166 | 174 | 183 |

Table 7.7b Forecasting 65% Capture of Blue Box Material from Residential Waste Stream

| Anticipated Future Solid Waste and Blue Box Recovery Rates | | | |
|---|---|---|---|
| | Current Year | Current Year + 5 | Current Year + 10 |
| | | | |
| Population | 929 | 976 | 1,026 |
| Total Waste | 1,084 | 1,139 | 1,197 |
| Blue Box Material Available | 240 | 252 | 265 |

## 8.0 Planned Recycling System

The following section outlines some possible strategies that are suitable for the Township to consider to increase **Blue Box diversion capture rates** in the upcoming years.

Based on the recent installation of solar-powered compaction bins for the depot program, (compared to the smaller 28 cubic yard non-compacting bins) a phased-in approach is proposed to the existing depot system with emphasis on promotion and education (P&E) for permanent and seasonal residents and Blue Box capture from public spaces. This will ensure that results can be closely monitored by existing Township staff with possible support from part-time seasonal staff (summer students, volunteers, committee members, cottagers associations, etc).

It should be possible to gradually increase the capture rate of the Blue Box program within the context and costs of the current program. This would be done by encouraging residents to recycle more of their wastes using the existing program infrastructures and by enhancing the program through greater awareness in areas beyond the home including public parks, community centres, cottage associations, McKellar Conservation Association, the McKellar Fall Fair and the local schools. The enhanced community awareness can be supported with a `Council 3 R's training session supported with handouts for distribution at events, training for the part-time

McKellar depot attendant and supplying literature to share with public, and using public space Blue Box receptacles and signage.

It is important to note that until last year, the main challenge for the Township was the increasing volume of collected material, and the capacity of the existing Blue Box depot bins and the growing collection frequency to empty the bins. With the recent Township purchase of two 40 cubic yard compactors (fibres and containers) it is anticipated additional capacity will be achieved at the depot site. The reduction in collection frequency and increase in bin capacity has the potential to reduce program costs closer to the Municipal Group average.

As pointed out by Township staff, transportation costs continue to be the primary obstacle for the program due to proximity of available processors. A release of a collection RFP may result in increases in processing costs or termination of processing availability. It may be beneficial for the Township to negotiate a longer term processing/collection contract with the current hauler, supported by a launch of a P&E program beyond the current method of using tax bill inserts to convey Blue Box information.

## 8.1 Possible Strategy to Increase Depot Recycling

The Township presently diverts approximately **5.6%** of its wastes through its Blue Box program (2010). The average for municipalities of its type is approximately **19%** (2009).

Given that the Township's Blue Box program is well below average for Blue Box diversion and above average for costs and is a rural depot program in northern Ontario, a practical preliminary goal (2011-12) would be a **10%** waste diversion rate from Blue Box collection (i.e. 5 percentage points more than current rate) with a focus on P&E and public space recycling.

A second and aspirational future goal (2015) would be to achieve **a 15% Blue Box** diversion rate as a result of the Blue Box depot program. This would result in attaining the lower target of 45% capture rate of Blue Box materials with consideration toward Best Practice options such as residential waste bag limits at the depot site, mandatory recycling by-law, the use of clear bags for garbage, possible increases in waste tipping fees for residents disposing of recyclables in the waste, all supported by continued public education to both the permanent and seasonal residents.

The minimum future goal would be to at least reach an average **10%** Blue Box diversion rate and work towards increasing the rate over time through increases in overall Blue Box tonnes collected at the Site.

Table 8.1 highlights the estimated number of tonnes that would need to be captured to attain 10% and 15% diversion rates of Blue Box material from the waste stream. It

includes consideration of the impact of population growth in the Township (1% growth) and reflects a lower Blue Box capture rate target of 45%.

Table 8.1 Forecasting Diversion Rates

| Capture Rates to Meet Waste Diversion Goals | | | |
|---|---|---|---|
| | % Waste Diversion | | |
| | Current (5.6) | 10 | 15 |
| | tonnes captured/year | | |
| 2010 | 61 | 108 | 163 |
| 2015 | 64 | 114 | 171 |
| 2020 | 67 | 120 | 180 |

It is anticipated that it should be possible to capture additional Blue Box materials within the existing Township's Depot structure (Status Quo).

Table 8.2 highlights the potential impact of attaining a 10% diversion rate as a result of the current Blue Box program.

Table 8.2 Forecasting Diversion Rates

| Meeting 10% Blue Box Diversion Rate | | |
|---|---|---|
| Current Capture (5.6%) | tonnes/year | 61 |
| 10% Capture | tonnes/year | 108 |
| 10% Capture (additional tonnes) | tonnes/year | 47 |
| Per household | kg/year | 31.0 |
| Per household | kg/week | 0.6 |
| Current program costs | $/year | $113,368 |
| Current program costs | $/tonne | $1,858 |
| New program costs | $/tonne | $1,046 |

On average this would amount to each household recycling an additional 31 kg/year or 0.6kg/week. This does not include potential savings from a competitive bid structure for contracted services of the Blue Box depot program (collection and processing).

This has potential to drive the average cost per tonne for depot recycling even lower than the current costs. It is understood that the current depot collection program is structured on a cost per lift ($382/lift/bin) plus processing fee ($40/tonne) and fuel surcharge ($310/month). Based on this structure, it is feasible to gradually increase tonnes collected without impacting the overall costs due to increases in bin capacity through compaction. Savings are somewhat restricted as there are a limited number of haulers in the area and the closest processing operation is Bracebridge (WSI/BFI). With this in mind, it is still anticipated that longer term hauling/processing contract should be addressed as part of the planned initiatives for the Township to reduce and maintain costs for the future.

It is important to note that with the installation of the two compactors the Township saved approximately $30,000 per year representing a project payback period of

approximately 4 years. Savings are realized directly through reductions in transportation costs (frequency of lifts) and container rental (Township owned).

Full project details are depicted in Appendix 2.

## 8.2 Overview of Planned Initiatives

The best approach for increasing the capture rate and decreasing transportation costs is to phase possible changes to the current program and support the changes with a new longer term collection and processing contract (5 years).

With that in mind a number of options were reviewed and scored based on a series of criteria, which included:

- Estimate of waste diverted (%);
- Proven Results;
- Reliable Processing Facilities/End Use;
- Accessible to Public; and
- Ease of Implementation.

A summary of the options to improve Blue Box programs presented in the CIF Guidebook were reviewed with staff. Their scoring is provided in Appendix 1. Using the evaluation criteria table in the CIF guidebook that lists possible ranking of options surrounding promotion, collection, processing and Best Practices, staff provided feedback on areas requiring consideration.

Another comment from staff was the consideration of establishing a regional meeting of neighbouring municipal programs to brainstorm possible Blue Box handling initiatives for the future. Located within a one hour travel distance to the Township of McKellar, are other Blue Box programs inclusive of the Townships of McDougall, Carling, Seguin, and the Municipalities of Parry Sound, and White Stone. All of these programs operate independently with many hauling their material to the same processing contractor. Consideration could be made to request the CIF to organize a Rural Depot North Regional meeting in 2011 and offer `round table' discussions for neighbouring programs with emphasis on a long term multi-municipal processing/collection agreements as part of cost-saving mechanisms for the area.

**This exercise does not commit to a final decision but acts as a guide to assist with making future decisions.**

From there a refined list of options were summarized into two tables:

- Possible Priority Initiatives (Table 8.3); and
- Possible Future Initiatives (Table 8.4).

These options can be considered by staff and Council as part of this Strategy.

Table 8.3 Priority Initiatives (2011)

| Possible Priority Initiatives (Immediate Future 2011) | | | | |
|---|---|---|---|---|
| Initiative | Estimated Implementation Cost | Estimated Annual Operating Cost | Implementation Time Line | Comments |
| Enhance Existing Promotion and Education (P&E) Program<br><br>(CIF Promotion and Education Tool available) https://blueboxpe.wdo.ca/ | $5,000<br><br>CIF priority area=50% funding in 2011 | $1,000 to maintain new enhancement (flyers, website maintain) | 2011 | Intent to better publicize program and capture more Blue Box materials-supported with flyers handed out at Transfer Site, Events, etc. |
| Training of Key Program Staff (depot attendant and administration staff) | Staff time | Free training is available from CIF (CIF Blue Box Recycler Training Courses). MWA Spring workshop mwa@municipalwaste.ca Estimate $1,000/year in travel costs. | 2011 | Better educated staff translates into better educated public. |
| Public Space Recycling | $5,000<br><br>CIF funding available with supporting P&E material. | $1,000 to maintain system | 2011 | Work with volunteer groups and use summer students to launch program. |

| Possible Priority Initiatives (Immediate Future 2011) | | | | |
|---|---|---|---|---|
| **Initiative** | **Estimated Implementation Cost** | **Estimated Annual Operating Cost** | **Implementation Time Line** | **Comments** |
| **Permanent Resident Campaign** | $2,000 | $1,000 | 2012 | Possible summer students or launch committee volunteer through Township. |
| **Rural Depot North Regional Meeting** | CIF support and staff time | None | 2011 | Discuss benefits of consolidating multi-municipal contracts for long term savings. |
| **Following Generally Accepted Principles (GAP)** | Staff time to prepare a contract for collection and processing contract | None | 2012 | In general it is prudent to develop a 5 year length that will result in reduction in costs. Consider revenue rebates. |

The following table outlines possible **future initiatives** to take into consideration to improve Blue Box diversion and capture rates.

Table 8.4 Future Initiatives (2013-2015)

| Possible Future Initiatives | | | | |
|---|---|---|---|---|
| **Initiative** | **Estimated Implementation Cost** | **Estimated Annual Operating Cost** | **Implementation** | **Comments** |
| **Mandatory Recycling By-law** | Administration and Depot Attendant Time | None | 2013 | Enforcement of program. Offer fines. |
| **Bag Limits for Waste** | Administration and Depot Attendant Time | None | 2014 | Encourages participation in depot program. |
| **Clear Bags for Waste** | Administration and Depot Attendant Time | None | 2015 | Incentive to participate in program. |
| **User Fees for Bagged Wastes** | Administration and Depot Attendant Time | None | 2015+ | Enforcement of program. Consider $1/bag |

Additional details of some key priority and future initiatives are described below.

*CIF Promotion and Education Tool and Best Practices*

It is **recommended** that the Township increase its level of public P&E with financial and other assistance from the CIF. Successful promotion will require significant staff time and should be considered when launching a P&E campaign (summer students, part time staffing, school groups, volunteers from cottager associations, possible share of students with Conservation Authority, etc).

CIF provides a free online tool that provides the Township with all the elements needed to run a successful Blue Box P&E program. After completing a questionnaire, a customized marketing plan and materials will be prepared.

The marketing plan is a 3-year plan that is organized in seven sections including:

- Program Guiding Principles;
- Goals;
- Key Messages;
- Target Audiences;
- Resources;
- Tactics; and
- Tracking.

The costs noted in Table 8.3 reflect possible flyer preparations, mail outs, and advertising to promote the participation of the rural Blue Box program.

The CIF guide book lists the use of media reported by P&E leaders in five broad categories:

- Print (ads, brochures, calendars, newsletters);
- Broadcast (local TV, radio, Public Service Announcements);
- Electronic (website, emails, electronic newsletters to groups); and
- Outreach (special events, in-school education, landfill contractor hand outs).

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; and
- The most popular content – brief facts, tips and general environmental information, recyclable materials lists, pick-up schedules.

In conjunction with the newly installed depot containers, the McKellar recycling program could effectively be "Re-launched" and supported by an education campaign designed to inform the residents of any new initiatives (mandatory recycling by-law, etc.) and reinforce proper recycling procedures. P&E is a key element of a successful blue box program. It was rated as a fundamental Best Practice in the July 2007 report: Blue Box Program Enhancement and Best Practices Assessment Project (KPMG and RW Beck). Moreover, townships and municipalities know that the best way to convince residents to recycle and to do it properly is with a strong and consistent P&E program.

Further suggestions to enhance the McKellar P&E program:

- Hand out information flyers at the landfill sites; and
- Offer information flyers at all commercial establishments (LCBO, Library, resorts, marinas).

The following lists sources and links to effective P&E:

- MWA website outlining a report entitled: Research Report: Identifying Best Practices in Municipal Blue Box Promotion and Education, (2005) County of Oxford –AMRC;
- City of Hamilton website and CIF : Blue Box Recycling Public Opinion Survey (March 2006); and
- CIF website: McConnell Weaver Communication Management: Enhanced Blue Box Recovery: Benchmark Survey and Focus Groups (2006).

### *Drop-off Depot Best Practices*

The rural drop off depot at the McKellar Transfer Site has recently received CIF contribution to upgrade the property. The Township has made investments to reduce frequency of collection and eliminate depot rental costs. The next steps are to

increase participation from residents to increase Blue Box capture rate. The following outlines some municipal best practise examples to consider.

A report commissioned by WDO through the Effectiveness and Efficiency 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; and
- **Depot attendant actively involved in monitoring recycling depot** –hand out literature to new residents, sell Blue Boxes at the depot site for residents.

Members of 2cg Inc. staff prepared the Rural Depot Study report and found that successful depot programs were achieved through the front-line promotion efforts made by the depot attendant and supported by enforcement mechanisms from the municipality (by-laws).

Typically, the leading rural depot systems in Ontario are sites depicting a level of "hands-on" involvement associated with a depot attendant which translates into a perception by residents that the depot site is being monitored to prevent contamination issues, as well as offering a worthwhile service. The attendant acts as the front-line defence against material contamination as well as a knowledge base for all waste management related concerns from the general public. The attended is regularly kept informed of recent waste management policies and distributes flyers to all seasonal and new residents to ensure continued commitment to the program. A few examples of effective municipal depots sites are listed below:

### The Township of Algonquin Highlands (Rural Depot South)

- Township staff regards the depot attendant as the main enforcement mechanism supporting their program policies (2004).
- The attendant monitors the recycling depot site to ensure recyclable material is not entering the waste disposal area of the site. The attendant also provides residents with promotional literature regarding the mandatory recycling by-law and also asks **all** inbound residents if they have any recycling to segregate prior to entering the waste disposal site.

### The Township of Minden Hills (Rural Depot South)

- The Township's depot attendant inspects residents' bagged residential waste as they enter the waste disposal site including periodically shaking waste bags to determine if recyclable material is hidden inside. Where recyclables are detected, residents are directed to the recycling depot prior to the waste area.
- Township staff indicated this type of periodic inspection has proven to be an effective incentive for residents to separate their recyclables, word of mouth provides sense of motivation to encourage recycling participation.

Supporting the promotion activities of the depot attendant is the necessary enforcement mechanisms (policies) established by the municipality. There is substantial supporting documentation indicating the effectiveness of waste diversion policies, such as pay-as-you-throw programs, mandatory recycling by-laws, illegal dumping by-laws, backyard burning by-laws, and higher waste disposal site tipping fees (Enviros 2001- User Pay Report).

A few examples of Best Practices pertaining to enforcements policies at depot sites are listed below:

### Township of Melanchthon (Rural Depot South)

- The Township uses clear bags for garbage to encourage participation and increase capture rates of recyclables at the depot site (2004).
- The Township also has a User Pay program in place - $1/bag (2002).
- Three months prior to each enforcement launch, information was provided to residents at the waste disposal site.
- The Township experienced increases in recyclable tonnage immediately after program launch.

### Township of Algonquin Highlands (Rural Depot South)

- The Township implemented a mandatory recycling by-law (2004) prohibiting residents from disposing of recyclables in the waste disposal sites.
- Within the first year of program launch, the program increased tonnages by 40%.

### Township of Tay Valley (Rural Depot South)

- The Township of Tay Valley established a Waste Management Advisory Committee to liaise with the Township Council.
- The Advisory Committee conducted a survey to determine the effectiveness of the recycling depot. Based on the responses from the survey, the Township increased the depot's hours of operation and developed an educational newsletter.

### Townships of Conmee, Gillies, Neebing, O'Connor, Oliver Paipoonge and Shuniah (Rural Depot North)

- Six Townships joined together to develop a cooperative solid waste recycling plan to increase the efficiency and effectiveness of their recycling programs and maximize the amount of recyclable material diverted from disposal.
- Representatives from each of the six municipalities formed the Joint Municipal Recycling Committee (JMRC) to develop a waste recycling diversion plan. The JMRC applied to the CIF for financial support and expertise to develop a cooperative recycling plan (2009).

Township of Madawaska Valley (Rural Depot South)

- A report prepared for the Township (Blue Box Best Practises Report –Genivar August 2010 CIF #260) recommended the importance of targeting both the administrative and enforcement requirements to improve depot capture rates. The report recommended the Township generate annual reports for all best practice elements that require monitoring and reporting including recycling plan review, blue box targets and performance, effectiveness of P&E, and operational reviews as well as consider policy support in the form of bag limits or user fee charges per bags at the depot sites.

### *Training of Key Program Staff in Core Competencies*

This is outlined as a fundamental Best Practice and identified in the KPMG Blue Box Program Enhancement and Best Practices Assessment Final Report. The full report is available through www.stewardshipontario.ca/bluebox/eefund/bestpractices.htm.

Specific to McKellar Township, staff are multi-disciplinary with time restraints. A possible solution is to hire seasonal staff to assist with program campaigns (summer students). Further, CIF and Stewardship Ontario offer low cost workshops and training sessions throughout the year: Ontario Recycler Workshops listed on the WDO website www.wdo.ca.

As a result, consideration to phasing in some of the Best Practices depot enhancements discussed above as part of priority initiatives (2012, 2013) could be implemented.

### *Public Space Recycling Best Practices*

Public space recycling (PSR) gives residents and seasonal visitors the opportunity to recycle while in public places. It can also be used to reinforce the Township's Blue Box program.

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 www.wdo.ca/cif/projects (Project 159 Open Space Recycling Literature Search).

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 to the 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 2008. 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 report highlighted the following:

- Beverage container diversion increased by 64%;
- It is important to twin garbage and recycling bins to reduce contamination;
- Fibre recovery is weak; and
- 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 PSR containers are depicted in the Photos 6 through 11.


**Photo 6 Twinned PSR – Paper- Litter- Containers**
Purchase Price: (2010) approximately $700/unit

**Photo 7 Twinned Heritage PSR –Litter- Paper – Containers**
Purchase Price: (2009) approximately $900/unit


**Photo 8 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 9 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 10 Twinned Eco Media PSR -Cans, Plastic Bottles -Litter**
System designed to have capital cost paid for by advertisers

**Photo 11 Bear Proof Molok Drop off Depots (Algonquin Park Entrance) -Cans, Plastic Bottles -Litter**
Purchase Price: (2010) approximately $1500/Molok, with Bear Lid

There is CIF financial support available for public space recycling.

## 8.3 Contingencies

The priority initiatives can be impacted if there is no municipal funding available. However, there is CIF funding available so at least some of the initiatives should be able to be implemented.

If no future initiatives are implemented then the Township will revert to priority initiatives.

## 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 Strategy.

Once implementation of the Strategy begins, the performance of the Strategy 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. Some suggested approaches for monitoring the Township's Strategy is outlined in Table 9.1.

Table 9.1 Blue Box Monitoring Strategy

| Recycling System Monitoring | | |
|---|---|---|
| **Monitoring Topic** | **Monitoring Tool** | **Frequency** |
| Administration staff meets regularly with Depot Attendant. | Meet with depot attendant to identify any problems with depot program (e.g. contamination, awareness of seasonal residents) and to outline Township program policies. | Monthly |
| Administration staff call depot contractor regularly. | Keep in regular contact with the collection/processing contractor to ensure effectiveness of program. | Bi-Monthly |
| Measurement of Blue Box materials captured. | Documented total weight data as outlined in this Strategy and compare it to target capture rates (45% and later 65%) | Annual summary as per CIF requirements for WDO reporting. |
| Diversion rate (Blue Box) | Document BB Diversion Rate<br>Formula: (Blue box materials diversion) ÷ Total waste generated * 100% | Annual summary as per CIF requirements for WDO reporting. |
| Program Cost | Document Blue Box Program Costs to reflect each cost area to determine overall cost composition. Incorporate a revenue column to depict annual | Once every 1 year. |

| Recycling System Monitoring | | |
|---|---|---|
| **Monitoring Topic** | **Monitoring Tool** | **Frequency** |
| | revenues from Blue Box program. | |
| Customer satisfaction-success of Promotion Campaign | Customer survey (e.g., telephone); tracking calls/complaints received to the municipal office. | Every 3 years |
| Opportunities for improvement | Customer survey (e.g., telephone); tracking calls/complaints received to the municipal office | On-going |
| Planning activities | Describe what initiatives have been fully or partially implemented, what will be done in the future | Annually as per CIF requirements for WDO reporting |
| Review of Recycling Strategy | A periodic review of the Recycling Plan to monitor and report on progress, to ensure that the selected initiatives are being implemented, and to move forward with continuous improvement. | Annual for current initiatives- 5 yrs to re-evaluate & refine lists as per CIF requirements. |

## 10.0 Conclusion

The Township recently implemented improved technology to its rural depot program but currently has a low Blue Box waste diversion rate (5.6%) and a high program cost. The emphasis is on the need to improve the Blue Box capture rate which should impact overall reduction in operating costs.

A staged process to increase capture rate and reduce depot collection cost is **recommended**.

There are some fairly low cost priority initiatives that can be implemented to help boost the capture rate within the context of the current program. There are a number of low cost future initiatives that could be implemented.

Reference was also made to request from CIF that a Rural Depot North Regional meeting be organized in 2011 for programs within the area to allow for `round table' discussions with possible emphasis on a long term multi-municipal processing or collection agreements to reduce overall program costs.

It is recommended that the initiatives be reviewed annually and implemented as budget allows.

It is **recommended** that this Strategy be fully updated in 2015.

# Appendix 1
# Waste Recycling Option Scores

Waste Recycling Option Scores

| Suitable? Y/N | Description of Options/Best Practices<br><br>(For more information: *More information: Blue Box Program Enhancement and Best Practices Assessment Project Final Report, Volume 1)* | Criteria (Score out of 5) | | | | | | Total Criteria Score | Score x/100 |
|---|---|---|---|---|---|---|---|---|---|
| | | % Waste Diverted | Proven Results | Reliable Market/ End Use | Economically Feasible | Accessible to Public | Ease of implementation | | |
| *Promotion and Outreach* | | | | | | | | | |
| Y | Public Education and Promotion Program | 1-3% | 5 | 4 | 5 | 4 | 3 | 21 | 84 |
| Y | Training of Key Program Staff | 1-3% | 5 | 5 | 5 | 3 | 5 | 23 | 92 |
| *Collection* | | | | | | | | | |
| N/A | Optimization of Collection Operations | 0% | | | | | | | |
| N/A | Bag Limits | 3-5% | | | | | | | |
| Y | Enhancement of Recycling Depots | 3-5% | 5 | 4 | 5 | 4 | 4 | 22 | 88 |
| N/A | Provision of Free Blue Boxes | 1-3% | | | | | | | |
| N/A | Collection Frequency | 3-5% | | | | | | | |
| Y | Broaden materials categories for Blue Box | 1-3% | 5 | 3 | 5 | 4 | 4 | 21 | 84 |
| *Transfer and Processing* | | | | | | | | | |
| Y | Optimization of Processing Operations | 0% | 5 | 5 | 5 | 5 | 5 | 25 | 100 |

| Suitable? Y/N | Description of Options/Best Practices<br><br>(For more information: *More information: Blue Box Program Enhancement and Best Practices Assessment Project Final Report, Volume 1)* | Criteria (Score out of 5) | | | | | | Total Criteria Score | Score x/100 |
|---|---|---|---|---|---|---|---|---|---|
| | | % Waste Diverted | Proven Results | Reliable Market/ End Use | Economically Feasible | Accessible to Public | Ease of implementation | | |
| *Partnerships* | | | | | | | | | |
| N/A | Multi-Municipal Collection and Processing of Recyclables | 3-5% | | | | | | | |
| Y | Standardized Service Levels and Collaborative Haulage Contracting | 3-5% | 5 | 5 | 5 | 3 | 4 | 22 | 88 |
| N/A | Intra-Municipal Committee | 0% | | | | | | | |
| *Additional Research* | | | | | | | | | |
| Y | Assess Tools and Methods to Maximize Diversion | 1-3% | 4 | 4 | 5 | 3 | 4 | 20 | 80 |
| *Administration* | | | | | | | | | |
| Y | Following Generally Accepted Principles for Effective Procurement and Contract Management | 0% | 5 | 5 | 5 | 5 | 5 | 25 | 100 |
| *Other Options* | | | | | | | | | |
| | | | | | | | | | |

# Appendix 2
# CIF #280 Final Report
# Solar Power Compactors

# CIF #280

# Township of McKellar Solar Compactors Project


Final Project Report, April 2011

*Acknowledgement:*



*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, and Waste Diversion Ontario and Stewardship Ontario accept no responsibility for these views.*

**Executive Summary**

Communities in the northern region of Ontario, specifically the Township of McKellar (Township) are confronted with unique waste management issues such as seasonally fluctuating populations, large rural road networks and long distances to recycling material processing facilities and markets. These obstacles present operational and economic challenges for the Township recycling program. The Township of McKellar in association with Waste Diversion Ontario (WDO), The Continuous Improvement Fund (CIF) and Stewardship Ontario entered into an agreement to install equipment to improve efficiency and reduce transportation costs at the Township Transfer Station.

Based on the costs of transporting recyclable materials for processing and the amount of trips required to satisfy the materials generated by the Township the following equipment additions were made at the Transfer Station:

-2 RJ 225 VL Stationary Solar Compactors
-4 Forty yard roll-off containers

These new additions dramatically increase the efficiency of the Township's recycling operations regardless of the fluctuating nature of the waste management variables in the Township. The key area of improvement is the reduction of transportation costs which has a desired corollary effect of reducing Green House Gases.

Over a sample three month period during 2009/2010 without the compactors and the same sample period during 2010/2011 with the compactors the benefits of the new equipment has already paid huge dividends. When the two periods are compared, the Township moved significantly more recycling material with fewer lifts with the new equipment installed. During the months without the compactors and new bins the Township's invoices for recycling totaled $7,757.55, contrasted by the three months with the compactors the Township's recycling invoices totaled $2,675.81 for a net savings during the period of $5,081.74.

**Background**

The Corporation of the Township of McKellar was incorporated in 1873. The Township is a rural, residential and recreational municipality located on Highway 124 approximately 20 km northeast of the Town of Parry Sound with adjacent municipalities of Seguin, Magnetawan, Whitestone, and McDougall, all within the District of Parry Sound. The Township has a year round population of 927 persons with approximately 66% of the 1,526 households in the municipality being seasonal.

The area of the Township is 17,634 hectares and consists of 209.9 lane kilometres of roadways. The entire municipality is serviced by a single Transfer Station located at 13 Lee's Road and is operated by one part-time municipal employee. Current Transfer Station hours are as follows:

| Transfer Station Hours | |
|---|---|
| October 1st-April30th | |
| Saturday | 10AM-4PM |
| Sunday | 10AM-4PM |
| Wednesday | 10AM-4PM |
| | |
| May 1st-September 30th | |
| Saturday | 10AM-4PM |
| Sunday | 12PM-8PM |
| Wednesday | 12PM-8PM |

Prior to installation of the solar powered compaction units and the forty yard roll-off bins the Township, in an open contract with Waste Services Inc. (WSI), hauled its recycling materials in twenty-eight yard loose fill roll-off bins 112 kilometers one way to the nearest recycling centre located in Bracebridge, Ontario. The Township collects two streams of recyclables, Mixed Recycling and Mixed Paper. For the calendar year of 2009 WSI lifts are as follows:

| Waste Services Inc Recycling – 2009 Hauling | | | | |
|---|---|---|---|---|
| | Monthly Lifts | | Average Tonnage Per Lift (MT) | |
| | Mixed Recycling | Mixed Paper | Mixed Recycling | Mixed Paper |
| January | 2 | 3 | 0.71 | 1.37 |
| February | 2 | 2 | 0.35 | 1.12 |
| March | 2 | 2 | 0.51 | 1.59 |
| April | 2 | 2 | 0.48 | 1.52 |
| May | 4 | 4 | 0.42 | 1.14 |
| June | 4 | 4 | 0.58 | 1.35 |
| July | 5 | 5 | 0.79 | 1.29 |
| August | 4 | 4 | 0.54 | 1.26 |
| September | 4 | 4 | 0.47 | 0.86 |
| October | 5 | 5 | 0.38 | 1.01 |
| November | 2 | 2 | 0.63 | 1.23 |
| December | 3 | 3 | 0.49 | 1.33 |
| *Total Monthly Average* | ***3.25*** | ***3.33*** | ***0.53*** | ***1.26*** |

The WSI-2009 table highlights the cause of the expensive transportation costs the Township was dealing with pre-installation of the compactors. The loose fill twenty eight yard roll of containers only held an average of 0.53 metric tonnes of mixed recycling and 1.26 metric tonnes of mixed papers. The low capacity of the loose fill containers in conjunction with the high number of monthly trips to the recycling facility, an average of 3.25 trips/month for mixed recycling and 3.33 trips/month for mixed paper caused, recycling costs at the Transfer Station to come under scrutiny. As a result an analysis for economic and environmental solutions that

would reduce transportation costs and increase the efficiency of the transfer station was conducted.

**Monitoring & Reporting**

**Budget**

Upon review of the transportation costs associated with the Township's recycling program a plan was constructed to increase the efficiency of the program and an application was made to the CIF. The Township of McKellar in association with WDO, CIF and Stewardship Ontario entered into an agreement to install two solar powered compactors and four forty yard roll-off bins at the Township Transfer Station. A detailed budget was prepared and a synopsis of budgeted versus real costs is as follows:

| CIF#280-McKellar Transfer Station Solar Compactors Project | | |
|---|---|---|
| | Budgeted Costs | Real Costs |
| Expenses | | |
| Site Preparation | $18,900.00 | $14,421.84 |
| 2-Two yard stationary solar powered compactors | $59,000.00 | $58,680.00 |
| 4-Forty yard receiver bins | $35,400.00 | $35,380.00 |
| Delivery, installation and training | $1,700.00 | $1,650.00 |
| | | |
| Cost | $115,000.00 | $110,131.84 |
| GST/HST* | $5,750.00 | $13,202.77 |
| *Total Cost* | ***$120,750.00*** | ***$123,334.61*** |
| | | |
| Revenue | | |
| Requested Funding (CIF)** | $80,000 | $77,584.83 |
| GST/HST Rebate | $5,750.00 | $11,415.16 |
| Township of McKellar | $35,000.00 | $34,334.62 |
| | | |
| *Total Revenue* | ***$120,750.00*** | ***$123,334.61*** |
| | | |

*Project was initially budgeted before implementation of HST

**Real costs include 1.8% in lieu of HST as per CIF#280 agreement

Upon completion and installation of the compactors, the real costs of the project were within 2% of the budgeted costs. The slight departure from budgeted costs was due to the difference between GST and HST. When the project was budgeted it was expected the project would be completed before July 2010 and the introduction of HST. The agreement for this project was made on May 26, 2010. The actual work began in July due to unforeseen staff obligations with a number of other infrastructure projects. The Transfer Station project was completed November 9, 2010.

**Maintenance**

Upon completion of the installation of the solar powered compactors and forty yard roll off bins a few trouble shooting initiatives took place. The compression rate of the compactors was adjusted to maximize capacity and a transportation tarping issue was resolved. Otherwise the project proceeded and is operating without inefficiencies.

**Labour**

The compactors do not directly reduce labour time. However, the compression gauges on the compactors allow the Transfer Station attendant to closely monitor the amount of material in the roll-off bins and allows recycling lifts to be scheduled accordingly in a precise manner. Thus, the Transfer station is not interrupted by WSI trucks removing roll-off bins at a high frequency and when the bins are inconsistently filled. The only increase in labour has been at the processing facility in Bracebridge where WSI staff has indicated the compacted material takes a minimal amount of time longer to unload when compared to non-compacted material.

**Costs**

The installation of the solar powered compactors and forty yard roll off bins have provided immediate positive results and savings. To properly quantify the monetary savings, environmental value and the increase in efficiency at the Transfer Station, a three month period in 2009/2010 without the equipment and the same three month period in 2010/2011 with the equipment have been analyzed:

| | Pre CIF#280 | | | | | | |
|---|---|---|---|---|---|---|---|
| | Mixed Recycling Lifts | Mixed Paper Lifts | Metric Tonnes | Shipping Fees | Container Rental | Fuel Surcharge | Total |
| December (2009) | 3 | 3 | 5.74 | $2,154.72 | $195.89 | $504.32 | $3,237.13 |
| January (2010) | 3 | 3 | 3.81 | $2,219.34 | $201.77 | $522.47 | $3,249.70 |
| February (2010) | 1 | 1 | 1.62 | $739.78 | $201.77 | $204.30 | $1,270.72 |
| Total | 7 | 7 | 11.17 | $5,113.84 | $599.43 | $1,231.09 | $7,757.55 |
| | Post CIF#280 | | | | | | |
| December (2010) | 0 | 1 | 4.73 | $369,89 | $0.00 | $172.10 | $1052.80 |
| January (2011) | 0 | 0 | 0 | $0.00 | $0.00 | $0.00 | $0.00 |
| February (2011) | 1 | 1 | 9.12 | $764.20 | $0.00 | $309.75 | $1623.01 |
| Total | 1 | 2 | 13.83 | $1,134.09 | $0.00 | $481.85 | $2,675.81 |

The dramatic reduction in overall costs is exactly the desired outcome when the project was initiated. Since installation of the compactors and roll-off bins the Township has handled a higher tonnage of recycling material while requiring less lifts from WSI. Examination of the Pre CIF#280 table highlights that over the three month period post CIF#280 the Township managed 2.66 metric tonnes more recycling material in 11 less lifts than the facility managed without the compactors. Furthermore, in the three month period post CIF#280 the Township saved $3,979.75 in shipping fees, $599.43 in container rental fees and $749.24 in fuel surcharges. The sum of this three month sample period is an overall monetary savings of $5,081.74 in addition to the reduction of green house gases and the increase in overall Transfer Station efficiency.

In reviewing a cost analysis of the present and future benefits of the solar compactors and roll off-bins a few important variables must be noted. The costs of shipping fees have increased by $84.69 per lift since 2009. The cost of a container rental has increased by $38.09 per month. Lastly, the volatile nature of fuel costs must be considered when measuring the monetary benefits of the new equipment. Regardless of future fuel costs or fee increases by transport contractors the reduction of trips to the processing facility and elimination of bin rentals will benefit the Township financially.

**Conclusion**

The completion of CIF #280 has produced additional efficiency at the already proficient Township Transfer Station. As was anticipated during the project application, the solar powered compactors and forty yard roll of bins have reduced the number of lifts of recycling materials to the southern market processors. When 2009 recycling totals are re-assessed using amounts reflected post CIF#280 the results are as follows:

| | 2009 Totals vs. 2009 Totals with CIF#280 | | | | | | |
|---|---|---|---|---|---|---|---|
| | Lifts | Tipping Fees | Shipping Fees | Container Rental | Fuel Surcharge | Taxes | Total |
| 2009 | 79 | $2,733.90 | $26,824.76 | $2,197.38 | $5,742.01 | $1,874.94 | $39,372.99 |
| 2009 (Post CIF#280) | 15 | $2,733.90 | $5093.25 | $0.00 | $1,090.20 | $445.87 | $9,363.22 |

When the average from the three month span that the Township has used the compactors and roll off bins is applied to the 2009 recycling management totals, a large scale reduction in monetary costs is highlighted. Theoretically, with the compactors installed the Township saves $30,009.77 over the course of the year. Using the same estimated savings per year of $30,009.77 the Township will have a project payback period totaling 4.11 years with the CIF portion of funding comprising 2.59 years of that total. The cause of the increased savings and expedited payback period is directly related to the reduction of transportation costs (shipping fees) and container rental which was the main issue addressed by CIF #280. Furthermore, the Township will

contribute a not easily quantified reduction in fossil fuels and green house gasses. Lastly when the compactors are showcased during the Township's new Recycling Promotion and Education campaign a reduction in landfill material will also follow. The installation of the solar powered compactors and forty yard roll of bins at the Township Transfer Station and completion of CIF#280 will provide relief to the environment and recycling management budget for years to come.