



**KIRKLAND LAKE**  
THE RIGHT ENVIRONMENT

# A Waste Recycling Strategy for The Town of Kirkland Lake Blue Box Program

Final Report  
2012



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## Glossary of Terms and Acronyms

**Bag Tag:** A clearly identifiable sticker approved for sale by resolution of the Council of the Municipality and used to indicate that a fee has been paid.

**Best Practices:** Waste system practices that affect Blue Box and other recycling programs and that result in the attainment of provincial and municipal Blue Box and other material diversion goals in the most cost-effective way possible.

**Blue Box:** A plastic container, often blue in colour, for conveying acceptable recyclable materials. Also refers to a municipal curbside recycling program.

**Bi-Weekly Collection:** The collection of material set out at curbside one day every two weeks.

**Capture rate:** The total quantity of a waste that is diverted for recycling as a percentage of the total quantity of that waste generated.

**CIF:** Continuous Improvement Fund.

**Garbage:** Black/green bag or reusable container of waste set at the curb for disposal in the landfill.

**H.h:** household

**IC&I:** Industrial, Commercial & Institutional. Waste generated from industrial processes or commercial or institutional activities.

**Kg:** The metric weight measurement of Kilogram.

**Markets:** Persons, corporations, organizations or partnerships willing to purchase or accept in exchange for a fee, recyclable material processed through or at a recycling facility.

**MHSW:** Municipal Hazardous or Special Waste. Includes the following materials that are considered hazardous waste materials generated from the municipal sector (paints, solvents, adhesives, pesticides, acids/bases, aerosols, fuels and batteries). Also sometimes referred to as Household Hazardous Waste (HHW).

**MRF:** Material Recovery Facility. This is a facility where recyclable materials from the Blue Box are sorted prior to sending to market.

**OBB:** Old boxboard (post-consumer).

**OCC:** Old corrugated cardboard (post-consumer).



**OES:** Ontario Electronic Stewardship is the Industry Funding Organization (IFO) for Waste Electrical and Electronic Equipment. Companies that are designated as stewards for Waste Electrical and Electronic Equipment can discharge their legal obligations under the Waste Diversion Act by registering, reporting and paying fees to OES.

**OTS:** Ontario Tire Stewardship is the Industry Funding Organization established to develop a diversion program for Used Tires. Companies that are designated as stewards for Used Tires can discharge their legal obligations under the Waste Diversion Act by registering, reporting and paying fees to OTS.

**P&E:** Promotion and Education materials prepared and distributed by a municipality to help promote the proper participation in waste management and waste diversion programs.

**PAYT/User Pay:** Pay as You Throw. Defined as a program in which every individual unit, bag or container set out for collection is paid for directly by the resident, commonly by the purchase of bag tags. Other examples of user pay systems would be the utility based system and the subscription based system.

**PET:** Polyethylene terephthalate. A plastic bottle or container commonly used for carbonated beverages and water.

**Recyclables:** Materials diverted in the Blue Box program or other municipal recycling programs.

**Recycling Depot:** A designated location within a municipality where recyclable material can be dropped off into segregated bins.

**Stewardship Ontario:** Is the Industry Funding Organization (IFO) established to develop diversion programs for both the Blue Box and MHSW Programs.

**Stewards:** Businesses that produce or import products that are sold to consumers that include packaging and/or end of product life wastes.

**Tonne:** The metric weight of 1 tonne is 1,000 kilograms. This is equivalent to approximately 2,200 pounds.

**Waste:** A general term that describes all waste generated including “garbage,” recyclables, organic waste, leaf and yard waste, MHSW, and WEEE.

**Waste Diversion rate:** Waste diversion rate is the percentage of waste diverted from landfill through means of diversion programs (Blue Box, composting, etc). Waste diversion rate is determined by dividing the total quantity of waste diverted by the total amount diverted and disposed.



**Waste Recycling Strategy:** A Best Practice initiated by Waste Diversion Ontario and funded through the CIF to optimize Blue Box programs. It includes forecasting waste and recyclable material generation, planning how to optimize recycling of identified materials and implementing and monitoring a plan to improve overall Blue Box capture rates and performance.

**WDA:** Waste Diversion Act.

**WDO:** Waste Diversion Ontario (WDO) which is a non-crown corporation created under the Waste Diversion Act (WDA) on June 27, 2002. WDO was established to develop, implement and operate waste diversion programs for a wide range of materials (Blue Box Waste, Used Tires, Used Oil Material, Waste Electrical and Electronic Equipment and Municipal Hazardous or Special Waste) under the WDA.

**WEEE:** Waste Electrical and Electronics Equipment. This includes any broken or unwanted electrical or electronic appliances including computers, phones and other items that have reached the end of their usable life.



## 1.0 Introduction

This Waste Recycling Strategy (Strategy) was initiated by the Town of Kirkland Lake (Town), to develop a plan to increase the efficiency and effectiveness of its Blue Box recycling program, maximize the amount of Blue Box material diverted from disposal and to help maximize Blue Box funding provided by the stewards (i.e. producers) of packaging waste (i.e. materials that end up in the Blue Box), as managed by Waste Diversion Ontario (WDO). This Strategy will be updated at least every five years.

The development of a Strategy is considered to be a Best Practice (BP) and acts as a standalone document that functions as a tool for the Town's municipal staff specific to the Blue Box Program. The Continuous Improvement Fund (CIF) *Guidebook for Creating a Municipal Waste Recycling Strategy* (March 2010) was used to help develop this Strategy, along with considerable feedback from municipal staff and Review of KPMG "Blue Box Program enhancement and best practice Assessment Report (2007)". This Strategy uses the most recent WDO Datacall data (2010 reporting year) as its starting point. It should be noted from the outset that all reference to diversion rates is specific to residential Blue Box diversion rates and does not incorporate overall waste diversion rates.

The implementation of Best Practices, such as completing this Strategy and monitoring the Town's Blue Box program, as defined by WDO can help maximize Blue Box funding. According to the CIF webpage, complying with BP standards will represent 15% of the 2011 blue box funding allocation, rising to 25% of the allocation in 2012. Ensuring compliance with BP standards will mean that the Town will either maintain or improve the funding allocated to the Town. Failure to comply means Town Blue Box funding allocation will be reduced. The method WDO collects information from municipalities on compliance with blue box best practices is through a series of Best Practice questions in its annual Datacall.

Implementing and maintaining Blue Box program monitoring initiatives outlined within this Strategy helps secure funding for the Town in the future.

Specifically, the purpose of this Strategy is to:

1. Act as a high level strategic roadmap and planning document to assist the Town with future decision making specific to the Blue Box program;
2. Assess current performance of the Blue Box program (diversion rates and programs costs) that can be used as a baseline to assess future performance (2013-2017);
3. Set long-term Blue Box diversion goals and cost targets;
4. Identify and implement Best Practice initiatives to help improve future performance of the Blue Box program; and
5. Help the Town maximize WDO Blue Box funding.



## 2.0 Overview of the Planning Process

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

The development of the Strategy included the following steps:

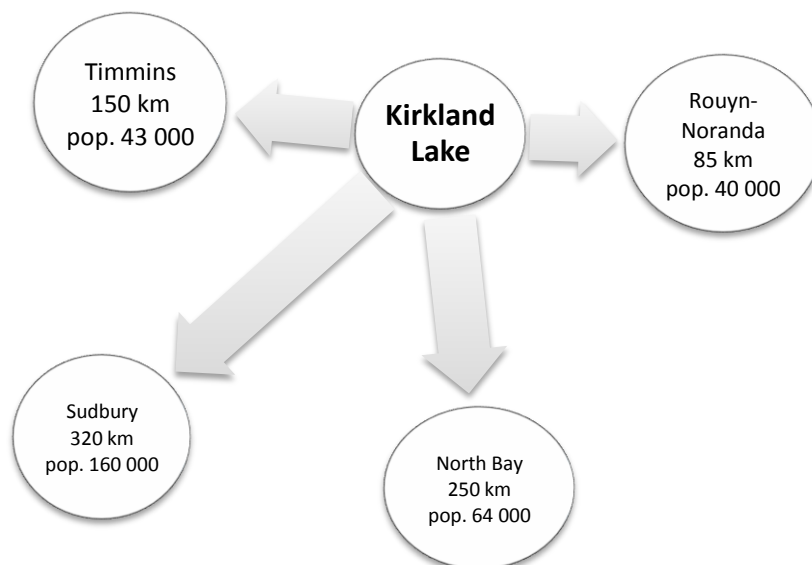
- Gather relevant baseline data from the Town;
- Assemble staff input/ranking on various waste recycling options;
- Prepare Draft Strategy;
- Incorporate staff feedback; and
- Prepare final Strategy.

The next steps include:

- Staff/Council endorsement of this Strategy; and
- Council decision on timing and which Blue Box supporting initiatives to implement.

## 3.0 Study Area

The study area for this Strategy is the Town of Kirkland Lake, located in north-eastern Ontario. The Town is approximately 600 km north of Toronto, along highway 66, just off Highway 11. Kirkland Lake's proximity to larger urban centers is outlined in the diagram below. Kirkland Lake's primary industries are Government related jobs, educational institutes, forestry and mining.





This Strategy addressed the following sectors:

- Low density households (71.5% of households);
- Schools & Nursing Homes (except those under Reg. 102/94)

#### **4.0 Public and Stakeholder Consultation Process**

Public and stakeholder groups included in this consultation included:

- Municipal staff;
- Draft Report review by Council
- Posting of Final Report on the municipal website.

#### **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 including the Town of Kirkland Lake. 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 Town faces some Blue Box recycling challenges that this Strategy can address including:

- Distance to end markets;
- Limited availability of private contractors (collection/processing)
- Distance to training/workshops for municipal staff;
- Limited staff resources and budget;

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 Town. These are presented in Table 6.1.



Table 6.1 Towns Recycling Goals and Objectives

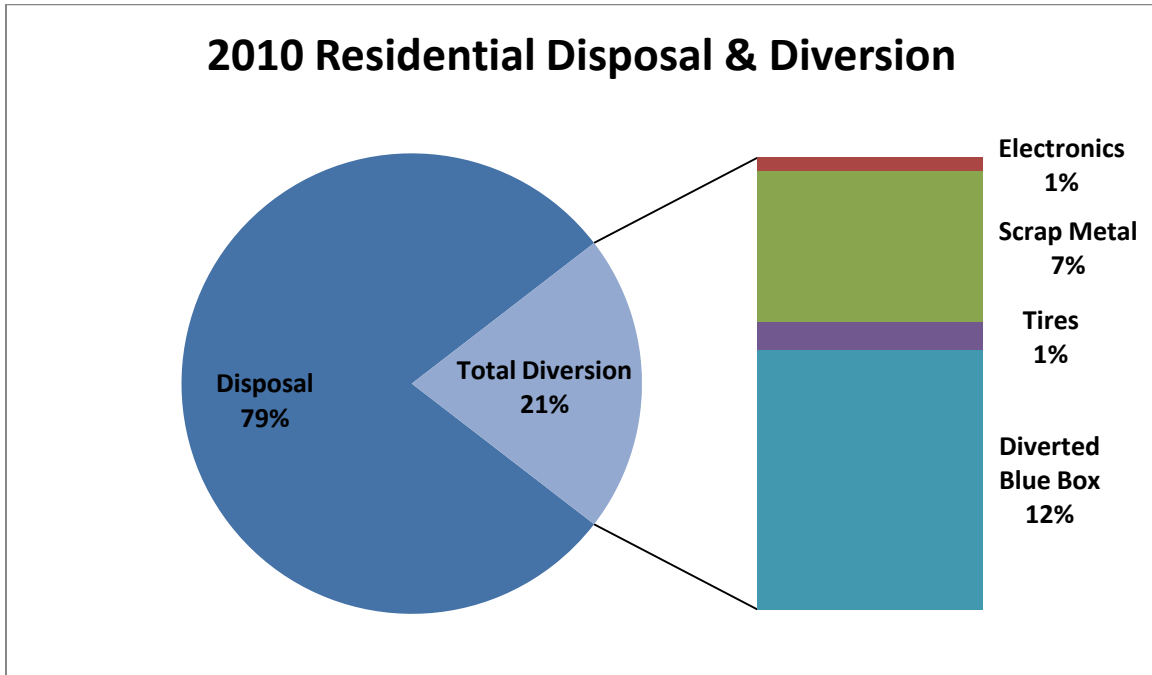
Waste Recycling Goals and Objectives	
Goals	Objectives
To maintain the Blue Box Program's cost-effectiveness while maximizing program efficiency	Aim to keep costs low while allocating budget to implement enhancements to the existing Promotion & Education (P&E) to 're-launch' the existing Blue Box program and increase tonnages
To maximize capture and diversion of residential Blue Box materials.	<p>In <b>2013 to 15</b> aim to increase our <b>diversion</b> from the current 12% (see Table 7.2) up to at least <b>15%</b> of residential waste, <b>which will create a capture rate of close to 40%</b> of available blue box materials. This objective will be met by increasing promotion, targeting specific materials (such as fibres &amp; plastics) and expanding residential sectors to include schools in existing residential Blue Box collection routes.</p> <p>From <b>2015 to 2018</b> consider setting target to <b>divert 20%</b> and <b>capture rate close to 55%</b> of available blue box materials through support from integrated diversion programs and enforcement by incentive mechanisms at the curbside (bag limits, user fees, landfill and curbside bans). See Table 7.8 b</p>

Throughout this Strategy, references are made to Blue Box capture rate and Blue Box diversion rate.

The **Blue Box diversion rate** is calculated using the total residential blue box tonnes divided by the total residential waste tonnes.

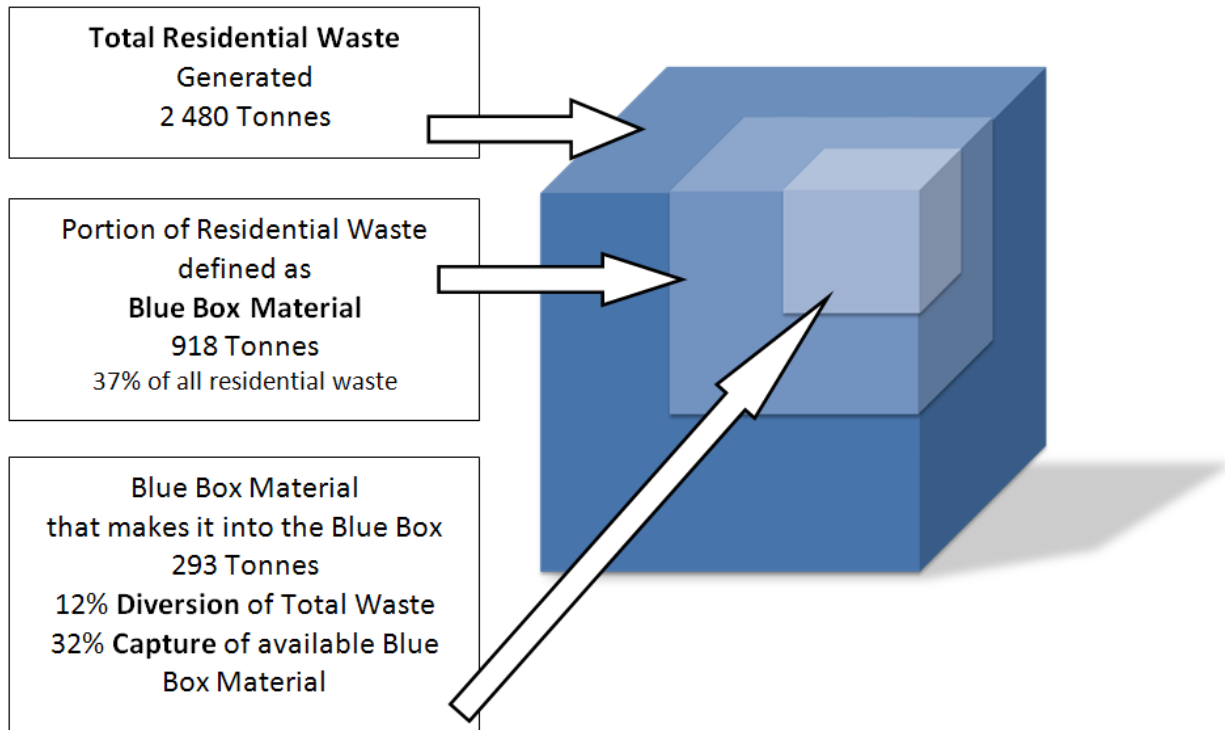
The Blue Box diversion rate in this report provides specific reference to Kirkland Lakes Blue Box program. The 12% for Blue Box Diversion does not include other divertible tonnes captured through leaf and yard waste, backyard composting, MHSW, scrap metal, WEEE or commercial sector recycling.

Table 6.2



The **Blue Box capture rate** is calculated using the amount of blue box recyclables collected divided by the total amount of blue box recyclables produced or generated.

The Blue Box capture rate also provides specific reference to Kirkland Lakes Blue Box program and does not include other divertibles. The Blue Box capture rate represents the Blue Box tonnes that the Town is capturing out of the waste stream based on Waste Diversion Ontario composition data for Rural Regional programs.



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

### 7.1 Community Characteristics

The Town has a population of approximately 9,200. It has about 3,500 households which include about 2,800 single family/low density households and 700 multi-residential households.

### 7.2 Existing Waste Management Services

The Town provides waste management services including collection, diversion and disposal to low density households and much of the IC&I sector.

Kirkland Lake provides the following:

- Weekly collection of garbage (private forces);
- Bi-weekly collection and processing of Blue Box material by a private contractor (combined contract);
- Drop off depot for recyclables at privately owned and operated MRF located in the Town;
- Ownership and administration of municipal landfill site with supporting tipping fees;

- Support of “at home” waste diversion programs, such as backyard composting with the provision of backyard composters (cost recovery), and promoting grass cycling.
- Drop off depot at landfill site for waste tires, electronics, refrigerant containing appliances, empty outdated propane containers and clean wood waste

Blue Box material is collected and processed by a local private sector contractor (TNR). The Town has been working from an annual renewal arrangement with TNR. The Contractor retains 100% of revenue from the sale of the Town’s material. The contract operates on a cost per month basis.

**7.3 The Town collects the following Blue Box material:**

Containers	Fibres
<ul style="list-style-type: none"> <li>• Glass bottles and jars</li> </ul>	<ul style="list-style-type: none"> <li>• Newspaper, flyers, magazines, inserts and office paper.</li> </ul>
<ul style="list-style-type: none"> <li>• Metal food and beverage containers</li> </ul>	<ul style="list-style-type: none"> <li>• Boxboard</li> </ul>
<ul style="list-style-type: none"> <li>• PET 1 plastic bottles only</li> </ul>	<ul style="list-style-type: none"> <li>• Corrugated Cardboard and Brown Paper Bags</li> </ul>

Currently, the Town offers its single family residents 14 gallon boxes; at a reduced rate of \$5/box.

**7.4 Current Waste Generation and Diversion**

Table 7.1 depicts total waste quantities managed by the Town 2010 as gathered from the Town’s most recent Datacall submissions. This table does not include information on self-management of wastes by residents (e.g. backyard composting and deposit return).

**Table 7.1 2010 Total Residential Waste Quantities**

Waste Material	Tonnes (2010)
Curbside Garbage Collection (Residential and ICI)	2,486
Curbside Blue Box Marketed	293
<b>Other Divertibles</b>	<b>Tonnes (2010)</b>
Electronics Depot	13.97
Tire Depot	27.71
Scrap Metal Depot	166.54
<b>Overall Tonnes Managed by the Town</b>	<b>2,987.22</b>

The Town combines waste tonnages from the residential and commercial sectors during collection. To estimate residential waste quantities, reference was made to the 2008 Stats Canada Waste Management Industry Survey outlining residential waste generation rates. Based on the reported Ontario residential rate for disposal



averaged per capita per year, it can be estimated that the Town average residential disposal rate is 2,187 tonnes per year, reflecting 2.5 persons per household and 3,500 households (650kg/h.h./year). This data was further confirmed by the Town after gathering informal weights from the curbside trucks on Dec. 5<sup>th</sup> and Dec. 9<sup>th</sup> of 2011.

The Town reported 2,486 tonnes of curbside collected waste for 2010. Using the calculated residential waste quantity of 650kg/h.h./year (2,187 tonnes), it has been estimated that approximately 299 tonnes reflects IC&I disposed wastes.

As shown above in table 7.1 the Town managed a total of 2,987 tonnes of waste (garbage and divertibles) respectively. This represents an overall diversion rate of all material managed by the Town (inclusive of IC&I collected material) of 16% (501.22 divertible tonnes/2,987.22 total tonnes) and a residential **Blue Box diversion rate of 12%** (293 Blue Box tonnes/2,480 residential wastes collected).

Table 7.2 summarizes the total waste generation and the **Blue Box diversion rate**.

Table 7.2 Town's Residential Blue Box Diversion Rate (2010)\*

<b>2010 Residential Solid Waste Generated and Diverted through Blue Box</b>		
<b>Residential Waste Stream/ Blue Box Collected Material</b>	<b>Tonnes</b>	<b>Percent of Total Waste</b>
Total Residential Waste Generated (625kg/hh/yr waste + Blue Box)	2,480	-
Papers (ONP, OMG, OCC, OBB and fine papers)	252	10.2%
Metals (aluminum, steel, mixed metal)	13	0.5%
Plastics (containers, film, tubs and lids)	18	0.7%
Glass	10	0.4%
<b>Total Blue Box material diverted</b>	<b>293</b>	<b>12%</b>

\*Reflecting the assumed disposal rate of 650kg/h.h./yr. for 3,500 households

As a result, the Town's 2010 household recovery rate for Blue Box is about 83 kg per household per year. Comparably, the Provincial average is 180kg per household per year (WDO 2010).

Waste Diversion Ontario divides municipalities into a number of municipal groupings for comparison purposes. The Town is included in the Rural Collection North grouping with 31 other municipalities.



A more applicable comparison is to calculate the total tonnes collected from the WDO Rural Collection North Municipal Grouping to represent other programs of similar size, geographic location and demographics as Kirkland Lake. Table 7.3 depicts that the average Blue Box recovery rate for the 33 municipalities within the Rural Collection North Grouping is 121 kg per household per year representing 38 kg more than the Town of Kirkland Lake.

**Table 7.3 Rural Collection North Blue Box Recovery Rate (2010)**

Rural Collection - North	2010 Households	2010 Waste Generated	2010 kg/capita Waste Generation	2010 Blue Box Tonnes	2010 Blue Box kg/hh
HEAD, CLARA AND MARIA, TOWNSHIPS OF	332	187	596	38	114
DRYDEN, CITY OF	3,554	3,298	402	653	184
NORTHEASTERN MANITOULIN & ISLANDS, TOWN OF	2,065	1,249	405	347	168
ARMOUR, TOWNSHIP OF	2,176	1,141	396	201	92
MAGNETAWAN, MUNICIPALITY OF	1,955	903	421	152	78
PRINCE, TOWNSHIP OF	442	304	303	85	192
KILLARNEY, MUNICIPALITY OF	933	328	431	35	38
ESPANOLA, TOWN OF	2,410	2,058	387	249	103
KENORA, CITY OF	6,609	4,152	330	1,130	171
CENTRAL MANITOULIN, TOWNSHIP OF	1,552	951	416	271	175
SPANISH, TOWN OF	421	313	422	60	143
TRI-NEIGHBOURS	1,312	963	365	193	147
POWASSAN, MUNICIPALITY OF	1,342	1,152	364	299	223
TIMMINS, CITY OF	18,401	13,426	302	2,256	123
BLIND RIVER, TOWN OF	2,812	1,438	377	353	126
WEST NIPISSING, MUNICIPALITY OF	7,045	5,040	365	885	126
SIoux LOOKOUT, TOWN OF	1,493	1,312	253	121	81
<b>KIRKLAND LAKE, TOWN OF</b>	<b>3,500</b>	<b>2,187</b>	<b>238</b>	<b>293</b>	<b>84</b>
PAPINEAU-CAMERON, TOWNSHIP OF	524	356	325	48	92
CALLANDER, MUNICIPALITY OF	1,542	1,185	328	209	136
EAST FERRIS, TOWNSHIP OF	1,894	1,507	334	289	153
MARATHON, TOWN OF	1,491	1,692	438	188	126
CHISHOLM, TOWNSHIP OF	610	419	318	68	111
ELLIOT LAKE, CITY OF	2,431	3,636	316	496	204
WAHNAPIITAE FIRST NATION	40	20	336	3	75
FORT FRANCES, TOWN OF	3,385	3,006	371	424	125
NAIRN & HYMAN, TOWNSHIP OF	305	127	304	17	56
SABLES-SPANISH RIVERS, TOWNSHIP OF	1,739	992	304	127	73
ST.CHARLES, MUNICIPALITY OF	922	442	324	57	62
ATIKOKAN, TOWNSHIP OF	1,583	873	296	60	38
BALDWIN, TOWNSHIP OF	352	172	291	16	45
RAINY RIVER FIRST NATIONS	105	115	287	9	86
SAULT NORTH WASTE MANAGEMENT COUNCIL	4,533	1,722	267	32	7
<b>Total&gt;</b>	<b>79,810</b>		<b>Total&gt;</b>	<b>9,664</b>	
				<b>Average&gt;</b>	<b>121</b>



Table 7.4 shows that the Town’s current Blue Box diversion rate from the total residential waste generated is below average for its grouping as depicted in the CIF guidebook referencing 2009 group averages. The range for Rural Collection North is 0 to 38%

**Table 7.4 Residential Blue Box Diversion Rate Comparison to Rural Collection North Rate**

<b>Average Blue Box Diversion Rate (2010)</b>	
<b>Municipality of Kirkland Lake (2010)</b>	<b>12%</b>
<b>Municipal Grouping: Collection North (2009)</b>	<b>20.29%</b>

In 2010 the Town reported (WDO data call) Gross cost to manage the Blue Box program was approximately \$134,615 (inclusive of processing/collection contract, administration, and the promotion and education program). The Town does not receive revenue from the sale of material.

As a point of reference, in 2010, the reported composite index for the sale of baled post-consumer residential materials averaged \$124/tonne. Specific to the Rural Collection North Grouping, only 13 programs out of a reported 33 programs received revenue from the sale of Blue Box material, reflecting a group revenue average of approximately \$15/tonne. Details are depicted in Table 7.5.





**Table 7.5 Revenue for Rural Collection North Programs (2010)**

Rural Collection - North	Blue Box Tonnes	Municipal Revenue From Sale of Material	Revenue Per Tonne (2010)
ARMOUR, TOWNSHIP OF	201	\$ 32,425.90	\$ 161.38
ATIKOKAN, TOWNSHIP OF	60	\$ -	\$ -
BALDWIN, TOWNSHIP OF	16	\$ -	\$ -
BLIND RIVER, TOWN OF	353	\$ -	\$ -
CALLANDER, MUNICIPALITY OF	209	\$ 112.00	\$ 0.54
CENTRAL MANITOULIN, TOWNSHIP OF	271	\$ 480.00	\$ 1.77
CHISHOLM, TOWNSHIP OF	68	\$ 56.00	\$ 0.83
DRYDEN, CITY OF	653	\$ 8,243.71	\$ 12.63
EAST FERRIS, TOWNSHIP OF	289	\$ 1,040.07	\$ 3.59
ELLIOT LAKE, CITY OF	496	\$ 96.00	\$ 0.19
ESPANOLA, TOWN OF	249	\$ -	\$ -
FORT FRANCES, TOWN OF	424	\$ -	\$ -
HEAD, CLARA AND MARIA, TOWNSHIPS OF	38	\$ -	\$ -
KENORA, CITY OF	1,130	\$ 21,162.26	\$ 18.73
KILLARNEY, MUNICIPALITY OF	35	\$ 385.00	\$ 11.13
KIRKLAND LAKE, TOWN OF	293	\$ -	\$ -
MAGNETAWAN, MUNICIPALITY OF	152	\$ -	\$ -
MARATHON, TOWN OF	188	\$ -	\$ -
NAIRN & HYMAN, TOWNSHIP OF	17	\$ -	\$ -
NORTHEASTERN MANITOULIN & ISLANDS, TOWN OF	347	\$ -	\$ -
PAPINEAU-CAMERON, TOWNSHIP OF	48	\$ -	\$ -
POWASSAN, MUNICIPALITY OF	299	\$ -	\$ -
PRINCE, TOWNSHIP OF	85	\$ -	\$ -
RAINY RIVER FIRST NATIONS	9	\$ -	\$ -
SABLES-SPANISH RIVERS, TOWNSHIP OF	127	\$ -	\$ -
SAULT NORTH WASTE MANAGEMENT COUNCIL	32	\$ 6,621.80	\$ 208.43
SIOUX LOOKOUT, TOWN OF	121	\$ 1,515.00	\$ 12.55
SPANISH, TOWN OF	60	\$ -	\$ -
ST.CHARLES, MUNICIPALITY OF	57	\$ -	\$ -
TIMMINS, CITY OF	2,256	\$ 1,615.00	\$ 0.72
WAHNAPITAE FIRST NATION	3	\$ -	\$ -
TRI-NEIGHBOURS	193	\$ -	\$ -
WEST NIPISSING, MUNICIPALITY OF	885	\$ 60,147.39	\$ 67.93
Totals>	9,665	\$ 133,900.13	
Total Municipalities >	33		\$ 15.16

As Table 7.6 shows, 2010 annual recycling costs for the Town are **below** the Net average cost for Rural Collection North programs for the 2009 WDO reporting year and are also lower than the proposed costs as per the CIF guidebook (2009). It is anticipated that the Town's lower than average costs reflect a smaller size collection area and an extended contract which may not totally reflect true inflationary increases.

**Table 7.6 Municipality's Blue Box Costs\* vs. Rural Collection North Costs**

<b>Recycling Cost (per tonne)</b>	
Town of Kirkland Lake Costs (2010)	<b>\$459</b>
Average Net Costs for Rural Collection North Programs (WDO Datacall 2009)	\$508
Proposed Reasonable Cost for Rural Collection North Programs (based on CIF guidebook-2009)	\$540

It is anticipated that costs will increase with a new contract and normal rise in cost of living allowances for contractors.

### **7.5 Potential Waste Diversion:**

The Town's current waste composition was estimated using the Rural Collection North waste composition data, as represented in the CIF Guidebook. It is anticipated that glass composition may be somewhat higher than actual Town composition due to the LCBO bottle return program.

Composition data focus is specific to residential collected wastes and excludes larger item components such as construction and demolition material (C&D) scrap metal, electronics and hazardous waste and tires. On this basis it is estimated, that approximately 2,480 tonnes of waste (residential garbage, and blue box) was generated in 2010.

Table 7.7 Potential Available Blue Box Material from the Town of Kirkland Lake

Waste/ Resource Material	Composition % (Rural Collection North Audit Data)*	Residential Waste (tonnes)	Total Blue Box Material in Waste Stream (tonnes)
Papers (ONP, OMG, OCC, OBB and fine papers)	23	2,480	570
Metals (aluminum, steel, mixed metal)	3		74
Plastics (containers, film, tubs and lids)	8		198
Glass (referencing City of Barrie recent audit data of 2009 – pre LCBO program 4%)	3		74
<b>Total Blue Box Materials</b>	<b>37</b>	<b>2,480</b>	<b>918</b>

Table 7.7 applies the Rural Collection North waste composition data (with the exception of glass for which Barrie’s 2009 audit data was used) to reflect the Town’s curbside program. Based on this, it can be estimated that approximately 918 tonnes of Blue Box materials are available in the Town’s waste stream with the majority of the material representing paper and plastics. It can also be estimated that the current capture rate of Blue Box materials is about 32% (i.e. 293 current Blue Box tonnes/918 available Blue Box tonnes).

As depicted in the following Table 7.8 Rural Collection North programs have a recommended target **capture rate** of 70% of the Blue Box material from the residential waste stream (as per CIF guidebook). In the case of the Town, this represents approximately 642 tonnes (i.e. 918 x 70%= 642). The Town would need to capture an additional 350 tonnes of Blue Box material from the residential waste stream to achieve this target (i.e. 642-293=350 remaining Blue Box tonnes)

**Table 7.8 Available Blue Box Material from the Town's Residential Garbage Stream (70% Target Capture Rate)**

<b>Current and Potential Diversion</b>						
<b>Waste/Resource Material</b>	<b>Composition (%) (Rural Collection North Audit Data)</b>	<b>Residential Waste (tonnes)</b>	<b>Total Blue Box Material in Waste Stream (tonnes)</b>	<b>Target Blue Box Capture Rate (%)</b>	<b>Blue Box Material Available for Diversion</b>	<b>Blue Box Material Currently Diverted (tonnes)</b>
Papers (ONP, OMG, OCC, OBB and fine papers)	23	2,480	570	70.00	399.28	252.20
Metals (aluminum, steel, mixed metal)	3		74		52.08	12.80
Plastics (containers, film, tubs and lids)	8		198		138.88	17.75
Glass (referencing City of Barrie recent audit data of 2009)	3		74		52.08	10.00
<b>Total Blue Box Materials</b>	<b>37</b>	<b>2,480</b>	<b>918</b>	<b>70.00</b>	<b>642.32</b>	<b>292.75</b>

Capturing 70% of Blue Box material from the Town's residential waste stream would raise its Blue Box diversion rate to close to 26% (i.e. (293 current Blue Box tonnes + 350 additional Blue Box tonnes)=642/ 2,480 residential tonnes) when excluding all other divertibles.

It is anticipated that a 70% target will be a challenge for the Town. A more realistic short term goal (2013 to 2018) for the Town program is to strive toward a 55% **capture rate** (currently 32%) of Blue Box material from the waste stream which represents approximately an additional 211 tonnes of available Blue Box material from the waste stream. (i.e. 504-293=211 tonnes), as depicted in the following Table 7.8b

Table 7.8 (b) Available Blue Box Material from the Town's Residential Garbage Stream (55% Target Capture ate

Current and Potential Diversion						
Waste/Resource Material	Composition (%) (Rural Collection North Audit Data)	Residential Waste (tonnes)	Total Blue Box Material in Waste Stream (tonnes)	Target Blue Box Capture Rate (%)	Blue Box Material Available for Diversion	Blue Box Material Currently Diverted (tonnes)
Papers (ONP, OMG, OCC, OBB and fine papers)	23	2,480	570	55.00	313.72	252.20
Metals (aluminum, steel, mixed metal)	3		74		40.92	12.80
Plastics (containers, film, tubs and lids)	8		198		109.12	17.75
Glass (referencing City of Barrie recent audit data of 2009)	3		74		40.92	10.00
<b>Total Blue Box Materials</b>	<b>37</b>	<b>2,480</b>	<b>918</b>	<b>55.00</b>	<b>504.68</b>	<b>292.75</b>

Capturing 55% of Blue Box material from the Town's residential waste stream would raise its Blue Box diversion by an additional 211 tonnes

## 7.6 Anticipated Future Waste Management Needs:

The following Table 7.9 depicts the expected growth rates for solid waste generation and Blue Box material recovery (based on a projected 55% Blue Box capture rate).

Table 7.9 Forecasting 55% 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	9,200	9,669	10,163
Total Waste	2,480	2,607	2,739
Blue Box Material Available	505	530	557

## 8.0 Planned Recycling System

The following section outlines some possible initiatives that could be implemented from 2013-2018 to help increase Blue Box diversion, capture and minimize cost increases.



Opportunities exist to increase Blue Box capture for the Town. To improve overall performance it will be important to focus on **maximizing the capture of recyclables using current program elements** and then phase in some new initiatives to the existing program to spur further capture of recyclables.

Potential Priority initiatives could include improvements to:

- Increases to program monitoring (truck weighing and Blue Box set out data);
- Explore alternative processing options;
- Expand the range of material to include additional plastics;
- Re-launch the Blue Box program with new P&E (Program and education) material;
- Enhance material capture to include new locations and P&E programs aimed at targeting residential sectors (curbside participation, multi-residential, schools, public space, etc.)
- Consider generating a municipal calendar;
- Consider participating in upcoming Home Shows (displays, calendar hand-outs/flyers and booth)
- Develop a new RFP to reflect the waste recycling strategy, consider a new collection and possibly a separate processing contract;
- Take advantage of the CIF funded RFP preparation services;
- Increase/improve signage at the drop off depot currently located at the privately owned MRF.

Potential Future initiatives to consider could include:

- Bag limits for residential wastes;
- Cardboard bans;
- Mandatory recycling by-law to support existing garbage by-law;
- Increase in tipping fees at the landfill site;
- Phase in a Pay-As-You-Throw program with max bag limit;
- Weekly Blue Box collection; and/or
- Apply to CIF for funding of a rationalization study to establish a centralized Blue Box transfer facility within the Town limits to transfer material to a third party MRF to increase processing potential for additional material (plastics).

### **8.1 Possible Strategy to Increase Recycling**

As previously mentioned under goals and objectives in section 6, a reasonable preliminary goal (2013-15) would be a **15%** Blue Box diversion rate from residential waste stream (i.e. about 3 percentage points more than current rate). This would result in a capture rate of close to **40%**.

- This is easily expected to be accomplished within the context of the current program with supporting P&E enhancements targeting fibre and plastic material.



Our second future goal (2015-18) would be to achieve a **20%** diversion rate of residential waste stream as a result of the Blue Box program. This would result in a capture rate of close to **55%**.

- It is expected that this would require enforcement incentives (bag limits, landfill bans, mandatory recycling by-laws), supported by an enhanced Blue Box program to include additional materials and an expanded promotion and education program. Additionally, consideration to increasing collection frequency with a new collection tender would also drive up Blue Box capture provided that it is a cost effective solution to the Town.

Table 8.1 highlights the estimated number of tonnes that would need to be captured to attain the current rate and then **15%** and **20%** diversion rates of **Blue Box material** from the residential waste stream. It includes consideration of the impact of population growth in the Town.

**Table 8.1 Forecasting Diversion Rates based on Residential Waste and Blue Box Material**

<b>Capture Rates to Meet Waste Diversion Goals</b>			
	<b>% Waste Diversion</b>		
	<b>Current (12)</b>	<b>15</b>	<b>20</b>
	<b>tonnes captured/year</b>		
<b>2011</b>	<b>293</b>	<b>372</b>	<b>496</b>
<b>2015</b>	<b>308</b>	<b>391</b>	<b>521</b>
<b>2020</b>	<b>323</b>	<b>411</b>	<b>548</b>

Table 8.2 highlights the impact of attaining a 15% Blue Box diversion rate in terms of additional tonnes required to be diverted per household and the impact on the current residential waste program.

**Table 8.2 Forecasting Diversion Rates of Household Wastes through the Blue Box**

<b>Meeting 15% Diversion Rate</b>		
Current Diversion (12%)	tonnes/year	293
15% Diversion	tonnes/year	372
15% Diversion additional tonnes	tonnes/year	79
Annual additional kg per household	kg/year	28.3
Weekly additional kg per household	kg/week	0.5

## **8.2 Overview of Planned Initiatives**

A number of waste recycling options and Best Practices that could be implemented and/or expanded were reviewed with Town staff 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.

This exercise does not commit to a final decision but acts as a guide for the Town 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 (2013-2015)

<b>Possible Priority Initiatives (Immediate Future 2013-2015)</b>				
<b>Initiative</b>	<b>Estimated Implementation Cost</b>	<b>Estimated Annual Operating Cost</b>	<b>Implementation Time Line</b>	<b>Comments</b>
<b>Training of Key Program Staff</b>	Staff time	Free training is available from CIF (CIF Blue Box Recycler Training Courses). Fees for MWA and OWMA conferences.  Estimate \$2,000/year in travel costs and \$1,500 for conferences.	Ongoing – staff have attended some recycler training courses	Better educated staff will be able to develop a high quality waste and Blue Box collection tender and better manage the overall program .
<b>Expand range of materials to Target Plastic and Paper Material out of the waste stream</b>	Staff time and P&E costs. Apply to CIF for funding to offset costs.  Estimate \$1,500 in advertising and possibly \$1,000 in disbursement costs for mileage of volunteers/service clubs.	\$500 to maintain program targeted material P & E  Contracted increases approximately \$3,000	2013-2016	Work with collection contractor to determine areas requiring more attention.





<b>Possible Priority Initiatives (Immediate Future 2013-2015)</b>				
<b>Initiative</b>	<b>Estimated Implementation Cost</b>	<b>Estimated Annual Operating Cost</b>	<b>Implementation Time Line</b>	<b>Comments</b>
<b>Enhance material capture through P &amp; E focusing on expanded sites</b>	Staff time and P&E costs. Apply to CIF for funding to offset costs.  Estimate \$1,500 in advertising	Ongoing normal P&E costs  Contracted increases approximately \$4,000	On going	Non-enforcement means of expanding diversion rates
<b>Consider Municipal Calendar</b>	Staff time, Potential CIF funding \$5,000	\$500/ year for website alterations Hard Copy approximately \$4,000	On going	Hard copy can be expensive but rewarding
<b>Enhance Depot Signage</b>	Staff time and capital of signs. Apply to CIF for funding.  Estimate \$6,500 for signage.	None	2013 -14	Use graphics instead of a lot of text. Consider this if not planning on relocating to a central transfer station location.

Table 8.4 Future Initiatives (2013-2018)

<b>Possible Future Initiatives (2013-2018)</b>				
<b>Initiative</b>	<b>Estimated Implementation Cost</b>	<b>Estimated Annual Operating Cost</b>	<b>Implementation</b>	<b>Comments</b>
<b>Following Generally Accepted Principles (GAP) for Effective Procurement and Contract Management for MRF RFP</b>	Use CIF template and staff time. Possible peer review by outside consultant \$3,500	Not applicable	2013	Develop an RFP for collection services using CIF funding for RFP development  Apply to CIF for funding of a Transfer Station rationalization study to determine most effective means of managing the Town's material.
<b>Study additional potential expansion of recyclable materials</b>	Staff time and P&E costs. Apply to CIF for funding to offset costs.		2013	Non-enforcement means of expanding diversion rates
<b>Bag limits and User Fees</b>	Staff time and program launch with specific P&E	Flyers and newspaper ads \$2,500	2014 to 2018	Start with bag limit
<b>Updated Waste By-Law (includes mandatory recycling and diversion)</b>	Staff time	Not applicable	2013	Strengthen current by-law to include mandatory requirement to divert Blue Box wastes and consider implementing curbside bans.
<b>Landfill and waste collection Bans &amp; Increases to Tipping Fees</b>	Staff time	Not applicable	2014 to 2015	Target cardboard and support it with a bans at the curbside. Review and consider other items.

Fundamental best practices, outlined in the CIF guidebook for creating a Waste Recycling Strategy are based on the KPMG /RW Beck Best Practices Report 2007. These best practices are for municipalities to use a combination of policy mechanisms and incentives to stimulate recycling and discourage excessive generation of waste.

### 8.3 Contingencies

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

The Future initiatives will be decided as an outcome of the waste and Blue Box



material collection RFP or new processing contract. If no future initiatives are implemented then the Town will revert to potential Priority initiatives.

## 9.0 Monitoring and Reporting

The monitoring and reporting of the Town recycling program is considered a “Blue Box program fundamental Best Practice” and is a component of this Waste Recycling Strategy.

Once implementation of the Strategy begins, the performance of the Strategy will be monitored and measured against the baseline established as part of this Strategy for the current system. Once the results are measured, they can be reported to Council and the public annually using the Strategy format and updating the details. Some suggested approaches for monitoring the Town’s Strategy is outlined in Table 9.1.

**Table 9.1 Blue Box Monitoring Strategy**

<b>Recycling System Monitoring</b>		
<b>Monitoring Topic</b>	<b>Monitoring Tool</b>	<b>Frequency</b>
Meet regularly with collection contractor	Meet with collection contractor to identify any problems with Blue Box collection(e.g. contamination)	Bi-Monthly for an hour or have contractor report bi-weekly
Measurement of Blue Box materials captured.	Documented total weight data as outlined in this Strategy and compare it to target capture rates	Annual summary using Strategy format.
Diversion rate (Blue Box)	Document BB Diversion Rate Formula: (Blue box materials diversion) ÷ Total residential waste generated * 100%	Annual summary
Program participation	Documented Curbside Set-out Studies or Curbside Participation Studies to determine frequency of curbside set out, number of boxes, fullness of boxes, and type of boxes used.	Once every 1-2 years, using students or collection contractor to assist.
Composition Verification	Consider conducting a curbside waste audits to verify program waste composition.	Once.
Program Cost	Document Blue Box Program Costs	Annual summary
Customer satisfaction	Customer survey (e.g., telephone); tracking calls/complaints received to the municipal office.	Once every 3 years.
Opportunities for improvement	Customer survey (e.g., telephone); tracking calls/complaints received to the municipal office	On-going



Recycling System Monitoring		
Monitoring Topic	Monitoring Tool	Frequency
Planning activities	Describe what initiatives have been fully or partially implemented, what will be done in the future	Annual summary
Review of Strategy	A periodic review of the Strategy to monitor and report on progress, to ensure that the selected initiatives are being implemented, and to move forward with continuous improvement	Annual summary  Update Strategy every 5 years

## 10.0 Conclusion

There is room to improve the Blue Box diversion rate for the Town. As a result, a phased process to increase the capture 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 also could be implemented.

It is recommended that the initiatives be reviewed annually with Council and implemented as budget allows. It is recommended that this Strategy be fully updated in 2018.