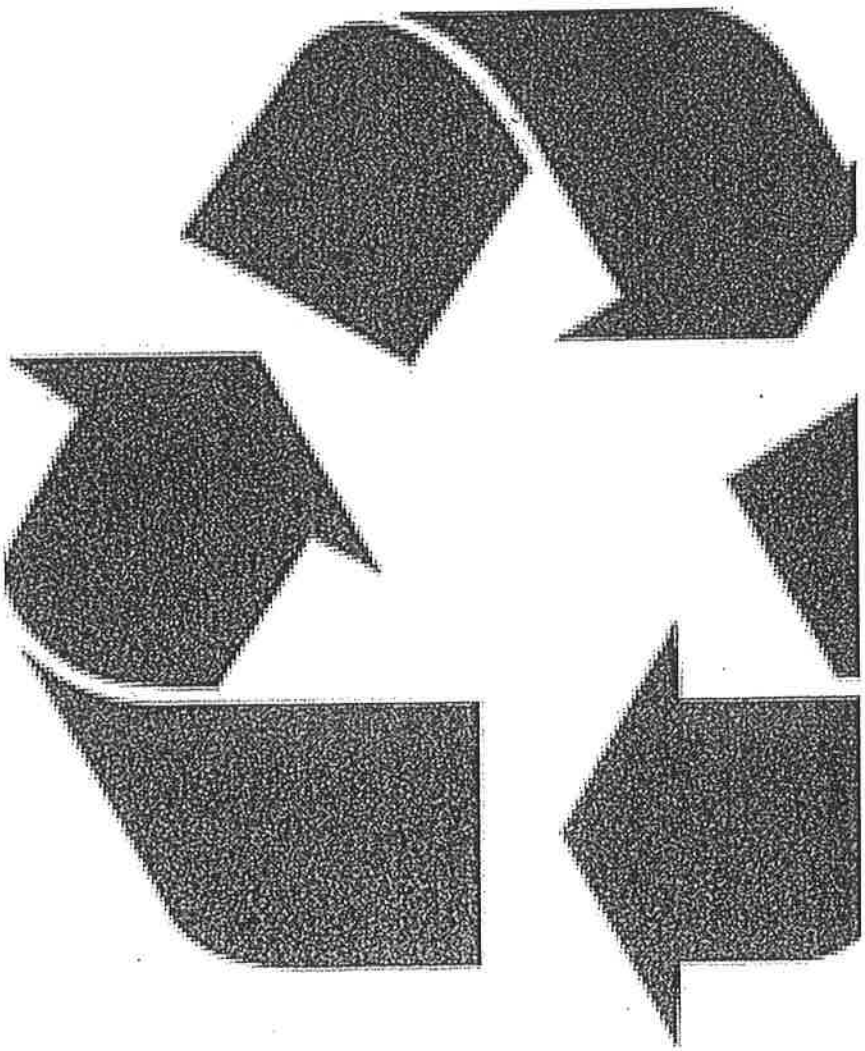
Waste Recycling Strategy

Cochrane Timiskaming

Waste Management Board

June 2012



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Waste Recycling Strategy

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

This report was prepared by exp. Services Inc.

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1. Introduction

This Waste Recycling Strategy was initiated by the Cochrane Timiskaming Waste Management Board (CTWMB) to develop a plan to increase the efficiency and effectiveness of its recycling program and maximize the amount of materials diverted from disposal. Specifically, the purpose of this recycling strategy is to guide the CTWMB in municipal recycling services for the foreseeable future using cost effective measures and environmentally friendly practices. Current practices will be addressed along with potential diversion options to manage recyclable material into the future.

The CTWMB is currently responsible for managing the residential recycling stream of member municipalities and provides depot collection services for Blue Box type recyclable material. Blue Box materials are items collected by the municipality through a curbside or depot collection programs, to be recycled into new products and thereby, diverted from disposal.

2. Overview of the Planning Process

This Waste Recycling Strategy (WRS) was developed following the process outlined in the Continuous Investment Fund's (CIF) *Guidebook for Creating a Municipal Waste Recycling Strategy* and will address only the residential recycling waste stream. Industrial, commercial and institutional (IC&I) establishments are mandated under Ontario Regulation 102/94 to manage their own waste recycling planning.

The WRS process consisted of the following steps:

- Conducting a review of relevant background information;
- Conducting an assessment of the CTWMB's current waste generation and diversion trends, operations and future needs;
- Conducting stakeholder interviews;
- Reviewing and evaluating a suite of options and recommendations for improving the CTWMB's recycling program; and
- Preparing the Waste Recycling Strategy.

3. Study Area

The study area for this Waste Recycling Strategy includes 15 communities which form the CTWMB. Municipalities within the CTWMB are grouped into two regions: Northern Node and Southern Node. The CTWMB is comprised of the municipalities identified in Figure 1, and their respective community profiles are summarized in Table 1.

Figure 1: Cochrane Timiskaming Waste Management Board member communities

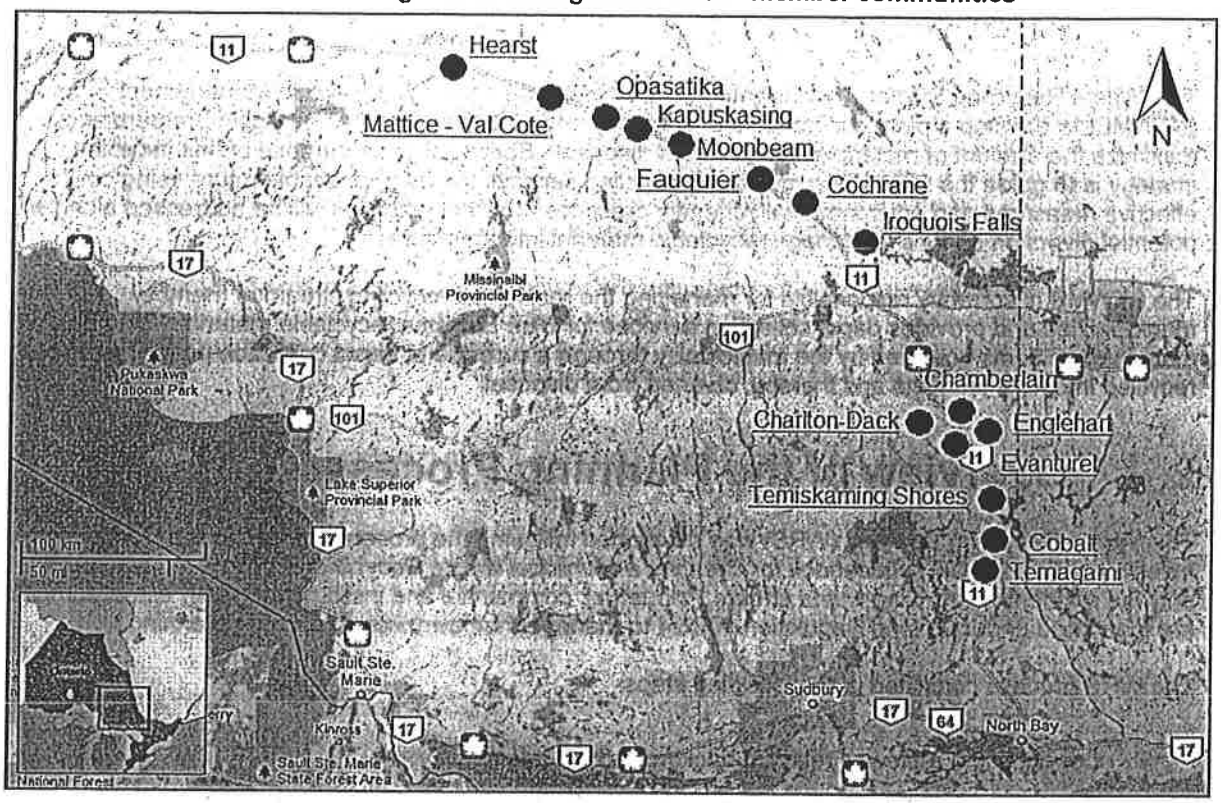


Table 1. CTWMB Member Community Profiles

	Municipality	Households[1]	Population[2]
Northern Node	Hearst	2,517	5,620
	Mattice - Val Cote	346	772
	Opasatika	132	280
	Kapuskasing	4,098	8,509
	Moonbeam	549	1,298
	Cochrane	2,443	5,487
	Fauquier	271	530
	Iroquois Falls	2,217	4,729
Southern Node	Charlton-Dack	273	613
	Chamberlain	158	322
	Englehart	747	1,494
	Evanturel	208	473
	Temiskaming Shores	4,706	10,442
	Cobalt	620	1,223
	Temagami	469	934
	TOTAL	19,754	42,726

[1] CTWMB, Municipality Statistics. 2011
[2] Statistics Canada, Community Profiles. 2006

4. Stakeholder Consultation

The consultation process followed in the development of this Waste Recycling Strategy consisted of contacting and interviewing CTWMB representatives from member municipalities. Councillors, public works directors and coordinators participated and provided opinions through stakeholder interviews.

In general, the response from stakeholders indicated that participation in the recycling program by residents is low. This was attributed to a lack of easy access to recycling depots (respondents suggested that some residents don't have their own transportation), and education and enforcement of current recycling rules and protocols. Other issues raised were difficulty in travelling to recycling depots in winter months and the program not accepting a greater range of recyclable material.

5. 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 recycling programs can vary greatly and depends on a municipality's size, geographic location and population.

The CTWMB wishes to develop a Waste Recycling Strategy that is consistent with provincial goals and provides for an efficient and effective recycling program for its member municipalities. In order to reach these goals the CTWMB has to consider the following issues in regard to the decisions it makes:

- The community is a considerable distance from recyclable processors and markets;
- A low economy of scale for handling recyclables, due to small population and therefore relatively small tonnages of material collected;
- No dedicated staff to manage the recycling program (recycling is one of many responsibilities of municipal staff); and
- Lack of public participation in available recycling program.
- In addition to the issues identified above, provincial funding received by municipalities for their blue box recycling program is based in part on the development and adoption of a Waste Recycling Strategy, the incorporation of WDO (Waste Diversion Ontario) approved recycling best practices, and the amount of recyclable material marketed. This Waste Recycling Strategy will help to improve efficiencies through the adoption of recycling best practices and therefore, maximize the amount of eligible funding.

6. Goals and Objectives

The purpose of this Waste Recycling Strategy (WRS) is to provide the CTWMB with a plan for addressing Blue Box recycling issues over the next decade. Strategic goals provide benchmarks to assist the municipalities evaluate improvements in program efficiency and effectiveness of its recycling programs as they implement the Strategy. Specifically, the goals of the WRS are:

- To provide an effective and efficient residential recycling program;
- To increase participation in the recycling program and
- Achieve a diversion target equal to or higher than the average WDO municipal grouping recycling diversion rate of 20%

- Achieve a capture rate for recyclable material of at least 65%[3].

7. Current Solid Waste Practices

7.1 Residential Recycling Program

The Ontario Blue Box Program supports various municipal recycling programs across the province, but in order to evaluate and compare program efficiencies, municipalities are placed into municipal groupings. Each municipal grouping has economic and recycling rate targets and is based on population, location and type of recycling services offered. The CTWMB falls under the WDO municipal grouping of Rural Depot - North.

The CTWMB operates a depot collection recycling program that accepts the following items:

- Cardboard (OCC) and boxboard;
- Office and newsprint paper (ONP);
- All plastics (#1 to #7);
- Aluminum foil and packaging; and
- Steel and aluminum food and beverage containers.

Depots within each member municipality include four depot bins (OCC, ONP, metal and plastics) at the municipalities' designated recycling depots/areas. Depots are unmanned and unsupervised, unless they are located within landfill sites where landfill attendants are on site. The CTWMB collects the materials from the depot bins and ships it to one of two material recovery facilities (MRF). For municipalities within the southern node, accepted recyclable materials are transported to the New Liskeard MRF for processing, while recyclable materials from municipalities within the northern node are transported to and processed at the Kapuskasing MRF. The bin collection schedule for each node is summarized below.

Table 2. Collection Schedule

Collection Schedule	Depot Bins	Communities
Southern Node		
Bi-weekly	All depot bins	Chamberlain, Charlton and Temagami
Daily	All depot bins	Cobalt, Temiskaming Shores, Evanturel and Englehart
Northern Node		
Monday	OCC, ONP	Moonbeam, Kapuskasing, Cochrane, Iroquois Falls, Fauquier
Tuesday	Recyclable metals and plastics	Kapuskasing, Moonbeam, Fauquier
Tuesday	OCC, ONP	Hearst
Wednesday	Recyclable metals and plastics	Cochrane, Iroquois Falls, Hearst, Mattice-Val Cote, Opasatika
Thursday	OCC, ONP	Kapuskasing, Opasatika, Cochrane, Iroquois Falls

[3] The Continuous Improvement Fund (CIF) identifies a reasonable capture rate for recyclable material in a Rural Depot – North to be 65%

7.2 Residential Refuse

Each municipality within the CTWMB manages its own municipal landfill site, with the exception of Moonbeam, where residents take their waste to the Kapuskasing landfill. The municipalities of Englehart, Temiskaming Shores, Hearst, Kapuskasing and Cochrane provide residents with a curbside garbage collection service. All other municipalities require residents to drop off waste at their local municipal landfill site. While this Waste Recycling Strategy only provides direction for the management of Blue Box type recyclable materials, Table 3 below summarizes additional recycling and disposal practices currently undertaken in each member municipality.

Table 3. Waste practices in CTWMB member municipalities

Municipality	Household Special Waste (HSW)	Waste Electrical And Electronic Equipment (WEEE)	Scrap Metal	Garbage	Tires
Hearst	N/A	N/A	At landfill	Municipal landfill	N/A
Mattice - Val Cote	N/A	Bin at landfill	At landfill	Municipal landfill	OTS*
Opasatika	N/A	N/A	At landfill	Municipal landfill	OTS
Kapuskasing	N/A	N/A	At landfill	Municipal landfill	OTS
Moonbeam	N/A	N/A	N/A	Sent to Kapuskasing landfill	
Cochrane	Bin at landfill	Bi-annual collection event	N/A	Municipal landfill	OTS
Iroquois Falls	N/A	N/A	N/A	Municipal landfill	N/A
Charlton-Dack	Bin at landfill	Bin at landfill	At landfill	Municipal landfill	OTS
Chamberlain	N/A	N/A	N/A	Municipal landfill	N/A
Englehart	North Bay Depot	Bin at landfill	N/A	Municipal landfill	OTS
Evanturel	N/A	N/A	At landfill	Municipal landfill	OTS
Temiskaming Shores	N/A	N/A	N/A	Municipal landfill	OTS
Cobalt	Bin at landfill	Collected periodically at HSW events	N/A	Municipal landfill	N/A
Temagami	North Bay Depot	North Bay Depot	At landfill	Municipal landfill	OTS

*Ontario Tire Stewardship

8. Current Solid Waste Trends, Costs and Future Needs

The CIF's Guidebook for Creating a Municipal Waste Recycling Strategy provides recommended target capture rates for Blue Box material based on municipal grouping which are determined by the WDO. The CTWMB recycling program is identified by the WDO in the municipal grouping for Rural Depot North. For municipalities within the Rural Depot North grouping, the target capture rate for Blue Box material is 65% and the target net cost for a municipal Blue Box program is $720 per tonne.

8.1 Determining Potential Waste Diversion

In order to determine the Blue Box material diversion potential of the CTWMB recycling programs, the composition of the waste stream needs to be established. As no waste audit data currently exists for the CTWMB, the Stewardship Ontario waste audit data for West Nipissing was used as a representative sample. The province of Ontario undertook a series of municipal waste audits across Ontario to determine waste compositions relative to geography and population. The information was gathered to assist municipalities evaluate the effectiveness of their recycling programs. The municipality of West Nipissing was determined to be the most representative waste audit because it has similar characteristics to CTWMB municipalities in terms of geography, demographics, and accepts similar items for recycling.

In 2010 approximately 12,030 tonnes of waste was generated by residents within the CTWMB municipalities. Table 4 below summarizes the estimated composition of the total residential waste stream. As illustrated in the diagram below, approximately 30% of the waste stream is comprised of Blue Box material that could be diverted through the current CTWMB recycling program. Of this amount, the greatest proportion is recyclable papers (21%), followed by recyclable plastics (3%), recyclable glass (3%) and recyclable metals (3%).

Table 4. Residential Solid Waste Generated

Residential Waste Stream	Estimated Tonnes Generated	Estimated Percent of Total Waste
Blue Box Papers (ONP, OMG, OCC, OBB, fine papers)	2,476	21%
Blue Box Metals (aluminum, steel, mixed metal)	367	3%
Blue Box Plastics (containers, tubs & lids)	362	3%
Recyclable Glass	423	3%
Other Waste (e.g. non blue box type material.)	8,402	70%
Recyclable Material Available For Diversion	3,628	30%
Total Waste Generated	12,030	100%

8.2 Residential Blue Box Recycling Program

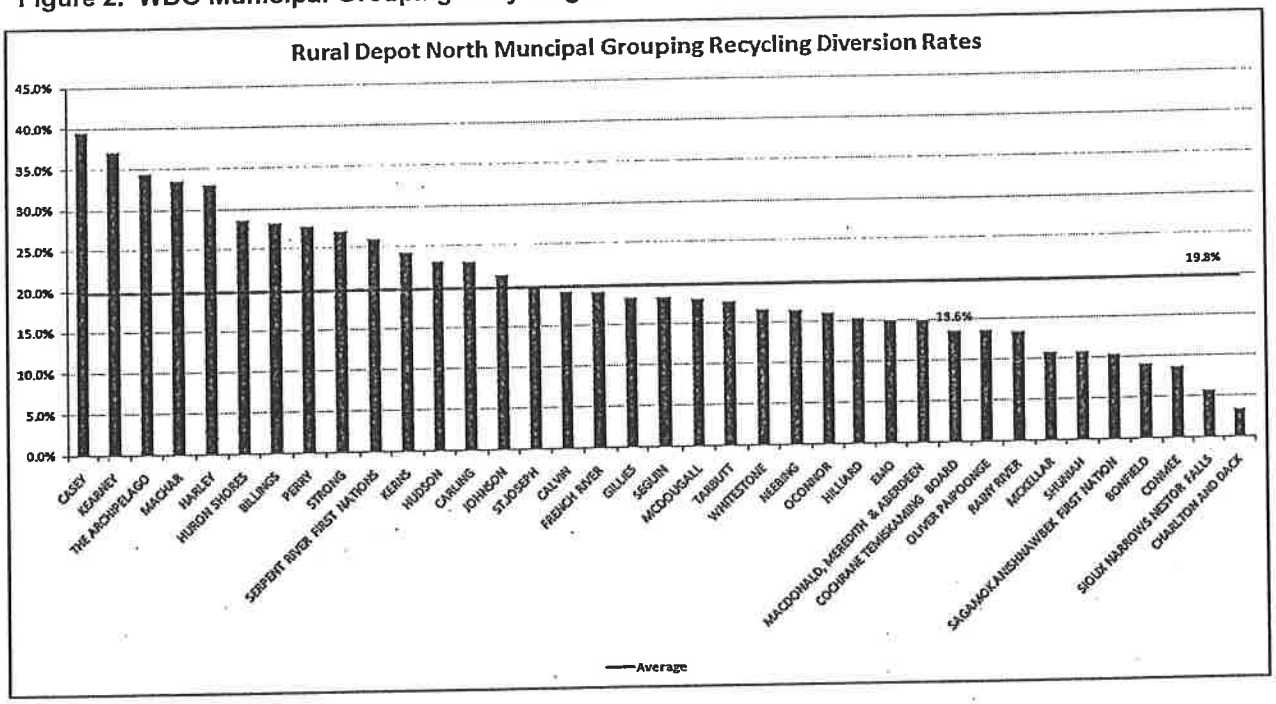
The CWTMB municipalities generated approximately 12,030 tonnes of residential solid waste in 2010 of which, approximately 1,640 tonnes was Blue Box material. This accounts for approximately 13.6% of the waste diverted through the CTWMB recycling program. Currently, the most common materials recycled through the municipal program are paper products, such as cardboard, boxboard and office paper. Glass is not accepted through the CTWMB recycling program however, some glass is being diverted through the Ontario LCBO deposit return program. Table 5 below summarizes the amount of waste being diverted by category, through the municipal recycling program.

Table 5. Blue Box Recyclables Currently Diverted

Residential Waste Stream	Tonnes Diverted	Percent of Materials Diverted
Papers (ONP, OMG, OCC, OBB, fine papers)	1,428.7	87.1%
Metals (aluminum, steel, mixed metal)	94.5	5.8%
Plastics (containers, film, tubs & lids)	85.2	5.2%
Glass	31.8	1.9%
Total Diversion and Rate	1,640.2	13.6%

Figure 2 illustrates how the CTWMB compares to other Ontario municipalities in the same WDO municipal grouping. The average recycling diversion rate for municipalities within CTWMB's grouping is 19.8%. The CTWMB's current recycling diversion rate of 13.6% is below this average by 6.2 percentage points.

Figure 2. WDO Municipal Grouping Recycling Diversion Rates.



8.3 Costs

To determine costs associated with the CTWMP recycling programs, the 2010 actual CTWMB budget was used. In 2010, the total expenditures for the CTWMB recycling program were $779,032 and included the following items:

- Wages (collection, processing, supervision and student);
- Office and buildings costs;
- Vehicle operation and maintenance;
- Fees and benefits; and
- Other fees and expenses[4].

In 2010, the total revenues for the CTWMB from marketing recycling materials were approximately $197,755. The net cost was approximately $581,277 or approximately $361 per tonne.

[4] Includes transfer to reserve, interest and bank charges, accounting fees, professional fees, legal fees, miscellaneous expenses and payments on trucks and loaders.

Table 6. Total Cost of the CTWMB Blue Box Program

Item	Cost
Expenditures	$779,032
Revenue from materials	$197,755
Net Recycling costs	$581,277 ($361/tonne)

The CTWMB provides recycling services at a relatively low cost when compared to the cost target of $720/tonne set out by the WDO for the Rural Depot North municipal grouping. In addition, the CTWMB provides recycling services at a lower cost compared to the average recycling costs of municipalities within this municipal grouping. On average, municipalities within the same category spent $814 per tonne for recycling in 2010.

A detailed breakdown of expenditures and revenues is presented in Appendix A – Cochrane Timiskaming Waste Management Board Budget.

8.4 Determining Potential Waste Diversion

8.4.1 Waste Diversion Analysis

A waste diversion analysis was conducted to assess the performance of the CTWMB's current Blue Box program and determine where improvements could be made to increase its efficiency and effectiveness. Table 7 illustrates material categories that could be targeted to increase the amount of Blue Box material captured through the municipal recycling program. Based on comparable waste composition audit data from West Nipissing, the CTWMB is currently capturing 50% of all the recyclable material in its waste stream through its recycling program. This falls short of the WDO goal of 65% for municipalities within the Rural Depot North municipal grouping. If the CTWMB was to capture 65% of the residential Blue Box material available in the waste stream, it could collect an estimated additional 718 tonnes of material which would raise the program's diversion rate to 20% which is the municipal average for the WDO Rural Depot North municipal grouping.

Table 7. Estimate of Available and Recoverable Blue Box Material

Material	Estimated Composition (%)	Total Amount of Divertible Material in Waste Stream (tonnes)	65% Capture Rate of Divertible Material (tonnes)	Material currently diverted through existing program in 2010 (tonnes)	Additional material required to achieve 65% Capture Rate (tonnes)	Additional Diversion (% of total waste stream)
Paper/Cardboard	21%	2,2476	1,610	1,429	181	1.5%
Metals	3%	367	239	95	144	1.2%
Plastics	3%	362	235	85	150	1.2%
Glass	4%	423	275	32	243	2%
Total Divertible Materials	31%	3,628	2,358	1,640	718	6%
Current Diversion Rate				13.6%		
Div. Rate with 65% Capture						19.6%

8.5 Anticipated Future Waste Management Needs

Population projections from the Ontario Ministry of Finance (MoF) for Timiskaming and Cochrane census divisions were used in order to determine future waste management needs and costs. Population growth projections for each CTWMB municipality were unavailable and an assumption was used that growth for the Timiskaming and Cochrane census divisions are the same for all CTWMB municipalities. Table 8 summarizes population and waste generation projections in 5 year intervals to 2031. Projected waste generation amounts assume waste generation per capita remains the same over the next 20 years. In addition, the projections assume no additional diversion programs are initiated.

Table 8. Anticipated Future Growth

Year	2010	2016	2021	2026	2031
Population	40,139	38,863	37,835	36,948	36,097
Total Waste Generated (tonnes)	12,030	12,503	12,172	11,887	11,613
Recyclable Material Available (tonnes)	3,628	3,770	3,670	3,584	3,502

The population of all municipalities that make up the CTWMB is projected to decline at an average rate of 3% over the next 20 years. This is well below the Ontario average of 0.9% growth over the same period. Collectively, the CTWMB municipalities generated approximately 12,030 tonnes of waste in 2010, which equals about 300kg per capita. Based on the projected population and the current per capita waste generation, it is estimated that the CTWMB municipalities combined will generate about 11,613 tonnes of waste per year by 2031. Therefore, the amount of Blue Box material required to be managed over the next decade will also decline accordingly.

9. Planned Recycling System

9.1 Overview of Blue Box Program Options

Based on the analysis of the current system, the following options were identified as a means to increase the effectiveness and efficiency of the CTWMB recycling program and meet the goals of the Waste Recycling Strategy.

9.1.1 Promotion and Education

A successful waste management system requires a sound communications strategy that supports all of the system's waste management components (i.e., the drop off recycling bins). A good communications program will allow residents and businesses to fully participate in waste reduction and diversion programs by raising awareness about the CTWMB's recycling program and overcoming barriers to participation.

An enhanced promotion and education program would go beyond the static use of brochures and online information by establishing a dialogue with residents to assess those barriers to participation and determine opportunities for improvement. Such a program may include:

- Face-to-face contact to promote specific programs, possibly at community events or by going door-to-door;
- Using neighbourhood champions or community leaders to teach others or to lead by example (e.g., recycling properly and using current programs);

- Interactive on-line waste forums and feedback forms; and
- Community-based social marketing approaches, among other things.

The strategy should also examine additional cost-effective means of delivering outreach to the community, including (but not limited to):

- The use of community volunteers and neighbourhood champions;
- Participation in existing events (e.g., display booths at expos or fairs);
- Cost-sharing opportunities with other municipal departments or engaging community partners that have similar or complimentary mandates (e.g., beautification or anti-litter programs, newsletters from other departments or community partners, etc);
- Hiring of a student or intern (specifically for waste projects or shared between departments); or
- Presentations to community groups and schools on available programs.

The CTWMB or individual participating municipalities could set up educational and display booths at the following community events in order to increase awareness of current recycling programs such as:

- New Liskeard Summerfest
- Festival of Lights
- Temagami Community Market
- Kapuskasing Lumberjack Heritage Festival
- Hearst Carnival
- Canada Day Celebrations

The communication activities should have specific strategic targets, which may include (but are not limited to):

- Promotion of recycling at key points of the year (e.g. holidays);
- Reminders about specific recyclable materials or topics of concern to achieve identified problem areas (e.g., to reduce contamination levels); or
- Encouraging the adoption of waste reduction/prevention behaviours (e.g., encouraging wasteless gifts by purchasing 'experiences', such as concert tickets or a spa visit, or consciously avoiding the purchase of products with excessive packaging).

The waste recycling communication strategy should include a monitoring and evaluation component, which would allow program managers to adjust programming in response to program performance or other identified needs, such as changes in materials collected, common contamination issues, feedback from residents, or new priority issues.

The estimated cost for CTWMB's promotion and education program is approximately $1.2 per household (identified as a best practice in the KPMG *Blue Box Program Enhancement and Best Practices Assessment Project Final Report*). Therefore, the total annual cost to implement this option is estimated to be $23,000.

The estimated increase in diversion through additional promotion and education is 1%-10%.

9.1.2 Expansion of WDO Acceptable Recyclable Materials

Currently, the CTWMB does not collect and divert all the material types WDO considers to be part of a Blue Box program. If the CTWMB expands its list of acceptable items to divert all recyclable materials

listed by the WDO it would contribute to the added diversion potential discussed in Section 8. Additional types of Blue Box material to those currently accepted by the CTWMB program include:

- Composite cans;
- Gable top cartons; and
- Aseptic containers.

Of note, while glass is considered under Ontario Regulation 101/94 a mandatory material to be collected by municipalities for diversion from disposal, it is not included in the CTWMB program. Glass can be an expensive material to collect, process and market with other Blue Box material. The market value for glass is also low or negative, which would result in the CTWMB either receiving minimal payback for the material or having to pay to have it processed. Therefore, if the CTWMB were to add glass to its program it should be collected in a separate bin at the recycling depots. End use for the material could include crushing to use it as landfill cover which would be more cost effective than shipping this material to a MRF.

Prior to future program changes, further consideration and assessment should be completed to examine the timing of municipal contracts and end markets for new materials. The cost to collect and process additional types of materials would depend on the type of material and the requirements to process it. The CTWMB should contact and request information from their recyclable materials collector and processor in order to determine the feasibility to include new material types. The estimated annual operating cost to implement this initiative would be in the order of $30,000.

9.1.3 Depot Enhancement

In conjunction with increased promotion and education, increased participation in the recycling program could be achieved by providing enhanced signage at the existing depots and by creating additional satellite depots to improve public convenience.

Installing satellite recycling depots would provide greater convenience to residents. This option would address one of the main issues raised by stakeholders during the public consultation process which was the distance residents had to travel to access a recycling depot. In addition, the additional depots would increase the presence of the recycling program, making it more visible to residents and provide a reminder to recycle. Additional recycling collection containers should be placed in high traffic areas, such as the main street of the participating municipalities and near grocery stores.

Increased or better signage at the depots would make the recycling bins more prominent and help ensure residents participate correctly which would reduce contamination. The cost of depot signage would be approximately $100 to $200 per depot and could be incorporated into the promotion and education budget. The cost for additional recycling depots would range from $7,000 to $13,000 per depot, depending on location and site preparation e.g. fencing, signage, etc.

9.1.4 Enforcement and Communication at Recycling Depots

A lack of enforcement, contamination and illegal dumping were issues raised by two stakeholders during interviews. This may be attributable in some part to recycling depots being unsupervised. Hiring part- or full-time depot attendants at those recycling depots currently unattended may help to reduce contamination and illegal dumping (depending on municipal resources, a part-time attendant scheduled in for during the periods of greatest activity at the depot may be more cost effective than a full-time attendant). When on duty, the attendant could inspect items coming in to the depot and help residents make sure their recyclable items are placed in the correct bin or recycling container. Depot attendants

could also provide information regarding recycling programs and promote other waste diversion initiatives.

With a part-time attendant, there will be periods when the recycling depot is open and no attendant is on duty. For example, many of the depot sites are open 7 days a week, 24 hours a day. While a part-time attendant may be unable to discourage those who illegally dump at the depot site at off-hours, an attendant that is scheduled at the depot's busiest time should be able to reduce contamination by educating residents on how to properly recycle.

The cost for the attendant would depend on the number of hours scheduled at each depot. The CTWMB should hire part time staff to attend unstaffed depots during high traffic times of the week or days of the year. This will likely be on weekends and following holidays. The cost to hire staff 1 day per week for the unstaffed depot would be approximately $5,000 to $7,000 per year for each depot. However, part time staff could manage the depots on a rotation whereas each depot would be staffed every other week or once per month. The CTWMB could also consider volunteers and students for these positions in order to reduce costs.

9.1.5 Curbside Collection of Recyclables

Currently, none of the municipal partners in the CTWMB offer curbside recycling to its residents, although the option is being explored by the City of Temiskaming Shores. Offering curbside collection of recyclables to residents could potentially increase the amount of waste diverted through the blue box program, as it would make recycling easier and more convenient for residents.

A detailed assessment would be required to estimate the cost and diversion implications of offering curbside recycling to residents served by the CTWMB. The assessment would need to consider a number of factors, including (but not limited to):

- Frequency of collection – while weekly collection may offer more convenience to residents, collection every other week or once a month may be more affordable for the partner municipalities.
- Dual stream or single stream – while single-stream collection can be less expensive, some material recycling facilities (MRF's) required the recyclable material to be sorted.
- Area of coverage – while providing curbside collection service across an entire municipality would provide equity of service to residents, it would be more cost-effective to limit curbside collection to more densely populated areas.

To assess the performance of curbside recycling collection programs against depot recycling programs, data from the 2010 WDO datacall was used to compare the average cost and diversion rates between "Rural Collection – North" programs and "Rural Depot – North" programs. As table 9 shows, the average program cost for Rural Collection – North was $498 per tonne, or approximately 15% more than the average cost for "Rural Depot – North" communities (CTWMB falls within this group) of $431 per tonne. However, the Rural Collection – North communities on average diverted about 16.3% of their waste stream through the blue box program, while Rural Depot – North diverted 15.4%.

Table 9. Curbside versus Depot Collection of Recyclables

Municipal Group	Average Blue Box Cost ($ per tonne)	Percent of Waste Stream Diverted Through Blue Box Program (average)
Rural Collection - North	$498	16.3%
Rural Depot - North	$431	15.4%

Notes:

- *Average blue box cost includes collection, depot/transfer, and processing costs.*
- *Municipalities with blue box costs greater than $1,500 per tonne were considered outliers and omitted from this analysis.*

This indicates that curbside collection of recyclables, while slightly more expensive, could result in greater capture of blue box materials. A more detailed assessment for the CTWMB communities would be required to estimate how much more curbside collection of recyclables would cost and if it would result in marked increased diversion of blue box materials. The estimated cost to conduct such an assessment would range from $10,000 to $20,000.

9.1.6 Clear Bags Policy

A 'clear bag' policy refers to the use of a garbage bag that is transparent or see-through. Use of clear bags for garbage encourages waste diversion in a number of ways. Clear bags allow residents to observe what is within other residents' garbage stream and could act as a form of peer pressure to recycle. Secondly, clear bags can serve as a reminder if people forget to separate out these materials from their garbage, as the clear bag allows residents to see what has been thrown out. Clear bags also prompt people to reflect on their waste disposal habits and encourage them to consider waste diversion options.

A policy such as this would be more relevant for those CTWMB communities with curbside garbage collection. This policy would work best alongside a ban on all acceptable recyclable materials from the garbage stream.

A Stewardship Ontario study that examined 22 municipalities with clear bag programs concluded that this option could have a considerable increase on diversion rates. For example, 13 Nova Scotia municipalities reportedly experienced, on average, a 41% decrease in residential waste, a 35% increase in residential recycling and a 38% increase in residential organics collection. One region from Nova Scotia experienced a 71% increase in tonnes of material collected for recycling. It is important to note that these averages were based on programs with existing recycling and organics diversion programs and therefore most of the gains can be directly attributed to clear bags.

In some programs, residents are allowed to include a 'privacy bag' inside their clear bag. A 'privacy bag' is any small opaque plastic bag into which residents can place materials they wish to keep private.

The costs associated with implementing a clear bag policy are minimal. The cost of implementing this option is dependent on the amount of promotion and education completed by the CTWMB. Promotional and educational expenses could be included in the existing P&E budget.

Based on similar programs in other municipalities, this option could increase CTWMB's diversion rate up to 4%.

9.1.7 Training of Key Staff

A well-trained staff can lead to greater cost and time efficiencies and improved customer service. It could help with organization of and compliance with permits, contracts, and increase efficiency between management and workers. Knowledgeable staff (including both front line staff, managers and policy makers) have a greater understanding of their municipal programs and can perform their responsibilities more effectively. Staff training is considered a WDO best practice and can affect up to 2% of a municipalities Blue Box funding from the province. There are a number of low-cost training options available. The CIF holds periodic Ontario Recycler Workshops that discuss all aspects of managing and operating a municipal recycling program (www.wdo.ca/cif/orw.html). These workshops are offered free of charge to municipal staff.

The Municipal Waste Association (MWA), Waste Diversion Ontario (WDO), the association of Municipalities of Ontario (AMO), Stewardship Ontario and the Solid Waste Association of Ontario (SWANA) also provide sources of information, workshops, or training on recycling or solid waste

management. In order to determine which training is best suited for staff, the CTWMB should asses individuals based on their knowledge and experience with:

- Recycling planning and continuous improvement;
- Service procurement and contract administration;
- Waste diversion policy mechanisms; and
- Operations planning and management.

Training related expenses range from $1,600 to $2,150 per staff member (based on data from the *KPMG Blue Box Program Enhancement and Best Practices Assessment Project*). The direct impact on CTWMB's diversion rate would likely be negligible, but training of staff would make the recycling program operate more efficiently by providing manager and front line staff with the tools necessary to deal with issues more effectively.

9.1.8 Bag Limits

Bag limits restrict the number of bags of garbage a resident can dispose. This encourages residents to divert more recyclable materials in order to remain within the bag limit. Limiting the amount of garbage disposal should be used in conjunction with an expanded recycling program to make it easier for residents to stay within the limit.

Landfill attendants could also limit the amount of visits a resident makes to the landfill for garbage disposal through tracking of vehicles or residents. The bag limit could be based on an amount per week, month or year. How the bag limit would be enforced would require further assessment.

Reductions in the collection frequency of garbage and/or limiting the amount allowed at landfills have resulted in increases in recycling and organics diversion in other municipalities in southern Ontario. For example, Ontario municipal programs have reported a 4-6% increase in diversion from landfill when this option was implemented. Therefore, the CTWMB should expect to see a comparable increase in diversion if this option is implemented. The cost of the program is minimal and limited to additional promotion and education by the CTWMB.

9.1.9 Landfill Disposal Bans on Recyclables

A disposal ban at the landfill site can be a useful tool to help keep recyclable material from being disposed in landfill. Disposal bans in other municipalities has proven to increase the diversion of recyclable material. Depending on the level of enforcement, additional staff resources could be required to enforce the ban. For the ban to be effective, promotion of the ban would need to be included in a promotion and education program in advance of the ban taking effect.

Many Ontario municipalities have implemented disposal bans for recyclable material, hazardous waste, tires, yard waste, white goods, etc. Bans of recyclable materials have also been implemented in municipalities in other provinces including Winnipeg, Saskatchewan, Nova Scotia and British Columbia.

Establishing a landfill disposal ban for recyclables could be imposed through a municipal by-law. Costs for promotional and educational expenses could be included in the existing P&E budget.

9.1.10 Following Generally Accepted Principles for Contracts

A considerable number of municipalities in Ontario contract out the collection and processing of recyclables. To ensure that municipalities obtain good value for money, municipalities should follow

generally accepted principles (GAP) for effective procurement and contract management as outlined in the KPMG *Blue Box Program Enhancement and Best Practices Assessment Project Final Report*, prepared for Stewardship Ontario. The contracting GAP outlined in the report deal specifically with waste collection and processing and includes topics such as planning the procurement well in advance, issuing clear RFPs, obtaining competitive bids, and including performance-based incentives. This option could be most effective in reducing costs for the CTWMB if a multi-municipality recycling collection and processing contract is in place.

Municipalities of the CTWMB should asses their level of performance against the GAP and update their contracting practices where feasible to follow the GAP as best as possible. Incorporating the contracting GAP for waste collection and processing could improve the value-for-money received from waste management contracts. GAP is included in the WDO Datacall as a municipal best practice and accounts for up to 3% of municipal funding for Blue Box programs.

9.2 Evaluation of Options and Recommended Initiatives

The options identified in section 9.1 were then ranked against a set of criteria, which included:

- Percent of waste diverted;
- Proven results (e.g. is the initiative operating effectively in other municipalities);
- Economic feasibility;
- Social acceptability; and
- Ease of implementation.

A summary of the evaluation and scoring of the options reviewed are provided in Appendix B.

Once scored, the top ranking Waste Recycling Strategy options were organized into Priority Initiatives and Future Initiatives. The priority initiatives are recommended for implementation over the next 3 years by the CTWMB to improve the effectiveness and efficiency of its Blue Box programs. The estimated capital cost to implement the priority initiatives is about $16,000 and the estimated annual operating cost is about $27,000.

Table 10. Estimated Cost of Priority Options.

Option	Implementation Costs	Operating
Promotion and Education	-	~$23,000
Depot Enhancement	~ $7,000 - $13,000 per new depot; ~$3,000 for new signage for existing depots	
Training of Key Staff	-	$1,600 - $2,150 per staff member
GAP for Contract Management	-	-

The following priority initiatives are recommended to improve Blue Box material diversion over the next 1 to 3 years:

- **Promotion and Education:** Enhance the CTWMB's existing solid waste communications program.

- **Depot Enhancements:** Improving participation and operations at the depot through increased signage, increased hours of operation and/or providing satellite bins.
- **Training of Key Staff:** Increasing waste management knowledge among staff who manage the recycling program. It is considered by the WDO as a best practice.
- **Following Generally Accepted Principles for Effective Procurement and Contract Management:** Evaluate existing contract policies against the Generally Accepted Principles (GAP) for effective solid waste contracting and procurement (as outlined in the KPMG *Blue Box Program Enhancement and Best Practices Assessment Project Final Report*) and considered a best practice by WDO.

The following options were identified as possible future initiatives that could be implemented if the CTWMB does not reach its goals following implementation of the priority initiatives:

- **Expansion of Acceptable Blue Box Materials:** Adding other types of recyclable material to the current list of acceptable materials.
- **Ban Recyclables from Garbage Stream:** Institute a by-law which prohibits recycling from entering the landfill or garbage stream.
- **Enforcement and Communication at Recycling Depots:** Include at each depot an attendant trained to provide education, direction, reduce contamination and illegal dumping.
- **Assessment of Curbside Collection of Recyclables**: Conduct a feasibility assessment for introducing curbside collection of recyclables for CTWMB member municipalities.

10. Contingencies

Even the best planning can be delayed by a variety of foreseen and unforeseen circumstances. Predicting and including contingencies can help to ensure that these risks are managed for minimum impact. Table 10 below identifies contingencies to overcome potential planning issues.

Table 11. Waste Recycling Strategy Contingencies

Risk	Contingency
Insufficient funding	Explore and apply for other funding sources (e.g. Green Enabling Fund)
	Delay lower-priority initiatives
	Increase proportion of municipal budget to solid waste management
Public opposition to planned recycling initiatives	Improve public communications
	Engage community/stakeholders to discuss initiatives/recycling plan
Lack of available staff	Prioritize department/municipal goals and initiatives
	Hire summer student to help with planning (may be available funding)
	Provide volunteer opportunities for students and members of the community
Permit requirements	Identify permit requirements early on in process
	Establish a "permit requirements" checklist

11. Monitoring and Reporting

The monitoring and reporting of the CTWMB's recycling program is considered a Blue Box program fundamental best practice and will be a key component of this Waste Recycling Strategy. Once implementation of the strategy begins, the performance of the recycling program will be monitored and

measured against the baseline established for the current system. Once the results are measured, they will be reported to Council and the public. The approach for monitoring the waste recycling program is outlined in Table 11 below.

Table 12. Recycling Program Monitoring

Monitoring Topic	Monitoring Tool	Frequency
Total waste generated (by type and by weight)	Measuring of wastes and recyclables at disposal site and MRFs	Each load
Diversion rates achieved (by type and by weight)	Formula: (Blue box materials + other diversion) ÷ Total waste generated x100%	Annually
Program participation	Survey (e.g., telephone, face to face at the depot)	Every 2 to 3 years
Customer satisfaction	Customer survey (e.g., telephone); tracking calls/complaints received to the municipal offices	Every 2 to 3 years
Report on implemented activities	Describe what initiatives have been fully or partially implemented, what will be done in the future	Annually
Review of Waste Recycling Strategy	A periodic review of the Waste Recycling Strategy to monitor and report on progress, to ensure that the selected initiatives are being implemented, and to move forward with continuous improvement	Every 3 years

12. Conclusion

This Waste Recycling Strategy describes a number of opportunities for increasing diversion through the CTWMB recycling programs. The Strategy provides a path forward for improving recycling program, suggesting new initiatives that can help increase participation and efficiencies. The review of the CTWMB's current program shows that, while recycling costs are generally lower than other similar municipalities in Ontario, diversion levels are also generally lower. Increasing education and promotion of the current program is the most cost effective and efficient way to increase Blue Box diversion in member municipalities.

Appendix A – Cochrane Timiskaming Waste Management Board Budget

COCHRANE TIMISKAMING WASTE MANAGEMENT BOARD

BUDGET 2011

Revenues	2010 Budget	2010 Actual	2011 Budget
Mixed	46,675	$ 65,940	$ 80,000
OCC	25,380	54,094	53,550
Aluminium	27,000	42,777	37,500
Ferrous	11,175	16,094	15,000
PET	7,400	16,850	12,750
Sales	$ 116,630	$ 197,755	$ 198,800
WDO Grant	$ 189,320	$ 189,320	$ 206,916
Student Grant	1,600	1,188	1,490
Grants	$ 190,920	$ 190,508	$ 208,406
Municipal contribution	$ 389,660	$ 389,660	$ 410,067
CIF Grant	$ -	$ -	$ 15,000

Expenditures	2010 Budget	2010 Actual	2011 Budget
Collection wages	$ 79,750	$ 68,804	$ 87,642
Supervision Wages	85,960	87,621	94,106
Processing Wages	133,700	121,511	148,525
Students	8,200	9,466	10,234
Wages	$ 307,610	$ 287,402	$ 340,507
Advertising & Subscription	$ 1,000	$ 670	$ 1,000
Heating	21,000	16,512	18,000
Hydro	10,000	11,670	13,500
Sewer and Water	1,200	353	500
Telephone	1,800	1,730	1,800
Insurance	30,020	30,020	30,600
Municipal Taxes	25,000	24,942	26,000
Office	1,300	4,117	2,000
Computer Maintenance	300	297	300
Travel / Car allowance	1,200	720	1,000
Building Maintenance	30,000	14,695	42,000
Office and Buildings	$ 122,820	$ 105,726	$ 138,700
Parts and supplies	$ 8,000	$ 4,960	$ 8,000
Bailing Wire	12,000	11,483	12,000
Safety Supplies	300	2,328	1,900
Gas--oil--fuel	55,000	53,427	59,000
Vehicle Maintenance - Truck	12,000	14,187	15,000
Vehicle Maintenance - Bobcat	9,000	8,425	10,000
Maintenance - Bins	2,000	3,011	1,500
Maintenance - Equipment	21,102	34,414	25,000
Equipment Rental	2,000	2,653	2,500
Licences	1,270	1,270	1,270
Vehicles	$ 122,672	$ 136,138	$ 133,170

COCHRANE TIMISKAMING WASTE MANAGEMENT BOARD

BUDGET 2011

Expenditures	2010 Budget	2010 Actual	2011 Budget
Administration Fees	$ 20,000	$ 17,500	$ 20,000
Meal Allowance	200	180	200
Safety Boots	800	1,036	800
Benefits	51,000	44,445	54,800
Fees and Benefits	$ 72,000	$ 63,161	$ 75,800
Transfer to Reserve	-	98,044	-
Interest and Bank Charges	100	320	100
Accounting Fees	7,000	7,000	7,000
Professional Fees	2,800	2,691	3,000
Legal	5,000	1,100	2,500
Miscellaneous Expenses	300	544	500
Waste Recycling Plan	-	-	40,000
Payments on trucks and Loaders	78,908	78,906	78,906
Other Expenditures	$ 94,108	$ 186,605	$ 132,006
Total Expenditures	$ 719,210	$ 779,032	$ 818,183
Total Revenues	$ 719,210	$ 779,032	$ 818,183
Surplus (Deficit)	$ -	-$ 0	$ -

	2007		2008		2009		2010		2011	
	Households	Costs	Households	Costs	Households	Costs	Households	Costs	Households	Costs
	Total Levy of $18.50/HH		Total Levy of $18.50/HH		Total Levy of $20.00/HH		Total Levy of $20.00/HH		Total Levy of $21.00/HH	
Town of Hearst	2,519	$ 46,602	2,576	$ 47,656	2,518	$ 50,360	2,517	$ 50,340	2,513	52,773
Township of Mattice - Val Cote	358	6,623	357	6,605	350	$ 7,000	346	$ 6,920	344	7,224
Township of Opasatika	134	2,479	134	2,479	133	$ 2,660	132	$ 2,640	132	2,772
Town of Kapuskasing	4,124	76,294	4,125	76,313	4,100	$ 82,000	4,098	$ 81,960	4,089	85,869
Township of Moonbeam	554	10,249	555	10,268	548	$ 10,960	549	$ 10,980	556	11,676
Town of Cochrane	2,455	45,418	2,459	45,492	2,440	$ 48,800	2,443	$ 48,860	2,452	51,492
Town of Iroquois Falls	2,256	41,736	2,252	41,662	2,220	$ 44,400	2,217	$ 44,340	2,233	46,893
Municipality of Charlton - Dack	271	5,014	271	5,014	273	$ 5,460	273	$ 5,460	270	5,670
Township of Chamberlain	158	2,923	159	2,942	158	$ 3,160	158	$ 3,160	160	3,360
Town of Englehart	744	13,764	743	13,746	740	$ 14,800	747	$ 14,940	747	15,687
Township of Evanturel	208	3,848	208	3,848	208	$ 4,160	208	$ 4,160	209	4,389
City of Temiskaming Shores	4,685	86,673	4,721	87,339	4,690	$ 93,800	4,706	$ 94,120	4,729	99,309
Town of Cobalt	628	11,618	630	11,655	624	$ 12,480	620	$ 12,400	623	13,083
Municipality of Temagami	493	9,121	501	9,269	500	$ 10,000	469	$ 9,380	470	9,870
	19,587	$ 362,360	19,691	$ 364,284	19,502	$ 390,040	19,483	$ 389,660	19,527	$ 410,067

Appendix B – Waste Recycling Option Scores

Description of Options/Best Practices	Criteria (Score out of 5)					Total Criteria Score	Rationale
	% Waste Diverted	Proven Results	Economically Feasible	Acceptable to Public	Ease of Implementation		
Promotion and Education	5	5	4	5	5	24	Relatively easy and inexpensive to implement when compared to other options, and has proven results.
Following Generally Accepted Principles (GAP) for Effective Procurement and Contract Management	3	5	5	5	3	21	Would not affect diversion rate, but could make recycling more economical for the CTWMB
Depot Enhancements	3	5	3	5	4	20	Installing satellite depots could be relatively expensive
Training of Key Staff	3	4	4	5	4	20	Would not increase diversion rate significantly, but could increase efficiency of current recycling program
Expansion of Acceptable Blue Box Materials	5	5	1	5	3	19	Would improve diversion rate, but is a relatively expensive option.
Ban Recyclables from Garbage Stream	3	4	5	3	3	18	Garbage would require inspection by landfill attendant or collectors. Could face negative attitude from residents.
Assessment of Curbside Collection of Recyclables	4	3	2	5	3	17	Curbside collection would likely raise cost of program, but would provide added convenience for residents and could increase diversion.
Enforcement and Communication at Recycling Depots	3	3	3	4	4	17	Would help mitigate contamination of recycling streams, but has not been proven to significantly increase diversion.
Bag Limits	3	5	4	1	2	15	Could come up against political barriers and negative attitudes by residents.
Clear Bags	3	5	4	1	2	15	Improves diversion, but privacy concerns could be a problem for some residents.