Ontario, Canada
Aylmer
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A Waste Recycling Strategy for The Town of Aylmer

May 2011

Prepared by:

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TOWN OF AYLMER

COUNCIL RESOLUTION

06 Jun 2011

MOVED BY: D. Barker

SECONDED BY: J. Vandermeersch

That the Town of Aylmer Council endorses the Waste/Recycling Strategy Plan dated May 2011 for the Town of Aylmer as presented by Paul van der Werf, 2cg Waste Management Consulting Services.

Head of Council

Clerk

Resolution No. 221 -11

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1.0 Introduction

This Waste Recycling Strategy (Strategy) was initiated by the Town of Aylmer (Town) to develop a plan to increase the efficiency and effectiveness of its recycling program and to maximize the amount of Blue Box material diverted from disposal. This plan will be updated at least every five years.

Specifically, the purpose of this Strategy is to:

- Maximize Best Practices funding in the 2011 Datacall year;
- Identify and demonstrate continuous improvements toward Best Practices;
- Clarify long term Blue Box diversion goals; and
- Identify cost effective options to maximize Blue Box diversion for the Town.

The Town faces a few waste management challenges that this Strategy can address including:

- Current collection & processing contracts expire May 31, 2011; and
- Upcoming new processing opportunity with London's Materials Recovery Facility (MRF) (Manning Drive location).

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

2.0 Overview of the Planning Process

This Strategy was prepared by environmental consulting firm 2cg Inc and Town staff.

The development of the Strategy included the following steps:

- Gather relevant data from the Town;
- Meet with Town representatives to review data and walk through Strategy format;
- Gather and compile additional information from the Town to prepare draft Strategy;
- Submit Draft report to the Town to seek input;
- Conduct Open House (15 March 2011) at the Town Hall; and
- Prepare final Strategy.

The next steps include:

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

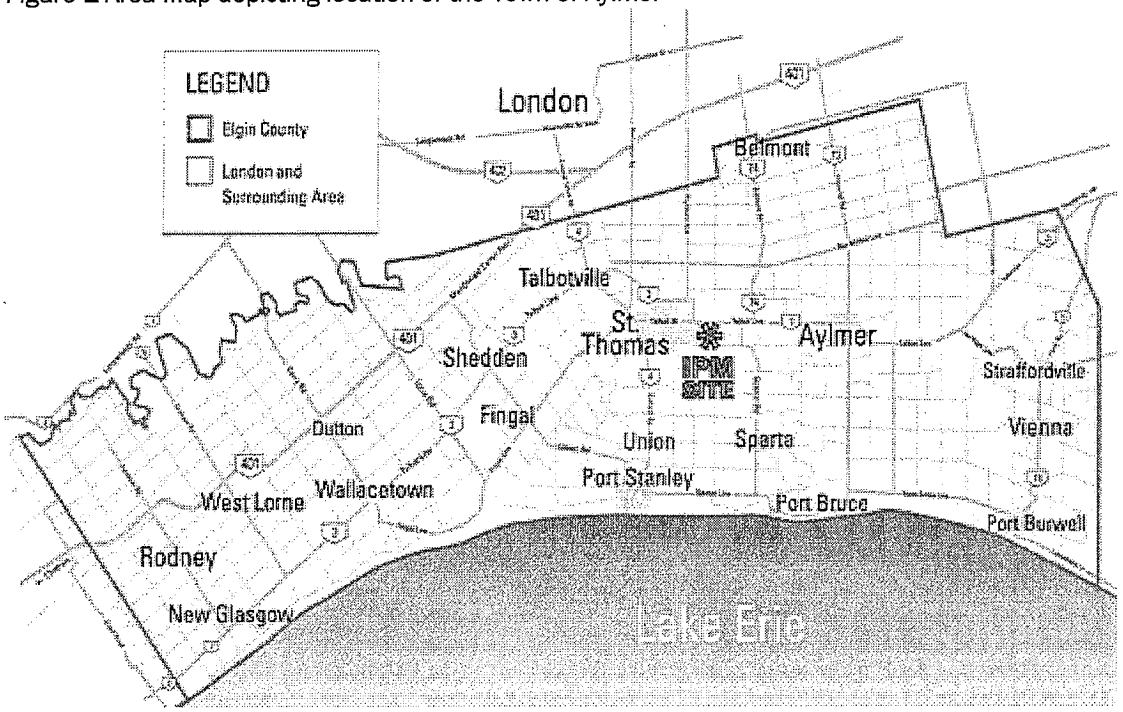
- Develop & issue tender/RFP's for Waste/Recycling Collection and Blue Box Processing.

3.0 Study Area

The study area for this Strategy is the Town of Aylmer, located in Elgin County, approximately 37 kilometers southeast of London.

The geographic area of the Town in relation to proximity of other urban centres and surrounding Townships is depicted in Figure 1.

Figure 1 Area Map depicting location of the Town of Aylmer



This Strategy addressed the following sectors:

- Residential single family and multi-residential;
- Downtown core small businesses;
- Industrial, commercial and institutional (IC&I) (collect select materials from this sector); and
- Public space areas

4.0 Public and Stakeholder Consultation Process

Stakeholder groups included in this consultation included:

- Town staff;

- General public; and
- Town Council to endorse.

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

- Notification of Strategy on Town web-site with opportunity for public feedback;
- Discussions with staff to prepare Draft report and receive input/guidance into possible enhancements to recycling program;
- Post draft report to Town web-site for comment;
- Advertise and hold Public Open House Meeting to overview Draft report; and
- Submission of Final Report to staff for Town Council to review and adopt.

4.1 Public Meeting

A Public Open House (Meeting) was held on 15 March 2011 to overview the Draft Report.

In advance of this meeting and until 25 March 2011 the Draft report was available for download from the Town's web site. Notice of the meeting was also published in the local newspaper and posted at Town Hall prior to the event.

Approximately 10 people attended the meeting including members of the public, councillors, the local press and Town staff.

The Meeting consisted of a presentation by 2cg on the draft Strategy as well as a question and answer session.

Key themes emerged from the meeting included:

1. The Town has a relatively low waste diversion rate. This is at least partly due to not counting the wastes recycled by service groups such as Club 7 (not counted by WDO). It was also acknowledged that resident participation could improve;
2. The upcoming Request for Proposal (RFP)/Tender process was an opportunity to ask the market place for costing on a variety of options including adding more materials to the Blue Box, more frequent collection of the Blue Box; and
3. It may be prudent to consider public sector collection of wastes and recyclables.

Key comments from the Meeting and subsequent feedback received on the Strategy included:

- Investigate allowing recyclables collected by service groups such as Club 7 to be counted as part of waste diversion;

- Provide additional low cost Blue Boxes to residents;
- Additional training for collection staff as recyclables are being left behind;
- Consider weekly collection of recyclables;
- Investigate ways to reduce Blue Box recycling costs (e.g. sending recyclables to new City of London MRF);
- More frequent collection of business recyclables;
- Improve multi-residential access to recycling as part of the next collection RFP;
- Improve business access to recycling as part of the next collection RFP;
- Investigate cooperating with local municipalities and cooperate where mutually beneficial;
- Consider using Bag Tags for garbage;
- Consider using Clear Bags for garbage;
- Consider instituting public space recycling;
- Consider developing a Recycling Depot in the future;
- Take a multi-faceted approach to Promotion and Education materials for the Blue Box program (e.g. print, on-line);
- Investigate the cost of public sector collection versus current private sector collection; and
- Seek costing for a variety of options (e.g. weekly and bi-weekly collection; expanded Blue Box materials, bi-weekly garbage) as part of the next RFP.

2cg was requested to investigate the cost of public sector collection versus current private sector collection to determine if public sector collection was less costly than private sector collection.

5.0 Stated Problem

Management of municipal solid waste, including the diversion of Blue Box materials, is a key responsibility for all municipal governments in Ontario. The factors that encourage or hinder municipal Blue Box recycling endeavors can vary greatly and depends on a municipality's size, geographic location and population.

The challenges facing the Town are:

- Timing of the opening of the new London Regional MRF in relation to the Town's current processing contract expiry date (May 31, 2011); and
- Potential change to current collection system reflecting new processing contract with London MRF (e.g. more materials to add to Blue Box);

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

- Maximize Best Practices funding;
- Update information on the Town's Blue Box Program;
- Upcoming waste management and recycling contracts; and

- Potential changes to Blue Box program by joining the London Regional MRF and launching of a Promotion & Education (P&E) program.

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 Town's Recycling Goals and Objectives

Waste Recycling Goals and Objectives	
Goals	Objectives
To increase waste diversion from the Blue Box	By 2012 aim to divert at least 15% of Town's solid waste through the Blue Box program through implementation of simple measures (priority initiatives). In 2012 and beyond, consider setting targets to divert 21% or more of the Town's solid waste through the Blue Box program through the implementation of more comprehensive measures (future initiatives).
To reduce Blue Box program costs	To reduce cost to lower the average for Waste Diversion Ontario's "Small Urban Municipal Group."

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

Community Characteristics

The population of Aylmer is approximately 7,070 (2006 Census). The Town has 2,590 single family households and 376 multi-family residences.

Existing Recycling Programs and Services

Currently, the Town has the following policies and programs in place to manage residential solid waste:

- Weekly residential waste bag limit (4 bags/week, of which 1 bag can be yard waste);
- Twice-weekly curbside collection of waste for designated downtown core businesses;
- Bi-weekly curbside collection of Blue Box materials;
- Annual yard waste collection (spring);

- Bi-annual collection of brush (spring/fall);
- Annual leaf collection (fall);
- Joint partnership with the Township of Malahide for an annual Municipal Household Special Waste (MHSW) and Waste Electronics and Electrical Equipment (WEEE) depot event day (3rd Saturday in September);
- Annual bulky waste collection (October);
- Annual Christmas Tree Drop-off Depot; and
- Promotion of backyard composting program.

Waste and recyclables are currently collected by Antonissen's Trucking Inc. The Waste/Recyclable Collection Contract is structured on a cost per household ($75/household). The current Waste/Recyclable Collection Contact is set to expire May 31, 2011.

Waste is received and disposed of at the City of Toronto's Green Lane Landfill Site located in Elgin County (2011 Rate $60.71/tonne tipping fee). The County of Elgin negotiated a long term contract (2009-2019) with the City of Toronto, owner of the Green Lane Landfill site, to provide landfill services to all Elgin County Municipalities including the Town of Aylmer.

Recyclables are received and processed by BFI in London. The Blue Box Processing Contract is structured on a cost per tonne (2011 rate $116.86/tonne). The Town does not receive revenue rebates as part of this arrangement. The current Recyclables Processing Contact is set to expire May 31, 2011.

As noted the Town offers bi-weekly collection of Blue Box materials to the residential sector. The Town collects a limited range of Blue Box material which includes the following:

Containers	Fibres
• Glass bottles and jars	• Newspaper, flyers, magazines, inserts
• Metal food and beverage containers & foil products	• Office paper, fine paper, envelopes
• Rigid plastic containers #1 & #2	• Boxboard, corrugated cardboard

Residents are asked to bundle/bag their fibre material and place items either inside or beside their Blue Box. All container material is to be placed loose inside the Blue Box. Typically, residents are using one or more Blue Boxes to set out their container material. Blue Box material is processed and marketed by BFI. Residents can purchase additional Blue Boxes from the Town for $10.00 plus applicable taxes.

Photos 1 and 2 depict recyclable collection set outs.

Photo 1 Average Blue Box set out

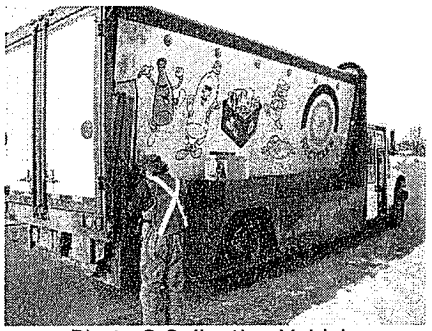


Photo 2 Collection Vehicle

In 2006, representatives from Aylmer, along with neighbouring Elgin County Municipalities, Bayham, Central Elgin, Dutton Dunwich, Malahide, the City of London, Waste Diversion Ontario (WDO) and Stewardship Ontario formed a joint board to investigate the possibility of creating a shared Regional MRF located in the City of London. The MRF project has since been approved and is currently being constructed with expectations that the facility will be fully operational later in 2011. The Town has continued negotiations with the City of London to determine Blue Box processing costs.

Currently, the Town does not have mandatory recycling by-laws or user fees (bag tags) to support diversion programs. Public space recycling has not been promoted nor has event based recycling initiatives.

Upcoming important Blue Box related milestones that may affect how collection services are administered within the Town include:

1. Waste/Recycling Collection & Processing Contracts are set to expire May 31, 2011;
2. Opening of London Regional Two Stream MRF (estimated October 2011); and
3. Recent increase in capacity of the Bluewater Single Stream MRF.

Current Waste Generation and Diversion

Table 7.1 depicts total waste residential quantities managed by the Town in 2009.

Table 7.1 2009 Total Waste Generated by Residential Sector in Aylmer (2009)

Waste Material (2009)	Quantities (Tonnes)
Municipal Waste Collection	1,991
Municipal Blue Box Collection	310
MHSW	12
Yard Wastes	35
Leaf Collection	165
Electronics	5
Total	2,518

In 2009, the Town managed 2,518 tonnes of **residential** waste. Of this 310 tonnes (12%) is diverted specifically through the Blue Box program. Table 7.2 summarizes the current waste generation and Blue Box diversion rates.

It is important to note that the Strategy's focus is on the Blue Box program and reference to diversion rates and capture rates is specific to Blue Box recyclables and the residential waste stream and does not incorporate overall waste diversion rates from other sources (Leaf and Yard Waste, MHSW, etc). Data depicts the most recent WDO Datacall (2009) to reflect reporting requirements for the upcoming 2010 WDO Datacall year to be completed in April 2011.

Table 7.2 Town's Residential Blue Box Diversion Rate (2009)

Residential Solid Waste Generated and Diverted Through Blue Box		
Residential Waste Stream/ Blue Box Material	Tonnes	Percent of Total Waste
Total Waste Generated	2,518	-
Papers (ONP, OMG, OCC, OBB and fine papers)	231	9.2%
Metals (aluminum, steel, mixed metal)	23	0.9%
Plastics (containers, film, tubs and lids)	30	1.2%
Glass	26	1.0%
Total Blue Box material diverted	310	12.3%

Table 7.3 indicates the Town's current Blue Box diversion rate is below its WDO municipal grouping.

Table 7.3 Residential Blue Box Diversion Rate Comparison To Small Urban Rate (WDO Datacall 2009)

Average Blue Box Diversion Rate (WDO-2009)	
Town of Aylmer	12%
Municipal Grouping: Small Urban	21.9%

In 2009, the overall recycling cost for the Town was $109,515. The Town is charged for processing on a per tonne basis, so more tonnes collected for processing result in a higher cost. This represents all costs associated with the Blue Box program inclusive of curbside contract costs, processing fees, and a portion of salaries from management and clerical staff. This amounts to a Net residential Blue Box program cost of $353 per tonne, $16 per capita or $37 per household for the Town of Aylmer.

As Table 7.4 shows, net annual recycling costs for the Town are **above average** for the WDO Small Urban municipal grouping for Net Blue Box program costs. **The CIF Guidebook has set a Net cost target of $210/tonne** as a reasonable Blue Box Program cost for municipalities to strive toward within the Small Urban Grouping.

Table 7.4 Town's Residential Blue Box Costs vs. Small Urban Program Costs (2009)

Recycling Cost (per tonne per year)	
Town of Aylmer (Net Costs)	$ 353
Municipal Grouping: Small Urban (Net Program Costs)	$ 260

Blue Box programs in Ontario are partly funded by WDO. In return the Town must report to WDO (i.e. Datacall for the 2010 WDO reporting year with submissions due April 2011) on its current recycling program, including Blue Box diversion rates and Blue Box program costs.

The amount of funding related to Best Practices is increasing, from 5% (2010) to 25% (2012). The Town can maintain and possibly increase the level of WDO funding by implementing Best Practices. Preparing a Strategy that includes defined performance measures including targets, monitoring and a continuous improvement program represents a considerable part of the Best Practices score.

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

The Town's 2011 Blue Box Performance Factor is 40% which is significantly lower than the WDO Small Urban Municipal Group average of 63%. The Performance Factor determines the share of funding allocated to the Town relative to other members within the Small Urban Municipal Grouping.

Table 7.5 depicts Performance factors of the Small Urban Municipal Group

established from data reported in the 2009 WDO Datacall which determines 2011 WDO funding for this group.

Table 7.5 2011 Blue Box Performance Factors for Small Urban Programs

Program Name-Small Urban	Blue Box Tonnes Marketed[1]	Net Costs	Recycling Rate[3]	Net Costs per Tonne[2]	Performance Factor within Group
ARNPRIOR, TOWN OF	601 T	$145,376	63.7%	$242.07	67%
AYLMER, TOWN OF	289 T	$109,345	36.9%	$378.99	40%
BROCKVILLE, CITY OF	1,445 T	$190,036	54.2%	$131.51	80%
CARLETON PLACE, TOWN OF	581 T	$226,487	54.0%	$390.03	40%
CASSELMAN, VILLAGE OF	256 T	$74,577	70.8%	$291.61	64%
CORNWALL, CITY OF	3,080 T	$806,532	55.4%	$261.84	57%
DESERONTO, TOWN OF	111 T	$25,907	52.2%	$233.13	60%
GANANOQUE, TOWN OF	458 T	$79,681	70.5%	$174.11	80%
HANOVER, TOWN OF	543 T	$116,650	66.3%	$215.01	73%
MATTAWA, TOWN OF	159 T	$59,167	61.1%	$371.85	46%
ORANGEVILLE, TOWN OF	2,942 T	$499,064	90.0%	$169.66	84%
ORILLIA, CITY OF	2,516 T	$365,220	74.3%	$145.16	83%
OWEN SOUND, CITY OF	2,214 T	$425,922	90.0%	$192.36	82%
PARRY SOUND, TOWN OF	421 T	$183,449	54.7%	$435.82	40%
PERTH, TOWN OF	477 T	$195,558	71.2%	$410.24	48%
PETROLIA, TOWN OF	356 T	$20,055	60.3%	$56.31	88%
PRESCOTT,TOWN OF	212 T	$64,767	36.3%	$306.12	40%
RENFREW, TOWN OF	631 T	$186,068	62.2%	$294.82	57%
SHELBURNE, TOWN OF	489 T	$103,066	87.9%	$210.69	81%
SMITHS FALLS, TOWN OF	620 T	$157,242	64.0%	$253.44	66%
ST. THOMAS, CITY OF	1,863 T	$363,997	46.4%	$195.35	63%
STRATFORD, CITY OF	2,291 T	$588,714	67.1%	$256.97	67%
SUNDRIDGE, VILLAGE OF	66 T	$24,015	48.4%	$364.65	40%
				Average >	63%

(Adapted directly from WDO datacall summary. Ignore footnote notations)

Opportunities exist with the London MRF to improve the Town's Blue Box Performance Factor by diverting a broader range of Blue Box materials.

Potential Waste Diversion

It should be noted that the Town's waste composition was calculated using the Small Urban waste audit sample (WDO Provincial Average) and is referenced in the CIF guidebook as a suitable sampling comparator to establish current Blue Box capture rates.

It is estimated, as depicted in Table 7.6, that approximately 1,183 tonnes of Blue Box materials are available in the waste stream.

The current capture rate of Blue Box materials is **26%** (i.e. 310 tonnes collected/1,183 tonnes). There are approximately 873 tonnes of Blue Box materials still in the waste stream.

Table 7.6 Potential Available Blue Box Material

Current and Potential Diversion			
Waste/Resource Material	Composition (%) (from Small Urban sample audit)	Total Residential Waste Generated (tonnes)	Total Blue Box Material in Waste Stream (tonnes)
Papers (ONP, OMG, OCC, OBB and fine papers)	28	2,518	705
Metals (aluminum, steel, mixed metal)	3		76
Plastics (containers, film, tubs and lids)	9		227
Glass	7		176
Total Blue Box Materials	47	2,518	1,183

Small Urban municipalities have a recommended a target capture rate of 80% or 1,037 tonnes, as depicted in Table 7.7.

The Town would need to capture an additional 637 tonnes of additional Blue Box material to achieve this target (i.e. 947-310=637).

Table 7.7 Capturing 80% of Available Blue Box Material from Town's Residential Waste Stream

Current and Potential Blue Box Diversion			
Waste/Resource Material	Total Available in Waste Stream (tonnes/year)	Currently Recycled (tonnes)	Potential Increase (tonnes/year)
Papers (ONP, OMG, OCC, OBB and fine papers)	564	231	333
Metals (aluminum, steel, mixed metal)	60	23	37
Plastics (containers, film, tubs and lids)	181	30	151
Glass	141	26	115
Total Blue Box Materials	947	310	637

Capturing 80% of Blue Box material from the Town's residential waste stream would raise its Blue Box diversion rate to about **38%** (i.e. 310 Blue Box tonnes + 637 projected tonnes / total residential waste of 2,518). The 637 additional tonnes would increase Blue Box diversion by about 26 percentage points.

Anticipated Future Waste Management Needs

The Town's projected growth rate is 1% per annum over the next 10 year planning period. Table 7.7 depicts the expected growth rates for solid waste generation and Blue Box material recovery (based on a projected population growth rate of 1% and 80% Blue Box capture rate).

Table 7.7 Forecasting 80% Capture of Blue Box Material from Town's Residential Waste Stream

Anticipated Future Solid Waste and Blue Box Recovery Rates			
	Current Year	Current Year + 5	Current Year + 10
Population	7,070	7,431	7,810
Total Waste	2,518	2,646	2,781
Blue Box Material Available	947	995	1,046

8.0 Planning a Recycling System

The following section outlines some possible strategies that are suitable for the Town to consider and incorporate as part of their planning processes for reducing costs and increasing blue box diversion and capture rates in the upcoming years.

8.1 Service Delivery by Public Sector

The Town currently contracts out all of its waste management collection and processing services for its approximately 3,000 households and has done so for many years.

The Town wishes to compare the costs of current garbage and Blue Box collection using its own forces to see if it can reduce its waste and recycling collection costs.

8.1.1 Current Waste Management Costs

The current annual cost to operate the Town's waste management program is about $365,000. Collection costs make up about $205,000 of the total and have been allocated and reported as 2/3 garbage and 1/3 Blue Box collection.

The overall annual costs are divided into garbage (2,000 tonnes/year) at $260,000 and Blue Box (300 tonnes/year) at $105,000. This works out to about $121/single family household. This does not include municipal staff and other municipal costs (e.g. special recycling events). Current costs are summarized in Table 8.1.

Table 8.1 Estimate of Current Operating Costs for Garbage and Blue Box

	Annual Operating Costs	Per Tonne	Per Household
Garbage Collection	$137,000	$69	$46
Garbage Tipping	$122,000	$61	$41
Subtotal	**$259,000**	**$130**	**$86**
Blue Box Collection	$68,000	$227	$23
Blue Box Processing	$35,100	$117	$12
Subtotal	**$103,100**	**$344**	**$34**
Grand Total	**$362,100**	**$157**	**$121**

8.1.2 Estimated Waste Management Costs Using Town Forces

An analysis of the cost to collect and process garbage and Blue Box from single family households using Town forces was undertaken. This analysis was undertaken so that it could be compared to the current waste management program. The current contractor uses one garbage collection vehicle with two operators and one recycling vehicle with one operator. It takes approximately 8 hours to collect garbage and 8-9 hours to collect Blue Box materials.

Table 8.2 describes a range of startup **capital** costs. The low end of the range assumes the purchase of used waste collection vehicles. The high end of the range assumes the purchase of new waste collection vehicles. It is estimated that the capital costs for purchase of collection vehicles would be approximately $500,000-$840,000. It is assumed that these vehicles would be parked and serviced (by outside contractors) at a public works yard in the Town.

Table 8.2 Estimate of Capital Costs for Collection Vehicles

	Capital Costs- Low		Capital Costs- High		Comments
Garbage	$250,000	2 collection vehicles (1 + 1 spare)	$400,000	2 collection vehicles (1 + 1 spare)	Weekly collection 4 day collection schedule
Blue Box	$250,000	2 collection vehicles (1 + 1 spare)	$440,000	2 collection vehicles (1 + 1 spare)	Bi-weekly collection 4 day collection schedule
	$500,000		$840,000		

Note: These upfront capital costs do not include any additional expenses associated with the requirement to either expand the current Public Works Facility or find alternative space needed to house and accommodate the addition of 2-4 collection vehicles to the Public Works Fleet.

Table 8.3 describes the **operating** costs to collect and process garbage and Blue Box (gross costs) materials. It is estimated that it would cost approximately $442,000/year in operating costs to collect garbage, and Blue Box materials, deliver them to processing facilities and pay any required tipping fees. This works out to about $147/single family household.

Table 8.3 Estimate of Operating Costs for Garbage and Blue Box

	Annual Operating Costs	Per Tonne	Per Household
Garbage Collection	$170,000	$85	$57
Garbage Tipping	$122,000	$61	$41
Subtotal	**$292,000**	**$146**	**$97**
Blue Box Collection	$115,000	$383	$38
Blue Box Processing	$35,100	$117	$12
Subtotal	**$150,100**	**$500**	**$50**
Grand Total	**$442,100**	**$191**	**$147**

Operating costs include a reserve contribution required for future collection vehicle purchases. These funds would be included in the Town's Equipment/Vehicle Replacement Reserve.

8.1.4 Comparison of Costs, Analysis and Conclusions

It is estimated that a Town operated waste management program would incur approximately $80,000 in additional annual operating costs over and above the current system in place (i.e. results of Table 8.1 versus Table 8.3).

It is assumed that processing costs would be the same for both scenarios (i.e. private and public). A comparison of current versus estimated public sector collection costs is depicted in Table 8.4.

Table 8.4 Comparison of Operating Costs for Garbage and Blue Box

	Garbage Collection	Blue Box Collection	Total	Comments
Estimated Costs Using Town Forces	$170,000	$115,000	$285,000	Estimated costs
Current Costs	$137,000	$68,000	$205,000	2011 costs
Difference($)	$33,000	$47,000	$80,000	
Difference (%)	24	69		

A fairly conservative approach was used to develop both capital and operating costs.

Capital Costs

The Town would need to purchase collection vehicles at a cost of $500,000-$840,000 if it wanted to collect garbage and blue box wastes.

For capital costs it may be possible to gain the following efficiencies:

- Purchase used collection vehicles either as primary or spare vehicles; and
- Do not purchase a spare vehicle(s).

Operating Costs

The Town is relatively small in terms of waste collection requirements. The estimated collection costs for a Town operated program have been driven upwards by the following:

- Directing partial loads (i.e. collection vehicle not full) to processing facilities; and
- Route completed in less than 8 hours but retaining full time staff.

A two person garbage collection vehicle will service between 1,000 to 1,400 households per day, depending on many variables and assuming 95% set out.

A one person recycling truck will service between 750 and 900 households per day,

assuming 75 to 85% set out.

The private sector is better able to balance loads, between clients to ensure full loads.

Reducing the number of collection days to three per week could result in waste management costs that are closer to private sector waste management costs. Other measures including the use of part time staff, using a one person garbage collection vehicle and/or the co-collection of waste streams could reduce the cost estimates for the Town to collect wastes.

As well, there are opportunities for market revenues to easily cover Blue Box processing costs. For instance the London MRF will have a processing cost of somewhere between $80 and $100 per tonne plus 90% of revenue back to customers. At this point this would likely yield a surplus back to the Town (i.e. rebate). This can be investigated as part of the next waste Request for Proposal/Tender.

For **operating** costs it may be possible to gain the following cost efficiencies:

- Negotiate a better processing fee/rebate for the processing of Blue Box materials;
- Reduce number of garbage and Blue Box collection days (i.e. consider operating a three day collection week);
- Consider use of part time staff; and
- Co-collection of waste.

Conclusions

In conclusion it would be about $80,000/year more expensive for Town forces to collect garbage and Blue Box materials as compared to the current private sector arrangement.

There are some opportunities for the Town to reduce future waste management costs, in particular as it relates to the processing of Blue Box materials. The Town should be able to reduce this cost considerably moving forward.

The Town could potentially collect garbage and Blue Box materials in a less costly way than the current private sector arrangement. However, this would entail an extensive re-arrangement of the waste management program.

8.2 Possible Strategy to Increase Recycling

Given that the Town is well below the average Blue Box diversion rate for municipalities of its grouping and above the average costs for its grouping, a phased approach is proposed. The Town presently diverts approximately 12% of its wastes through its Blue Box program. The average for municipalities of its type is approximately 21%.

Given the current low capture and high costs of the Blue Box program a phased approach is proposed. This will ensure that program costs and results can be closely monitored.

It should be possible to increase the capture rate of the Blue Box program within the context and costs of the current program. This would be done by encouraging residents to recycle more of their wastes using the existing program. A reasonable preliminary goal would be to increase capture rate to achieve a 15% diversion rate as a result of the Blue Box program.

A second and aspirational future goal would be to achieve a 21% diversion rate as a result of the Blue Box program. The minimum future goal would be to at least reach the average 21% diversion rate. This would result in a capture rate of about 45%. Once this has been achieved the Town should strive to achieve the 80% capture rate (i.e. 37% diversion rate) target from Small Urban municipalities.

Table 8.5 highlights the estimated number of tonnes that would need to be captured to attain 15% and 21% diversion rates. It includes consideration of the impact of population growth in the Town (1% growth rate).

Table 8.5 Forecasting Diversion Rates

Capture Rates to Meet Waste Diversion Goals			
	% Waste Diversion		
	Current (12)	15	21
	tonnes captured/year		
2009	310	378	529
2015	326	397	556
2020	342	417	584

It may be possible to capture additional Blue Box materials with enhancements to the existing programs. Table 8.6 highlights attaining a 15% diversion rate.

Table 8.6 Forecasting Diversion Rate

Meeting 15% Blue Box Diversion Rate		
Current Capture (8%)	tonnes/year	310
15% Capture	tonnes/year	378
15% Capture (additional tonnes)	tonnes/year	68
Per household	kg/year	26.1
Per household	kg/week	0.5
Collection routes	#	4
Per route	tonnes/year	17
Per route	tonnes/week	0.1
Current program costs	$/year	$109,515
Current program costs	$/tonne	$353
New program costs	$/tonne	$290

* The numbers used in the table above are assuming recyclable collection costs would stay relatively the same with any cost increase due to the additional tonnage being collected being offset by the efficiencies listed.

On average this would amount to each household recycling an additional 26 kg/year or 0.5kg/week (1.1 pounds). This could drive the current cost/tonne for recycling close to the average for other similar municipalities.

It is important to mention that within the Town, there are a few not for profit organizations that are permitted to collect paper and pop cans as part of community fund raising initiatives. These tonnages are not calculated as part of the tonnes reported in the WDO Datacall but are tonnes generated by the residential sector.

The path to approaching or attaining a 21% diversion rate from Blue Box would need to be evaluated during the upcoming waste and Blue Box collection/processing tender/RFP process.

If the costs of avoided landfilling and possible cost efficiencies through maximizing capture rate are fully considered it should be possible to approach or attain this diversion rate.

Furthermore, during the tender/RFP process it will be prudent to seek out contractors that can handle a wider array of recyclables that will ultimately boost what residents can place at the curb and therefore potentially increase overall capture rate. For instance, both the City of London and Bluewater Recycling Association have or will have considerable new processing capacity available in 2011.

The path to approaching or attaining a 21% diversion rate through the Blue Box would need to be evaluated during the future waste and Blue Box collection/processing tender/RFP process and possible Blue Box processing agreement with the City of London (2012 and beyond).

The upcoming tender/RFP could include consideration of the following:

- Longer term collection contract to reduce overall recycling costs;
- Option requesting the provision of weekly Blue Box collection service;
- Municipal option to include future programs to support waste diversion (user pay, reduction in bag limits, clear garbage bags, vendor take back programs for electronic items or batteries, etc.);
- Servicing Public Space Areas with recycling infrastructure; and
- Assisting with enhancements of a P&E program (expand awareness).

8.3 Overview of Planned Initiatives

The best approach for increasing the capture rate and decreasing costs is to try to develop improvements in conjunction with the next collection/processing contracts. Furthermore, it is anticipated that the Town will enter into an agreement with the City of London for the processing of blue box materials at the new MRF in 2012.

With that in mind a number of options were reviewed and scored based on a series

of criteria, which included:

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

A summary of the options to improve Blue Box programs presented in the CIF Guidebook were reviewed with staff. Their scoring is provided in Appendix 1.

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

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

- Possible Priority Initiatives (Table 8.7); and
- Possible Future Initiatives (Table 8.8).

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

Table 8.7 Priority Initiatives

Possible Priority Initiatives				
Initiative	Estimated Implementation Cost	Estimated Annual Operating Cost	Implementation Time Line	Comments
Blue Box Collection and Processing Tender/RFP	Staff time	Not applicable	2011	This represents an immediate opportunity to improve the Blue Box program (include frequency of collection, materials and delivery to new London MRF)
Following Generally Accepted Principles for Effective Procurement	Staff time	No cost	2011	Free templates for developing tender/RFP available on-line

Possible Priority Initiatives				
Initiative	Estimated Implementation Cost	Estimated Annual Operating Cost	Implementation Time Line	Comments
and Contract Management				In general it is prudent to develop a tender/RFP that will result in reply from a variety of contractors
Enhance Existing & Future Promotion and Education (P&E) Program (CIF Promotion and Education Tool available) https://blueboxpe.wdo.ca/	$5,000 - $10,000 CIF priority area=50% funding in 2011	$1,000 to maintain new enhancement (flyers, website maintain)	2011 - 2012	Intent to better publicize program and capture more Blue Box materials Develop after tender/RFP process is completed
Training of Key Program Staff	Staff time	Free training available through CIF. Annual travel approx. $1,000.	2011	Better educated staff will be able to develop waste and Blue Box collection tender/RFP and better manage overall program.
Public Space Recycling	$6,000-$15,000 CIF funding available with supporting P&E material.	$1,000 to maintain system	2011-2012	
Include recyclables collected by service groups in overall	Staff time	Staff time	2011	Request WDO to recognize this additional diversion of Blue Box wastes

Possible Priority Initiatives				
Initiative	Estimated Implementation Cost	Estimated Annual Operating Cost	Implementation Time Line	Comments
diversion				
Engage Environmental Advisory Committee	Staff time	Staff time	2011	Engage committee to help promote the Blue Box recycling program

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

Table 8.8 Future Initiatives

Possible Future Initiatives				
Initiative	Estimated Implementation Cost	Estimated Annual Operating Cost	Implementation	Comments
Public sector collection of Blue Box and Waste	Would need to be costed	Would need to be costed	2012 or later Consider as part of tender/RFP process	Would need to be completed before the tender/RFP is released
Low Cost Blue Boxes	Depends on number & type purchased	Not applicable	2012 or later Consider during tender/RFP process	
Include Multi-residential households in Blue Box program	Would need to be costed	Would need to be costed	2012 or later Consider during tender/RFP process	

Weekly Blue Box Collection	Staff time and possible increase in curbside collection costs by approx. 7% based on CIF guidebook.	Could result in shift in collection costs from waste to Blue Box.	2012 or later Consider during tender/RFP process	Potential to increase capture rate to 80% and blue box diversion rate to 21%
Reduce Bag Limits (2-3 bags/week)	$5,000	Part of promotion costs	2012 or later Consider during tender/RFP process	This would reduce amount of waste collection. This would require discussions and support of Council. Would require P&E
Clear Bag for Waste	Staff time, and supported by enhancement of Promotion and Education costs.	Part of promotion costs	2012 or later	This would require discussions and support of Council. Would require P&E
Partial or Full User Pay (adopt a bag tag system)	Staff time, and supported by enhancement of Promotion and Education costs.	Part of promotion costs	2012 or later Consider during tender/RFP process	This would reduce amount of waste collection. This would require discussions and support of Council. Would require P&E
Investigate Developing a Recycling By-law	Staff time	Staff time	2012 or later	A by-law that would compel residents to recycle. Would need to include consideration of enforcement costs
Investigate Developing a Recycling Depot	Would need to be costed	Would need to be costed	2012 or later	

It was recognized that the actual implementation of immediate cost saving initiatives would be a function of the results of the next Blue Box processing agreement with the City of London, followed by enforcement mechanisms such as User Pay and curbside bans, decreased bag limits, etc.

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

CIF Promotion and Education Tool

It is recommended that the Municipality increase its level of public P&E with financial and other assistance from the CIF. Successful promotion will require additional staff time and should be considered when launching a P&E campaign (summer students, part time staffing).

CIF provides a free online tool that provides the Municipality with all the elements needed to run a successful Blue Box P&E program. After completing a questionnaire a customized marketing plan and customized marketing materials will be prepared. The marketing plan is a 3-year plan that is organized in seven sections including:

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

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

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

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

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

- MWA website outlining a report entitled: Research Report: Identifying Best Practices in Municipal Blue Box Promotion and Education, (2005) County of Oxford –AMRC;
- City of Hamilton website and CIF : Blue Box Recycling Public Opinion Survey (March 2006); and

- CIF website: McConnell Weaver Communication Management: Enhanced Blue Box Recovery: Benchmark Survey and Focus Groups (2006).

Public Space Recycling

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

The Town can work with Council and the public to organize a public space recycling initiative with support from the collection contractor and possible summer students/co-op placement students.

Weekly Blue Box Collection

The Blue Box Program Enhancement and Best Practices Assessment Project report (KPMG/RW Beck 2007) concluded that programs in Ontario with weekly collection of recyclables and bi-weekly collection of garbage are the most efficient in terms of the amount of waste diverted. It is important to reference those programs with bi-weekly collection of recyclable materials where residents had sufficient containers to store materials for two weeks (e.g.: 22 gal. large capacity blue boxes) were more cost effective. An examination of Blue Box collection costs with respect to collection frequency found that the average cost per tonne of collecting Blue Box materials bi-weekly averaged 7% less than the costs for collecting weekly.

Bag Limits

Currently, the Town has a 4 bag limit for residential users to reduce weekly waste quantities for curbside collection. Another Best Practice outlined in the KPMG/RW Beck Report to increase participation and capture rate of a Blue Box program is by employing a limit to the number of bags a household can set out for collection (e.g. 2-3 bags per household per week). The following table excerpted from the CIF Guidebook suggests effective bag limit levels for various Blue Box recycling programs.

Programs with bi-weekly Blue Box collection have a suggested bag limit of 4 bags per week, consistent with the Town's bag limit. This can be decreased so long as there is sufficient capacity to collect Blue Box wastes.

Table 8.9 provides information depicted in the CIF guidebook:

Table 8.9 Suggested Bag Limits

Recycling System	Collection Frequency	Garbage	Suggested Bag Limit	Add Kitchen Organics	Suggested Bag Limit
Multi-Sort	Weekly	Weekly	3	Weekly	2
	Bi-weekly	Weekly	4	Weekly	3
Two Stream	Weekly	Weekly	3	Weekly	2
	Bi-weekly	Weekly	4	Weekly	2
	Alternating weeks	Weekly	3	Weekly	2

Bag limits can generally be administered without capital expense and are typically regarded as a low-cost initiative.

User Pay

As outlined in the CIF guidebook for creating a Waste Recycling Strategy and the Blue Box Program Enhancement and Best Practices Assessment Project report (KPMG/RW Beck 2007) there are a number of policy mechanisms and incentives that can stimulate recycling and discourage excessive generation of garbage. Economic incentives are diverse. The objective is to place a cost on disposing of residential waste and an importance on Blue Box diversion.

Full or Partial User Pay or Pay-As-You-Throw (PAYT) has the potential to recover a portion or all of waste management costs from system users. If the Town were to implement a Full or Partial User Pay program to coincide with the new processing agreement with the City of London, there would be a potential savings in processing/collection costs supported by a gain in revenue from bag tag sales.

Realistically, it is anticipated that residents would reduce their curbside set out of waste thereby reducing available fees. It will be important to support any user fees with an expanded Blue Box program, bag limit and mandatory recycling by-law.

The implementation of priority initiatives would need to begin in 2011 to coincide with the preparation of the processing agreement with the City of London. Future initiatives should be considered during the waste and Blue Box collection and processing tender/RFP process. The implementation of future initiatives could also be undertaken in 2012 or later, dependent on Council's direction.

8.4 Contingencies

The priority initiatives can be impacted if there is no municipal funding available.

The future initiatives will be decided as per direction of Council and collection/processing tender/RFP. If no future initiatives are implemented then the Town will revert to the priority initiatives only.

9.0 Monitoring and Reporting

The monitoring and reporting of the Town'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 Strategy will be monitored and measured against the baseline established for the current system. Once the results are measured, they should be reported to Council and the public.

The recommended approach for monitoring the Town's Strategy is outlined in Table 9.1.

Table 9.1 Blue Box Monitoring Strategy

Recycling System Monitoring		
Monitoring Topic	Monitoring Tool	Frequency
Tracking of Non-profit tonnages collected from residential Blue Box Material.	Co-ordinate with non-profit groups and the processing contractor to include tonnages in the WDO Datacall.	Include in annual Blue Box Summary
Measurement of Blue Box materials captured.	Documented total weight data as outlined in this Strategy and compare it to target capture rates (75%)	Annual summary
Diversion rate (Blue Box)	Document BB Diversion Rate Formula: (Blue box materials diversion) ÷ Total 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 3-5 years.
Program Cost	Document Blue Box Program Costs to reflect each cost area to determine overall cost composition. Incorporate a revenue column to depict annual revenues from Blue Box program.	Annual summary.
Customer satisfaction	Customer survey (e.g., telephone); tracking calls/complaints received to the Town office	Every 3-5 years
Opportunities for improvement	Customer survey (e.g., telephone); tracking calls/complaints received to the Town office	On-going
Planning activities	Describe what initiatives have been fully or partially implemented, what will be done in the future	Annually document.

Review of Recycling Strategy	A periodic review of the Recycling Plan to monitor and report on progress, to ensure that the selected initiatives are being implemented, and to move forward with continuous improvement	Annual for current initiatives. Every 5 years to re-evaluate and refine list of initiatives

10.0 Conclusion

The Town currently has a low Blue Box waste diversion rate (12%) and a higher than average rate (i.e. $353/tonne) for its Blue Box recycling program and experiences an overall low Blue Box capture rate (26%).

It is recommended that the Town obtain up to date and ongoing data on its Blue Box program so that it can better gauge program effectiveness.

A staged process to increase capture rate and reduce the tonne cost is recommended.

The Town has a unique opportunity to effect immediate changes to its Blue Box program because of the impending waste and Blue Box collection/processing tender/RFP process. It is recommended that the Town explore a number of potential opportunities to increase the diversion of Blue Box materials.

At the very least 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 future initiatives that could be implemented. It is recommended that the marketplace be asked to provide pricing to implement some of these initiatives. Their implementation will be a function of the results of the upcoming Waste and Blue Box Material Collection/Processing Tender/RFP and ultimately Council's wishes.

Once a waste diversion rate of 21% (from the Blue Box has been attained) it is recommended that measures be identified and implemented to move the waste diversion rate to 37% (which allow the Town to attain the 80% capture rate)

It is recommended that the Town annually monitor its progress against this Strategy and update this Strategy as it sees fit. It is recommended that this Strategy be fully updated in 2016.

Appendix 1
Waste Recycling Option Scores

Waste Recycling Option Scores

Suitable? Y/N	Description of Options/Best Practices (For more information: *More information: Blue Box Program Enhancement and Best Practices Assessment Project Final Report, Volume 1)*	Criteria (Score out of 5)						Total Criteria Score	Score x/100
		% Waste Diverted	Proven Results	Reliable Market/ End Use	Economically Feasible	Accessible to Public	Ease of implementation		
Promotion and Outreach									
Yes	Public Education and Promotion Program	1-3%	5	5	3	5	3	21	84%
Yes	Training of Key Program Staff	1-3%	5	5	3	4	3	20	80%
Collection									
Yes	Bag Limits	3-5%	4	4	4	4	4	20	80%
Yes	Collection Frequency (bi-weekly to weekly)	3-5%	5	5	3	5	3	21	84%
Yes	Broaden materials categories for Blue Box	1-3%	5	5	4	5	4	23	92%
Administration									
Yes	Following Generally Accepted Principles for Effective Contract Management (upcoming tender)	0%	5	5	5	5	5	25	100%