Municipality of Bayham
Municipality of Central Elgin and
Township of Malahide

Waste Management Master Plan
Waste Recycling Strategy
Final Report

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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.

C of A: A certificate of approval outlining license operating parameters of a waste management facility.

C&D: Construction and Demolition Wastes that are derived from construction and demolition processes and of sufficient size, volume or weight that would make it unsuitable for its disposal in curbside waste bags or blue box containers. This is often included in the definition of IC&I waste.

CCF: Central Composting Facility.

CIF: Continuous Improvement Fund.

EA: Environmental Assessment.

EAA: *Environmental Assessment Act.*

EPA: *Environmental Protection Act.*

EPR: Extended Producer Responsibility is a framework to work towards the goal of zero waste. EPR means that product manufacturers are responsible for the full life cycle costs associated with their products including the environmental costs of production and managing the product at the end of its life, whether that be for reuse, for recycling, or safe disposal.

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

GAP: Generally Accepted Principles.

Green Bin Program: Diversion of organic wastes including food waste, non-recyclable paper and sometimes including diapers, sanitary products and pet waste. Term often used interchangeably with SSO.

HDPE: High density polyethylene plastic bottles and jugs commonly used for containing detergents.

hshld: household.

HHW: Household Hazardous Waste. Also sometimes referred to as Municipal Hazardous or Special Waste (MHSW).

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).

MOE: The provincial Ministry of the Environment responsible for regulations governing waste management practices.

MR: Multi-Residential buildings which contain multiple self-contained residential dwelling units (typically greater than 6 units).

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.

Organic Waste: Wastes including food waste, non-recyclable paper streams and leaf and yard wastes. All of these wastes can be diverted away from landfill disposal to composting at a centralized composting facility.

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 (Blue Box, organics, scrap metal, clean lumber, etc.) can be dropped off into segregated bins.

SF: A residential single family detached housing unit.

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.

SSO: Source Separated Organics. This includes residential organic waste such as food waste and non-recyclable paper that is segregated for composting or other organic waste processing. Some municipalities have widened the definition of SSO to include diapers, sanitary products and pet waste.

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.

White Goods: Large electrical home appliances (e.g. refrigerators or washing machines etc.) that are often finished in white enamel.

Zero Waste: the philosophy of taking a cradle-to-cradle approach to managing waste where "industry has to redesign products and processes to reduce waste before it is made, as well as designing products for greater reuse."

Executive Summary

1.0 Introduction

The Municipalities of Bayham and Central Elgin and the Township of Malahide (collectively referred to as Municipalities) teamed up to develop a Waste Management Master Plan (Plan). Embedded within this plan is a Waste Recycling Strategy (Strategy) that deals specifically with Blue Box wastes.

The Municipalities, which have significant rural areas, provide their residents with garbage collection/disposal, Blue Box collection/processing and limited collection/processing of organics, municipal household special waste (MHSW) and waste electrical and electronics equipment (WEEE).

The current waste diversion rates of the Municipalities ranges from 15-31%.

The Municipalities initiated this 20 year (2012-2032) Plan and Strategy to assist with planning for waste management into the future and to see if and where there were opportunities to work together in this regard. The Plan focuses on wastes managed by the Municipalities (i.e. residential and limited industrial, commercial and institutional (IC&I)).

There were a number of key questions that were addressed as part of the Plan development including:

1. What is an appropriate waste diversion target for the Municipalities?
2. Is it feasible and what would be required for the Municipalities to achieve the provincial goal of 60% waste diversion rate?

The answers to the questions below helped answer the key questions:

1. Are existing programs sufficient or are some new programs required?
2. What types of new programs could be added that could improve waste diversion?
3. To what extent should the three municipalities work together (e.g. harmonize programs, individual versus joint contracts)?

This Plan was developed by:

- Reviewing the existing waste management system including waste disposal and waste diversion;
- Reviewing waste composition and diversion potential;
- Consulting with the public;
- Estimating future waste disposal and diversion requirements;
- Reviewing and evaluating a number of waste diversion systems;
- Reviewing and evaluating a number of waste disposal options; and

- Recommending a planned waste management system.

2.0 Current Disposal and Diversion

The waste generated in the Municipalities comes from two sectors:

- Residential (Single family and Multi-Residential); and
- IC&I.

The waste under the Municipalities control comes largely from the residential sector with small amounts of garbage and Blue Box wastes from the commercial sector. The focus of this Plan is for wastes that are under the Municipalities control.

Table 1 depicts the overall average residential waste disposed and diverted in 2009 and 2010 that is managed by the Municipalities.

Table 1 Waste Disposal and Diversion Managed by the Municipalities 2009 and 2010

	Bayham	Central Elgin	Malahide	Total
Single Family Households	2,568	5,333	2,904	10,805
Multi-residential Households	24	0	0	24
Households	**2,592**	**5,333**	**2,904**	**10,829**
Population	**6,750**	**13,530**	**7,865**	**28,145**
Disposal	tonnes/year			
Curbside Collection	1,350	2,781	1,871	**2,001**
Sub-total	**1,350**	**2,781**	**1,871**	**6,002**
Diversion				
Recyclables	360	813	270	1,443
Organics	0	24	1	25
HHW[1]	7	7	5	19
WEEE[1]	0	0	4	4
Residential Deposit Return[1]	37	76	46	159
Residential On-Property[1]	206	1	0	207
Total Residential Waste Diverted	**610**	**921**	**325**	**1,856**
Total Residential Waste Generated	**1,960**	**3,702**	**2,196**	**7,858**
Residential Waste Generated kg/capita/year	**290**	**274**	**279**	**279**
Diversion Rate (%)	**31**	**25**	**15**	**24**

1. Derived from WDO Datacall data

Table 2 depicts the annual costs of waste management as managed by the Municipalities.

Table 2 Summary of Annual Costs (2010)

	Bayham	Central Elgin	Malahide	Total
Garbage	$258,000	$510,000	$275,000	$1,043,000
Blue Box	$108,000	$310,000	$110,000	$528,000
Other Waste Diversion	$10,000	$45,000	$15,000	$70,000
Total	**$376,000**	**$865,000**	**$400,000**	**$1,641,000**
Tonnes Managed	1,986	3,603	2,189	7,778
$/tonne	**$189**	**$240**	**$183**	**$211**
Households (all)	2,599	5,355	2,919	10,873
$/household (all)	**$145**	**$162**	**$137**	**$151**
Population	6,725	13,925	8,809	29,459
$/capita	**$56**	**$62**	**$45**	**$56**

It costs approximately $1.6 million for the Municipalities to manage wastes annually. This includes wastes managed directly by residents and other activities such as deposit return.

This works out to about $211/tonne of wastes generated by residents that are managed by the Municipalities. The annual cost of waste management is on average about $151/household and $56/capita.

3.0 Waste Diversion Plan

Currently, about 7,858 tonnes/year of waste are managed by the Municipalities. The current diversion rate is about 24% and comes primarily from a Blue Box program.

The goals and objectives of future waste diversion are:

- To meet a waste diversion goal of 40%;
- To consider Zero Waste principles;
- To address Best Management Practices as set out by WDO for Blue Box collection as embodied in a Waste Recycling Strategy; and
- To consider striving to work towards the Provincial waste diversion goal of 60%.

The 40% waste diversion rate was selected through public consultation. While a majority of respondents wanted a waste diversion rate of 60% or greater, a similar majority did not want to incur any additional tax costs as a result of implementing waste diversion programs. Achieving a higher waste diversion rate can be explored once the 40% goal has been attained.

About 99% of survey respondents indicated that they were in favour of the Municipalities working cooperatively if it means maintaining services and reducing costs and especially if it means increasing waste diversion. The harmonization of waste management programs can result in a clear program for all residents of the

Municipalities and provide opportunities to explore cost efficiencies through joint service provision of collection, disposal and/or diversion services.

Table 3 and 4 depicts the additional diversion required to meet waste diversion milestones up to 70%.

Table 3 Additional Waste Diversion Required to Meet Waste Diversion Milestones

Possible Waste Diversion Milestones	Additional Diversion	Total Diversion	Total Landfill
%	tonnes/year		
23.6	0	1,856	6,002
30	501	2,357	5,501
40	1,287	3,143	4,715
50	2,073	3,929	3,929
60	2,859	4,715	3,143
70	3,645	5,501	2,357

Table 4 Additional Household Waste Diversion Required to Meet Waste Diversion Milestones

Possible Waste Diversion Milestones	Additional Diversion		
%	kg/hshld/year	kg/hshld/week	pounds/hshld/week
23.6	0	0	0
30	46	0.9	2
40	119	2.3	5
50	191	4	8
60	264	5	11
70	337	6	14

Five alternative Systems were developed:

- System 1: Status Quo;
- System 2: Existing System with Improved Capture and Diversion;
- System 3: Improved Capture of Blue Box Wastes and Leaf and Yard Wastes;
- System 4: Reduce Bag Limits, Green Bin Program and Recycling Depot; and
- System 5: User Pay and Bi-Weekly Waste Collection.

These Systems have been developed sequentially. Each System adds onto the previous System and results in increased waste diversion.

The Systems have been developed so that the Municipalities can harmonize their waste management program.

Table 5 sets out the five Systems and resultant estimated waste diversion rates.

Table 5 Summary of Waste Management System Diversion Rates

	System 1	System 2	System 3	System 4	System 5
	Status Quo	Existing System with Enhanced Capture and Diversion	Improved Capture of Blue Box Wastes and Leaf and Yard Wastes	Implement Green Bin Program and Recycling Depot	Full User Pay and Bi-Weekly Waste Collection
	tonnes/year				
Cumulative additional waste diverted	not applicable	461	1,195	1,978	2,784
Waste diverted	1,856	2,317	3,050	3,834	4,640
	%				
Impact on Waste Diversion Rate		5.9	15.2	25.2	35.4
Waste Diversion Rate	24	29	39	49	59

The Systems presented offer the Municipalities the opportunity to harmonize their waste management programs and achieve an overall waste diversion rate of up to **60%.** It will be up to the Municipalities to decide what waste diversion rate they would like to achieve and which system it would like to proceed with. This decision will be a function of desired waste diversion balanced with desired service provision and costs. This will need to clearly balance overall environmental performance (i.e. waste diversion) with cost.

It is **recommended** that the first stage be to attain a minimum 30% waste diversion goal and that this goal be attained by **1 January 2014**. The waste diversion initiatives described as part of System 2 would be implemented.

It is **recommended** that the second stage be to attain a minimum 40% waste diversion goal and this goal be attained by **1 January 2016**. It is **recommended** that the waste diversion initiatives described as part of System 3 of the waste diversion plan be implemented.

Thereafter it is **recommended** that the Municipalities review progress and assess the feasibility of implementing System 4 or System 5 and higher waste diversion rates.

4.0 Garbage Disposal Strategy

The Municipalities do not own an operating landfill and presently take their garbage to third party landfills in the region. Currently the Municipalities have a contractual arrangement with the City of Toronto to take its garbage to the Green Lane Landfill. Currently the Municipality of Central Elgin and the Township of Malahide take its garbage to that landfill. The Municipality of Bayham landfills its garbage through its waste collection contractor (contracted to April 2012) at the private sector Ridge Landfill (BFI, also known as Progressive Waste Solutions).

The Municipalities have secure landfill capacity until 2024 and possibly until 2036. There are a number of alternatives the Municipalities could pursue to deal with the eventual closure of the Green Lane Landfill.

This includes:

- Reduce Landfilling of Waste;
- Develop Municipalities-Owned Landfill Site;
- Encourage Future Expansion of the Green Landfill; and
- Dispose Waste at Other Landfills.

Given the level of effort, high costs and uncertainty of success it is **not recommended** that the Municipalities explore the siting, permitting and constructing of its own landfill.

It is **recommended** that the Municipalities continue to work with the City of Toronto regarding disposal of garbage at the Green Lane Landfill and in particular assess on an annual basis remaining capacity at this landfill.

It is also **recommended** that the Municipalities discuss with the City of Toronto the possibility of them initiating a full EA study to assess feasibility of creating additional landfill space at the Green Lane landfill beyond 2024.

It is **recommended** that the Municipalities contact the City of London and discuss the potential and feasibility of disposing its garbage at the W-12A landfill by 2024.

It is **recommended** that the Municipalities assess post-2024 disposal capacity in their next waste management tenders (i.e. 2012).

5.0 Description of Planned Waste Management System

5.1 Service Delivery

1. Harmonize Programs

It is **recommended** that the Municipalities consider working to harmonize their waste management programs. This would ensure that all residents have access to the same programs. This includes the collection and disposal of garbage and waste diversion programs.

2. Individual versus Consolidated Collection of Garbage and Blue Box

The Municipalities each contract out waste management collection and processing services and have done so for many years. While the programs appear to work reasonable well and are for the most part cost effective they result in a relatively low waste diversion rate. The current contracts run until 2012.

It is **recommended** that the Municipalities consider a joint tender for the collection and processing of garbage, Blue Box and other waste diversion with the following options:

1. Traditional pricing structure for each municipality;
2. Traditional pricing structure for each municipality but a price reduction if awarded all 3 municipalities; and
3. An amalgamated price.

3. Processing of Blue Box Recyclables

Currently the Municipalities deliver Blue Box recyclables to three different MRFs. The Municipalities receive no rebates for their Blue Box recyclables.

It is **recommended** that the Municipalities solidify pricing with the City of London and request its private sector waste contractor(s), as part of the next tender, to deliver its recyclables to the new City of London MRF.

5.2 Waste Diversion Goal

The Municipalities currently have a waste diversion rate of about **24%**. The Provincial waste diversion goal is **60%**.

During public consultation many residents indicated that they would like to strive for a waste diversion goal of **60%** or greater. However, a similar number of residents indicated that they did not want to pay additional taxes to accommodate expanded or new waste diversion programs.

It is **recommended** that the first stage be to attain a minimum 30% waste diversion goal and that this goal be attained by **1 January 2014**. The waste diversion initiatives described as part of Systems 2 (Section 7) would be implemented.

It is **recommended** that the second stage be to attain a minimum 40% waste diversion goal and this goal be attained by **1 January 2016**. It is **recommended** that the waste diversion initiatives described as part of System 3 of the waste diversion plan (Section 7) be implemented.

Thereafter it is **recommended** that the Municipalities review progress and assess the feasibility of implementing System 4 or System 5 and higher waste diversion rates.

In general, this increased emphasis on waste diversion will mean that capacity and convenience for waste disposal will need to be reduced but increased for waste diversion.

5.3 Garbage Collection and Disposal

Current garbage collection and disposal appear to be working well. However, to attain waste diversion goals less garbage needs to be collected.

It is **recommended** that the following key initiatives, described in detail in Section 7 (i.e. Systems 2 and 3), be implemented:

1. **Set a 3 and then 2 bag weekly limit for waste for Bayham and Malahide;**

This means reducing bag limits for Bayham and Malahide. To provide some flexibility to residents all of the Municipalities could provide residents with an annual supply of bag tags. This would essentially result in a harmonization of garbage bag limits across the Municipalities (Central Elgin has an average bag limit of 1.8 bags/week).

It is **recommended** that the following key initiatives, described in detail in Section 8, be implemented:

1. Continue to work with the City of Toronto regarding disposal of garbage at the Green Lane Landfill and in particular assess on an annual basis remaining capacity at this landfill.

2. Discuss with the City of Toronto the possibility of them initiating a full EA study to assess feasibility of creating additional landfill space at the Green Lane landfill beyond 2024.

3. Contact the City of London and discuss the potential and feasibility of disposing its garbage at the W-12A landfill by 2024.

4. Determine available post 2024 disposal capacity in area landfills in its next waste management tender (i.e. 2012).

5.4 Blue Box Collection and Processing

Current Blue Box collection and processing has a relatively low capture rate.

It is **recommended** that the following key initiatives, described in detail in Section 7 (i.e. System 2 and 3), be implemented:

1. **Distribution of Additional Blue Boxes to single family households**

This means providing additional recycling capacity for residents. There is funding available for this initiative. This should be continued on an ongoing basis at no cost to residents or on a cost recovery basis.

2. Deliver Blue Box recyclables to new City of London Regional Materials Recovery Facility (open fall 2011)

The new City of London MRF will be able to accept a broad range of Blue Box wastes. As well they have developed a program whereby municipalities receive revenue for recyclable materials (currently the Municipalities receive no revenue).

It is recommended that the Municipalities solidify pricing with the City of London and consider requesting its private sector waste contractor(s) to deliver its recyclables to the new City of London MRF, if the costs are more favorable than current costs.

3. Introduce Mandatory Recycling By-Law

Residents will need to be made aware that a Recycling by-law precludes them from placing recyclable wastes in with their garbage.

4. Harmonize Programs and Expand Allowable Materials

To improve the capture of Blue Box materials, it is prudent that the allowable materials be standardized across the Municipalities.

The Municipalities should also consider adding milk/juice cartons and drink boxes to the Blue Box program. The Municipalities could negotiate the addition of these materials with its current or future waste contractor(s).

5. Implement Weekly Collection of Blue Box-Malahide

Malahide currently collects Blue Boxes on a bi-weekly basis. Malahide could change this to weekly collection. This provides single family residences with at least 50-100 litres/week of additional Blue Box capacity and gives them the opportunity to divert more wastes. This would result in a harmonization of the Blue Box across the Municipalities.

6. Enhance Public Space Recycling

Public space recycling gives residents and visitors the opportunity to recycle while in public places. While it does not contribute significantly to waste diversion rates it can be used to reinforce the Municipalities' Blue Box programs. There is CIF funding available to purchase public space recycling bins.

5.5 Organic Waste Collection and Processing

There is currently little diversion of organic wastes.

It is recommended that the following key initiatives, described in detail in Section 7, be implemented:

1. Introduce a Backyard Composter Program

Each properly used backyard composter can divert about 100kg of organic waste/year. A low to no cost resident backyard composter program could be initiated to divert leaf and yard wastes (and food wastes) from the garbage stream.

2. Introduce Mandatory Recycling By-Law

Residents will need to be made aware that a Recycling by-law precludes them from placing recyclable wastes (including leaf and yard wastes) in with their garbage.

3. Expand Leaf and Yard Waste Collection to All Urban Areas

Central Elgin currently collects a limited amount of leaf and yard waste through a seasonal fall collection program, in urban areas. This could ultimately be expanded to all urban areas in the Municipalities. Collection could occur during fall leaf drop in October/November. In the future this could also be expanded to include the spring collection.

4. Hold Annual Leaf and Yard Waste Drop Off Depots

The Municipalities could hold annual seasonal drop-off depots for leaf and yard waste. This could occur over a number of days or throughout a particular season. This could take place at a Public Works yard or similar.

5.6 Other Wastes

No new programs are recommended if proceeding with a minimum 40% goal.

5.7 Promotion and Education

A key part of a waste management program's success is driven by its P&E program.

It is <u>recommended</u> that the following key initiative, described in detail in Section 7, be implemented:

1. Revise Current P&E program

This would include an overhaul and redevelopment of existing P&E materials. The objective would be to promote the Municipalities waste management program more effectively.

New P&E material should spell out the Municipalities commitment to waste diversion and include a "Call to Action" letting residents and the IC&I sector know how they can participate and contribute to meeting the Municipalities' waste diversion goals. This would also include specific information and instructions on how to participate.

6.0 Cost and Financing Strategy

The Municipalities currently fund their waste management programs through municipal taxes.

The focus of this Plan is to achieve a minimum waste diversion rate of 40%. Once this has been achieved the Municipalities may wish to strive for a 60% waste diversion rate. This Plan has highlighted methods to improve the capture rate for current programs and through the introduction of new programs.

The current waste management contracts conclude in 2012.

It may be possible to reduce overall costs if the Municipalities consolidated all or some waste management services. This can be accomplished by taking advantage of possible economies of scale. Possible cost savings can be determined in the upcoming recommended tender process. They include possible reduced collection costs.

The Municipalities may be able to reduce their overall costs to collect Blue Box recyclables by maximizing annual WDO funding. This can be accomplished by improving the capture rate but also by reducing current costs. The new London MRF offers an opportunity to reduce current costs.

Cost savings could be used to fund additional waste diversion initiatives.

7.0 Implementation Timelines

The following implementation timeline is recommended:

- Council receipt of this Plan in November 2011;
- Discuss state of waste disposal with City of Toronto annually;
- Discuss state of waste collection and waste diversion with private sector waste contractor annually; and
- Annual review of waste diversion and identification of necessary improvements.

Implement System 2 of Waste Diversion Plan

- Develop work plan to implement System 2 of the Waste Diversion Plan by January 2012;
- Implement revised P&E program by April 2012;
- Set 3 bag weekly limit for waste for Bayham and Malahide by June 2012;
- Distribution of Blue Boxes to single family households by June 2012;
- Deliver Blue Box recyclables to new City of London Regional MRF in 2012;
- Availability of Backyard Composters (subsidized or unsubsidized) by June 2012; and

- Achieve minimum 30% waste diversion by 1 January 2014.

Waste Management Tender

- Develop work plan to implement System 2 of the Waste Diversion Plan by November 2011; and
- Develop waste management tender in 2011.

Implement System 3 of Waste Diversion Plan

- Preparation and implementation of a recycling By-law that covers Blue Box material and leaf and yard waste by January 2013;
- Set 2 bag weekly limit for waste for Bayham and Malahide by June 2014;
- Improvement of Blue Box collection and processing including:
    - Harmonize what is collected;
    - Additional allowable materials in Blue Box;
    - Weekly collection of Blue Box wastes; and/or
    - Enhanced public space recycling;
- Improve capture of leaf and yard waste through combination of backyard composting, seasonal drop-off depots and/or curbside collection by June 2014; and
- Achieve minimum 40% waste diversion by 1 January 2016.

Other

- Undertake annual review and prepare progress report to Council and the public in January of each year;
- Evaluate the current waste diversion rate and increasing the waste diversion target to 50% or 60% in January 2016;
- Where relevant develop work plan to implement System 4 or System 5 of the Waste Diversion Plan by April 2016; and
- Renegotiate waste disposal contract with City of Toronto in 2019 (start process in 2018).

Review and Update Plan

- Review and update Plan in 2017; and
- Review and update Plan in 2022, 2027 and 2032.

9.0 Conclusion

This Plan sets out a strategy for waste management in the next 20 years. The focus of this Plan has been to reduce the amount of waste directed to landfill and increase the amount of waste diverted.

Waste disposal is fairly secure until 2024 at the earliest but possibly until at least 2036.

This Plan investigated ways to improve waste diversion. A Waste Recycling Strategy, embedded within this Plan, focused on how to improve Blue Box recycling. Improvement of the capture of organic wastes and Other wastes were also investigated.

The Municipalities have the potential through current and new programs help it attain a minimum 40% waste diversion goal. The Plan has staged increased waste diversion in steps. It is envisioned that a minimum 30% waste diversion will be attained by January 2014 and that a minimum 40% waste diversion will be attained by January 2016.

The cooperation of the Municipalities will play a critical role in the success of the Plan and the potential to deliver more cost effective services while at the same time increasing waste diversion. Current and future private waste management contractor(s) will play an important role in the success of this Plan by delivering high quality services that will allow the Municipalities to implement this Plan. Finally, it is the residents of the Municipalities, whose participation in the various waste diversion programs will determine whether this Plan is successful.

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2. Is it feasible and what would be required for the Municipalities to achieve the provincial goal of 60% waste diversion rate?

The answers to the questions below helped answer the key questions:

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This Plan was developed by:

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- Reviewing waste composition and diversion potential;
- Consulting with the public;
- Estimating future waste disposal and diversion requirements;
- Reviewing and evaluating a number of waste diversion systems;
- Reviewing and evaluating a number of waste disposal options; and
- Recommending a planned waste management system.

1.1 Documents used to Develop the Plan

There were a number of key Provincial and other documents that played a critical role in the development of this Plan.

Ontario's 60% Waste Diversion Goal – A Discussion Paper
In 2004, the Minister of the Environment announced a 60% waste diversion goal by 2008 for the Province of Ontario. The Ministry of the Environment's (MOE) June 2004 document, "Ontario's 60% Waste Diversion Goal – A Discussion Paper," outlined some of its goals with regard to diversion targets and how to reach them (MOE, 2004).

Policy Statement on Waste Management Planning: Best Practices for Waste Managers
In June 2007, the MOE released a "Policy Statement on Waste Management Planning: Best Practices for Waste Managers" (MOE, 2007). The MOE maintains its 60% waste diversion target but without a target year. As well, it proposes to compel all municipalities to prepare a Municipal Waste Management Plan. According to this document the scope of municipal waste management plans includes residential wastes, IC&I and construction and demolition (C&D) waste collected by the municipality.

The following principles should be considered when completing the Plan:

1. Environmental protection is a shared responsibility;
2. Integrated waste management systems that reflect local circumstances are in place;
3. Diversion of materials from final disposal is maximized in consideration of the provincial 60% diversion target, including the creation of incentives where appropriate;
4. Public and private sectors cooperate, where possible, to realize cost savings and maximize efficiencies;
5. Waste management choices consider economic, social and environmental costs;
6. Investment in infrastructure is made to accommodate growth;
7. Waste is managed as close to the source of generation as possible;
8. Producer responsibility is incorporated into waste reduction and management;
9. Decision-making is open and transparent;
10. Informed citizens support waste management choices and participate in waste management programs;
11. Maximum value from waste is recovered from the waste stream (see Figure 1. The Waste Value Chain). This concept essentially rearticulates the 3Rs hierarchy of Reduce, Re-use and Recycle; and
12. Innovative waste management technologies and approaches are incorporated as appropriate to local circumstances to achieve sustainable solutions.

This Plan was prepared using the template outlined in this document.

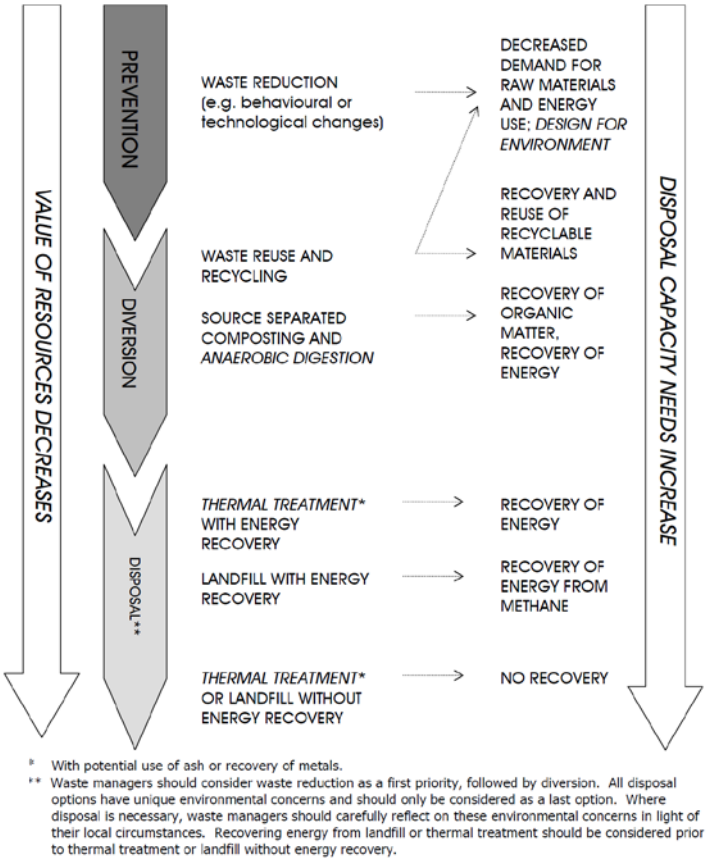


Figure 1. The Waste Value Chain

Toward a Zero Waste Future: Review of Ontario's Waste Diversion Act, 2002

In 2002, the Ontario government passed the *Waste Diversion Act, 2002*. The Waste Diversion Act (WDA) is Ontario's main legislation to "promote the reduction, reuse and recycling of waste for the development, implementation and operation of waste diversion programs." To date, four program plans have been approved by the Minister, the Blue Box Program Plan (BBPP), Municipal Hazardous & Special Waste (MHSW), Waste Electronics & Electrical Equipment (WEEE) plans and a Used Tires Diversion Program.

The document "Toward a Zero Waste Future: Review of Ontario's Waste Diversion Act, 2002" (MOE, 2008) highlights some of the Province's thinking with regard to waste management in Ontario.

The document proposes two key principles as being central to Ontario's future waste management system:

Zero Waste philosophy means taking a cradle-to-cradle approach to managing waste where "industry has to redesign products and processes to reduce waste before it is made, as well as designing products for greater reuse."

Extended Producer Responsibility (EPR) is a framework to work towards the goal of zero waste. EPR means that product manufacturers are responsible for the full life

cycle costs associated with their products including the environmental costs of production and managing the product at the end of its life, whether that be for reuse, for recycling, or safe disposal.

From Waste to Worth: The Role of Waste Diversion in the Green Economy
The document "From Waste to Worth: The Role of Waste Diversion in the Green Economy" (MOE, 2009) is the follow up document that encompasses and summarizes public consultation efforts related to the *Waste Diversion Act, 2002* review.

Key proposed changes to Ontario's waste diversion framework include:

- Outcomes-based individual producer responsibility;
- More clarity for the concept of diversion;
- Development of a long-term schedule for diversion;
- Development of effective oversight;
- Support producer responsibility; and
- Transitioning existing programs.

As of September 2011 no decision had been made by the Provincial government on these proposed changes to the *Waste Diversion Act, 2002*.

Guidebook for Creating a Municipal Waste Recycling Strategy
The Municipalities receives partial funding to operate a Blue Box collection and processing program from Waste Diversion Ontario (WDO). This funding comes from stewards (i.e. manufacturers and first importers) that create the packaging waste that ends up in the Blue Box. Each year the Municipalities must complete a data call and provide WDO with data on its Blue Box program. WDO aims to have municipalities improve the capture rate and reduce the costs of their Blue Box program. WDO promotes a number of Best Practices to meet these ends. Through its Continuous Improvement Fund (CIF), WDO provides funding to municipalities to complete a Waste Recycling Strategy. This Plan was partially funded by the CIF and their "Guidebook for Creating a Municipal Waste Recycling Strategy" (CIF, 2010) was used to help prepare this Strategy. The Waste Recycling Strategy is embedded in this Plan.

Blue Box Program Enhancement and Best Practices Assessment Project
A Blue Box Best practices Project was commissioned by WDO and resulted in the "*Blue Box Program Enhancement and Best Practices Assessment Project"* (KPMG, 2007). Best Practices were defined as "waste system practices that affect Blue Box recycling programs and that result in the attainment of provincial and municipal Blue Box material diversion goals in the most cost-effective way possible." The report summarizes Best Practices gleaned from research undertaken of various recycling programs. This document was used to help shape the Waste Recycling Strategy aspect of this Plan.

1.2 Stated Problem

A review of the current waste management system helped identify some issues/challenges including:

- Low waste diversion rates;
- Low capture rate of Blue Box materials;
- No revenues received for Blue Box materials; and
- Disposal capacity possibly running out as soon as 2024.

A problem statement was developed to help guide current waste management issues that the Plan addresses:

The Municipalities, all of which have a significant rural component, offer residents curbside garbage collection/disposal, Blue Box collection/processing and limited other opportunities to dispose and divert wastes. The costs of waste management appear to be about average to slightly above average. Working together cooperatively may result in the development of cost efficiencies while at the same time improving waste diversion. While the municipalities long-term waste disposal capacity appears stable until at least 2024 this 20 year Plan sets in place strategies to reduce reliance on waste disposal by increasing waste diversion through existing programs and the possible implementation of new waste diversion programs.

1.3 Goals and Objectives

The goal of this Plan is to ensure that there are sufficient cost effective programs to manage waste collection, garbage disposal and waste diversion. A number of objectives follow:

General

- Harmonize waste collection, disposal and processing programs.

Garbage Disposal

- Ensure long-term waste disposal capacity.

Waste Diversion

- Achieve a minimum waste diversion goal of 40%;
- Consider Zero Waste principles;
- Address Best Management Practices for Blue Box collection as embodied in a Strategy; and
- Consider striving to work towards a waste diversion rate of 60%.

1.4 Area that the Plan will cover

This Plan covers the Municipalities of Bayham (Bayham) and Central Elgin (Central Elgin) and the Township of Malahide (Malahide).

The Study considered the following wastes:

- Residential curbside waste, Blue Box and waste collected and processed on behalf of the Municipalities by private contractors;
- Other recyclable wastes including MHSW and WEEE; and
- Large items, IC&I and C&D waste collected and/or managed by the municipality.

2.0 Current Waste Management System

To develop the Plan a good understanding of the Municipalities current Waste Management System is required.

The current system consists of:

- Curbside garbage collection and disposal;
- Curbside Blue Box program;
- Limited drop off depots for White Goods, MHSW, WEEE;
- Limited fall curbside collection of leaves; and
- Promotion and Education (P&E) program.

The Municipalities currently do not collect or process any of its waste streams. This is all undertaken by private sector contractors.

The following sections present a detailed overview of the Municipalities waste management programs.

2.1 Waste Management By-law

Only Central Elgin has a waste management by-law that prohibits the inclusion of recyclable waste in the garbage stream.

2.2 Garbage Disposal

Table 2.1 summarizes garbage collection and disposal for each Municipality.

All garbage is collected by the private sector.

All Municipalities landfill their garbage at third party landfills in the region. Currently the Municipalities have a contractual arrangement with the City of Toronto that allows it to take its garbage to the Green Lane Landfill until 2019. Central Elgin and the Malahide have exercised this option. A new contract with the City of Toronto will need to be negotiated in 2019.

It should be noted that, due to a Certificate of Approval obligation all Elgin County Municipalities can take waste to the Green Lane Landfill until it closes (earliest estimate is 2024).

Bayham currently landfills its garbage at the Ridge Landfill (BFI) until 2012 (i.e. current contract).

Table 2.1 Collection and Disposal of Garbage

	Municipality of Bayham	Municipality of Central Elgin	Township of Malahide
Frequency of Collection	Weekly	Weekly	Weekly
Garbage Bag Limits			
Single Family	4 bags/week	95 bags/year	7 bags/week
Commercial	5 bags/week	235 bags/year	7 bags/week
Farms		140 bags/year	
Collection	Norfolk Disposal Services Limited	Emterra Group	Antonissen Trucking
Contract Expiry	April 2012	February 2012	June 2011
Landfill	The Ridge Landfill (BFI)	Green Lane Landfill	Green Lane Landfill
Comments		Additional bag tags can be purchased for $1.50/tag.	

Single Family
Single family residential garbage collection is undertaken weekly.

Multi-residential
There are a few multi-residential properties in the Municipalities. In most cases it is collected at the same time as single family garbage.

Industrial, Commercial and Institutional (IC&I)
The Municipalities typically allow the commercial sector to set out garbage. This garbage is collected at the same time as residential garbage. The Municipalities do not separately track garbage collected from the commercial sector.

Essentially no garbage is collected from institutional (e.g. schools) and industrial (i.e. factories) sectors.

IC&I owners/property managers (i.e. those not on a residential collection route or those not participating in residential program) have the option of making arrangements directly with private sector contractors to provide a waste collection bin and collect this waste for disposal. Garbage is taken to landfills (Canada and US) and possibly energy from waste facilities (US) for final disposal. The Municipalities do not separately track garbage collected from the IC&I sector.

2.3 Waste Diversion

2.3.1 Blue Box Program

Table 2.2 summarizes Blue Box collection and processing for each Municipality.

Table 2.2 Collection and Processing of Blue Box Waste

	Municipality of Bayham	Municipality of Central Elgin	Township of Malahide
Frequency of Blue Box Collection	Weekly	Weekly	Bi-weekly
Streams	Two stream Fibre Containers	Two stream Fibre Containers	Two stream Fibre Containers
Recyclables accepted	**Fibre** Newspapers Magazines Phone books Fine paper Corrugated cardboard Boxboard **Containers** Glass Bottles and Jars Aluminum and Steel containers Rigid Screw Top Plastics (#1,2,4) Wide Mouth Tubs (#1-7) Plastic bags Aerosol and paint cans	**Fibre** Newspapers Magazines Phone books Corrugated cardboard Boxboard Books Egg cartons Gable top cartons **Containers** Glass Bottles and Jars Plastic Bottles (#1), Jugs (#2) and Tubs (#1,2,4,5) Aluminum and Steel containers Aluminum Foil Containers and Foil Wrap Clean Dry Paint Cans	**Fibre** Newspapers Magazines Phone books Fine paper Corrugated cardboard Boxboard **Containers** Glass Bottles and Jars Rigid plastic containers (#1,2) Aluminum and Steel containers Aluminum pie plates and foil
Contractor	Norfolk Disposal Services Limited	Emterra Group	Antonissen Trucking
Materials Recover Facility (MRF)	BFI MRF London	Emterra MRF London	BFI MRF London
Contract Expiry	April 2012	February 2012	June 2011

Single Family
The Municipalities offer a two stream (paper, containers) Blue Box collection program for its residents.

Multi-residential
Multi-residential buildings (apartments) have the option to recycle Blue Box material on residential collection days.

Ontario Regulation 103/94 prescribes IC&I source separation programs, including for multi-residential buildings.

They are required to have source separation programs in place for:

- Aluminium food or beverage cans (including cans made primarily of aluminium);
- Glass bottles and jars for food or beverages;
- Newsprint;
- Polyethylene terephthalate bottles for food or beverages (including bottles made primarily of polyethylene terephthalate);

- Steel food or beverage cans (including cans made primarily of steel); and
- The categories of waste that are collected or accepted by the Blue Box waste management system, if any, of the municipality where the building is located.

Although the MOE enforcement has increased in recent years not all multi-residential buildings are in compliance with these requirements.

IC&I
The Municipalities collects recyclables from the commercial sector, primarily in urban areas. All commercial properties are eligible to participate in recycling, on the same day as the residential Blue Box waste is collected, as long as the properties are able to meet the standard set out requirements.

IC&I recyclables collection is also undertaken by private sector contractors that make arrangements directly with IC&I owners/property managers. Recyclables are likely taken to one of a number of materials recovery facilities (MRFs) in southwestern Ontario.

Source separation programs for prescribed recyclables are mandatory for businesses and institutions that exceed the following thresholds:

- Retail Shopping Establishments and Complexes Total floor space > 10,000 m^2
- Large Construction and Demolition Projects Total floor space > 2,000 m^2
- Office Buildings Total floor space > 10,000 m^2
- Restaurants >$3,000,000 gross sales
- Hotels and Motels >75 Units
- Hospitals Class A, B or F Hospital
- Educational Institutions >350 enrolment
- Large Manufacturing Establishments >16,000 hours of employment/month

According to Ontario Regulation 102/94 these businesses must undertake/update an annual Waste Audit and Waste Reduction Work Plan.

Furthermore, Ontario Regulation 103/94 prescribes IC&I source separation programs.

Although enforcement has increased in recent years many businesses are not in compliance with these requirements.

2.3.2 Organics and Other Waste Diversion

Table 2.3 summarizes other waste diversion programs for each Municipality.

Table 2.3 Other Waste Diversion Programs

	Municipality of Bayham	Municipality of Central Elgin	Township of Malahide
Organics	On-residence management (backyard composting etc.)	Limited leaf and yard waste collection in fall	No programs
Other programs	Large item and Household Hazardous Waste Drop-off Day Ongoing Large Item Drop-off	Spring Clean Up & Household Hazardous Waste Depot	Household Hazardous Waste& Electronics Recycling Depot Drop-off Day Battery Drop-off at Township offices Ongoing Large Item Drop-off (fee)

The Municipalities have a variety of other programs which allow residents to divert (and in some cases dispose) of a variety of wastes.

These wastes represent a low tonnage of the overall waste stream.

3.0 Current Disposal and Diversion

3.1 Waste Generation

The waste generated in the Municipalities comes from two sectors:

- Residential (Single family and Multi-Residential); and
- IC&I.

The waste under the Municipalities control comes largely from the residential sector with small amounts of garbage and Blue Box wastes from the commercial sector. The focus of this Plan is for wastes that are under the Municipalities control.

Table 3.1 depicts overall average residential waste disposed and diverted in 2009 and 2010 that is managed by the Municipalities. Figure 3.1 depicts the proportion of different waste streams managed by the Municipalities and its residents.

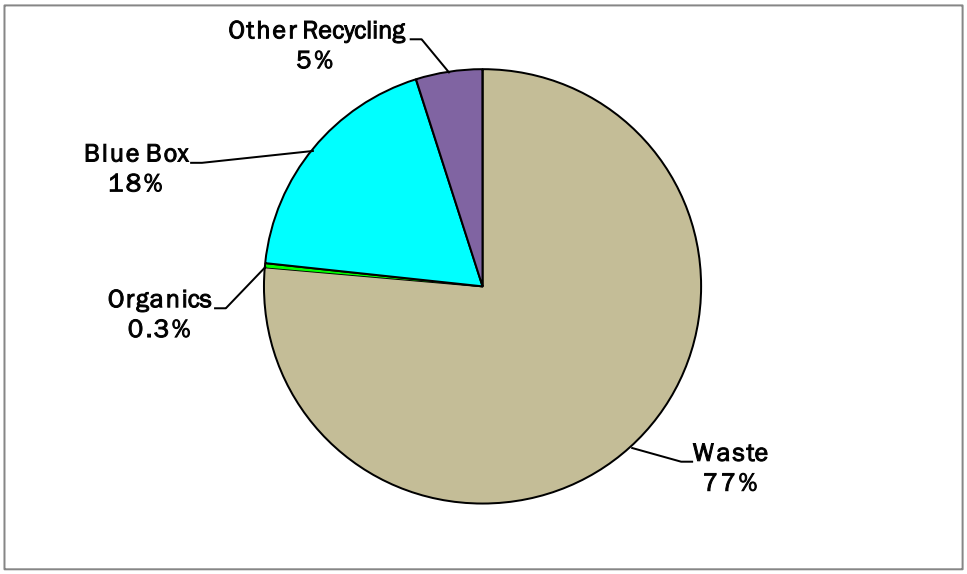
Table 3.1 Waste Disposal and Diversion Managed by the Municipalities 2009 and 2010

	Bayham	Central Elgin	Malahide	Total
Single Family Households	2,568	5,333	2,904	10,805
Multi-residential Households	24	0	0	24
Households	**2,592**	**5,333**	**2,904**	**10,829**
Population	**6,750**	**13,530**	**7,865**	**28,145**
Disposal		tonnes/year		
Curbside Collection	1,350	2,781	1,871	**2,001**
Sub-total	**1,350**	**2,781**	**1,871**	**6,002**
Diversion				
Recyclables	360	813	270	1,443
Organics	0	24	1	25
HHW[1]	7	7	5	19
WEEE[1]	0	0	4	4
Residential Deposit Return[1]	37	76	46	159
Residential On-Property[1]	206	1	0	207
Total Residential Waste Diverted	**610**	**921**	**325**	**1,856**
Total Residential Waste Generated	**1,960**	**3,702**	**2,196**	**7,858**
Residential Waste Generated kg/capita/year	**290**	**274**	**279**	**279**
Diversion Rate (%)	**31**	**25**	**15**	**24**

1. Derived from WDO Datacall data

It is clear that most waste is landfilled. The Blue Box program accounts for most waste diversion in the Municipalities.

Figure 3.1 Breakdown of Wastes Managed by the Municipalities and its Residents



3.2 Waste Collection

A set-out study was conducted to determine resident participation in the garbage and Blue Box programs. For each municipality, two routes were selected to represent rural and urban areas. Approximately 25 houses were selected on each street. In early June and again in early July, a 2cg staff member drove to the selected streets and documented house numbers, set-out of garbage (# of containers, # of bags) and set-out of recycling (# of bins, # of bags).

Table 3.2 presents an overview of the results. The full results are presented in a separate report (Appendix 1).

Table 3.2 Overall Set-out Rates for June and July 2011 (300 households)

	Total		Urban		Rural	
	hshlds	%	hshlds	%	hshlds	%
Set-out	194	65	113	86	81	48
Garbage	182	61	108	82	74	44
Recycling	157	52	95	72	62	37

The set-out rates for urban areas are fairly high and at expected levels. The set-out rates for rural households are low and indicate that rural households generate less waste and/or manage a portion or all of their waste themselves.

Table 3.3 depicts some additional waste collection information.

Table 3.3 Additional Waste Collection Information

	Bayham	Central Elgin	Malahide
Households per serviced kilometers of roads	13.3	14.6	11
Seasonal households	35	50	160
IC&I stops	120	210	70

3.3 Current System Costs

Table 3.4 depicts the annual costs of waste management as managed by the Municipalities.

Table 3.4 Summary of Annual Costs (2010)

	Bayham	Central Elgin	Malahide	Total
Garbage	$258,000	$510,000	$275,000	$1,043,000
Blue Box	$108,000	$310,000	$110,000	$528,000
Other Waste Diversion	$10,000	$45,000	$15,000	$70,000
Total	**$376,000**	**$865,000**	**$400,000**	**$1,641,000**
Tonnes Managed	1,986	3,603	2,189	7,778
$/tonne	**$189**	**$240**	**$183**	**$211**
Households (all)	2,599	5,355	2,919	10,873
$/household (all)	**$145**	**$162**	**$137**	**$151**
Population	6,725	13,925	8,809	29,459
$/capita	**$56**	**$62**	**$45**	**$56**

It costs approximately $1.6 million for the Municipalities to manage wastes annually. This includes wastes managed directly by residents and other activities such as deposit return.

This works out to about $211/tonne of wastes generated by residents that are managed by the Municipalities. The annual cost of waste management is on average about $151/household and $56/capita.

A further and more detailed examination of garbage and Blue Box collection and processing costs is completed in Section 9.

4.0 Data Analysis

4.1 Comparison with Provincial Averages

It is useful to understand how the Municipalities waste generation and diversion compares to Provincial averages.

Table 4.1 presents an overview of Ontario waste generation, diversion and disposal as calculated from the Statistics Canada report *Waste Management Industry Survey: Business and Government Sectors- 2008* (Statistics Canada, 2010).

Table 4.1 Overview of Ontario's (2006) Waste Generation, Diversion and Disposal

	Residential	IC&I	Total
	kg/capita		
Diversion	145	72	217
Disposal	250	495	745
Total	**395**	**567**	**962**
Diversion Rate (%)	**37**	**13**	**23**
Diversion Rate (%) Municipalities[1]	**24**		

1. Average using 2009-2010 data

On this basis, about 41% of all waste is generated by the residential sector and about 59% by the IC&I sector. About 67% of all waste diverted is done so by the residential sector with about 33% diverted by the IC&I sector. About 34% of waste disposed in landfill is done so by the residential sector with about 66% disposed by the IC&I sector. In short the residential sector generates less waste but diverts more waste than the IC&I sector.

As noted in Table 4.2 the Municipalities residential waste generation rate is estimated to be 279 kg/capita, which is considerably lower than the Ontario average. Furthermore, the Municipalities residential diversion rate of 24% is lower than the Ontario residential average. On a weight basis the Municipalities divert 66kg/capita versus the Ontario residential average of 145 kg/capita.

Both garbage disposal and waste diversion are impacted by the rural nature of the Municipalities.

The lower rate of garbage disposal in the Municipalities is likely a function of the self management of a portion of the garbage stream (e.g. burning, backyard composting, disposing on-site).

The lower rate of waste diversion is also likely a function of the self management of a portion of the waste diversion stream as well as the extent of waste diversion programs available to residents (e.g. very little collection of organic wastes).

Table 4.2 Overview of the Municipalities' (2009-2010) Waste Generation, Diversion and Disposal

	Residential	IC&I[1]	Total
	kg/capita		
Diversion	66	72	138
Disposal	213	495	708
Total	**279**	**567**	**846**
Diversion Rate (%)	**24**	**13**	**16**

1. Used data from Statistics Canada to estimate (Statistics Canada, 2010)

Statistics Canada data was used to estimate waste generation in the Municipalities IC&I sector. There was no data available to verify these estimates although it is likely that they are overestimated given the rural nature of the Municipalities and its relatively small IC&I base.

Mindful that IC&I data is estimated using the Provincial average, the Municipalities have an overall waste diversion rate of 16% and this is lower than the Provincial average of 23%. This lower average waste diversion is driven down by estimated diversion in the IC&I sector.

The Provincial waste diversion goal is 60%. To achieve this goal about 508 kg/capita would need to be diverted annually. This is almost four times what is currently diverted and would entail diverting another 370 kg/capita annually.

It should be noted that this Plan pertains to all wastes collected by the Municipalities.

The MOE's "Policy Statement on Waste Management Planning: Best Practices for Waste Managers" notes that any planning is to include residential wastes and IC&I and C&D waste collected by the municipality (MOE, 2007). The Municipalities collect essentially residential wastes with small amounts of IC&I wastes. It is this waste stream that is the focus of this Plan.

On this basis, an estimated further 102 kg/capita (or about 264 kg/hshld) would need to be diverted annually to achieve a 60% waste diversion rate.

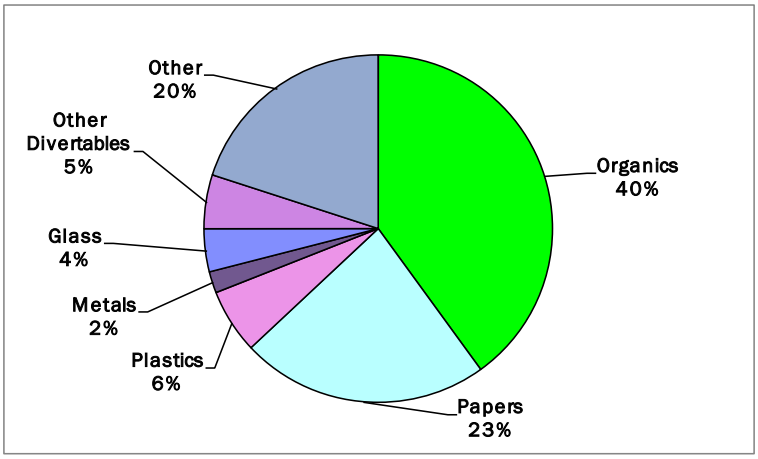
4.2 Waste Composition and Diversion Potential

It is useful to understand the Municipalities estimated waste composition to develop an understanding of additional waste diversion opportunities.

4.2.1 Residential Waste Composition

A number of residential waste audits have been undertaken by Stewardship Ontario. Using the results from similarly sized municipalities the waste composition for residential waste in the Municipalities was estimated. Figure 4.1 depicts the estimated residential waste composition.

Figure 4.1 Estimated Residential Waste Composition



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

$$\text{Capture Rate [\%]} = \frac{\text{Waste Diverted}}{\text{Waste Generated}} \quad \text{X } 100$$

A capture rate can be used as a measure of the success of a recycling reuse program. A higher capture rate is indicative of less recyclable waste being sent to landfill.

Table 4.3 and Figure 4.2 present an overview of current waste diversion. It is clear that Blue Box waste diversion contributes the most to overall waste diversion in the Municipalities.

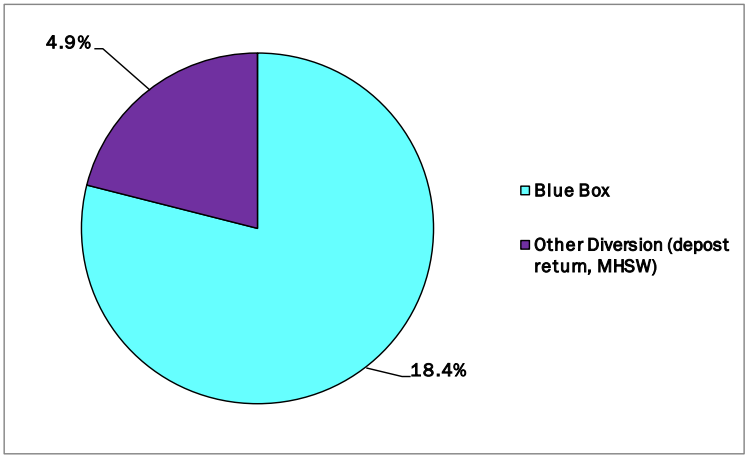
As depicted in Table 4.3 overall the capture rate of Blue Box materials is about 53% with the balance presently being landfilled. Overall, it is estimated that about 30% of wastes for which there are diversion programs are being captured.

Figure 4.2 shows the breakdown of current waste diversion (i.e. 24%), with the largest contributors to waste diversion being and Blue Box material.

Table 4.3 Overview of Current Waste Diversion (2009-2010)

Residential Waste Stream and Waste Diversion	Bayham	Central Elgin	Malahide	Tonnes Diverted	% of Total Waste	Total Generated	Capture Rate
Total Waste Generated						**7,858**	
Waste Diversion							
Blue Box							
Papers (ONP, OMG,	234	651	175	1,059	13.5%	1,807	58.6%
Metals (aluminum,	38	41	28	107	1.4%	471	22.7%
Plastics (containers,	48	55	36	138	1.8%	157	87.8%
Glass	41	67	30	138	1.8%	314	44.1%
Blue Box Subtotal	**360**	**813**	**270**	**1,443**	**18.4%**	**2,750**	**52.5%**
Organics	**206**	**24**	**1**	**231**	**2.9%**	**3,143**	**7.3%**
Other Diversion	**44**	**83**	**55**	**182**	**2.3%**	**393**	**46.4%**
Total material	**610**	**921**	**325**	**1,856**	**23.6%**	**6,286**	**29.5%**

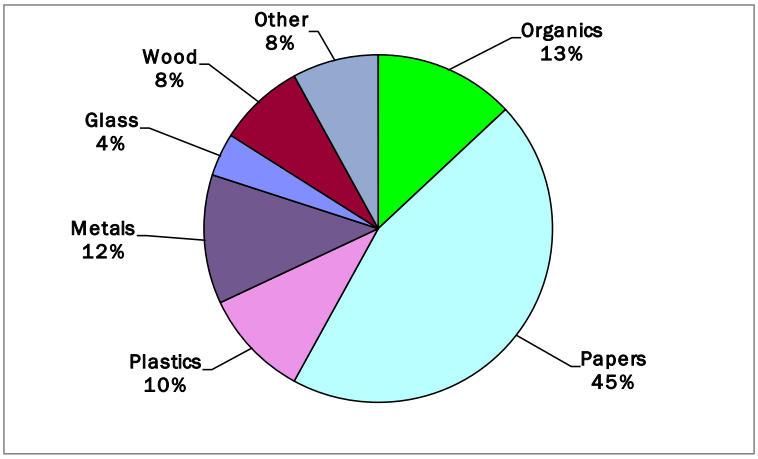
Figure 4.2 Overview of Current Waste Diversion



4.2.2 IC&I Waste Composition

IC&I waste composition was estimated in RIS International 2005. Figure 4.3 depicts the estimated IC&I waste composition.

Figure 4.3 Estimated IC&I Waste Composition



There is very little data available about the IC&I sector in the Municipalities in terms of waste generation and waste diversion.

4.3 Comparison with Other Municipalities

The Municipalities are all part of the Rural South grouping, as designated by WDO.

Table 4.4 presents a comparison with other similar municipalities (ca. 2,000-6,000 households), that make up part of the Rural South grouping, using 2009 summarized WDO datacall information (WDO, 2010). (Note: This is the most recent fully summarized data. 2010 data is expected later in 2011.). Municipalities are presented in order from highest to lowest waste diversion.

The average waste diversion rate for the municipalities in Table 4.4 is 30%. On this basis Bayham is slightly above average and Central Elgin and Malahide are below average.

Table 4.5 refines this comparison to nearby municipalities in the Rural South grouping but also in some of the other groupings. From this analysis it is clear that the Municipalities generate a relatively low amount of waste but that it diverts a relatively low amount and disposes a medium amount of waste.

Table 4.6 presents an overview of municipal waste management programs of the municipalities in Table 4.5.

The municipalities with higher diversion rates had one or more of the following:

- User pay or bag tag system;

- Drop off depots for a variety of wastes; and/or
- Green bin program.

A closer analysis of Blue Box and other diversion was undertaken to help identify challenges and opportunities regarding waste diversion. Waste diversion rates were calculated from WDO Datacall (WDO, 2009) using Generally Agreed Principles (GAP) analysis. The GAP analysis accounts for wastes diverted minus assumed levels of contamination in the diverted waste streams. GAP waste diversion rates are typically lower than municipally calculated diversion rates because estimated contamination is subtracted from overall diversion.

Table 4.4 Municipal Comparison for Selected Rural South Grouping Municipalities

Municipality	Total Reported Single Family Households Including Seasonal Households	Reported Population	Residential Waste Diverted	Residential Waste Disposed
Rural Collection - South			**%**	%
MONO, TOWN OF	2,631	7,515	**58%**	**42%**
THAMES CENTRE, MUNICIPALITY OF	4,679	13,427	**48%**	**52%**
WEST GREY, MUNICIPALITY OF	5,051	12,193	**47%**	**53%**
SOUTHGATE, TOWNSHIP OF	2,411	7,167	**46%**	**54%**
MEAFORD, MUNICIPALITY OF	5,420	11,000	**46%**	**54%**
HIGHLANDS EAST, MUNICIPALITY OF	4,484	3,259	**42%**	**58%**
DUTTON-DUNWICH, MUNICIPALITY OF	1,493	3,507	**41%**	**59%**
GREY HIGHLANDS, MUNICIPALITY OF	5,254	9,480	**38%**	**62%**
LANARK HIGHLANDS, TOWNSHIP OF	3,199	5,180	**36%**	**64%**
GEORGIAN BLUFFS, TOWNSHIP OF	5,130	11,531	**36%**	**64%**
NORTH GLENGARRY, TOWNSHIP OF	4,543	10,163	**36%**	**64%**
MADAWASKA VALLEY, TOWNSHIP OF	2,937	4,385	**35%**	**65%**
EDWARDSBURGH CARDINAL, TOWNSHIP OF	2,836	6,194	**33%**	**67%**
BAYHAM, MUNICIPALITY OF	2,560	6,750	**32%**	**68%**
CHATSWORTH, TOWNSHIP OF	3,134	6,440	**32%**	**68%**
DRUMMOND-NORTH ELMSLEY, TOWNSHIP OF	3,443	6,763	**32%**	**68%**
ELIZABETHTOWN-KITLEY, TOWNSHIP OF	3,981	9,326	**32%**	**68%**
NORTH GRENVILLE, MUNICIPALITY OF	5,510	15,706	**31%**	**69%**
MCNAB-BRAESIDE, TOWNSHIP OF	3,057	7,222	**28%**	**72%**
RUSSELL, TOWNSHIP OF	4,961	14,470	**27%**	**73%**
SOUTHWEST MIDDLESEX, MUNICIPALITY OF	2,402	5,890	**26%**	**74%**
STONE MILLS, TOWNSHIP OF	3,449	7,568	**26%**	**74%**
NORTH HURON, TOWNSHIP OF	2,185	4,860	**25%**	**75%**
ASHFIELD-COLBORNE-WAWANOSH, TOWNSHIP OF	2,980	5,258	**25%**	**75%**
NORTH STORMONT, TOWNSHIP OF	3,052	6,239	**25%**	**75%**
SOUTH STORMONT, TOWNSHIP OF	4,860	12,520	**25%**	**75%**
BECKWITH, TOWNSHIP OF	2,809	6,251	**25%**	**75%**
ALFRED AND PLANTAGENET, TOWNSHIP OF	3,347	8,113	**23%**	**77%**
CENTRAL ELGIN, MUNICIPALITY OF	5,311	13,530	**23%**	**77%**
HASTINGS HIGHLANDS, MUNICIPALITY OF	3,614	3,519	**23%**	**77%**
ST. CLAIR, TOWNSHIP OF	5,560	14,649	**21%**	**79%**
MISSISSIPPI MILLS, TOWN OF	5,040	11,934	**20%**	**80%**
FRONT OF YONGE, TOWNSHIP OF	1,218	2,803	**20%**	**80%**
WHITEWATER REGION, TOWNSHIP OF	3,305	6,631	**19%**	**81%**
MERRICKVILLE-WOLFORD, VILLAGE OF	1,115	2,867	**19%**	**81%**
NORTH DUNDAS, TOWNSHIP OF	3,988	12,108	**18%**	**82%**
SOUTH DUNDAS, TOWNSHIP OF	4,322	10,535	**18%**	**82%**
SOUTH GLENGARRY, TOWNSHIP OF	5,621	12,067	**16%**	**84%**
SOUTHWOLD, TOWNSHIP OF	1,683	4,724	**16%**	**84%**
MALAHIDE, TOWNSHIP OF	2,889	7,865	**15%**	**85%**
PLYMPTON-WYOMING, TOWN OF	3,312	7,551	**15%**	**85%**
WEST ELGIN, MUNICIPALITY OF	2,451	5,223	**15%**	**85%**
Rural South Average	**276,278**	**633,778**	**29.7%**	**70.3%**
Provincial Totals	**4,067,653**	**13,284,473**	**44.0%**	**56.0%**

Table 4.5 Comparison of the Municipalities to Nearby Municipalities (2009)

Municipality	Total Reported Single Family Households Including Seasonal Households	Reported Population	Total Residential Waste Generated	Total Residential Waste Diverted	Total Residential Waste Disposed	Total Residential Diversion Rate	Total Residential Disposal Rate
			kg/capita			%	
Large Urban							
City of London	113,787	381,990	419	178	242	**42%**	**58%**
Rural Regional							
Oxford County	42,626	102,756	302	151	151	**50%**	**50%**
Small Urban							
City of St. Thomas	12,077	37,168	430	161	269	**37%**	**63%**
Rural Collection - South							
Municipaity of Bayham	2,560	6,750	290	94	196	**32%**	**68%**
Municipality of Central Elgin	5,311	13,530	286	67	219	**23%**	**77%**
Township of Malahide	2,889	7,865	278	42	236	**15%**	**85%**
Average (2009)	**10,829**	**28,145**	**279**	**66**	**216**	**24%**	**76%**
Municipality of Thames Centre	4,679	13,427	271	130	141	**48%**	**52%**
Municipality of Dutton-Dunwich	1,493	3,507	414	169	245	**41%**	**59%**
Township of Southwold	1,683	4,724	236	37	199	**16%**	**84%**
Town of Plympton Wyoming	3,312	7,551	422	62	360	**15%**	**85%**
Municipality of West Elgin	2,451	5,223	306	45	262	**15%**	**85%**

Table 4.6 Municipal Program Comparison

Municipality	Disposal	Diversion					
	Garbage	Blue Box	Organics	Municipal Household Special Waste	Waste Electrical and Electronics Equipment	Other	Diversion Rate
City of London	42 collections per year 4 bag/container limit Wastes can also be dropped off at depots	42 collections per year	Seasonal leaf and yard waste collection Depots Backyard composter program	Permanent depot at W-12A Landfill and City depots	Permanent depot at W-12A Landfill and City depots	Can drop off construction and demolition materials, scrap metal at some depots. One depot has a Goodwill attended donation centre for durable goods	42
Oxford County	Weekly collection All bag/container subject to $1.50 tag Waste can also be dropped off at landfill (tipping fee)	Bi-weekly collection (Most of County)	Leaf and yard waste drop off depots	Permanent depot at Oxford County Landfill Special event days	Permanent depot at Oxford County Landfill	Special event days for White Goods and Scrap metal	50
City of St Thomas	Weekly collection 2 bags/containers “free” Additional bag/containers $1.75 Waste can also be dropped off at transfer station for $1.75/bag Large Items can be taken to transfer facility (fee)	Bi-weekly collection Blue Boxes can be purchased at the Transfer Station	Bi-weekly collection Green cart program for food waste, non recyclable paper and leaf and yard waste	Accepted at transfer station (fee, material limitations)	Accepted at transfer station	MHSW accepted at transfer station	36
Municipality of Thames Centre	Weekly collection from April through October Bi-weekly for balance of the year Residents receive 45 bag tags annually. Additional tags can be purchased for $2.50	Weekly collection	Curbside seasonal leaf and yard waste collection	Permanent depot at W-12A Landfill (i.e. have access to City of London facility)	No program	Seasonal collection of bulky items. Landfill drop off depot that accepts metal, tires, concrete, bricks, compost, brush and empty propane tanks free of charge	48

Municipality	Disposal	Diversion					
	Garbage	Blue Box	Organics	Municipal Household Special Waste	Waste Electrical and Electronics Equipment	Other	Diversion Rate
Township of Southwold	Weekly collection 3 bag/week limit	Bi-weekly collection	No programs	No programs	No programs	No programs	16
Town of Plympton-Wyoming	Weekly collection	Alternating week collection (fibre week one; containers week two)	No programs	Periodic Lambton County depot (6 days per year)	No programs	No programs	15
Municipality of West Elgin	Rodney Weekly collection, clear bags West Lorne Weekly collection	Rodney Newspapers-third Tuesday of month Containers-last Saturday of month West Lorne Bi-weekly collection	No programs	Permanent drop-off depot (BFI) in St Thomas (fee)	No programs	Recycling depot at landfill	15

4.4 Blue Box Assessment

Blue Box
According to the WDO 2009 Datacall (WDO, 2010) the average capture rate in the Province for Blue Box wastes is 177 kg/hshld/year.

As noted the Municipalities are included in the Rural South grouping, with 69 other municipalities. Data for 2009 (most recent compiled data) (WDO, 2010) was analyzed for this municipal grouping. As depicted in Figure 4.4 the Municipalities capture rate was marginally lower when compared to the average of the Rural South grouping and considerably lower than the Provincial average. Malahide had the lowest capture rate and Central Elgin the highest capture rate of the three Municipalities.

As noted in Table 4.3 the current capture rate for Blue Box materials is about **53%**. The target capture rate for the Rural South grouping is **70%**.

Figure 4.4 Capture of Blue Box Materials (Paper Fiber, Plastic, Aluminum, Steel, Glass).

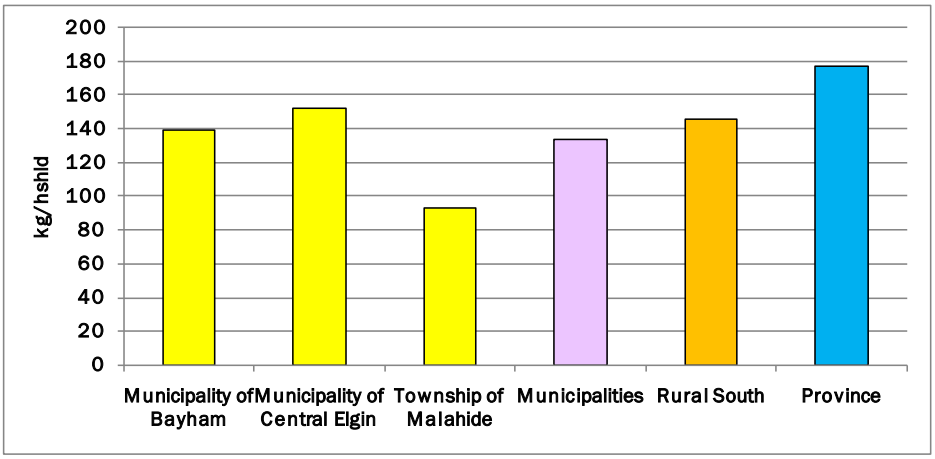


Figure 4.5 compares the Municipalities capture of paper fibre, plastic, aluminum, steel and glass to the average for the Rural South group (expressed as a percentage). It is clear that the capture of paper and glass are below average while the capture of plastic, aluminum and steel are essentially the same as the average. It may be prudent to emphasize the capture of additional paper fibre and to a lesser extent glass as part of future initiatives.

Figure 4.5 Comparison of Blue Box Capture-Municipalities vs. Rural South Group

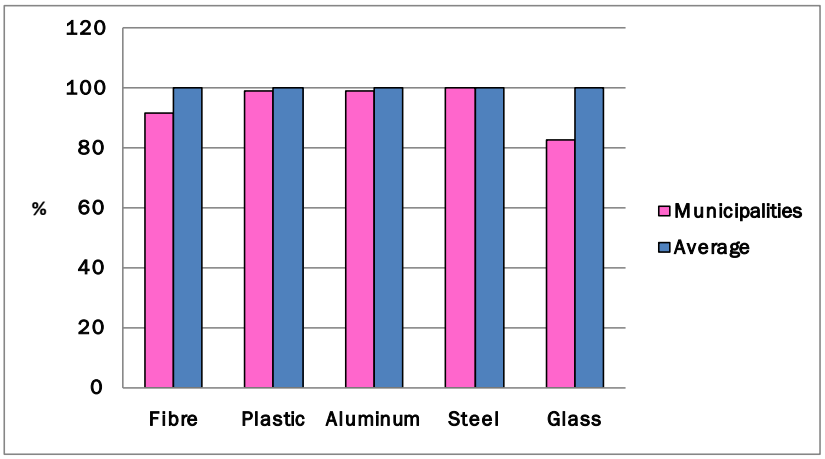


Figure 4.6a and 4.6b depict the proportion of these materials captured in the Municipalities versus the Rural South group. The average composition for both is fairly similar.

Figure 4.6a Proportion of Various Streams in Blue Box-Municipalities

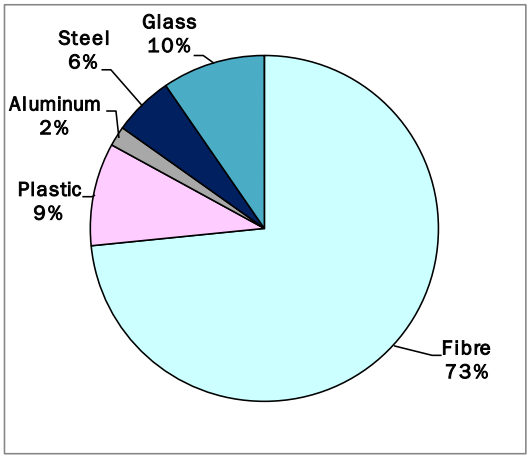
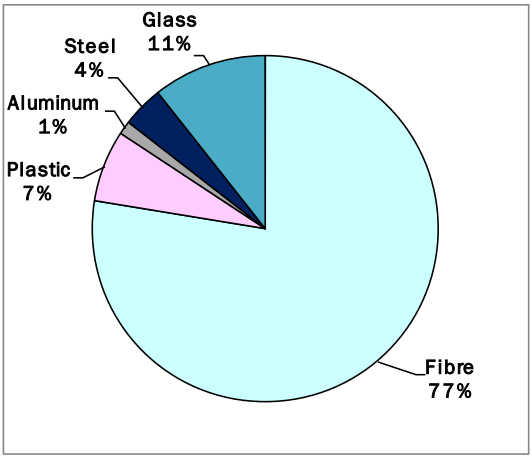


Figure 4.6b Proportion of Various Streams in Blue Box-Rural South Group



In conclusion, to capture 70% of Blue Box materials the Municipalities would require the additional capture of about 482 tonnes/year. This would contribute an additional 6 percentage points to overall waste diversion.

It should be noted that the there are very few multi-residential sector residences. These are included with single family households above.

4.5 Organics Assessment

The Waste Diversion Ontario *Highlights of the 2009 Tonnage Datacall Organic Waste Diversion* (WDO, 2010) was analyzed. Table 4.7 depicts the tonnes of leaf and yard waste and source separated organic waste (SSO) (i.e. food waste, non recyclable paper, other items) collected and the number of households with access to this service. On this basis, an average Ontario home with access to leaf and yard waste collection and/or Green Bin collection diverts about 139 kg of leaf and yard waste and 158 kg of SSO annually or up to about 280 kg/hshld if they have access to both services.

Table 4.7 Overview of Curbside Organic Waste Diversion in Ontario (2009)

	Tonnes	Households	kg/household
Leaf and Yard Waste	387,791	3,143,978	123.3
Source Separated Organic Waste	346,876	2,205,528	157.3
			280.6

On that basis it is clear that annual organic waste collection of 240-280 kg/hshld is achievable for an organics program that includes leaf and yard waste, food waste and non-recyclable paper.

The Municipalities annually diverts about 21 kg/hshld of organics (mostly from Bayham). As noted in Table 4.3 the current capture rate of organics by the Municipalities is about 7%.

To achieve a high diversion rate leaf and yard waste (>40% diversion rate) and food wastes (>50% diversion rate) would need to be diverted.

For example a 70% capture rate of organics would result in an additional 1,970 tonnes/year would need to be collected. This would contribute an additional 25.1 percentage points to overall waste diversion.

The Municipalities have very limited collection programs for organics (e.g. leaf and yard waste, food waste). Central Elgin has limited collection of leaf and yard waste and residents can drop off leaf and yard waste at the operations centre. Bayham assumes that residents manage a certain amount of organics at home through back yard and other composting (i.e. estimated 206 tonnes in 2010).

4.6 Other Diversion Assessment

The completed Plan also considers MHSW, WEEE, C&D wastes, tires and other reusable goods (e.g. bulky goods, textiles, reusables). WDO Datacall results for 2009 (WDO, 2010) provides data on a number of other waste streams. Where relevant this is compared to the Municipalities data.

MHSW
Approximately 11.9 million residents have access to MHSW recycling programs and a total of 17,096 tonnes were collected. This results in an average of 1.45kg/hshld (i.e. all households). The Municipalities presently capture an estimated 1.7 kg/hshld.

WEEE
WDO Datacall results for 2009 were analyzed (WDO, 2010). Approximately 4.13 million households have access to WEEE recycling programs and a total of 23,014 tonnes were collected. This results in an average of 5.6kg/hshld (i.e. all households). The diversion of WEEE commenced in 2010 in the municipalities. To date there is no data.

Other Wastes
WDO Datacall results for 2009 were analyzed (WDO, 2010). WDO's list of other wastes includes: scrap metal, wood, drywall, brick and concrete, other C&D recyclables, tires, bulky goods, textiles and reusables. Approximately 4.57 million households have access to this type of recycling and a total of 116,000 tonnes were collected. This results in an average of 25kg/hshld (i.e. all households). In the Municipalities, none of this waste is separately collected or received.

4.7 Summary

As previously noted, the current waste diversion rate is about 24%. Achieving a Blue Box capture rate of 70% would result in an additional 6.1 percentage points of waste diversion or total waste diversion of about 30%. There are currently no capture rate targets for Organic Waste and Other Diversion. The waste diversion rate could be further increased if targets were implemented and attained.

To achieve higher waste diversion rates would require the implementation of new programs focused on diverting more wastes (e.g. organic waste) and reducing garbage disposal capacity (e.g. reduce weekly bag limits).

On the basis of the foregoing analysis and to achieve a higher waste diversion the following possible initiatives need to be considered:

- Improve curbside single family household capture rate of Blue Box, especially for paper fibre;
- Implement program to divert leaf and yard wastes;
- Implement program to divert food wastes;
- Implement program to divert construction and demolition wastes;

- Implement program to reduce bag limits and/or reduce garbage collection and/or implement a bag tag program; and
- Implement additional depot opportunities for residents (i.e. to divert various recyclables, MHSW, WEEE).

It should be noted that the Provincial waste diversion goal of 60% has no timeline and it is not mandatory.

The Municipalities can opt to maintain their current waste diversion rate or select another intermediate waste diversion rate. The most appropriate waste diversion rate was contemplated as part of public consultation (Section 6). A Waste Diversion Plan that includes initiatives required to achieve various waste diversion rates is presented in Section 7.

5.0 Projected Waste Management Needs

5.1 Population Build Out

The Municipalities population, housing and employment projections (2006-2026) were estimated from available planning documents. The population and housing projections developed by Central Elgin were used to help estimate the future populations of the Municipalities (Lapointe, 2006).

To provide a robust analysis the Strategic Development Scenario Growth Projections were used (i.e. assumed highest level of population growth). On this basis it is estimated that the annual growth rate from 2012 to 2027 will be about 1.4% per year. No further data was available and therefore data from St Thomas was used to estimate the population through 2032. This estimated change in population as well as growth rates is depicted in Table 5.1.

While demographic information was not presented in available reports it is expected that the proportion of elderly people will increase while the proportion of younger people is expected to decrease.

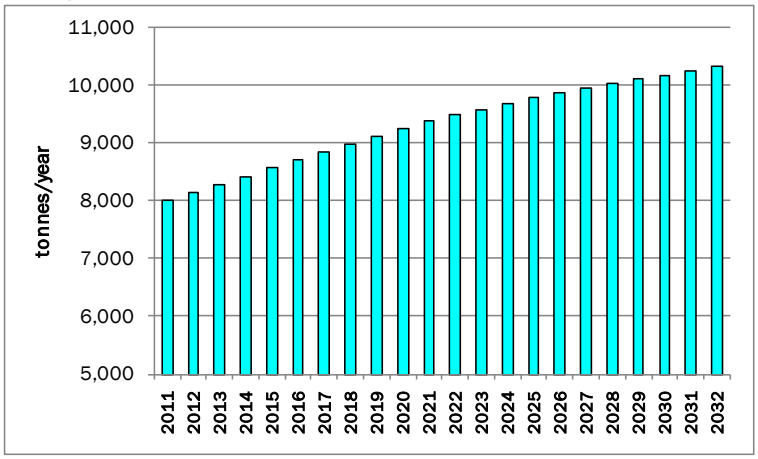
Table 5.1 Estimated Population of the Municipalities from 2011-2031

Year	Population	Annual Growth Rate (%)	Comment
2012	30,514	1.8	
2017	33,279	1.75	
2022	35,851	1.50	
2027	37,680	1.00	
2032	39,114	0.75	Used estimate from St Thomas as no data was available

5.2 Estimated Waste Generation

Figure 5.1 depicts estimated total waste generation for the Plan (i.e. 2012-2032). It is estimated that by 2032 approximately 10,500 tonnes/year of waste will be managed by the Municipalities, assuming no change in waste generation rates.

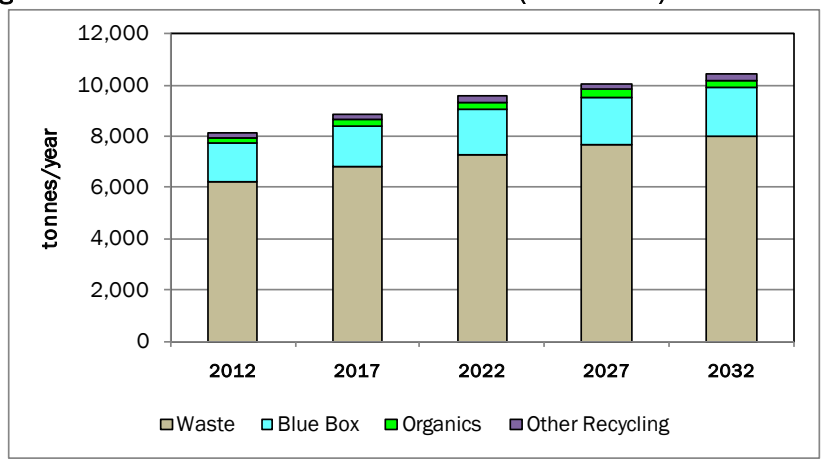
Figure 5.1 Estimated Waste Generation (2011-2032)



Waste generation has continued to increase across Canada, despite many programs and initiatives to encourage the reduction of waste generation and the use of waste diversion programs. If this trend continues then the estimate may be low. On the other hand implementation of various programs and initiatives by the Municipalities may result in a decline of overall waste generation. In any event, population growth and waste generation should be monitored annually. New waste generation projections should be calculated at least every five years.

Figure 5.2 depicts estimated annual tonnages of the various waste streams if the current waste diversion rate does not change. By 2032 about 7,900 tonnes/year of landfill space; 1,900 tonnes/year processing capacity for Blue Box wastes; 300 tonnes/year processing capacity for organics and 250 tonnes processing capacity for other recycling would be required.

Figure 5.2 Estimated Waste Stream Generation (2012-2032) - 24% Diversion



Some hypothetical waste diversion scenarios are presented to help illustrate possible required processing capacity for various waste streams in the future. The Waste Diversion Plan (Section 7) presents more detailed information on alternative Systems that could be developed to increase waste diversion.

As described in Section 4.7, increasing the capture rate of Blue Box wastes to 70% will bring overall waste diversion to about 30%.

Figure 5.3 depicts estimated annual tonnages of the various waste streams if a 30% waste diversion rate was achieved by 2017. This would require an additional 700 tonnes/year of processing capacity for Blue Box wastes. By 2031 about 7,300 tonnes/year of landfill space; 2,500 tonnes/year processing capacity for Blue Box wastes; 300 tonnes/year processing capacity for organics and 250 tonnes processing capacity for other recycling would be required.

Figure 5.3 Estimated Waste Stream Generation (2012-2032) - 30% Diversion

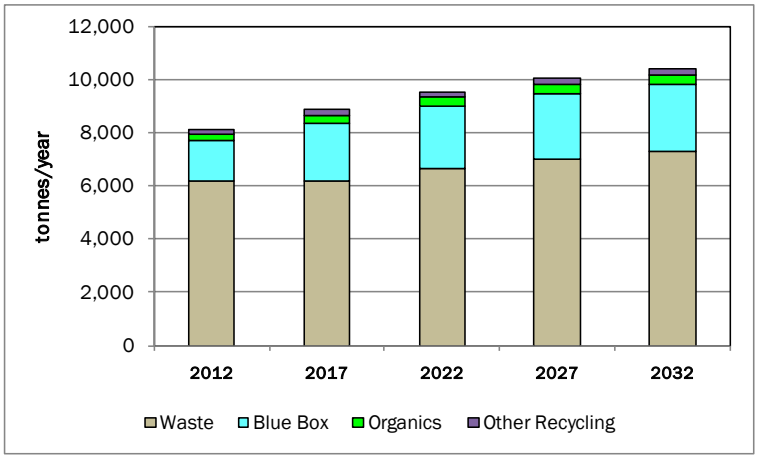
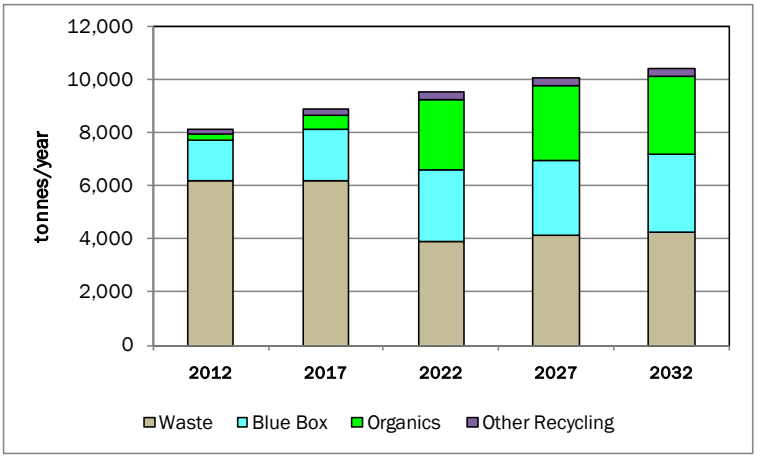


Figure 5.4 depicts estimated annual tonnages of the various waste streams if a 30% waste diversion rate was achieved by 2017 and if a 60% waste diversion rate was

achieved by 2022. This would require the capture of 70% of organic wastes and 80% of Blue Box materials.

By 2032 about 4,300 tonnes/year of landfill space; 2,900 tonnes/year processing capacity for Blue Box wastes; 2,900 tonnes/year processing capacity for organics and 300 tonnes processing capacity for other recycling would be required.

Figure 5.4 Estimated Waste Stream Generation (2011-2031) - 60% Diversion



5.3 Summary

Based on current waste generation rates and waste diversion rates by 2032 an estimated 10,500 tonnes/year of waste will be managed by the Municipalities.

The amount of infrastructure for collecting and managing these different waste streams will vary with the effort placed on waste diversion.

The Provincial waste diversion target rate is 60% and would represent a very aggressive target for the Municipalities. Table 5.2 depicts the estimated waste streams that would be collected if a 60% waste diversion rate were attained. By 2032 it is estimated that about 2,000 tonnes/year less landfilling capacity, but 2,600 more tonnes of organics processing capacity and 1,400 more tonnes of Blue Box processing capacity would be required.

Table 5.2 Required Processing Capacities for Various Waste Streams- 60% diversion

	Waste	Organics	Blue Box	Other Recycling
tonnes/year				
2012	6,217	239	1,495	189
2017	6,214	284	2,175	204
2022	3,921	2,678	2,678	287
2027	4,121	2,814	2,814	302
2032	4,278	2,921	2,921	313

The various waste diversion options are described further in the Waste Diversion Plan (Section 7).

6.0 Public Consultation Record

Public consultation included the following:

- Notification of this Study on the Municipalities web-sites;
- Steering committee meetings;
- Stakeholder meetings; and
- On-line survey.

6.1 Steering Committee

A steering committee meeting was held on 2 February 2011 to kick-off the Strategy and Plan. The focus of the meeting was used to discuss the scope of the Strategy and the Plan.

6.2 Stakeholder Meeting

A stakeholder meeting was held on 27 April 2011. Each of the Municipalities invited members of the public to attend this session.

The purpose of the session was to introduce the public to the Strategy and Master Plan process and obtain input that could be used in the development of the Strategy and the Plan.

The session consisted of:

a. Presentation which focused on describing the process as well as the current situation in the three municipalities (60 minutes); and
b. Break out and brainstorming session (60 minutes).

The key desired outcomes included:

- Attendees have understanding of the Strategy and Plan and can act as ambassadors in the community;
- Setting of a preliminary waste diversion goal to help guide Plan development;
- Provide input on potential disposal and diversion initiatives; and
- Help determine the extent the three municipalities should work together (e.g. harmonize programs, individual versus joint contracts).

Approximately 40 members of the public attended this meeting which was held at the Malahide Community Place.

After the presentation and question and answer session the meeting attendees were broken into four groups to answer the following questions:

- What is a reasonable target for a waste diversion rate?
- What are some possible initiatives related to Waste Disposal (Collection and Processing)?
- What are some possible initiatives related to Waste Diversion (Collection and Processing) (focusing on improving current programs and identifying possible new programs)?

The group sessions worked well and resulted in vigorous discussion. Each of the groups were provided with work-sheets that they could use to guide their discussion. At the end of the discussion period a representative of each group presented a summary of their group's findings.

A summary of results is presented below.

What is a reasonable target for a waste diversion rate?

There was general consensus for a waste diversion rate of 30-50% should be targeted. Some felt that staging waste diversion at 30%, 40% and then 50% over twenty years was the best way to go. Others felt that moving towards the higher end (i.e. 40-50%) of this range more rapidly was the best way to go.

What are some possible initiatives related to Waste Disposal (Collection and Processing)?

Some of the waste disposal options that were viewed favourably included:

- Harmonize Bag Limits;
- Implement a Bag Tag program; and
- Set up an Intra Municipal Waste Committee.

Some of the waste disposal options that were not viewed favourably included:

- User pay;
- Bi-weekly collection of waste; and
- Use of clear garbage bags.

What are some possible initiatives related to Waste Diversion (Collection and Processing)?

Some of the waste diversion options that were viewed favourably included:

- Enhanced P&E;
- Distribution of free or low cost Blue Boxes;
- Harmonization of Blue Box programs; and
- Backyard Composting Program.

Some of the waste diversion options that were viewed less favourably included:

- Recycling by-law; and
- Green Bin program.

Some of the waste diversion options led to mixed views including:

- Use of carts for multi-residential buildings;
- Bi-weekly collection of blue waste (versus weekly); and
- Sending blue box waste to new City of London MRF.

Some of these mixed views were as a result of differences of opinion while others were because of a lack of a comprehensive understanding of some initiatives.

The input from this meeting was used to help develop waste disposal and waste diversion initiatives.

6.3 On-line Survey

An on-line waste management survey was developed to obtain input from residents. The intent of the survey was to establish the current waste management behaviors of the community and gauge community opinion on possible future waste management options.

Two hundred and ninety residents completed the on-line survey. A full report summarizing this survey is included in Appendix 2.

The survey had 22 questions. The questions were divided into three categories: Introduction/Demographics; Current Habits; and Future Waste Management.

About 60% of the respondents reported that they set out one garbage bag or less while about 30% of respondents set out two garbage bags per week.

About 80% of respondents set out Blue Boxes for every collection.

Approximately 74% of respondents divert or dispose of MHSW and WEEE by utilizing depots put on by the municipality each year.

When asked about a suitable waste diversion target about 60% of respondents want to see the Municipalities striving to reach a diversion rate of 60% or higher. However, about 61% of respondents are not willing to pay more to fund enhanced waste diversion programs.

Respondents provided some general comments on a number of waste management topics including:

Acceptable Recyclables
Many respondents would like to see an increase in acceptable Blue Box items (especially Malahide respondents where only #1 and 2 plastics are collected).

Composting/Green Bin
Many respondents suggested backyard composting for rural areas and a Green Bin program for urban areas. They would also like to see leaf & yard waste collection implemented.

Frequency of Event Days
All respondents that commented on the frequency of special event days stated that there need to be more event days and they should be better advertised and organized.

Full User Pay Program
Most respondents do not agree with going to a full User Pay system. The main concern is illegal dumping of garbage in the country or on other residential properties by residents that cannot afford the additional cost or those not willing to pay for bag tags.

7.0 Waste Diversion Plan

Currently about 7,858 tonnes/year of waste are managed by the Municipalities. The current diversion rate is about 24% and comes primarily from a Blue Box program.

As noted in Section 1.3 the goals and objectives of future waste diversion are:

- To meet a waste diversion goal of 40%;
- To consider Zero Waste principles;
- To address Best Management Practices as set out by WDO for Blue Box collection as embodied in a Waste Recycling Strategy; and
- To consider striving to work towards the Provincial waste diversion goal of 60%.

The 40% waste diversion rate was selected through public consultation. While a majority of respondents wanted a waste diversion rate of 60% or greater a similar majority did not want to incur any additional tax costs as a result of implementing waste diversion programs. Achieving a higher waste diversion rate can be explored once the 40% goal has been attained.

About 99% of survey respondents (Appendix 2) indicated that they were in favour of the Municipalities working cooperatively if it means maintaining services and reducing costs and especially if it means increasing waste diversion. The harmonization of waste management programs can result in a clear program for all residents of the Municipalities and provide opportunities to explore cost efficiencies through joint service provision of collection, disposal and/or diversion services.

The focus of this waste diversion plan is on maximizing well-established waste diversion programs.

Embedded within this waste diversion plan is a Waste Recycling Strategy for Blue Box waste. A Strategy is required by WDO as part of Best Practices and can help the Municipalities maximize Blue Box funding. The CIF Guidebook for completing a

Waste Recycling Strategy was used for this purpose. Some of the tables in this Guidebook were used to help with waste diversion planning of all waste streams.

Table 7.1 depicts the additional diversion required to meet waste diversion milestones up to 70%.

Table 7.1 Additional Waste Diversion Required to Meet Waste Diversion Milestones

Possible Waste Diversion Milestones	Additional Diversion	Total Diversion	Total Landfill
%	tonnes/year		
23.6	0	1,856	6,002
30	501	2,357	5,501
40	1,287	3,143	4,715
50	2,073	3,929	3,929
60	2,859	4,715	3,143
70	3,645	5,501	2,357

Table 7.2 depicts the additional diversion required on a household level (i.e. both single family and multi-family households) to meet various waste diversion milestones.

Table 7.2 Additional Household Waste Diversion Required to Meet Waste Diversion Milestones

Possible Waste Diversion Milestones	Additional Diversion		
%	kg/hshld/year	kg/hshld/week	pounds/hshld/week
23.6	0	0	0
30	46	0.9	2
40	119	2.3	5
50	191	4	8
60	264	5	11
70	337	6	14

Based on the analysis in Sections 2-4 it is clear that there are well established and mature Blue Box programs and some other limited diversion programs in the Municipalities but that they are not achieving their waste diversion potential. Furthermore, there are some key opportunities to further expand the diversion of wastes including spring leaf and yard waste, fall leaves, food waste, C&D wastes, and bulky (large) items.

The key factors to promoting waste diversion are:

- Increasing waste diversion capacity (e.g. Blue Boxes, organics-leaf and yard waste food waste, Recycling depot) while decreasing waste disposal capacity; and
- Increasing the convenience of waste diversion and decreasing convenience of waste disposal.

Table 7.3 summarizes a number of residential best practices that could be incorporated into future waste diversion programs.

Table 7.4 depicts an evaluation of Waste Recycling Strategy Options and is adapted from the CIF Guidebook. Staff from each municipality reviewed and scored the various possible Best Practices to improve the capture of Blue Box wastes. A summary of the average scores and ranking are presented.

Table 7.3 Table of Residential Best Practices and Assessment of Applicability

	Overview	Potential impact on waste diversion	Cost to implement	Potential for Municipalities
General				
Promotion and Education (P&E) program	Municipalities clearly promote and educate residents on waste management and waste diversion goals	Low-medium	Low	The Municipalities could add to and enhance its current P&E.
Incentive Programs	Some municipalities provide incentives to residents that are high waste diverters (e.g. City of Hamilton "Gold Box")	Low	Low	The Municipalities could reward its high performers. This could encourage others to divert more waste
Garbage				
Bi-weekly garbage collection	Reduces available waste volumes residents can place at the curb. Needs to be coupled with additional waste diversion opportunities	Medium	Low	Good potential Would help Municipalities reduce waste going to landfill Needs to be partnered with additional waste diversion opportunities
Full User Pay	A user fee (purchased bag tag) applied for each bag of waste placed at the curb	Medium	Low	Good potential Would need to undertake a rate study to ensure residents are not being double taxed. Bag tags will not necessarily cover all costs

	Overview	Potential impact on waste diversion	Cost to implement	Potential for Municipalities
Use of Clear Bags	Residents would need to use clear bags for garbage	Medium	Low	Good potential Would require careful implementation. Would need to address resident privacy concerns
Blue Box				
Mandatory Recycling	By-law mandating recycling.	Medium	Low-Medium	The key to success is enforcement.
Curbside bans or mandatory source separation	By-law mandating recycling.	Medium	Low-Medium	The key to success is enforcement.
Weekly Collection of Blue Box (Malahide)	Blue Box would be collected weekly	Medium	Medium	This would give residents additional recycling capacity and could result in additional capture of these wastes. This could be coupled with bi-weekly garbage collection.
Develop Recycling Depot	Allow for the receipt of additional materials	Low	Medium-High	Residents currently have access to periodic depots for various materials. The Municipalities could develop their own recycling depot(s).
Organics				
Leaf and Yard Wastes				
Curbside collection and/or depot	Additional Collection of Leaf and Yard Waste (urban areas) and/or Seasonal Drop-off Depots for Leaf and Yard Waste	Medium	Medium	Ability to collect/receive leaf and yard wastes especially from urban areas. Access for all residents
Ban leaf and yard wastes in garbage	Wastes (garbage) placed at curb that includes leaf and yard wastes would not be collected.	Medium	Low-Medium	The key to success is enforcement.

	Overview	Potential impact on waste diversion	Cost to implement	Potential for Municipalities
Grasscycling	Ban the collection of grass.	Low	Low	The Municipalities would need to provide P&E information on grasscycling. This could result in a reduction of wastes collected.
Food Wastes				
Backyard Composting	Develop a back yard composting program.	Low	Low	The Municipalities could encourage backyard composting through sale of composters at cost or lower. This could result in a reduction of wastes collected. The Municipalities would need to provide P&E information on backyard composting.
Ban food waste in garbage	Wastes (garbage) placed at curb that includes organics would not be collected.	Medium-High	High	Impractical unless there is a Green Bin program. The key to success is enforcement.
Green Bin	Residents would be able to divert food waste in a Green Bin	Medium-High	High	Ability to collect/receive food wastes especially from urban areas.
Other				
Permanent or Seasonal Recycling Depots	Allow for the receipt of additional materials, especially for those with no curbside program	Medium	Medium-High	This could help divert considerably more wastes including, Blue Box recyclables, leaf and yard waste, large/bulky items, construction and demolition wastes, MHSW and WEEE.

Table 7.4 Table of Blue Box Best Practices with Scoring

Description of Options/Best Practices (For more information: *More information: Blue Box Program Enhancement and Best Practices Assessment Project Final Report, Volume 1)* • Proven results • Reliable Market/End Use • Economically Feasible • Accessible to Public • Ease of Implementation		% Estimated Waste Diverted	Score x/100	Ranking
Promotion and Outreach				
	Public Education and Promotion Program	1-3%	64	4
	Training of Key Program Staff	1-3%	32	12
Collection				
	Optimization of Collection Operations	0%	60	6
	Bag Limits	3-5%	83	1
	Enhancement of Recycling Depots	3-5%	na	na
	Provision of Free Blue Boxes	1-3%	65	3
	Collection Frequency	3-5%	71	2
	Broaden materials categories for Blue Box	1-3%	56	9
Transfer and Processing				
	Optimization of Processing Operations	0%	na	na
Partnerships				
	Multi-Municipal Collection and Processing of Recyclables	3-5%	57	8
	Standardized Service Levels and Collaborative Haulage Contracting	3-5%	63	5
	Intra-Municipal Committee	0%	51	10
Additional Research				
	Assess Tools and Methods to Maximize Diversion	1-3%	59	7

Description of Options/Best Practices (For more information: *More information: Blue Box Program Enhancement and Best Practices Assessment Project Final Report, Volume 1)* • Proven results • Reliable Market/End Use • Economically Feasible • Accessible to Public • Ease of Implementation		% Estimated Waste Diverted	Score x/100	Ranking
Administration				
	Following Generally Accepted Principles for Effective Procurement and Contract Management	0%	**48**	**11**

The top ranked Blue Box Best Practices included:

- Bag Limits (for waste);
- Collection Frequency of Blue Box or Garbage;
- Provision of Free Blue Boxes;
- Public Education and Promotion Program; and
- Standardized Service Levels and Collaborative Haulage Contracting.

The foregoing was used to help select possible initiatives that could lead to further waste diversion.

Table 7.5 summarizes a number of IC&I best practices that could be incorporated into future waste diversion programs.

These foregoing Best Management Practices were used to help identify ways to strengthen current and identify possible new diversion programs, which were then used to develop a number of alternative waste diversion systems (Systems) for the Municipalities.

Table 7.5 Table of IC&I Best Practices and Assessment of Applicability

	Overview	Potential impact on waste diversion	Cost to implement	Potential for Municipalities
General				
Promotion and Education (P&E) program	Municipalities promote and educate IC&I sector on waste management and waste diversion goals	Low-medium	Low	The Municipalities could add to and enhance its current P&E to include information for the IC&I.
Garbage				
Limit Curbside Collection of IC&I Waste	IC&I can currently put waste at the curb if on a residential collection route. The Municipalities could eliminate this service.	Low	Low	Low potential as current amounts collected are likely relatively low.
Blue Box				
Curbside disposal bans or mandatory source separation	By-law mandating recycling.	Medium	Low-Medium	The key to success is enforcement.
Organics				
Leaf and Yard Waste				
Ban leaf and yard wastes in garbage	Wastes (garbage) placed at curb that includes leaf and yard waste would not be collected.	Low	Low-Medium	Low potential as current amounts collected are likely relatively low. The key to success is enforcement.
Food Wastes				
Ban food waste in garbage	Wastes (garbage) placed at curb that includes organics would not be collected.	Low	Low-Medium	Low potential as current amounts collected are likely relatively low. Impractical unless there is a Green Bin program. The key to success is enforcement.
Other				

	Overview	Potential impact on waste diversion	Cost to implement	Potential for Municipalities
Permanent or Seasonal Recycling Depots	Municipally-owned Recycling Depot(s) where residents and business can bring waste and various recyclables.	Medium	Medium	Medium-High

Five alternative Systems were developed:

- System 1: Status Quo;
- System 2: Existing System with Improved Capture and Diversion;
- System 3: Improved Capture of Blue Box Wastes and Leaf and Yard Wastes;
- System 4: Reduce Bag Limits, Green Bin Program and Recycling Depot; and
- System 5: User Pay and Bi-Weekly Waste Collection.

These Systems have been developed sequentially. Each System adds on to the previous System and results in increased waste diversion.

The Systems have been developed so that the Municipalities can harmonize their waste management program.

7.1 System 1-Status Quo

System 1 is the existing system or Status Quo and includes the following components:

- Promotion and Education (P&E) program;
- Curbside collection of garbage;
- Curbside collection of recyclables (Blue Box);
- Limited fall curbside collection of leaves; drop-off depot (Central Elgin);
- Limited collection of wastes and recyclables from IC&I sector; and
- Periodic depots for large items, MHSW, WEEE operated by the Municipalities.

The estimated waste diversion rate for this system is **24%.**

7.2 System 2-Existing System with Improved Capture and Diversion

This System is based on maximizing waste diversion of the Municipalities existing waste management programs.

The main waste diversion program is the Blue Box. To move the capture of recyclables to 70% (i.e. WDO target for Rural Collection-South grouping) a number of changes need to be implemented. These changes focus on making waste disposal more restrictive and at the same time making waste diversion more convenient.

There is limited diversion of leaf and yard wastes, although this represents an obvious opportunity. The changes noted above for the Blue Box can also have a positive impact on the diversion of leaf and yard waste.

This System focuses on the following:

- All components of System 1;
- Upgraded P&E program;
- Set 3 bag weekly limit for waste for Bayham and Malahide;
- Distribution of Blue Boxes to single family households;
- Deliver Blue Box recyclables to new City of London Regional MRF;
- Availability of Backyard Composters (subsidized or unsubsidized);
- Improved capture of Blue Box waste to 60%; and
- Improved capture of organic waste (i.e. leaf and yard waste) to 15%.

When implemented, this system will result in a waste diversion rate of approximately 30%.

1. Upgraded P&E Program

Current P&E is adequate on how to dispose of and divert wastes. It provides education through instruction but does not promote the Municipalities waste management program. It does not speak to the Municipalities current goals or vision with regard to waste diversion.

Additional waste diversion could be stimulated through the development of an enhanced and sustained P&E program. This would include an overhaul and redevelopment of existing P&E materials. The objective would be to promote the Municipalities waste management programs more effectively.

New P&E material should spell out the Municipalities commitment to waste diversion and include a "Call to Action" letting residents and the IC&I sector know how they can participate and contribute to meeting the Municipalities waste diversion goals. This would also include specific information and instructions on how to participate.

A simple theme should be created that residents can relate to. An example of a simple theme would be using the additional pounds/week of waste diversion required to meet waste diversion targets, as described in Table 7.2.

Revised P&E would include a Waste Calendar and additional materials posted to the Municipalities web sites. The Municipalities should endeavour to reach residents through other means including print ads and through the use of social media. There are resources and funding available through the CIF for small municipalities (http://www.wdo.ca/cif/resources/education.html).

There is limited funding available from CIF for P&E programs.

2. Set 3 Bag Limit for Waste

Reducing bag/container limits is a Best Practice that can be used to induce waste diversion. The goal of this initiative is to drive additional Blue Box wastes and other wastes out of the garbage stream and into the diversion stream.

Currently Bayham and Malahide have garbage bag limits of four and seven respectively. These are very generous weekly bag limits and a disincentive to waste diversion. It is certain that there are recyclables and other wastes such as leaf and yard wastes in the garbage that could be readily diverted.

In Bayham, 98%, and in Malahide, 95%, of survey respondents noted that they put out three bags or less of garbage per week.

The Blue Box Program Enhancements and Best Practices Assessment Project (KPMG, 2007) suggested that municipalities that have weekly Blue Box collection have a three bag/week limit and those with bi-weekly collection have a four bag/week limit.

Currently Central Elgin has the most restrictive bag limit at an average of 1.8 bags/week. Residents are provided with some flexibility as they are provided with an annual allotment of bag tags that they can choose to use as they see fit. It is reasonable that the Municipalities all strive to move towards this weekly bag limit. Reducing Bayham's and Malahide's bag limit to 1.8 bags/week would be too drastic to take in one step. A bag limit reduction of three bags/weekly is a reasonable first step.

To provide some flexibility to residents the Municipalities could provide residents with an annual supply of bag tags. Residents would be able to use this supply of bag tags as they see fit. Central Elgin started out providing 104 tags/household/year and have reduced this by 5% in both 2009 and 2010. They now provide residents with 95 tags/household/year (i.e. 1.8 bags/week). Additional tags may be purchased by residents although the uptake of this is relatively low.

For this initiative to be successful it is critical that single family residents have access to low or no cost Blue Boxes and greater opportunities to divert leaf and yard waste.

3. Improved Capture of Blue Box Waste

The current capture rate of Blue Box material is approximately 53%. As noted the target capture rate for Rural Collection-South is 70%.

To move the capture of recyclables towards a preliminary target of 60% there are a number of Best Practice initiatives (as noted in Table 7.3) that can be used to improve the Blue Box capture rate including:

1. Upgrade P&E materials (described above);
2. Provision of additional free Blue Boxes to all households; and
3. Ensure relevant training of key program staff.

The provision of additional recycling capacity should make it more convenient for residents to recycle. The Municipalities should maintain a supply of Blue Boxes and supply them to residents at low or no cost.

Staff training to optimize Blue Box programs is readily available at a low cost to the Municipalities. Relevant Municipal staff should be encouraged to attend this training on an ongoing basis.

The foregoing will need to be coupled with additional P&E materials to be effective.

4. Deliver Blue Box Recyclables to new City of London Regional MRF (open fall 2011)

While this will not necessarily result in additional capture of Blue Box materials it can potentially result in a more cost effective Blue Box program. The City of London Regional MRF will be operational by the fall of 2011. This regional facility is intended to create efficiencies of scale by accepting recyclables from various municipalities. The Municipalities would need to ensure that what they collect can be processed at this MRF. The Municipalities processing fee would be dependent on the total tonnes received at the facility (i.e. higher tonnage means lower processing fees) for all municipalities. The Municipalities would receive revenue back for its recyclables (the Municipalities currently receives no revenue). At the current (2011) market value for recyclables the Municipalities would receive a rebate. Bringing Blue Box materials to this MRF may help the Municipalities reduce its costs. It should be noted that the market value for recyclables fluctuates and there may be cases where there is no rebate. The Municipalities would assume some risk in terms the market value for recyclables. This is discussed further in Section 9.

5. Improved Capture of Leaf and Yard Waste

There is currently limited collection of leaf and yard wastes.

Leaf and yard waste is relatively easy to capture and manage. This can be accomplished through a combination of curbside collection, backyard composting and seasonal depot(s).

There are a number of preliminary steps that could be taken to divert leaf and yard wastes including:

1. Upgrade P&E materials (described above);
2. Quantify residential on-property management;
3. Improve capture in existing programs; and
4. Introduce Backyard Composter program.

Quantify Residential On-Property Management
Bayham reports that a portion of the leaf and yard waste (and other organic wastes) are diverted through residential on-property management (e.g. back yard composting). Central Elgin and Malahide should estimate the amount of organic waste managed at home and add this to their estimates of waste diversion.

Improve Capture in Existing Programs
Central Elgin has seasonal leaf and yard waste collection and allows residents to bring this waste to its Operations Centre. This should be promoted further in P&E materials.

Introduce a Backyard Composter Program
Each properly used backyard composter can divert about 100kg of organic waste/year. A low to no cost to resident backyard composter program should be initiated to divert leaf and yard wastes (and food wastes) from the garbage stream.

The Municipalities could hold a spring truck-load sale to sell these units. Leftover stock could be stored for eventual sale to residents.

Table 7.6 depicts estimated cost implications to implement System 2. The estimated total costs would be divided across the three municipalities unless otherwise stated.

Table 7.6 System 2 Cost Implications

	Estimated Total Costs	Comments
Promotions and Education Program	$20,000 to upgrade $5,000 annual costs to maintain	New costs to the Municipalities

Set 3 Bag/Container Limit for Waste Bag Tags	Staff time $ 30,000	Enforcement costs to ensure only three bags per week are set out. $5/household or business to distribute bag tags and calendar for Bayham and Malahide
Blue Boxes	$30,000	Assumes 1 additional Blue Box provided per household Assumes and accounts for 50% funding from WDO's Continuous Improvement Fund
Improvement of Blue Box Processing Take Materials To London MRF	Unknown	Need to negotiate processing cost ($/tonne) and rebate formula with City of London Currently (2011) would likely yield a rebate
Staff Training	Travel costs (also sometimes covered)	No cost staff training is provided by WDO to optimize Blue Box programs
Quantify Residential On-Property Management of Organic Waste	Staff time	Staff time
Introduce Backyard Composter program	Staff time Depends on extent of subsidization	At cost or subsidized sale of backyard composters. (1,425 in a trailer load. $30 per composter FOB Brampton)

7.3 System 3-Improved Capture of Blue Box Wastes and Leaf and Yard Wastes

This System is based on expanding the Municipalities existing waste management system by expanding waste diversion opportunities.

This System focuses on the following:

- All components of System 1 and 2;
- Preparation and implementation of a recycling By-law that covers Blue Box material and leaf and yard waste;

- Set 2 bag weekly limit for waste for Bayham and Malahide;
- Improvement of Blue Box collection and processing including:
    - Harmonize what is collected;
    - Additional allowable materials in Blue Box;
    - Weekly collection of Blue Box wastes; and/or
    - Enhanced public space recycling.
- Capture of leaf and yard waste through combination of backyard composting, seasonal drop-off depots and/or curbside collection;
- Improved capture of Blue Box to 70%; and
- Improved capture of organic waste to 30%.

When implemented, this system will result in a waste diversion rate of approximately 40%.

1. Develop Recycling By-law

Central Elgin has a waste management by-law that prohibits the inclusion of recyclable waste in the garbage stream. The enforcement of this part of the by-law is minimal. Waste management by-laws could be developed by Bayham and Malahide that includes the mandatory recycling of Blue Box wastes and leaf and yard wastes and that prohibits or bans the placement of recyclables in the garbage stream.

The development and promulgation of such a by-law sends a clear message to residents that the Municipalities consider the diversion of Blue Box wastes and leaf and yard wastes important. It was not a popular initiative, as noted during public consultation (i.e. stakeholder meeting, on-line survey), but nonetheless can serve as a useful and relatively low cost tool to divert more wastes.

The Municipalities can select the extent of enforcement. This can vary from lax to strict. Lax or no enforcement renders the by-law useless. Overly strict enforcement of this by-law would require excessive resources (i.e. by-law officers) to monitor garbage set-out and the contents of each garbage bag. It is also an overly punitive approach that would generate resident complaints and resentment.

It is most prudent to take a moderate approach. This would include identification of non-conforming bags of garbage, by waste collectors (as part of their current duties), and a refusal to collect these bags. Non-conforming bags of garbage would receive a bright and large sticker that identifies the non-conformance. As waste collectors are under considerable time pressures to complete their route only the most egregious non-conformances would be identified. This can be coupled with spot checks by by-law officers and through reports/complaints from waste collectors and/or residents.

2. Set 2 Bag Limit for Waste

This is the second and final step in harmonizing weekly bag limits (to 1.8 bags/week) across Municipalities as described in Scenario 2. Bayham's and

Malahide's bag limit would be further reduced to two bags/week (i.e. essentially the same as Central Elgin's).

As described in Scenario 2, to provide some flexibility the Municipalities could provide residents with an annual supply of bag tags. Residents would be able to use this supply of bag tags as they see fit.

For this initiative to be successful it is critical that single family residents have ongoing access to low or no cost Blue Boxes, Backyard composters and greater opportunities to divert leaf and yard waste.

3. Improved Capture and Processing of Blue Box Waste

There are a number of steps that could be taken to improve the capture of Blue Box recyclables including:

1. Introduce Mandatory Recycling By-Law;
2. Harmonize Programs and Expand Allowable Materials; and
3. Implement Weekly Collection of Blue Box-Malahide.

Introduce Mandatory Recycling By-Law
Residents will need to be made aware that a Recycling by-law precludes them from placing recyclable wastes in with their garbage.

Harmonize Programs and Expand Allowable Materials
The current Blue Box program varies at the three Municipalities for aspects of both the paper and container (especially for plastics) streams. Malahide's program is currently the most restrictive of the Municipalities

To improve the capture of Blue Box materials it is prudent that the allowable materials be standardized across the Municipalities. This can be accomplished by developing a hybrid between Bayham and Central Elgin's current programs (see Table 2.2).

The Municipalities should also consider adding milk/juice cartons and drink boxes to the Blue Box program. The Municipalities could negotiate the addition of these materials with its current or future waste contractor(s).

Implement Weekly Collection of Blue Box- Malahide
Malahide currently collects Blue Boxes on a bi-weekly basis. Malahide could change this to weekly collection. This provides single family residences with at least 50-100 litres/week of additional Blue Box capacity and gives them the opportunity to divert more wastes.

This would help further harmonize the Blue Box programs across the Municipalities.

In terms of Best Practices the bi-weekly versus weekly collection of Blue Box waste is not unequivocal. On the one hand, weekly collection sends a clear message that Blue Box collection is as important as garbage collection and the additional capacity can facilitate greater diversion. There is clearly a cost associated with the weekly collection of Blue Box waste. These costs can be determined during a waste tendering process. On the other hand a bi-weekly collection program can be effective provided there is sufficient capacity for residents to store two weeks of Blue Box wastes.

It is assumed that providing additional Blue Box capacity through low or no cost Blue Boxes is less costly than additional curbside collection of Blue Box wastes. The impact of bi-weekly collection in terms of capture rate will be a function of bag limits and the enforcement of a mandatory recycling by-law.

Enhanced Public Space Recycling
Public space recycling gives residents and visitors the opportunity to recycle while in public places. While it does not contribute significantly to waste diversion rates it can be used to reinforce the Municipalities Blue Box programs.

The Municipalities have public space recycling in a number of key areas. Considerable garbage was noted in these bins as well as considerable recyclables in garbage bins. It should be possible to improve this recycling by standardizing bin types and messaging on the bins.

There is CIF funding available to purchase public space recycling bins.

4. Improved Capture of Organic Wastes

There are a number of steps that could be taken to improve the capture of organic wastes including:

1. Introduce Mandatory Recycling By-Law;
2. Expand Leaf and Yard Waste Collection to All Urban Areas; and
3. Hold Annual Leaf and Yard Waste Drop Off Depots.

Introduce Mandatory Recycling By-Law
Residents will need to be made aware that a Recycling by-law precludes them from placing recyclable wastes (including leaf and yard wastes) in with their garbage.

Expand Leaf and Yard Waste Collection to All Urban Areas
Central Elgin currently collects a limited amount of leaf and yard waste through a seasonal fall collection program, in urban areas. This could ultimately be expanded to all urban areas in the Municipalities. Collection could occur during fall leaf drop in October/November. It is estimated that about 400 tonnes/year could be captured. In the future this could also be expanded to include the spring collection.

These wastes could be composted at a Municipalities composting facility or delivered to a third party (i.e. contractor) leaf and yard waste composting facility. If composted at a Municipalities facility a permit would need to be secured. Leaf and yard waste can be composted at what is known at a Permit by Rule facility. This is a relatively straightforward permitting system that can be used at an appropriate site.

Hold Annual Leaf and Yard Waste Drop Off Depots
The Municipalities could hold annual seasonal drop-off depots for leaf and yard waste. This could occur over a number of days or throughout a particular season. This could take place at a Public Works yard or similar. These wastes could be composted at a Municipalities' composting facility or delivered to a third party (i.e. contractor) leaf and yard waste composting facility.

This can be held on its own or in conjunction with expanded leaf and yard waste collection to all urban areas.

Table 7.7 depicts estimated cost implications to implement System 3.

Table 7.7 System 3 Cost Implications

Programs	Estimated Total Costs	Comments
By-law enforcement	$10,000	Portion of enforcement officer wages
Set 2 Bag/Container Limit for Waste Bag Tags	Staff time $ 30,000 (Not a new cost. Same cost as noted in Scenario 2.)	Enforcement costs to ensure only two bags per week are set out. $5/household or business to distribute tags and calendar for Bayham and Malahide Costs to prepare/distribute bag tags.
Improvement of Blue Box Collection Weekly Collection	Unknown	Costs related to collecting Blue Box wastes on a weekly basis (Malahide) During next tender Municipalities seek pricing to collect Blue Box on weekly basis

Improvement of Blue Box Collection Additional Materials	Unknown	Costs related to adding additional materials. During next tender Municipalities seek pricing to harmonize acceptable Blue Box materials (i.e. fibre, plastic containers) During next tender Municipalities seek pricing to milk containers and juice boxes to Blue Box
Improvement of Blue Box Collection Public Space Recycling	$20,000	Costs related to purchase of new public space recycling bins and to create messaging. Funding is available to defray these costs.
Leaf and Yard Waste Collection and Processing	$30,000-$45,000	Cost for four fall collections of leaves from urban areas.
Leaf and Yard Waste Depots	$25,000	Assumes 1 shared depot open 24 hours per week for 26 weeks per year

7.4 System 4-Reduce Bag Limits, Green Bin Program and Recycling Depot

This System is based on more drastically improving the capture of organic waste through the implementation of a Green Bin program and other diversion through the implementation of a Recycling Depot(s).

This System focuses on the following:

- All components of System 1, 2 and 3;
- Set 1.5 bag/week limit for waste;
- Implement Green Bin Program;
- Establish Recycling Depot(s);
- Improved capture of Blue Box to 75%;
- Improved capture of organic waste to 50%; and
- Improved capture of Other Diversion to 50%.

These changes focus on making waste diversion more convenient through the dedicated collection of the organic waste stream from the household and by offering residents a more permanent opportunity to divert other recyclables.

When implemented, this system would result in a waste diversion rate of approximately 50%.

1. Set 1.5 Bag Limit for Waste

This would see all households being limited to an average of 1.5 bags of garbage per week.

This envisions that all the Municipalities would provide residents with a supply of bag tags (78/year) that residents could use throughout the year at their discretion. Residents would be able to use this supply of bag tags as they see fit.

For this initiative to be successful it is critical that single family residents have the ability to divert greater amounts of organic waste, Blue Box material, and other diversion (e.g. construction and demolition wastes, WEEE, MHSW).

2. Implement Green Bin Program-Urban Households

To be able to achieve 50% and move towards the provincial goal of 60% residential waste diversion a full range of organic wastes need to be diverted. Residents have limited opportunity to divert leaf and yard wastes and food wastes through current programs. Systems 2 and 3 contemplate the additional capture of leaf wastes through collection (urban households), a depot and backyard composting; and food wastes through backyard composting. A Green Bin program could be implemented for urban households that in general have fewer options than rural households for diverting source separated organics (SSO).

Currently about 2 million Ontario households have access to Green Bin programs. Residents segregate food waste and non recyclable paper from the waste stream and place it in a Green Bin. The Green Bin is emptied on a weekly basis. Many municipalities also allow residents to top up the Green Bin with leaf and yard waste.

For this System, the Municipalities would deliver a Green Bin (and P&E materials) to each urban single family household (i.e. rely on back yard composting in rural areas). Green Bin waste would be collected weekly. The Green Bin waste would be transferred to a third party composting or anaerobic digestion facility.

Table 7.8 presents some collection and processing information on Green Bin programs in the Province. For example, the City of St Thomas has had a Green Bin program in place since 1994.

Table 7.8 Collection and Processing Information for Green Bin Programs in Ontario

Municipality/ Single Family Households	Container Size (litres)	Collection Details			Processing Details		
		SSO	Garbage	Leaf/Yard Top Up	Technology	Owner	Location
Municipalities allowing plastic bags, sanitary products and pet waste							
Toronto 510,000	46 litre	Weekly	Weekly	No	Tunnel	Orgaworld	London
					Tunnel	Universal	Niagara
					Anaerobic Digester	Toronto	Dufferin-Toronto
					Tunnel	LaFleche	Moose Creek
					Drum Technology	Northridge Recycling	Whitby
					New Anaerobic Digester Facility	Toronto	Disco Transfer Site-Toronto
York Region 294,000	46 litre	Weekly	Bi-Weekly for some programs	Yes	Tunnel	Orgaworld	London
					Tunnel	Universal	Niagara
Municipalities not allowing plastic bags or sanitary products							
Barrie 49,000	46 litre	Weekly	Weekly	No	Cover	All Treat	Arthur
Durham 183,000	46 litre	Weekly	Bi-Weekly	No	Channel	Miller Waste	Pickering
Guelph 36,000	Currently bagged based. Likely switching to cart in Spring 2011	Weekly	Weekly	NA	Tunnel	Guelph	Guelph
Hamilton 200,000	46 litre for downtown & 120 litre for residential.	Weekly	Weekly	Yes	Tunnel	Hamilton	Hamilton
Halton Region 167,000	46 litre & 360 litre for townhouses	Weekly	Bi-Weekly	No	Tunnel	Hamilton	Hamilton

Municipality/ Single Family Households	Container Size (litres)	Collection Details			Processing Details		
		SSO	Garbage	Leaf/Yard Top Up	Technology	Owner	Location
Kingston 50,000	46 litre for downtown residential 80 litre for all subdivision	Weekly	Weekly	Yes	Cover	Norterra	Kingston
Niagara Region 164,000	46 litre & some 80 litre-need to confirm areas	Weekly	Weekly	Yes	Cover	IMS	Thorold
Ottawa 366,000	80 litre for majority & 46 litre based on requests.	Bi-Weekly in Winter Weekly Spring to Fall	Weekly	Yes	Tunnel	Orgaworld	Ottawa
Peel Region 300,000	46 litre	Weekly	Weekly	Yes	Tunnel	Peel Region	Brampton
					Tunnel	Peel Region	Caledon
Simcoe County 112,510	46 litre	Weekly	Weekly	No	Tunnel	Hamilton	Hamilton
City of St. Thomas 16,000	240 litre	Bi-Weekly	Weekly	Yes	Tunnel	Orgaworld	London
Waterloo 190,000	46 litre	Weekly	Weekly	No	Tunnel	Hamilton	Hamilton

Typical Green Bin programs include the weekly collection of SSO. It is estimated that urban households could capture 160 kg of SSO annually (i.e. provincial average). The Municipalities generate about 2,000 tonnes/year of SSO. If a Green Bin program is confined to urban households (about 50% of total households) then it would be expected that about 800 tonnes would be captured annually. It does not make sense to develop a composting facility for this annual tonnage. The closest composting facility is in London (Orgaworld Canada Ltd.).

A Green Bin program scenario was developed for the Municipalities that included:

- Weekly collection of SSO (food waste and non-recyclable paper only); and
- Direct haul transfer to composting facility in London.

Costs would include:

- Capital costs for purchase of containers;
- Operating costs to have private sector collect and transfer (direct haul) organic waste to a third party compost facility for processing; and
- Tipping at a third party composting facility.

Table 7.9 presents estimated costs.

Table 7.9 Estimated Capital and Operating Costs

	Costs	Comments
Capital Costs	$150,000	Green Bins-urban households
Annual Operating Costs	$200,000-$250,000/year $250-$300/tonne $40-$50/household	Includes weekly private sector collection; direct haul to London for tipping and processing.

Some of the costs associated with implementing a Green Bin program could be offset by implementing bi-weekly garbage collection (see System 5). Co-collection of wastes (e.g. garbage and green bin) could also be considered. The bi-weekly collection of Green Bin wastes would reduce these costs.

3. Establish a Recycling Depot

There are very limited to no opportunities for residents to drop off a variety of wastes including C&D wastes, MHSW, WEEE and tires.

The Municipalities could jointly or individually establish its own Recycling Depot(s) to allow residents to drop-off various wastes which can be diverted. It essentially would function as an overflow allowing residents to drop off excess recyclable waste that are collected curbside but also recyclable wastes that are not collected at the curb. The Recycling Depot would be open all year round. The specific opening times would be determined by the Municipalities but there should be access on at least a weekly basis.

A Recycling Depot could allow the following waste types:

- Blue Box;
- Green Bin;
- Leaf and yard wastes;
- Large (bulky items);
- White goods (appliances);
- Tires;

- Clean wood;
- Drywall;
- Metal;
- Shingles;
- Other building materials are fully segregated;
- Municipal household special waste (MHSW); and
- Electronics and electrical equipment (WEEE).

Most of these wastes can be directed away from landfill as there are existing markets for most of these wastes.
It may be prudent to work with a non-profit group such as Goodwill Industries to set up an attended donation centre to receive large (bulk items) such as furniture but also other durable goods and clothing. Similarly it may be prudent to work with a non-profit group such as Habitat for Humanity to collect salvageable building materials.

The depot could also be used as a garbage drop-off site.

It is anticipated that for many materials there would be no fee levied. However, there may be fees for items which require disposal or processing such as white goods (items containing refrigerant), construction and demolition wastes, possibly MHSW and garbage. It is suggested that the depot operate on a cost recovery basis.

Tables 7.10 and 7.11 depict a summary of some Ontario municipalities that have Recycling Depots. Limited cost information was available.

The City of London's recent re-development of a recycling depot is a good model for the Municipalities. Furthermore, the Blue Mountains and County of Oxford recycling depot designs/operations are good models for the Municipalities.

Table 7.10 Overview of Recycling Depots in Ontario Municipalities

Municipality	Number	Size (ha)	Materials Accepted	Comments
The Blue Mountains	1	<1	• Recyclables (Blue Box wastes, yard waste, wood, white goods, scrap metal, propane tanks, tires)	Recycling depot was expanded in 2010
City of Hamilton	3	-	• Recyclables (Blue Box wastes, yard waste, C&D wastes, white goods, scrap metal, tires) • MHSW • WEEE • Re-usable goods • Garbage	
City of London	4	1-1.5	• Recyclables (Blue Box wastes, yard waste, C&D wastes, white goods, scrap metal, propane tanks, fluorescent tubes & compact fluorescent light bulbs, tires) • MHSW • WEEE • Re-usable goods • Garbage	Not all materials accepted at each depot
Town of Markham	4	-	• Recyclables (Blue Box wastes, yard waste, white goods, scrap metal, fluorescent tubes & compact fluorescent light bulbs tires) • WEEE (only cell phones) • Re-usable goods	Not all materials accepted at each depot
County of Oxford	1		• Recyclables (Blue Box wastes, yard waste, C&D wastes, white goods, scrap metal, propane tanks) • MHSW • WEEE • Garbage	Some municipalities have own leaf and yard waste drop off depot

Municipality	Number	Size (ha)	Materials Accepted	Comments
Region of Peel	5	10-20	• Recyclables (Blue Box wastes, empty aerosol and paint cans yard waste, C&D wastes, white goods, scrap metal, tires) • MHSW • WEEE • Re-usable goods • Garbage	Not all materials accepted at each depot

Table 7.11 Summary of Municipal Recycling Depots

Municipality	Households	Capital Cost	Operating Cost	Operating Cost	Wastes Diverted	Wastes Diverted	Comments
	#	$	$/year	$/hshld/year	tonnes/year	kg/hshld	
The Blue Mountains	5,600	$410,000	-	-	-	-	Recycling depot was expanded in 2010
City of Hamilton	210,000	-	-	-	9,000	43	
City of London	160,000	$1,000,000	$400,000	$2.50	16,000	100	Capital costs for newest depot includes: approvals, service roads, site servicing, earthworks, fencing, lighting, retaining wall, stormwater management pond, and attendant's building. Operating costs are the costs to the City. Private contractor that operates depots able to levy fees for C&D wastes.

County of Oxford	43,000	$500,000	$110,000	$2.60	500	-	
Region of Peel	395,000	$3,500,000 - 10,000,000	$950,000– $3,000,000	$2.40-$6.30	20,500	52	Higher capital and operating costs include waste (garbage) disposal/ transfer systems.

The Blue Mountains (municipality) built a recycling depot for its residents in 2010, at its landfill. Figure 7.1 presents an overview of this depot. It consists of six 40 cubic yard bins configured in a "saw-tooth design" (Photo 1) and additional drop off areas for brush, tires and Blue Box recyclables.

Figure 7.1 Overview of The Blue Mountains Recycling Depot

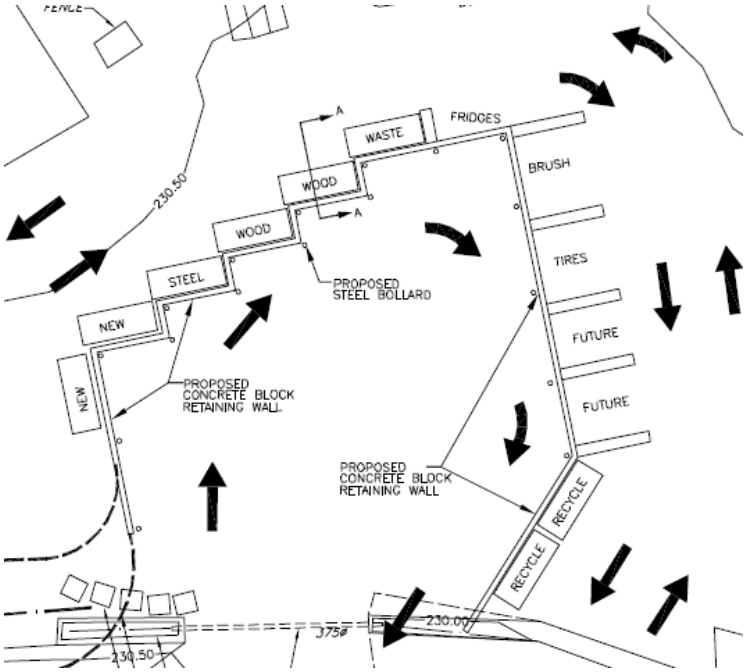
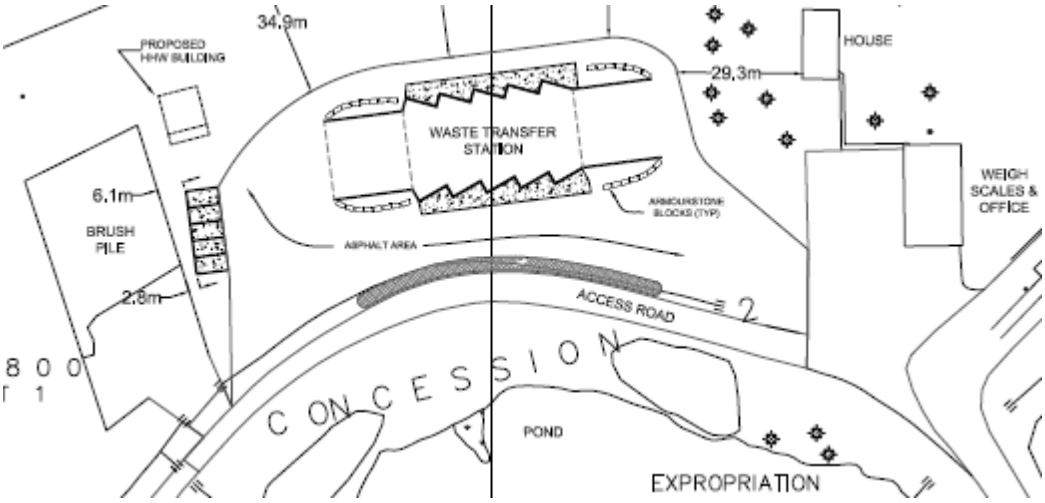


Photo 1 Recycling Depot-"Saw-tooth" Design

The County of Oxford has a similar design at their recycling depot/waste transfer station (Figure 7.2).

Figure 7.2 Overview of The County of Oxford Recycling Depot



The capital cost for The Blue Mountains and Oxford County sites was between $400,000 and $500,000. The operating cost for the Oxford County site is about $110,000 per year.

Given the population of the Municipalities a single centrally located Recycling Depot should be sufficient. 1-3 acres of municipal property would be required.

Table 7.12 depicts estimated cost implications to implement System 4.

Table 7.12 System 4 Cost implications

Programs	Estimated Total Costs	Comments
Set 1.5 Bag/Container Limit for Waste	Staff time	Administrative costs to ensure only two bags per week are set out.
Bag Tags	$30,000 (Not a new cost. Same cost as noted in Scenarios 2 and 3.)	$5/household or business to distribute tags and calendar for Bayham and Malahide Costs to prepare/distribute bag tags.
Set 1.5 Bag/Container Limit for Garbage	$5,000	Develop P&E program specific to this change
Implement Green Bin Program (Urban Households)		
Capital Costs	$150,000	Green Bins
Annual Operating Costs	$250,000-$300,000	Private sector collection and processing of Green Bin wastes collected from urban households only
Develop a Recycling Depot		
Capital Costs	$400,000-$500,000	Depends on extent of site development Rough estimate
Annual Operating Costs	$50,000-$125,000	Rough estimate for staff costs only Does not include tipping fees

7.5 System 5-User Pay and Bi-Weekly Waste Collection

This System is based on more drastically altering and reducing waste (garbage) capacity and driving divertable waste streams to existing waste diversion programs.

This System focuses on the following:

- All components of System 1, 2, 3 and 4;
- Changes to waste collection including:
  - Implement User Pay;
  - Bi-weekly waste collection; and
  - Use of clear bags for waste.
- Improved capture of Blue Box to 80% through reduced access to garbage collection;

- Improved capture of Organic Wastes to 70% through reduced access to garbage collection; and
- Improved capture of Other Diversion to 60% through reduced access to garbage collection.

These changes focus on making waste disposal less convenient. This can be accomplished by increasing the frequency of collection for waste diversion and/or by making garbage collection more restrictive.

When implemented, this system would result in a waste diversion rate of approximately 60%.

1. Implement User Pay Program

The Municipalities have a variety of weekly bag limits for garbage. Systems 2-4 propose measures to harmonize and then reduce weekly bag limits for garbage to an average of 1.5 bags/week. Furthermore, it was proposed that a bag tag system, as currently employed in Central Elgin, be expanded to Bayham and Malahide.

To further reduce the amount of waste that will be placed at the curb a full User Pay program could be implemented.

Moving to full User Pay (also known as Pay as You Throw) means that residents will need to buy and apply a bag tag to each bag/container of garbage. This puts the costs of curbside waste collection and disposal more clearly in the hands of residents.

According to the WDO 2009 Datacall (WDO, 2010) there are approximately 103 municipalities with User Pay programs in Ontario. This includes many smaller municipalities as well as some larger ones. Table 7.13 depicts some municipalities with User Pay programs. Most municipalities with User Pay programs have a higher waste diversion rate than the Municipalities; despite the fact most do not have a Green Bin program. For instance, the City of Stratford and Oxford County send considerably less waste to landfill than the Municipalities.

Table 7.13 Summary of Some Ontario Municipalities with User Pay Programs

Municipality	Collection Frequency for Garbage	Bag Limit	Cost of Tags	Waste to Landfill	Diversion Rate	Comments
				kg/capita/year	%	
Blue Water Recycling Association	Weekly or Bi-Weekly	None	$1.50-$2.50	228	30	No Green Cart Program

City of Stratford	Weekly	None	$2.25	182	49	No Green Cart Program
City of Orillia	Weekly	None	$1.65	226	53	30 "free" tags/year
City of Owen Sound	Bi-Weekly	4 bag/container	$2.00	254	41	No Green Cart Program
County of Oxford	Weekly	None	$1.50	165	44	No Green Cart Program
City of St Thomas	**Weekly**	**None 2 bag/container "free" then bag tags**	**$1.75**	**223**	**38**	Revenues received by contractor not the City

It is proposed that a User Pay program be developed that allows a maximum of two bags per week. Residents would need to purchase tags to be affixed to garbage bags. This would be a change from the system currently used for Central Elgin and proposed in Systems 2-4 for all the Municipalities in that "free" tags would no longer be distributed to residents.

If the Municipalities were to implement the proposed User Pay program it would need to do the following:

- Ensure that the current costs of collection and disposal are partially or fully removed from municipal taxes. This would necessitate a Rate Study;
- Ensure residents are aware of current waste diversion opportunities through enhanced P&E; and
- Continue to increase capacity of Blue Box and Green Bin wastes through additional collection and/or additional containers (e.g. "free" Blue Boxes).

2. Implement Bi-weekly Waste Collection

To achieve a high waste diversion rate of 60%, waste could be collected every two weeks. The same proposed bag limit could be maintained (i.e. 4 bags per collection day). This could be reduced further to 3 bags per collection day.

Table 7.14 depicts a number of Ontario municipalities with bi-weekly waste collection.

Table 7.14 Summary of Some Ontario Municipalities with Bi-weekly Garbage Collection

Municipality	Collection Frequency for Garbage	Bag Limit	Waste to Landfill*	Diversion Rate*	Comments
			kg/capita/year	%	
City of Toronto	Bi-Weekly	Resident can choose from three different sized bins	206	44	About 50% of housing stock is multi residential
City of Guelph	Bi-Weekly	None	226	40	Compost facility has been closed for a number of years. A new facility is under construction. Organic waste directed to energy from waste facility in New York State.
Ottawa Valley	Bi-Weekly	4 bags	235	49	
Municipalities	Weekly	1.8-7 bags	213	24	

3. Use of Clear Bags for Waste

Mandate the use of clear garbage bags for wastes collected by the Municipalities. This would allow for easier screening of recyclables in the waste stream and better enforcement of a recycling by-law (as described in System 3). The use of clear bags could be moved up to System 3.

The use of clear bags was contentious during public consultation with residents having concerns about privacy. These concerns would need to be addressed.

Table 7.15 depicts estimated cost implications to implement System 5.

Table 7.15 System 5 Cost Implications

	Estimated Costs	Comments
Implement User Pay Program	$20,000	Develop P&E program for User Pay program Develop bag tag system and retail distribution network.

	Estimated Costs	Comments
Implement Bi-weekly Waste Collection	Unknown	During next tender Municipalities seek pricing to collect garbage on bi-weekly basis. Possible reduction in costs
Use of Clear Bags for Waste	$2,000	Develop P&E program

7.6 Summary

Table 7.16 sets out the five Systems and resultant estimated waste diversion rates.

Table 7.16 Summary of Waste Management System Diversion Rates

	System 1	System 2	System 3	System 4	System 5
	Status Quo	Existing System with Enhanced Capture and Diversion	Improved Capture of Blue Box Wastes and Leaf and Yard Wastes	Implement Green Bin Program and Recycling Depot	Full User Pay and Bi-Weekly Waste Collection
	tonnes/year				
Cumulative additional waste diverted	not applicable	461	1,195	1,978	2,784
Waste diverted	1,856	2,317	3,050	3,834	4,640
	%				
Impact on Waste Diversion Rate		5.9	15.2	25.2	35.4
Waste Diversion Rate	24	29	39	49	59

The Systems presented offer the Municipalities the opportunity to harmonize their waste management programs and achieve an overall waste diversion rate of up to **60%.** It will be up to the Municipalities to decide what waste diversion rate they would like to achieve and which system it would like to proceed with. This decision will be a function of desired waste diversion balanced with desired service provision and costs. This will need to clearly balance overall environmental performance (i.e. waste diversion) with cost.

Table 7.17 depicts new waste diversion and its impact on cumulative waste diversion and garbage disposal (expressed in pounds to make it understandable).

Table 7.17 Summary of Waste Diversion and Garbage Disposal as a Result of Each System

	System 1	System 2	System 3	System 4	System 5
	Status Quo	Existing System with Enhanced Capture and Diversion	Improved Capture of Blue Box Wastes and Leaf and Yard Wastes	Reduce Bag Limits, Green Bin Program and Recycling Depot	User Pay and Bi-Weekly Waste Collection
	pounds/week/hshld				
Blue Box	not applicable	0.9	1.9	2.4	3.0
Organic Waste		0.9	2.8	5.2	7.7
Other Diversion		0.0	0.0	0.1	0.2
New Waste Diversion		1.8	4.7	7.7	10.9
Cumulative Waste Diversion	7.3	9.1	11.9	15.0	18.1
Garbage Disposal	23.5	21.7	18.8	15.7	12.6
Total Waste Generation	31	31	31	31	31

It is recommended that the first stage be to attain a minimum 30% waste diversion goal and that this goal be attained by 1 January 2014. The waste diversion initiatives described as part of System 2 would be implemented.

It is recommended that the second stage be to attain a minimum 40% waste diversion goal and this goal be attained by 1 January 2016. It is recommended that the waste diversion initiatives described as part of System 3 of the waste diversion plan be implemented.

Thereafter it is recommended that the Municipalities review progress and assess the feasibility of implementing System 4 or System 5 and higher waste diversion rates.

8.0 Garbage Disposal Strategy

The Municipalities do not own an operating landfill and presently take their garbage to third party landfills in the region. Currently the Municipalities have a contractual arrangement with the City of Toronto to take its garbage to the Green Lane Landfill. Currently the Municipality of Central Elgin and the Township of Malahide take its garbage to that landfill. The Municipality of Bayham landfills its garbage through its waste collection contractor (contracted to April 2012) at the private sector Ridge Landfill (BFI, also known as Progressive Waste Solutions).

8.1 Current Disposal at the Green Lane Landfill

Through its Certificate of Approval A051601 the Green Lane Landfill is to receive and dispose of wastes from the Municipalities. Specifically Condition 14 of the Certificate of Approval states:

The Owner shall ensure for the operational life of the Site that the municipal waste service contracts/obligations relating to the geographical Counties of Elgin and

Middlesex, including the City of St Thomas, shall at all times receive first priority and precedence to the allocated annual disposal limits pursuant to this Certificate for their municipal waste. The balance of the available annual disposal capacity can then be used for the disposal of waste from all other waste streams.

A waste disposal agreement between the Municipalities and the City of Toronto was signed on 15 June 2009. It governs waste disposal at the Green Lane Landfill until the last day of February 2019. It sets out the tipping fee for residential waste disposal and prescribes annual CPI based price increases. The Green Lane Landfill, at its own discretion, may choose to accept IC&I waste generated in the Municipalities.

According to the City of Toronto, the landfill will reach its capacity in 2024 at the very earliest based on current waste generation. If the City of Toronto's Target 70 (i.e. plan to reach 70% waste diversion) is reached then the Green Lane Landfill should not reach capacity until 2031 and possibly as late as 2036. It should be noted that the City of Toronto is pursuing initiatives that would maximize the life of the Green Lane Landfill (i.e. mechanical biological treatment of incoming wastes). It is uncertain if they will be approved.

The present worst case scenario suggests that the Municipalities have guaranteed landfill capacity until 2024 at the earliest and 2036 at the latest. This Plan is for 2012-2032. It should be noted that the actual amount of waste received at the Green Lane Landfill could fluctuate considerably.

There are a number of alternatives the Municipalities could pursue to deal with the eventual closure of the Green Lane Landfill.

8.2 Reduce Landfilling of Waste

The waste diversion plan (Section 7) describes a number of initiatives to increase waste diversion and reduce the amount of waste that would be directed to landfill. While the Municipalities send a relatively small amount of waste to the Green Lane Landfill and other landfills it can contribute to maximizing the life of these landfills through its own activities.

8.3 Develop Municipalities-Owned Landfill Site

The Municipalities currently do not have operating landfills. The Municipalities could jointly undertake a process to search for a suitable site and seek permitting for a landfill.

As noted in Section 5, it is estimated that the Municipalities will be generating almost 10,500 tonnes/year of garbage by 2031. Based on current diversion rates by 2032 about 7,900 tonnes/year of disposal capacity would be required.

On this basis it is estimated that a Municipalities-owned landfill would require an annual capacity of at least 7,800 tonnes/year for these estimated disposal rates. This includes small amounts of IC&I garbage. The Municipalities may wish to allow all IC&I garbage at this landfill. On average residential wastes account for about 35% of the total waste stream with IC&I garbage accounting for the balance. Given the largely rural nature of the Municipalities it is expected that IC&I garbage generation is relatively low. There was no data available on IC&I garbage generation in the Municipalities. For this analysis an annual required landfill capacity of 12,000 tonnes/year was used to accommodate both residential and IC&I garbage.

The process of developing a landfill is costly and it is estimated that it would take at least 10 years to complete. It has been estimated that it would cost between $25 and $50 million to site, permit, develop and operate a landfill with an annual capacity of 12,000 tonnes/year for 40 years. This works out to $50-$100/tonne.

This landfill would also receive IC&I wastes and the receipt of these wastes would be used to help subsidize the costs to dispose of residential wastes.

The Municipalities would need to start the process almost immediately to ensure that it would have capacity by 2024.

8.4 Encourage Future Expansion of the Green Lane Landfill

The Municipalities could encourage the City of Toronto to initiate a full EA study to assess feasibility of creating additional landfill space at the Green Lane landfill beyond 2024.

8.5 Dispose Waste at Other Landfills

Private Sector Landfills
BFI, now also known as Progressive Waste Solutions, is a large waste management contractor. Locally they own and operate the Ridge Landfill (Blenheim). This landfill currently accepts predominantly IC&I wastes. It has capacity until about 2027. The Municipality of Bayham currently disposes the garbage it collects at this landfill.

Waste Management is a large waste management contractor. Locally they own and operate the Petrolia Landfill and the Twin Creeks Landfill (Watford). The amount of capacity is unknown.

W-12A Landfill
The City of London operates a municipal landfill called W-12A close to the Municipalities. At present it has an estimated 11-13 years of capacity. In 2011, the City of London has proposed to re-launch its environmental assessment process for long-term solutions for resource recovery and disposal. In all likelihood, one item that would be considered as part of the environmental assessment process is the expansion of London's existing landfill site.

As noted in the Policy Statement on Waste Management Planning: Best Practices for Waste Managers (MOE, 2007) the province encourages cooperation between municipalities to find mutually beneficial waste management solutions.

Working with the City of London should it expand the W12-A Landfill could offer the Municipalities secure and long term disposal capacity after the closure of the Green Lane Landfill. It could also offer the Municipalities a backup location should circumstances change at the Green Lane Landfill. The City of London would need to expand its landfill service area (i.e. through Certificate of Approval amendment or the environmental assessment process) to accommodate the Municipalities garbage.

The W-12A landfill is located adjacent to a new regional MRF that is being constructed and expected to be open by September 2011. This provides the potential to efficiently co-collect garbage and Blue Box recyclables and deliver them to London. Other regional opportunities for waste diversion solutions that benefit not only the Municipalities but the region could be explored. For example, residents from the County of Middlesex have been delivering household special waste to the drop-off depot at W-12A landfill for about 10 years.

8.6 Summary

It is clear that the Municipalities have the opportunity for secure landfill capacity at the Green Lane Landfill until 2024 and possibly until 2036.

The Municipalities can elect to site, permit and construct its own landfill, take wastes to another municipal landfill or take waste to a private sector landfill.

Given the level of effort, high costs and uncertainty of success it is **not recommended** that the Municipalities explore the siting, permitting and constructing of its own landfill.

It is **recommended** that the Municipalities continue to work with the City of Toronto regarding disposal of garbage at the Green Lane Landfill and in particular assess on an annual basis remaining capacity at this landfill.

It is also **recommended** that the Municipalities discuss with the City of Toronto the possibility of them initiating a full EA study to assess feasibility of creating additional landfill space at the Green Lane landfill beyond 2024.

It is **recommended** that the Municipalities contact the City of London and discuss the potential and feasibility of disposing its garbage at the W-12A landfill by 2024.

It is **recommended** that the Municipalities assess post-2024 disposal capacity in their next waste management tenders (i.e. 2012).

9.0 Service Delivery Review

A review of current service delivery was undertaken and is described in the following sections.

9.1 Harmonization of Waste Management Programs

Currently the Municipalities have different waste management programs. The Waste Diversion Plan (Section 7) describes how they could be harmonized.

If the Municipalities continue to work together on waste management programs it is **recommended** that they consider working to harmonize their waste management programs. This would ensure that all residents have access to the same programs. This makes it simpler for residents. This includes the collection and disposal of garbage and waste diversion programs.

This would allow efficiencies in terms of the development of P&E information. As well it has the potential to lead to a reduction in collection costs as detailed in Section 9.1

9.2 Individual versus Consolidated Collection of Garbage and Blue Box

The Municipalities currently individually contract out all of its waste management collection and processing services and has done so for many years. It is reasonable to evaluate consolidating waste collection and/or processing services and determine if there are some cost efficiencies to using this approach.

An analysis of the current cost (2010 data) to collect and process garbage and Blue Box from all households and businesses was undertaken. These costs were compared to those from similar municipalities and a provincial median.

Table 9.1 depicts the current costs to collect and dispose of residential garbage.

Table 9.1 Estimate of Garbage Collection and Disposal (2010)

	Bayham	Central Elgin	Malahide	Total	MPMP[1]
Total Annual Costs	$258,000	$492,000	$273,000	$1,023,000	
Total Annual Tonnes Collected	1,402	2,664	1,870	5,935	
Total Households	2,599	5,355	2,919	10,873	
Collection					
Collection Costs	$164,000	$324,000	$170,000	$658,000	
				Average	
Collection Costs/tonne	$117	$122	$91	**$111**	**$91**
Disposal				**Total**	
Disposal Costs	$94,000	$168,000	$103,000	$365,000	
				Average	
Disposal cost/tonne	$67	$61	$55	**$61**	**$82**
Total	**$184**	**$183**	**$146**	**$172**	**$173**
Household Costs				**Average**	
Collection Costs/hhsld	$63	$61	$58	**$61**	**$59**
Disposal Costs/hhsld	$36	$31	$35	**$34**	**$72**
	$99	**$92**	**$94**	**$94**	**$131**

1. Municipal Performance Measurement Program (MPMP, 2011). Summary of 2008 results.

It should be noted that data reported in MPMP, 2011 represents 2008 median data.

On a per tonne basis it appears that the Municipalities garbage collection costs are generally higher than average. The higher garbage collection costs are likely a function of the large rural population and possible self management of at least part of the waste stream (e.g. burning, composting or other on-site disposal) in the Municipalities. This is borne out by the per household cost which is similar to the Provincial median. It appears that the Municipalities garbage disposal costs are relatively low. This is a function of available disposal capacity and the relative short distance to landfills.

Table 9.2 depicts the current gross costs to collect and process of Blue Box materials. This data is presented in a blended format (i.e. collection and processing). To allow for comparisons this data does not include the annual Stewardship Ontario rebate provided to the Municipalities to defray the costs of Blue Box recycling.

Table 9.2 Estimate of Blue Box Collection and Processing (2010)

	Bayham	Central Elgin	Malahide	Total	WDO Rural South Grouping Collection and Processing Costs[1]	WDO Rural South Grouping Collection and Processing Costs (Weighted)[1]	WDO Rural South Grouping Collection and Processing Costs (Target)[1]	Provincial Average Collection and Processing Costs[1]	MPMP[2]
Total Annual Collection and Processing Costs	$108,000	$311,000	$107,000	$526,000					
Total Annual Tonnes Collected	336	828	262	1,426					
Total Households	2,599	5,355	2,919	10,873					
				Average					
Collection and Processing Costs/tonne	$321	$376	$409	**$369**	**$517**	**$369**	**$410**	**$257**	**$146**
Collection and Processing Costs/hhsld	$42	$58	$37	**$48**		**$53**		**$43**	**$32**

1. Data gathered from 2009 GAP analysis and represents most current data available.
2. Municipal Performance Measurement Program (MPMP, 2011). Summary of 2008 results.

WDO develops average cost data using a straight average of all relevant municipal programs (i.e. $517). A weighted average (i.e. total costs/total tonnes collected and processed) was developed to provide a more accurate comparison.

The Municipalities Blue Box collection and processing costs are all lower than the average for the Rural South grouping ($517/tonne) and are lower than the target ($410/tonne) for this grouping. Only Bayham is lower than the weighted average ($369/tonne) for this grouping. All Municipalities have higher costs than WDO provincial average ($257/tonne) and MPMP median ($146/tonne).

While the Municipalities are comparable to other Rural South grouping municipalities there are potential opportunities to reduce Blue Box collection and processing costs.

There are opportunities to reduce garbage and Blue Box collection costs. One way in which to potentially lower these costs is through the consolidation of garbage collection through the use of one contractor.

Possible savings can be realized through optimal filling of collection vehicles and the optimal deployment of collection vehicles and staff. Table 9.3 describes the current collection vehicles and staffing used by the Municipalities.

Table 9.3 Waste Collection Vehicles and Staffing

	Bayham	Central Elgin	Malahide
Waste Collection vehicle type (side loader, rear packer, other)	Side Loader & Rear Loader	Side Loader	Rear Packer
Bulky waste collected with regular garbage **Yes/No**	No	No	Small items but not large items
Staff per vehicle	1 or 2	1 2 in Port Stanley	2
Blue Box Collection vehicle type (side loader, rear packer, other)	Side Loader	Side Loader	Side Loader
Staff per vehicle	1	1	1
Collection Days per week	3	5	5
Contractor	Norfolk Disposal Services Limited	Emterra Group	Antonissen Trucking

Preliminary cost modeling of consolidated collection demonstrates that there is the potential to reduce the total cost of garbage collection for all Municipalities through consolidated collection.

Multi-municipal cooperation for the collection and processing of recyclables has been identified as a Best Practice in the "*Blue Box Program Enhancement and Best Practices Assessment Project"* (KPMG, 2007). Some of the key benefits noted in this report include:

- Economies of scale;
- Increased resident participation/satisfaction;
- Optimized program funding;
- Shared staff/time/costs/skills/equipment;
- Improved supplier/contractor relations;
- Reduced need for management supervision;
- Reduced need for council time and attention;
- Increased capacity to adopt new technologies and methods;
- Material markets and pricing advantages, yielding higher revenues;

- Increased innovation in strategies, services and products;
- Shared risk management; and
- Shared capital requirements.

These benefits could also be realized through the consolidated collection of garbage.

There are a number of advantages and disadvantages to consolidating garbage and Blue Box collection.

Potential Advantages

- Potential taxpayers savings through economies of scale;
- Program consistency may reduce confusion to participants;
- Access to more collection equipment; and
- Consolidated contracts but the use of different service providers working cooperatively (e.g., prepared to help if trucks break down, peak periods).

Potential Disadvantages

- Local service provider (local business taxpayer) may be eliminated if not capable of scaling up and providing more services;
- Larger is not always better. A truck breakdown in one municipality could impact service delivery in another municipality;
- If the smaller service provider goes out of business or leaves that line of business, competition is potentially reduced for the next tender; and
- Less refined weight based data because loads may be mixed (i.e. from more than one municipality).

The best way in which to understand the cost implications of consolidated collection is through a tendering process. The Municipalities should consider developing and issuing a joint tender that provides options for individual and joint collection.

It is **recommended** that the Municipalities consider a joint tender for the collection and processing of garbage, Blue Box and other waste diversion with the following options:

1. Traditional pricing structure for each municipality;
2. Traditional pricing structure for each municipality but a price reduction if awarded all 3 municipalities; and
3. An amalgamated price.

The Municipalities will be able to select the solution that best meets their needs and is most cost effective.

The tender should be designed using the Generally Agreed Principles for Effective Procurement and Contract Management as outlined in KPMG, 2007.

This process should provide the Municipalities with maximum flexibility. It does not bind them to develop consolidated collection unless it best meets their needs.

9.3 Delivery of Recyclables to the City of London MRF

Currently, the Municipalities deliver their Blue Box recyclables to three different MRFs. The Municipalities receive no rebates for their Blue Box recyclables. Based on the current costs as described in Table 9.2 it appears that processing fees are embedded within collection costs.

The City of London Regional MRF will be operational by the fall of 2011. This regional facility is intended to create efficiencies of scale by accepting recyclables from various municipalities. The MRF will accept a greater range of Blue Box materials (e.g. plastics) than is currently collected by some of the Municipalities. The Municipalities processing fee would be dependent on the total tonnes received at the facility (i.e. higher tonnage means lower processing fees). The Municipalities would receive revenue back for its recyclables. At the current (2011) market value for recyclables the Municipalities would receive a rebate. Bringing Blue Box materials to this MRF may help the Municipalities reduce its costs. It should be noted that the market value for recyclables fluctuates and there may be cases where there is no rebate. The Municipalities would assume some risk in terms the market value for recyclables.

It is **recommended** that the Municipalities solidify pricing with the City of London and consider requesting its private sector waste contractor(s) to deliver its recyclables to the new City of London MRF, if the costs are more favorable than current costs.

9.4 Potential Cost Savings Ideas

Alternate Collection Model

Since the contracts of all three Municipalities will need to be re-tendered it may be prudent to examine some other potentially cost savings options.

One option would be for weekly collection for 6 months of the year (April-October) and every two weeks for six months (November-March) of the year. Preliminary cost modeling demonstrates that there is the potential to reduce the total cost of garbage collection for all Municipalities through reduced collection.

It is **recommended** that this option be included in the upcoming tender(s).

10.0 Description of Planned Waste Management System

This section sets out the proposed waste management system for the Municipalities. It includes a summary of all recommendations made throughout the document.

10.1 Service Delivery

1. Harmonize Programs

It is **recommended** that the Municipalities consider working to harmonize their waste management programs. This would ensure that all residents have access to the same programs. This includes the collection and disposal of garbage and waste diversion programs.

2. Individual versus Consolidated Collection of Garbage and Blue Box

The Municipalities each contract out waste management collection and processing services and have done so for many years. While the programs appear to work reasonable well and are for the most part cost effective they result in a relatively low waste diversion rate. The current contracts run until 2012.

It is **recommended** that the Municipalities consider a joint tender for the collection and processing of garbage, Blue Box and other waste diversion with the following options:

1. Traditional pricing structure for each municipality;
2. Traditional pricing structure for each municipality but a price reduction if awarded all 3 municipalities; and
3. An amalgamated price.

3. Processing of Blue Box Recyclables

Currently the Municipalities deliver Blue Box recyclables to three different MRFs. The Municipalities receive no rebates for their Blue Box recyclables.

It is **recommended** that the Municipalities solidify pricing with the City of London and request its private sector waste contractor(s), as part of the next tender, to deliver its recyclables to the new City of London MRF.

10.2 Waste Diversion Goal

The Municipalities currently have a waste diversion rate of about **24%**. The Provincial waste diversion goal is **60%**.

During public consultation many residents indicated that they would like to strive for a waste diversion goal of **60%** or greater. However, a similar number of residents

indicated that they did not want to pay additional taxes to accommodate expanded or new waste diversion programs.

It is **recommended** that the first stage be to attain a minimum 30% waste diversion goal and that this goal be attained by **1 January 2014**. The waste diversion initiatives described as part of Systems 2 (Section 7) would be implemented.

It is **recommended** that the second stage be to attain a minimum 40% waste diversion goal and this goal be attained by **1 January 2016**. It is **recommended** that the waste diversion initiatives described as part of System 3 of the waste diversion plan (Section 7) be implemented.

Thereafter it is **recommended** that the Municipalities review progress and assess the feasibility of implementing System 4 or System 5 and higher waste diversion rates.

In general, this increased emphasis on waste diversion will mean that capacity and convenience for waste disposal will need to be reduced but increased for waste diversion.

10.3 Garbage Collection and Disposal

Current garbage collection and disposal appear to be working well. However, to attain waste diversion goals less garbage needs to be collected.

It is **recommended** that the following key initiatives, described in detail in Section 7 (i.e. Systems 2 and 3), be implemented:

1. **Set a 3 and then 2 bag weekly limit for waste for Bayham and Malahide;**

This means reducing bag limits for Bayham and Malahide. To provide some flexibility to residents all of the Municipalities could provide residents with an annual supply of bag tags. This would essentially result in a harmonization of garbage bag limits across the Municipalities (Central Elgin has an average bag limit of 1.8 bags/week).

It is **recommended** that the following key initiatives, described in detail in Section 8, be implemented:

1. Continue to work with the City of Toronto regarding disposal of garbage at the Green Lane Landfill and in particular assess on an annual basis remaining capacity at this landfill.
2. Discuss with the City of Toronto the possibility of them initiating a full EA study to assess feasibility of creating additional landfill space at the Green Lane landfill beyond 2024.
3. Contact the City of London and discuss the potential and feasibility of disposing its garbage at the W-12A landfill by 2024.
4. Determine available post 2024 disposal capacity in area landfills in its next waste management tender (i.e. 2012).

10.4 Blue Box Collection and Processing

Current Blue Box collection and processing has a relatively low capture rate.

It is recommended that the following key initiatives, described in detail in Section 7 (i.e. System 2 and 3), be implemented:

1. Distribution of Additional Blue Boxes to single family households

This means providing additional recycling capacity for residents. There is funding available for this initiative. This should be continued on an ongoing basis at no cost to residents or on a cost recovery basis.

2. Deliver Blue Box recyclables to new City of London Regional MRF (open fall 2011)

The new City of London MRF will be able to accept a broad range of Blue Box wastes. As well they have developed a program whereby municipalities receive revenue for recyclable materials (currently the Municipalities receive no revenue).

It is recommended that the Municipalities solidify pricing with the City of London and consider requesting its private sector waste contractor(s) to deliver its recyclables to the new City of London MRF, if the costs are more favorable than current costs.

3. Introduce Mandatory Recycling By-Law

Residents will need to be made aware that a Recycling by-law precludes them from placing recyclable wastes in with their garbage.

4. Harmonize Programs and Expand Allowable Materials

To improve the capture of Blue Box materials it is prudent that the allowable materials be standardized across the Municipalities.

The Municipalities should also consider adding milk/juice cartons and drink boxes to the Blue Box program. The Municipalities could negotiate the addition of these materials with its current or future waste contractor(s).

5. Implement Weekly Collection of Blue Box- Malahide

Malahide currently collects Blue Boxes on a bi-weekly basis. Malahide could change this to weekly collection. This provides single family residences with at least 50-100 litres/week of additional Blue Box capacity and gives them the opportunity to divert more wastes. This would result in a harmonization of the Blue Box across the Municipalities.

6. Enhance Public Space Recycling

Public space recycling gives residents and visitors the opportunity to recycle while in public places. While it does not contribute significantly to waste diversion rates it can be used to reinforce the Municipalities' Blue Box programs. There is CIF funding available to purchase public space recycling bins.

10.5 Organic Waste Collection and Processing

There is currently little diversion of organic wastes.

It is **recommended** that the following key initiatives, described in detail in Section 7, be implemented:

1. Introduce a Backyard Composter Program

Each properly used backyard composter can divert about 100kg of organic waste/year. A low to no cost to resident backyard composter program could be initiated to divert leaf and yard wastes (and food wastes) from the garbage stream.

2. Introduce Mandatory Recycling By-Law

Residents will need to be made aware that a Recycling by-law precludes them from placing recyclable wastes (including leaf and yard wastes) in with their garbage.

3. Expand Leaf and Yard Waste Collection to All Urban Areas

Central Elgin currently collects a limited amount of leaf and yard waste through a seasonal fall collection program, in urban areas. This could ultimately be expanded to all urban areas in the Municipalities. Collection could occur during fall leaf drop in October/November. In the future this could also be expanded to include the spring collection.

4. Hold Annual Leaf and Yard Waste Drop Off Depots

The Municipalities could hold annual seasonal drop-off depots for leaf and yard waste. This could occur over a number of days or throughout a particular season. This could take place at a Public Works yard or similar.

10.6 Other Wastes

No new programs are recommended if proceeding with a minimum 40% goal.

10.7 Promotion and Education

A key part of a waste management program's success is driven by its P&E program.

It is recommended that the following key initiative, described in detail in Section 7, be implemented:

1. Revise Current P&E program

This would include an overhaul and redevelopment of existing P&E materials. The objective would be to promote the Municipalities waste management program more effectively.

New P&E material should spell out the Municipalities commitment to waste diversion and include a "Call to Action" letting residents and the IC&I sector know how they can participate and contribute to meeting the Municipalities' waste diversion goals. This would also include specific information and instructions on how to participate.

11.0 Cost and Financing Strategy

The Municipalities currently fund their waste management programs through municipal taxes.

The focus of this Plan is to achieve a minimum waste diversion rate of 40%. Once this has been achieved the Municipalities may wish to strive for a 60% waste diversion rate. This Plan has highlighted methods to improve the capture rate for current programs and through the introduction of new programs.

The current waste management contracts conclude in 2012.

It may be possible to reduce overall costs if the Municipalities consolidated all or some waste management services. This can be accomplished by taking advantage of possible economies of scale. Possible cost savings can be determined in the upcoming recommended tender process. They include possible reduced collection costs.

The Municipalities may be able to reduce their overall costs to collect Blue Box recyclables by maximizing annual WDO funding. This can be accomplished by improving the capture rate but also by reducing current costs. The new London MRF offers an opportunity to reduce current costs.

Cost savings could be used to fund additional waste diversion initiatives.

11.1 Possible Funding Sources

There are a number of possible funding sources. These include

- Green Infrastructure Fund (GIF) - Federal and Provincial Governments;
  - Infrastructure Canada - www.infc.gc.ca
  - www.buildingcanada-chantierscanada.gc.ca/creating-creation/gif-fiv-eng.html

- Sustainable Development Fund - Sustainable Development Technology Canada;
- Gas Tax Fund;
- Green Municipal Fund - Federation of Canadian Municipalities;
- Infrastructure Ontario Loan;
- CIF - WDO;
- Public-Private Partnerships Canada (http://www.p3canada.ca/home.php); and
- Banks.

12.0 Implementation Timelines

The following implementation timeline is **recommended**:

- Council receipt of this Plan in November 2011;
- Discuss state of waste disposal with City of Toronto annually;
- Discuss state of waste collection and waste diversion with private sector waste contractor annually; and
- Annual review of waste diversion and identification of necessary improvements.

Implement System 2 of Waste Diversion Plan

- Develop work plan to implement System 2 of the Waste Diversion Plan by January 2012;
- Implement revised P&E program by April 2012;
- Set 3 bag weekly limit for waste for Bayham and Malahide by June 2012;
- Distribution of Blue Boxes to single family households by June 2012;
- Deliver Blue Box recyclables to new City of London Regional Materials Recovery Facility in 2012;
- Availability of Backyard Composters (subsidized or unsubsidized) by June 2012; and
- Achieve minimum 30% waste diversion by 1 January 2014.

Waste Management Tender

- Develop work plan to implement System 2 of the Waste Diversion Plan by November 2011; and
- Develop waste management tender in 2011.

Implement System 3 of Waste Diversion Plan

- Preparation and implementation of a recycling By-law that covers Blue Box material and leaf and yard waste by January 2013;
- Set 2 bag weekly limit for waste for Bayham and Malahide by June 2014;

- Improvement of Blue Box collection and processing including:
    - Harmonize what is collected;
    - Additional allowable materials in Blue Box;
    - Weekly collection of Blue Box wastes; and/or
    - Enhanced public space recycling;
- Improve capture of leaf and yard waste through combination of backyard composting, seasonal drop-off depots and/or curbside collection by June 2014; and
- Achieve minimum 40% waste diversion by 1 January 2016.

Other

- Undertake annual review and prepare progress report to Council and the public in January of each year;
- Evaluate the current waste diversion rate and increasing the waste diversion target to 50% or 60% in January 2016;
- Where relevant develop work plan to implement System 4 or System 5 of the Waste Diversion Plan by April 2016; and
- Renegotiate waste disposal contract with City of Toronto in 2019 (start process in 2018).

Review and Update Plan

- Review and update Plan in 2017; and
- Review and update Plan in 2022, 2027 and 2032.

13.0 Contingencies

13.1 Waste Diversion

The Municipalities have the potential through current and new programs help it attain a minimum 40% waste diversion goal. The Plan has staged increased waste diversion in steps. It is envisioned that a minimum 30% waste diversion will be attained by January 2014 and that a minimum 40% waste diversion will be attained by January 2016.

The key potential issue is that changes to the current program do not result in increased waste diversion.

If waste diversion goals are not met as per the schedule, the time line can potentially be extended. It is **recommended** however that waste diversion be carefully tracked on a monthly and an annual basis to identify progress against the 30% and then 40% waste diversion goals. In the event that waste diversion is not tracking well remedial actions can be taken.

Remedial actions could include additional P&E to remind and further instruct residents how to participate in the program. As well, the various initiatives proposed can be assessed and adjusted as required to result in desired waste diversion impacts.

Another possible issue is that processing facilities (i.e. for Blue Box) could temporarily or permanently close. The Municipalities should maintain relationships with various public facilities and private sector waste contractors as they may have access to MRFs and composting facilities (or other organic waste processing facilities) to which the Municipalities could bring its Blue Box wastes.

13.2 Waste Disposal

Waste disposal is secure until 2024 at the earliest and possibly until 2036. A potential issue is that the Green Lane Landfill fills up more quickly than anticipated. A further potential issue is that environmental issues arise which result in the curtailment or cessation, whether temporarily or permanently, of waste receipt at the Green Lane Landfill.

The Municipalities will need to renegotiate a contract with the City of Toronto in 2019 to deliver its wastes to the Green Lane Landfill. A potential but unlikely issue is that the Municipalities cannot successfully negotiate a contract with the City of Toronto.

If the Municipalities cannot tip its wastes at the Green Lane Landfill, for whatever reason, it may be possible to deliver wastes to another local or more distant landfill. Section 8.5 highlights some possible alternate disposal options.

As has been previously **recommended**, the Municipalities should maintain annual communication with the City of Toronto. As well they should maintain relationships with the City of London and private sector waste contractors as they have access to landfills to which the Municipalities could bring its wastes.

14.0 Monitoring and Reporting System

It is **recommended** that a monthly progress update be developed and implemented. Ongoing results on performance versus targets can be calculated each year from the data gathered for the WDO Data Call submission and from information received from the private sector waste contractor.

A summary of performance measurements can be reported to the Councils annually.

The performance summary should be posted to Municipalities web-sites.

15.0 Plan Review

It is **recommended** that the Plan be reviewed when there are significant changes in legislation, demographics or local opportunities to manage wastes.

At a minimum it is recommended that the Plan should be reviewed at least every 5 years:

- 2015;
- 2022;
- 2027; and
- 2032.

16.0 Conclusion

This Plan sets out a strategy for waste management in the next 20 years. The focus of this Plan has been to reduce the amount of waste directed to landfill and increase the amount of waste diverted.

Waste disposal is fairly secure until 2024 at the earliest but possibly until at least 2032.

This Plan investigated ways to improve waste diversion. A Waste Recycling Strategy, embedded within this Plan, focused on how to improve Blue Box recycling. Improvement of the capture of organic wastes and Other wastes were also investigated.

The Municipalities have the potential through current and new programs help it attain a minimum 40% waste diversion goal. The Plan has staged increased waste diversion in steps. It is envisioned that a minimum 30% waste diversion will be attained by January 2014 and that a minimum 40% waste diversion will be attained by January 2016.

The cooperation of the Municipalities will play a critical role in the success of the Plan and the potential to deliver more cost effective services while at the same time increasing waste diversion. Current and future private waste management contractor(s) will play an important role in the success of this Plan by delivering high quality services that will allow the Municipalities to implement this Plan. Finally, it is the residents of the Municipalities, whose participation in the various waste diversion programs will determine whether this Plan is successful.

17.0 References

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Appendix 1
Set-out Study Results

Municipality of Bayham
Municipality of Central Elgin and
Township of Malahide

Waste Management Master Plan
Waste Recycling Strategy

Set Out Study

July 2011

Submitted by:

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Table of Contents

1.0 Introduction

As part of the Integrated Waste Management Master Plan for Malahide, Bayham and Central Elgin, a set-out study was conducted to determine resident participation in the garbage and Blue Box programs.

Two set-out studies were conducted in June and July 2011.

A copy of the data collection sheet is attached in Appendix 1.

2.0 Methodology

For each municipality, two routes were selected to represent rural and urban areas. Approximately 25 houses were selected on each street.

The following routes were selected:

- Bayham
  - Best Line (NE of Gray & Travis St.) (rural)
  - Gray, Travis & Plank St. in Eden (urban)
- Central Elgin
  - Belmont Rd. (Hwy 74 south of Belmont (rural)
  - Washburn St. in Belmont (urban)
- Malahide
  - Glencolin Line (rural)
  - Springfield Rd. (rural/urban)

The first 25 households were selected for analysis for each street for a total of 50 households per municipality. Set-out studies were conducted on the mornings of 9 June and 7 July 2011. A 2cg staff member drove to the selected streets and documented house numbers, set-out of garbage (# of containers, # of bags) and set-out of recycling (# of bins, # of bags).

3.0 Results

The results are summarized in a number of Tables. They include general set-out (i.e. of either garbage or recycling), garbage set-out and recycling set-out. An assessment of urban and rural set-out was also summarized.

3.1 Bayham

9 June 2011

The set-out study was completed at 8:40 am. Table 3.1 depicts the set-out rates on 9 June 2011 for total set-out and the breakdown of urban vs. rural set-out.

Table 3.1 Set-out 9 June 2011

	Total		Urban		Rural	
	hshlds*	%	hshlds	%	hshlds	%
Set-out	39	78	21	81	18	75
Garbage	37	74	21	81	16	67
Recycling	31	62	17	65	14	58

*hshlds = households

Set-out rates were similar for urban and rural streets. Photo 1 depicts set-out on Best Line.

Photo 1. Best Line

7 July 2011

The set-out study was completed at 8:00 am. Table 3.2 depicts the set-out rates on 7 July 2011 for total set-out and the breakdown of urban vs. rural set-out.

Table 3.2 Set-out 7 July 2011

	Total		Urban		Rural	
	hshlds	%	hshlds	%	hshlds	%
Set-out	29	58	20	77	9	38
Garbage	28	56	19	73	9	38
Recycling	23	46	15	58	8	33

Set-out appears to be quite a bit lower in July, possibly due to residents being away on summer vacation. As well, rural set-out is noticeably lower. This could be a function of rural resident managing a portion of their wastes themselves.

3.2 Central Elgin

9 June 2011

The set-out study was completed at 7:30 am. Set-out was very low so 2cg staff returned at 9:45 after completing the other streets. Table 3.3 depicts set-out rates on 9 June 2011 for total set-out and the breakdown of urban vs. rural set-out.

Table 3.3 Set-out 9 June 2011

	Total		Urban		Rural	
	hshlds	%	hshlds	%	hshlds	%
Set-out	32	64	23	92	9	36
Garbage	30	60	22	88	8	32
Recycling	28	56	21	84	7	28

Set-out rates were lower for rural households. Photo 2 depicts set-out on Washburn Street.

Photo 2. Washburn Street

7 July 2011

The set-out study was completed at 9:15 am. Table 3.4 depicts set-out rates on 7 July 2011 for total set-out and the breakdown of urban vs. rural set-out.

Table 3.4 Set-out 7 July 2011

	Total		Urban		Rural	
	hshlds	%	hshlds	%	hshlds	%
Set-out	32	64	23	92	9	36
Garbage	27	54	20	80	7	28
Recycling	29	58	21	84	8	32

Set-out rates were similar during both days. Rural set-out is noticeably lower. This could be a function of rural resident managing a portion of their wastes themselves.

3.3 Malahide

9 June 2011

The set-out study was completed at 8:00 am. Table 3.5 depicts set-out rates on 9 June 2011 for total set-out and the breakdown of urban vs. rural set-out.

Table 3.5 Set-out 9 June 2011

	Total		Urban		Rural	
	hshlds	%	hshlds	%	hshlds	%
Set-out	31	62	13	87	18	51
Garbage	30	60	13	87	17	49
Recycling	19	38	10	67	9	26

Set-out rates were lower for rural households. Photo 3 depicts set-out on Glencolin Line.

Photo 3. Glencolin Line

7 July 2011

The set-out study was completed at 8:45 am. Table 3.6 depicts set-out rates on 7 July 2011 for total set-out and the breakdown of urban vs. rural set-out.

Table 3.6 Set-out 7 July 2011

	Total		Urban		Rural	
	hshlds	%	hshlds	%	hshlds	%
Set-out	31	62	13	87	18	51
Garbage	30	60	13	87	17	49
Recycling	27	54	11	73	16	46

Recycling set-out increased from June to July. Rural set-out is noticeably lower. This could be a function of rural resident managing a portion of their wastes themselves.

3.4 Overall

Table 3.7 depicts overall set-out rates for both June and July 2011.

Table 3.7 Overall Set-out Rates for June and July 2011 (300 households)

	Total		Urban		Rural	
	hshlds	%	hshlds	%	hshlds	%
Set-out	194	65	113	86	81	48
Garbage	182	61	108	82	74	44
Recycling	157	52	95	72	62	37

Rural set-out is noticeably lower. This could be a function of rural resident managing a portion of their wastes themselves.

4.0 Conclusion

The set-out rates for urban areas are fairly high and at about expected levels. The set-out rates for rural households are low and may indicate that rural households generate less waste and/or manage a portion or all of their waste themselves.

Appendix 1
Data Collection Sheet

2011 Elgin Municipalities Garbage & Recycling Setout Data Collection

Municipality	
Sample Area	
Date of Study	
Weather Conditions	

			Garbage		Recycling			
	House Number	Street	# of Garbage Cans	# of Garbage Bags	# of Recycling Bins	# of Recycling Bags	Set-Aside Cardboard Estimate	Notes
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
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Appendix 2
On-line Survey Results

Municipality of Bayham
Municipality of Central Elgin and
Township of Malahide

Waste Management Master Plan
Waste Recycling Strategy

On-line Survey

July, 2011

Submitted by:

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1.0 Introduction

A survey was developed to obtain input from residents, including participation in an on-line waste management survey.

This survey was conducted from April 2011 to July 2011. The intent of the survey was to establish the current waste management behaviors of the community and gauge community opinion on possible future waste management options.

A copy of the survey is attached in Appendix 1. A copy of written comments are included in Appendices 2 and 3.

2.0 Survey Summary

A total of 22 questions were posed to residents. The questions were divided into three categories including Introduction/Demographics; Current Habits; and Future Waste Management. There were a total of 290 respondents who provided answers to the survey questions representing 259 complete surveys and 31 partial survey responses (skipped questions).

A summary of the survey responses is included in this Section.

2.1 Introduction/Demographics

Three Municipalities were included in this survey. About 44% of respondents reside in the Township of Malahide (Malahide), 39% of respondents reside in the Municipality of Central Elgin (Central Elgin) and 17% of respondents reside in the Municipality of Bayham (Bayham).

About 68% of the respondents were between the ages of 36 to 65 years of age, while about 12% of the respondents were between 19 and 35 years of age and 20% of the respondents were over the age of 65 years. About 51% of respondents were female and 49% were male.

All but one respondent indicated that they resided in a single family home.

2.2 Current Waste Management Habits

Respondents were asked a number of questions about their current waste management habits.

About 60% of the respondents reported that they set out one garbage bag or less while about 30% of respondents set out two garbage bags per week.

Table 2.1 depicts garbage bag set-out by Municipality. Central Elgin has the lowest set-out with 79% of respondents setting out one garbage bag or less per week. This may be a function of the garbage bag tag system in place in Central Elgin.

Table 2.1 Garbage Bag Set-out by Municipality

	Garbage Bag Set-out					
	0.5	1	2	3	4	5+
Bayham	16.3%	42.9%	28.6%	10.2%	2.0%	0.0%
Central Elgin	21.9%	57.1%	16.2%	3.8%	1.0%	0.0%
Malahide	11.5%	32.0%	41.0%	10.7%	4.1%	0.8%

Figure 2.1 depicts Blue Box usage. About eighty per-cent of respondents set out Blue Boxes for every collection.

Figure 2.1 Blue Box Usage

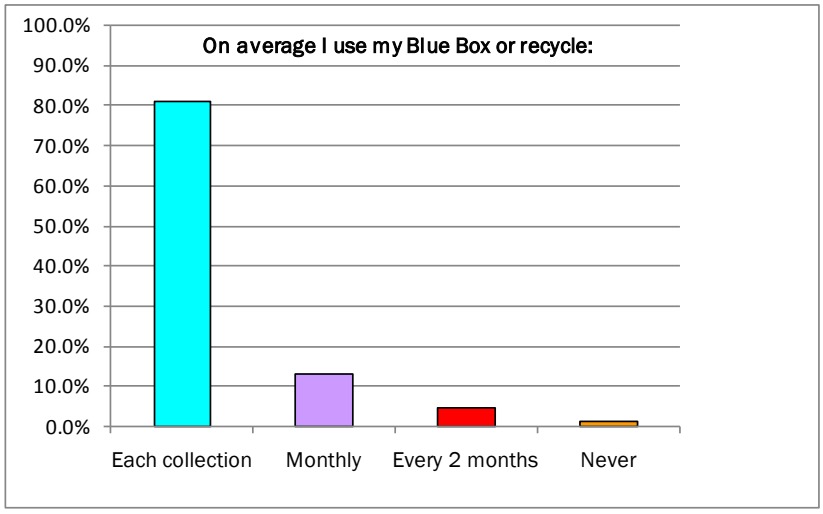


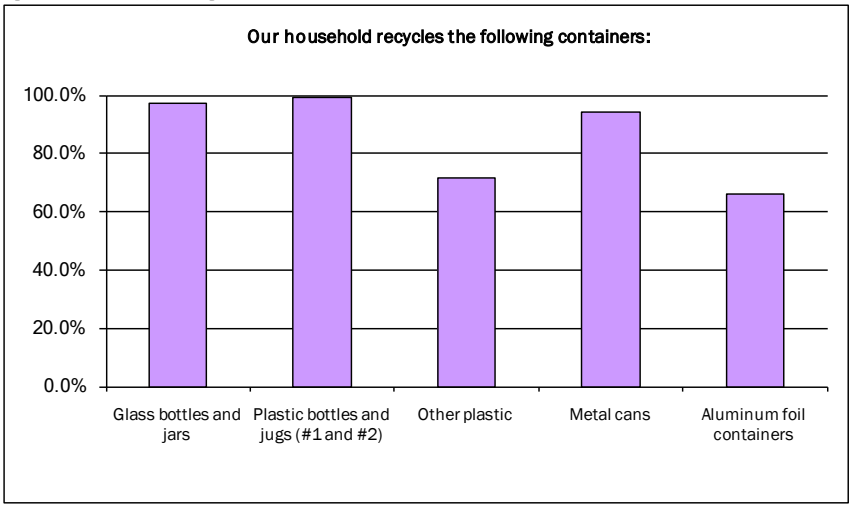
Table 2.2 depicts Blue Box set-out by Municipality. Central Elgin has the highest set-out for each collection day at about 90%.

Table 2.2 Blue Box Set-out by Municipality

	Blue Box Set-out			
	Each Collection	Monthly	Every 2 Months	Never
Bayham	81.6%	10.2%	8.2%	0.0%
Central Elgin	89.5%	7.6%	1.9%	1.0%
Malahide	71.9%	19.0%	7.4%	1.7%

As depicted in Figure 2.2 more than 90% of respondents recycled all container types that are permitted in the Blue Box, except for aluminum foil containers and other plastic. For Malahide residents, this is a function of what is allowed into the Blue Box (i.e. #1, #2 only).

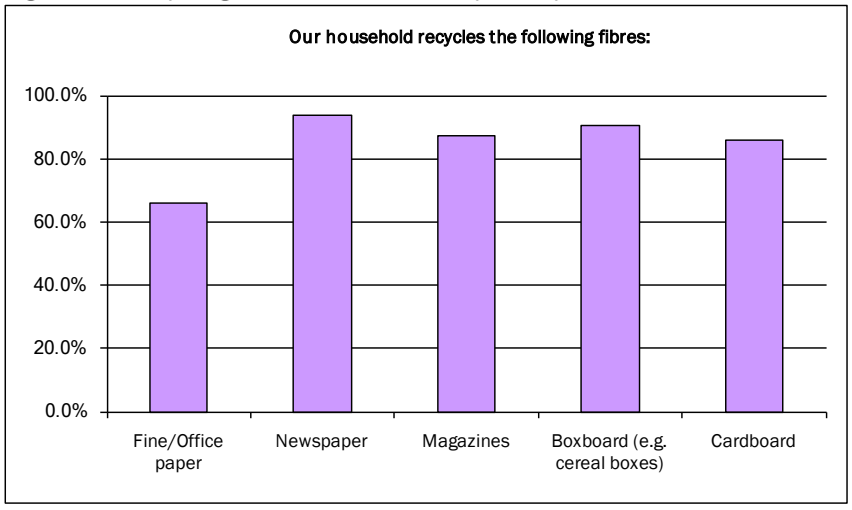
Figure 2.2 Recycling Rates for Containers Recycled by Households



Of the Malahide respondents, only 47% of respondents recycle other plastic while 92% of respondents from Central Elgin recycle other plastic.

As depicted in Figure 2.3 more than 85% of respondents recycled all fibre (paper) types that are permitted in the Blue Box, except for fine/office paper.

Figure 2.3 Recycling Rates for Fibres Recycled by Households



Of the three Municipalities, Malahide has the lowest recycling rate for all paper streams.

When their Blue Boxes are full about 78% of respondents either pile recyclable materials beside their Blue Box or store it and include in a future Blue Box set out. About 19% of respondents indicated that their Blue Box was never full.

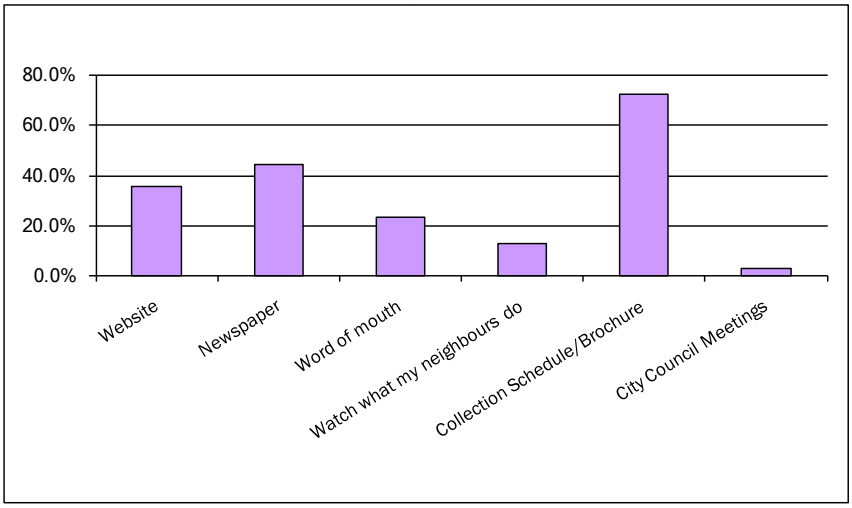
About 27% of respondents indicated that they divert leaf and yard waste through municipal curbside collection or leaf and yard waste depots each year. Approximately 35% of respondents indicated that they do not have access to municipal leaf and yard waste diversion. The remainder of respondents did not indicate that they participated in leaf and yard waste diversion.

Residents of Malahide receive bi-weekly Blue Box collection. About 85% of Malahide respondents find this collection schedule sufficient.

Approximately 74% of respondents divert or dispose of household hazardous waste and electronic waste by utilizing depots put on by the municipality each year. About 15% of respondents take no action and store these items in their home and 12% of respondents dispose of these items in the garbage.

As depicted in Figure 2.4 respondents were asked how they currently obtain information on their waste management programs. They were able to select more than one answer. The Collection Schedule/Brochure (73%) was the most common source of information with newspapers (44%) and websites (36%) the next most common sources of information.

Figure 2.4 Sources for Waste Management Program Information



2.3 Future Waste Management

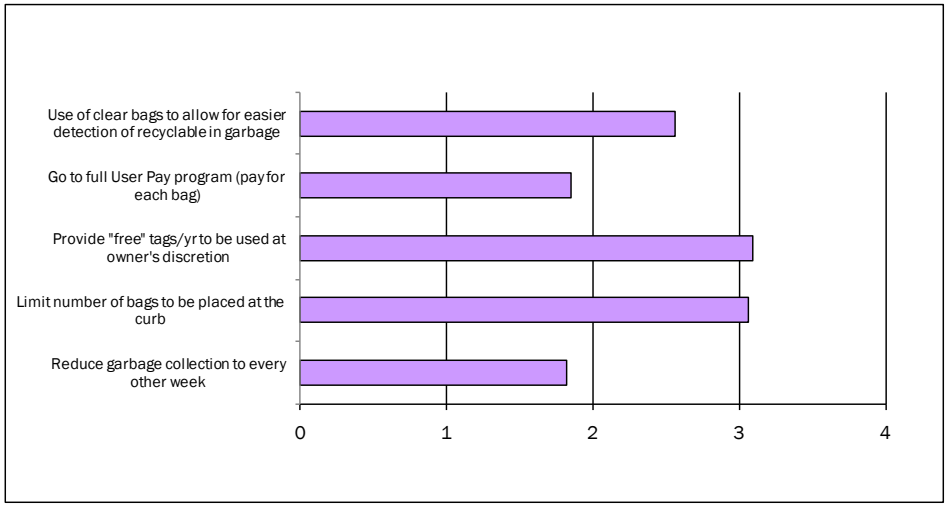
Respondents were asked a number of questions about future garbage collection and waste diversion.

When asked about a suitable waste diversion target about 60% of respondents want to see the Municipalities striving to reach a diversion rate of 60% or higher. In Central Elgin and Malahide, approximately 67% and 60% of respondents respectively want to

see the Municipalities striving to reach a diversion rate of 60% or higher, while only 45% of Bayham respondents want to see the Municipalities striving to reach a diversion rate of 60% or higher.

As depicted in Figure 2.5 respondents were asked to rank a number of initiatives from 1 lowest to 5 highest in terms of how they would contribute to waste reduction at the curb. The top three ranked initiatives included providing "free" bag tags/yr (95 to 105 per year) to be used at the property owner's discretion; limit the number of bags that can be placed at the curb for collection; and the use of clear garbage bags to allow for easier detection of recyclables in the garbage.

Figure 2.5 Ranking Possible Waste Reduction Initiatives (Average Score Range 1 to 5)



Respondents were able to provide comment on the possible waste reduction initiatives. A total of 84 additional comments were recorded in the survey responses. They are included in Appendix 2.

The following is a brief summary of the major discussion points that were highlighted by the respondents.

Full User Pay Program

Most respondents do not agree with going to a full User Pay system. The main concern is illegal dumping of garbage in the country or on other peoples' properties by residents that cannot afford the additional cost or those not willing to pay for bag tags. Additionally, respondents feel that their taxes are already too high and should be used for waste management without adding an additional cost for homeowners.

Clear Bags

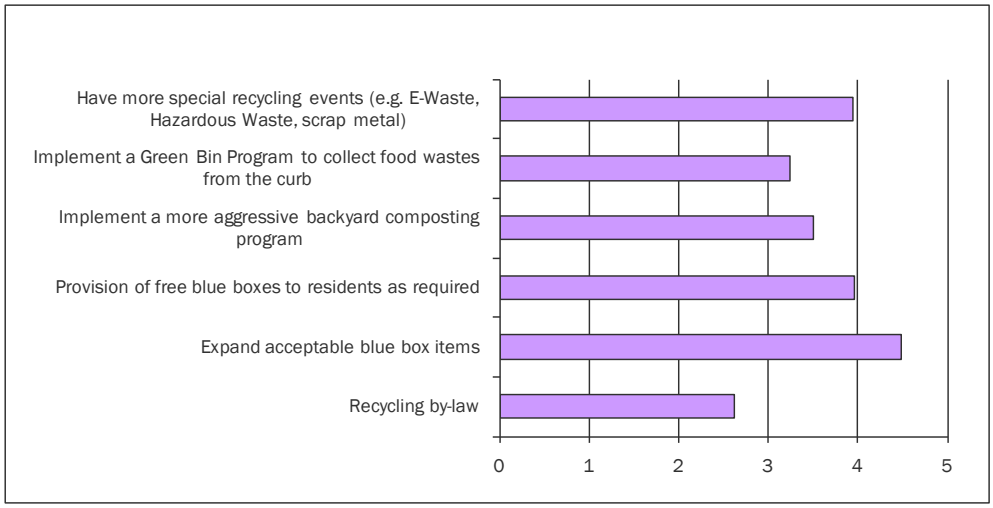
Respondents were divided on the issue of using clear bags. Some felt that the use of clear bags would not help to increase waste diversion. Additionally, there were concerns about privacy issues and increased costs for purchasing clear bags. Others

felt clear bags would help with waste diversion as it would make residents more accountable for what they put in the garbage. However, they felt a penalty system would need to be put in place if the garbage contained a certain percentage of recyclables.

"Free" Bag Tags
Many respondents like the "free" bag tags that are provided now (i.e. Central Elgin); however, many think that the number of tags provided should be reduced. This way the amount of garbage disposal is limited but homeowners can use the tags at their discretion.

As depicted in Figure 2.6 respondents were asked to rate a number of possible programs to increase waste diversion from 1 lowest to 5 highest in order of how they would contribute to waste diversion. The highest rated program was expanding acceptable Blue Box items, followed closely by provision of free Blue Boxes to residents as required and having more special recycling events.

Figure 2.6 Ranking Possible Programs to Increase Waste Diversion (Average Score Range 1 to 5)



Respondents were able to provide comment on the possible waste reduction initiatives. A total of 61 additional comments were recorded in the survey responses. They are included in Appendix 2.

The following is a brief summary of the major discussion points that were highlighted by the respondents.

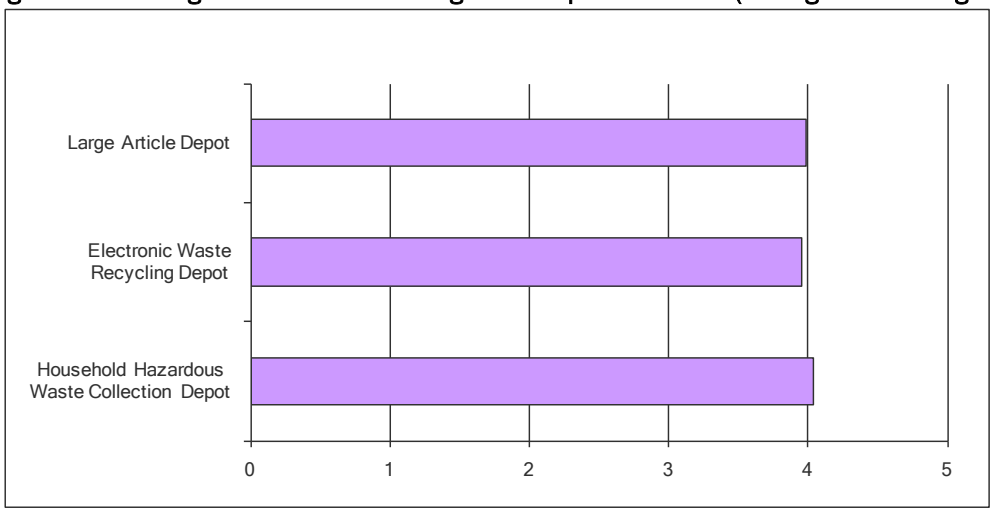
Special Recycling Events
Respondents feel that there are not enough special recycling events. They need to occur more frequently throughout the year otherwise these materials are often disposed in the garbage. Several Bayham respondents were very unhappy with the last Special Event Day held in May.

Acceptable Recyclables
Many respondents would like to see an increase in acceptable Blue Box items (especially Malahide respondents where only #1 and 2 plastics are collected). They would also like more information on how to recycle and what is currently acceptable. Several respondents suggested handing out free Blue Boxes with recycling instructions printed on them.

Composting/Green Bin
Many respondents suggested backyard composting for rural areas and a green bin program for urban areas. They would also like to see leaf & yard waste collected at the curb or a depot where this material can be dropped off from spring to fall.

As depicted in Figure 2.7 respondents were asked to rate several special events from 1 lowest to 5 highest in order of need. All three events had almost identical ratings.

Figure 2.7 Ranking Possible Waste Management "Special Events" (Average Score Range 1 to 5)



Respondents were able to provide comment on the need for special events. A total of 43 additional comments were recorded in the survey responses. They are included in Appendix 2.

The following is a brief summary of the major discussion points that were highlighted by the respondents.

Curbside Collection
Many respondents would like to see curbside collection of large items a few times a year as many of them do not have access to a truck for transport or the items are too heavy.

Frequency of Event Days
All respondents that commented on the frequency of special event days stated that there need to be more event days and they should be better advertised and organized. Once yearly event days are not enough for most people and concerns were raised that many items end up in the garbage or illegally dumped in the country.

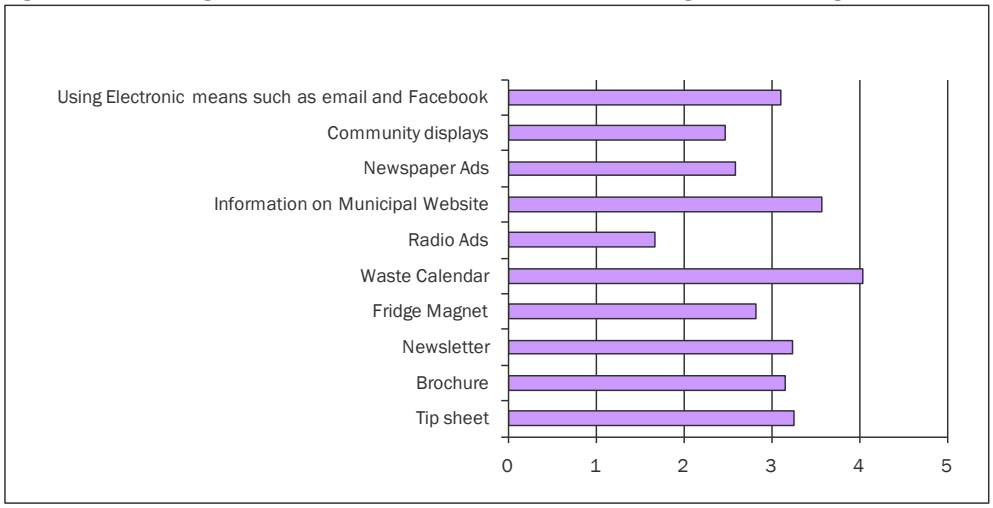
User Pay Depots
Respondents feel that depots should not include user fees as taxes are already high and should be used to fund these types of initiatives. Applying for additional funding from the government was also suggested. Many are concerned with illegal dumping if residents are required to pay to dispose of large items, electronics and hazardous waste.

About 99% of respondents think it is a good idea for their municipality to work cooperatively with the other Municipalities to cooperatively provide waste management services if it maintains services and costs and increases waste diversion.

About 61% of respondents are not willing to pay more to fund enhanced waste diversion programs. Approximately 27% of respondents are willing to pay up to 10% more.

As depicted in Figure 2.8 respondents were asked on a scale of 1-5, where 1 is not useful and 5 is very useful, to rank the following methods that could be used to communicate waste management information with them. The highest rated method of communication was the waste calendar, followed by information on the Municipal web-site, tip sheets, newsletter, brochures, and electronic means such as email or Facebook.

Figure 2.8 Ranking Possible Communication Methods (Average Score Range 1 to 5)



2.4 Summary of Individual Respondent Comments

Respondents were able to provide comment on the current waste management program. A total of 78 comments were recorded in the survey responses. They are included in Appendix 3.

The following is a brief summary of the major discussion points that were highlighted by the respondents.

Allowable Items in Blue Box
A number of respondents would like to see the amount of materials accepted in the Blue Box broadened. This was especially true for plastics. For instance, Malahide currently only allows #1 and #2 plastics. Many respondents would like to see an increase in the amount of acceptable Blue Box material.

Education
Another issue pertained to education and information for the Blue Box program. Many respondents were frustrated with the seeming lack of information on what is and isn't recyclable and were upset over items being left in their Blue Box that then need to be disposed in the garbage.

Event Days/Depots
Respondents felt that one event day per year to drop off large items, electronics and hazardous waste was not sufficient. Many would like to see semi-annual days (spring and fall). Others would like to have a depot open monthly where items can be dropped off. Some respondents would like to have a few curbside collection days for large items to assist residents that do not have access to a pick-up truck or trailer or are otherwise limited in their ability to dispose of these items.

Several respondents commented on depot days and found them very unorganized and inefficient.

Other Comments
- Have a drop off location for leaf & yard waste;
- Target back yard composting;
- Have garbage and recycling collectors treat the garbage and recycling bins better;
- No green bin program as most areas are rural and can backyard compost.

3.0 Conclusions

About 290 residents completed the on-line survey.

In general it appears that respondents participate in the current waste collection programs but would like to see more services for the amount of taxes that are already being paid, specifically, expanded Blue Box items, more event days and curbside collection of large items.

The survey respondents appear to be very keen to move the Municipalities to beyond 60% waste diversion although this is not commensurate with their willingness to pay the additional costs to fund new waste diversion programs, as 60% indicated they did not want to pay additional taxes to fund new waste diversion programs.

These results should be viewed as a "snap-shot" of resident opinion and function as part of the overall public consultation process.

Appendix 1
Survey

Waste Management Survey

1. Introduction

The Municipalities of Bayham and Central Elgin and the Township of Malahide are developing a joint Waste Recycling Strategy and Waste Management Master Plan. Part of this process involves consulting with the public.

We would like to hear from you about your current waste management habits and get some ideas about what you would like to see in the future. Please take a few minutes and fill out this anonymous survey. Unless otherwise noted there is only one response required per question. Thanks!

1. I live in the following municipality

- ○ Municipality of Bayham
- ○ Municipality of Central Elgin
- ○ Township of Malahide

2. My age is between

- ○ 19-35
- ○ 36-50
- ○ 51-65
- ○ 65+

3. I am a:

- ○ Female
- ○ Male

4. I am a:

- ○ Resident of a house
- ○ Resident of an apartment

2. Current Habits

We would like to learn about your current waste management habits.

5. On average our household puts this many full green/black garbage bags at the curb for collection each week:

- ○ 0.5
- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5+

6. On average our household puts its blue box(es) to the curb for collection:

- ○ Each collection
- ○ Monthly
- ○ Every 2 months
- ○ Never

7. On average our household puts this many full blue boxes at the curb for collection each week:

- ○ 0.5
- ○ 1
- ○ 2
- ○ 3+

8. Our household recycles the following (select as many answers as you like):

- ☐ Glass bottles and jars
- ☐ Plastic bottles and jugs (#1 and #2)
- ☐ Other plastic
- ☐ Metal cans
- ☐ Aluminum foil containers

Waste Management Survey

9. Our household recycles the following (select as many answers as you like):

- ☐ Fine/Office paper
- ☐ Newspaper
- ☐ Magazines
- ☐ Boxboard (e.g. cereal boxes)
- ☐ Cardboard

10. When our household's blue box(es) is full we typically do the following:

- ○ Throw recyclables in with the garbage
- ○ Store recyclables and put out another time
- ○ Put out in pile beside Blue Box
- ○ Never full

11. Our household diverts leaf and yard waste through municipal curbside collection or leaf and yard waste depots each year:

- ○ Each Collection
- ○ Monthly
- ○ Other
- ○ Never
- ○ Not available

12. For residents of BAYHAM only the current bi-weekly collection of my blue box is:

- ○ Sufficient
- ○ Insuffient it should be weekly
- ○ Not applicable I do not live in Bayham

13. Our household diverts or disposes household hazaradous waste and electronic waste by:

- ○ Diverting at annual depots put on by muncipality each year
- ○ Disposing with our garbage
- ○ Diverting at annual depots put on by muncipality when we have enough material
- ○ No action. It is stored in our home.

14. How does your household currently obtain information on your waste management programs? (select as many as you like)

- ☐ Website
- ☐ Watch what my neighbours do
- ☐ Newspaper
- ☐ Collection Schedule/Brochure
- ☐ Word of mouth
- ☐ City Council Meetings

3. Future Waste Management

We would like to ask you a few questions about your thoughts on future waste management.

Increasing waste diversion can come from implementing measures to reduce the amount of garbage colleced and/or implementing measures to make recycling more convenient and easier.

Waste Management Survey

15. Our current rate of waste diversion (away from landfill) is estimated to be about 24%. The Provincial goal is 60%.

In the future I would like our municipality to strive for the following waste diversion rate:

Current level (no change)	40%	50%	60%	70%	Greater than 70%

16. To increase the waste diversion rate it may be necessary to change how curbside waste is collected. Please rate the following possible initatives to reduce the amount of waste collected from 1 lowest to 5 highest in terms of how they would contribute to waste reduction.

	1	2	3	4	5
Reduce garbage collection to every other week					
Limit the number of bags that can be placed at the curb to 2 or 3 bags per week					
Provide "free" tags/year (95-105 tags per year) to be used at property owner's discretion					
Go to full User Pay program where the household must purchase tags for each bag/container of garbage					
Use of clear garbage bags to allow for easier detection of recyclables in the garbage					

Comments

Waste Management Survey

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Provide "free" tags/year (95-105 tags per year) to be used at property owner's discretion					
Go to full User Pay program where the household must purchase tags for each bag/container of garbage					
Use of clear garbage bags to allow for easier detection of recyclables in the garbage					

Comments

Waste Management Survey

17. Please rate the following possible programs to increase waste diversion from 1 lowest to 5 highest in terms of how they would contribute to waste diversion.

	1	2	3	4	5
Recycling by-law	○	○	○	○	○
Expand acceptable blue box items	○	○	○	○	○
Provision of free blue boxes to residents as required	○	○	○	○	○
Implement a more aggressive backyard composting program	○	○	○	○	○
Implement a Green Bin Program to collect food wastes from the curb	○	○	○	○	○
Have more special recycling events (e.g. E-Waste, Hazardous Waste, scrap metal)	○	○	○	○	○

Comments

18. Please rate the following special events from 1 lowest to 5 highest in order of need:

	1	2	3	4	5
Household Hazardous Waste Collection Depot	○	○	○	○	○
Electronic Waste Recycling Depot	○	○	○	○	○
Large Article Depot	○	○	○	○	○

Comments

19. I think our municipality working cooperatively with other local municipalities to cooperatively provide waste management services:

- ○ Is a good idea if it maintains services and reduces costs
- ○ Is a good idea if it maintains services and costs and increases waste diversion
- ○ Is a bad idea because our municipality's waste management needs are unique

20. How much more would you be willing to pay to fund enhanced waste diversion programs?

- ○ Not willing to pay anymore
- ○ Willing to pay up to 10% more
- ○ Willing to pay up to 25% more
- ○ Willing to pay up to 50% more
- ○ Not applicable

Waste Management Survey

21. On a scale of 1-5, where 1 is not useful and 5 is very useful, please rank the following methods that your municipality could use to communicate waste management information to your household:

	1	2	3	4	5
Tip sheet	○	○	○	○	○
Brochure	○	○	○	○	○
Newsletter	○	○	○	○	○
Fridge Magnet	○	○	○	○	○
Waste Calendar	○	○	○	○	○
Radio Ads	○	○	○	○	○
Information on Municipal Website	○	○	○	○	○
Newspaper Ads	○	○	○	○	○
Community displays	○	○	○	○	○
Using Electronic means such as email and Facebook	○	○	○	○	○

22. Thanks for taking the time to fill out this survey.

If you have any additional comments please include them below.

Appendix 2
Respondent written comments - Future Waste Management

Question 16 - **To increase the waste diversion rate it may be necessary to change how curbside waste is collected. Please rate the following possible initatives to reduce the amount of waste collected from 1 lowest to 5 highest in terms of how they would contribute to waste reduction.**
User pay increases diversion! Check out programs in Southwest Middlsex& Strathroy_caradocTheir rates are around 64%

7/8/11 2:14PM View Responses

I'm in the boonies, I'd be concerned about tag theft.

7/7/11 2:10PM View Responses

NO USER PAY!!!!!!

7/5/11 1:04PM View Responses

Making people for for tags might make them think about waste when they are shopping, but they will not be happy with more costs.

7/1/11 7:38AM View Responses

sort all, then burn unrecyclable waste for energy

6/27/11 10:38PM View Responses

have blue box one week, garbage next week... rotate

6/27/11 12:11AM View Responses

Black Bags

6/23/11 12:05AM View Responses

I live in a rural area. Any pay per use fees would increase the amount of garbage in the ditches on my sideroad!

6/23/11 8:28AM View Responses

Summer garbage needs to be picked up each week

6/22/11 12:54AM View Responses

We already pay for garbage collection through our taxes, user pay programs are double dipping by the municipality

6/22/11 9:45AM View Responses

there should be reduced number of free tags and pay for additional

6/22/11 9:31AM View Responses

Providing free tags per year would give the residents the flexibility to have varying amounts of garbage bags per week, but still enforce limits overall. I don't agree with a full user pay program as we do pay taxes for these services already.

6/21/11 8:18PM View Responses

What is to be done with excess bags as they ocassionally occurr. How long are we expected to store excess garbage?

6/21/11 2:03PM View Responses

clear bags is a new expense

6/17/11 9:28AM View Responses

remain the same

6/16/11 6:55AM View Responses

Definately disagree with the every other week pickup.I believe we will see even more country road dumping.I totally agree with purchasing tags although again roadside dumping may become an issue.

6/14/11 9:24AM View Responses

grass clippings or garden waste could be put into paper bags instead of plastice garbage bags

6/13/11 8:52PM View Responses

NOT SMART - Garbage will be dumped everywhere and NO - cameras are not the answer!

6/13/11 4:19PM View Responses

I DO NOT BELEIVE ANY OF THE ABOVE SOLVES THE PROBLEM

6/13/11 11:40AM View Responses

When are you going to collect green (garden waste) at the curb side like the city does?

6/12/11 4:17PM View Responses

bi-weekly would mean more dumping in countryside!!!!!!!

6/11/11 5:14PM View Responses

Green bins could help?

6/11/11 12:47AM View Responses

The current weekly wastement garbage bag tags system currently used by the MCE has neither encouraged the public to reduce/reuse/or recycle household garbage or increased the amount of waste being diverted away from landfill site. It has proven to be costly to the taxpayer and ineffective in the attempt to divert garbage from the landfill. If the MCE goal is to divert waste from the landfill the MCE should educate. encourage,reward the public to reduce/reuse/recycle. Instead of focusing on garbage collection the MCE should focus on increasing public services that promote recycling ie) increase leaf/lawn collections days/run recycle trucks every week , increase hazardous waste collection days, tree collection and scrap days and decrease garbage collection days. In general implement a system that encourages the public to sort garbage and decrease "acceptable" garbage to the landfill.

6/8/11 1:48PM View Responses

The easier it is to recycle, the more that will be recycled. Clear bags are great.

6/8/11 11:59AM View Responses

concerned about illegal dumping

6/7/11 6:47PM View Responses

Our taxes pay for waste collection, do not force households to purchase tickets. Clear bags force me to use one type of container. I like to use plastic drums or other methods that cost me nothing.

6/7/11 5:45PM View Responses

G

6/6/11 4:15PM View Responses

people with large families seemed to be punished

6/4/11 2:50PM View Responses

Why would I want to pay for tags to have my garbage picked up? If the tags we currently get are valued at $1.50 each would I then get a property tax reduction in stead of these tags? If that is the case then YES I would gladly pay for garbage tags!!

6/2/11 9:45PM View Responses

keep using the recycle boxes

6/2/11 2:36PM View Responses

will you reduce my taxes? if we have user pay???

5/31/11 9:01PM View Responses

do not initiate bag tags-demographic is such that garbage will probably end up in ditches and ravines is bag tag initiated.

5/31/11 2:56PM View Responses

User pay would increase the garbage dumped in the rural areas

5/30/11 11:02PM View Responses

Forget the tags. They cost us too much money & time.

5/30/11 10:37PM View Responses

Each household should be limited to 1 bag per week. After that a user fee could be initiated.

5/30/11 10:17PM View Responses

We pay very high taxes and we should have a far better recycling program in place without extra charge.

5/30/11 4:35PM View Responses

Include organic waste as recycled waste, curbzide pickup for houshold hazzardous waste quarterly

5/30/11 4:31PM View Responses

It would be good to use a wet/dry/green system like other areas. It would also be good if we could recycle other plastics such as yogurt and sour cream containers.

5/28/11 3:12PM View Responses

I came from an area that tried the clear garbage bags, ended up with increased garbage in the country on side of road

5/28/11 1:20PM View Responses

still use blue box but add yard waste like St. thomas

5/28/11 12:13AM View Responses

a local transfer station would make things simpler

5/28/11 11:31AM View Responses

Garbage ends up being dumped in ditches if no or not enough free tags are issued.

5/28/11 9:51AM View Responses

No User Pay Program! Our Taxes paid is enough for the services. Better information to be shared with residents for what can be recycled and with the recycling collection company as well. Review other recycling programs that maybe implemented to provide a better recycling program. (e.g. Vancouver, BC has a good recycling program for business and perhaps residents)

5/27/11 1:00PM View Responses

I would like to see garbage collection weekly / recyclables collection bi-weekly / more door-to-door promotion of recycling / bag tags - 52 tags free (one per week) pay for each additional

5/27/11 8:59AM View Responses

Garbage collection needed weekly in hot months due to odour.

5/26/11 4:33PM View Responses

I would like to see special recyling in the spring for the plastic containers from annual plants and flowers. Maybe Aylmer and Malahide could do this together.

5/25/11 7:53PM View Responses

Other municipality have tried the clear bag route and have failed. Homeowners who have medical issues would be embarrassed to know that there garbage is looked at by every resident in the area. If you use the pay as you do method then no restriction should be in place. I believe you would have a hard sell on your hands for clear bags:(:(

5/25/11 10:39AM View Responses

I lived in the City of Guelph for about 5 years, between 1998-2002. At that time they had a 3-stream system, with well-explained waste disposal into 3 streams: recycle, organic waste for compost, and garbage (using colour-coded clear garbage bags). This system seemed very progressive and effective. Increasing the # of plastics to be recycled would be a huge help - many foods come in #3,4,5 etc and the containers are recylced in other areas nearby! Styrofoam can be recycled too.

5/24/11 1:00PM View Responses

I prefer user pay. We only put out 1 bag or less per week whereas our neighbours put out 3 to 5 bags per week. User pay should smarten these people up with regard to recycling and composting.

5/23/11 3:13PM View Responses

purchase of tags should be mandatory now.

5/19/11 3:14PM View Responses

Stinky garbage is a no-no in the summer

5/19/11 2:03PM View Responses

Restrictions or purchased tags may lead to garbage dumped in ditches.

5/16/11 7:31PM View Responses

We already have people dumping garbage bags with our trash for pick-up. A user pay system will only cause this dumping to go higher as people with low incomes, who are struggling already, will tend to dump versus pay for the increased taxs. Implement a reward system for waste diversion will be the only way to help change people's attitudes.

5/15/11 10:42PM View Responses

works well now

5/14/11 2:45AM View Responses

Belmont's tag system and strategy to save as many tags to enter a contest is a good one.

5/13/11 8:13AM View Responses

Difficult to change old habits in people !

5/13/11 7:45AM View Responses

Having to buy tags in ruler area's may result in dumping on private property ar near the back of properties without better enforcement which we can not afford.

5/12/11 9:27PM View Responses

Pt Burwell had a clear bag progam where it all went in the bag and sorted at the garbage depot. very effective

5/12/11 8:54PM View Responses

With adapting full user fee, there is a risk that people dispose of waste elsewhere. There should be an incentive \reward for recycling.

5/12/11 7:19PM View Responses

My recycle guy is too picky. and will leave items by the road so we throw them out the following week in the trash

5/12/11 12:21AM View Responses

I am against any limits like this, garbage collection should be easy, convenient and free or else it ends up in my ravine!

5/11/11 9:27PM View Responses

would like to see more items available to recycle - tetra pacs, plastic clamshells, etc.

5/11/11 12:56AM View Responses

broader range of plastic recycleable items + electronic and general household item pickup twice a year

5/10/11 3:33PM View Responses

I am concerned about the jFull User Pay program in that it may cause illegal dumping of household waste by people who either can't afford this option or simply balk at paying for it.

5/10/11 12:39AM View Responses

All materials should be recyled - those that don't recycle should be fined.

5/10/11 12:12AM View Responses

question not clear, had to check with office on how to answer.

5/9/11 10:12AM View Responses

Weekly pickup is preferred

5/8/11 3:10PM View Responses

If dumping rates were reduced, hopefully garbage (sofas, appliances, mattresses etc.) would not end up in our rural ditches, gullies and watersheds.

5/8/11 9:17AM View Responses

newspaper needs to be recycled better

5/7/11 9:54PM View Responses

I think more garbage would be thrown along the county side roads if the Use Pay program was implemented

5/7/11 8:30PM View Responses

Implement Green Box waste pick up like other communities. Also expand blue box to include recyclable styrofoam meat containers.

5/7/11 7:40PM View Responses

We do not want to pay for garbage tags, we already pay too much for taxes in Central Taxes for the services we get. If the taxes go any higher we will try to get St. Thomas to take Lynhurst to take us over so our taxes can get alot lower.

5/7/11 3:05PM View Responses

Find recycling depots for plastics in addition to #s 1 and 2

5/7/11 11:18AM View Responses

Garbage should be collected weekly to ensure there isn't garbage dumping in rural areas.

5/7/11 6:58AM View Responses

any"hardline"policies do not create "Less" garbage ,it only makes residents become more creative in ways of getting rid of said garbage eg. taking it to work in neighboring cities etc.

5/7/11 2:23AM View Responses

Collect more yard waste

5/6/11 9:42PM View Responses

I think adding composting to collections would be greatly beneficial

5/6/11 7:37PM View Responses

By reducing garbage to every other week it would bring some dropping curb side on the highway. Limiting bags to 2-3 does help, yet is less than that then a buy your tags process in CE. The separting businesss and farm from household is partial to farms and Business, CE bag tags only create a new cost for tax payers and have created a guessed figure for staff to use in justifying their idea! A full user program would only create a new financial burden on rate payers, and also create a new issue of dumping throughout Elgin County. If Taxes dropped significantly I would be for it yet, it is not environmentally friendly.

5/6/11 6:18PM View Responses

ALLOW 2 BAGS IF YOU NEED MORE BUY TAGS DO NOT GIVE OUT THE EXPENSIVE TAGS YOU GIVE OUT EACH YEAR ALSO GIVE LARGER RE CYCLE BINS THEN YOU WOULD ONLY NEED TO COLLECT EVERY OTHER WEEK

5/6/11 6:15PM View Responses

I feel we pay for garbage collection in our taxes already so do not want to pay for user pay program. Cut tags to 90 or so.

5/6/11 5:08PM View Responses

The best for us would to start green bin waste collection like St.Thomas has, and have many more drives for drop off of hazardous waste and electronics etc. They don't happen near often enough, and I end up throwing them in the garbage instead of waiting for 8 more months before the next one.

5/6/11 5:05PM View Responses

The tags don't make any difference as most of us have way too many.

5/6/11 4:41PM View Responses

lower the number of tags per household

5/6/11 4:30PM View Responses

if clear bags used, penalties for over 50% recyclables-bag

5/6/11 4:20PM View Responses

we are a family of six with 4 teens we will always put out more than anyone even though we recycle and cut would not be fair if not based on the number of people in the household

5/6/11 4:14PM View Responses

Reducing collection every other week in winter only would be acceptable but NOT in summer months.

5/6/11 1:13PM View Responses

Poorly worded question

5/6/11 12:41AM View Responses

Question 17 - Please rate the following possible programs to increase waste diversion from 1 lowest to 5 highest in terms of how they would contribute to waste diversion.

Make it easier to dispose of e waste& hazardous waste by having a set place either semi monthly or monthly

7/8/11 2:14PM View Responses

I used to live in an area that had the Gren Bin Program, and for a family of 4 we were lucky to have a bag of garbage every teo weeks. Maybe 1/2 a bag. Food waste is a huge portion of household waste.

7/1/11 7:38AM View Responses

e-waste collections are 3rd. world exports, SHAME!

6/27/11 10:38PM View Responses

those are great ideas for Port Stanley , and get rid of the tanks at the main beach

6/27/11 12:11AM View Responses

We need green bins

6/23/11 1:11PM View Responses

A "once per year" large disposal day in Bayham in not enough! Should have this type of disposal monthly or bimonthy.

6/23/11 8:28AM View Responses

Bylaws depend on enforcement

6/22/11 12:54AM View Responses

investigate establishing a joint incinerator facility

6/22/11 9:45AM View Responses

at least 2 special days per year

6/22/11 9:31AM View Responses

decomposing waste material and composting stinks and attracts mice and rats . Have had experience with both.

6/21/11 2:03PM View Responses

Twice a year recycling event.Sidewalk display of items ahead of time is a good idea although this year was not advertised

6/14/11 9:24AM View Responses

Voluntary - we can't afford the cost to police LAWS!

6/13/11 4:19PM View Responses

RE OPEN THE DUMPING SITE ON HIGHWAY 19 AND CHARGE A FEE PER WEIGHT LIKE OTHER AREAS DO

6/13/11 11:40AM View Responses

This would help the environment if picked up at the curb, otherwise the homeowner will dispose of - cheapest way possible!

6/12/11 4:17PM View Responses

EXPAND special recycling days !!!!!!!!!!!!!!!!!!

6/12/11 9:45AM View Responses

We have 2 compostersand still not enough for all leaves,etc.

6/11/11 5:14PM View Responses

Not sure what the difference is between backyard composting and green bin program except homeowners can backyard compost at minimal cost and green bin would be an added cost to taxes.

6/8/11 1:48PM View Responses

Come and pick up our hazardous waste.

6/8/11 11:59AM View Responses

All great ideas with merit! Excellent ideas that would help with the initiative.

6/7/11 5:45PM View Responses

Composting is a must for waste diversion - I assume close to 80% of household waste could be recycled/composted.

6/7/11 8:30AM View Responses

twice yearly large garbage disposal. implement a leaf/limb disposal area(s)

6/4/11 7:29PM View Responses

Household hazardous day more often than once/year

6/3/11 6:23PM View Responses

How be we lobby Government bodies to make the producers of the "recycle" material more accountable for the end cost!

6/2/11 9:45PM View Responses

fire Ted Lemay

5/31/11 9:01PM View Responses

We need an easier and cheaper way to deal with garden trimmings so people will follow through

5/31/11 9:09AM View Responses

backyard composting not convenient for some due to space and involvement required

5/30/11 11:02PM View Responses

Saturday was terrible

5/30/11 10:17PM View Responses

more yard waste collection

5/30/11 8:54PM View Responses

The more we recycle the better. Other communities are doing a much better job at recycling.

5/30/11 4:35PM View Responses

Expand range of materials to be recycled

5/30/11 3:56PM View Responses

Since many are rural, can compost instead of green bin rurally

5/30/11 8:14AM View Responses

Just waited over 2 hours to dispose of e-waste.

5/28/11 1:20PM View Responses

1 or 2 times a year like Aylmer

5/28/11 12:13AM View Responses

There are many items still not accepted at hazardous waste depot - need to expand to cover all household hazardous waste, otherwise it ends up at the landfill or illegally dumped elsewhere.

5/28/11 9:51AM View Responses

Policing a recycling by-law is a waste of time & $. Expanding acceptable items for recycing is a excellent idea as well as special recycling events. We need more of these.

5/27/11 1:00PM View Responses

ensure each household has one blue box with instructions on use and expand the list of acceptables.

5/27/11 8:59AM View Responses

yard wastecollect seperately every two weeks from may one_ nov 30

5/26/11 10:07AM View Responses

Am very happy with the hazardous waste program that has been done so far. Would prefer to see it more often, and have community depots for dropping off small items (household batteries, cell phones etc)

5/24/11 1:00PM View Responses

Green Bin should only be down in built-up areas such as Springfield, otherwise rural lot owners should be encouraged/required to compost

5/23/11 3:13PM View Responses

Label removal is very difficult on some products. Lobby manufactures to use less agressive adhesives. They are available.

5/19/11 2:03PM View Responses

Making recycling easier and expanding the materials is the easiest way to get more material out of the land fill.

5/15/11 10:42PM View Responses

do not charge ..

5/13/11 7:44PM View Responses

When expanding the acceptavble blue box items then give out free blue boxes to each household to encourage and support the collection of the increased items. Try for voluntary compliance with a program inititiative that implements green bin and yard waste strategies. Yard waste for residents not living on farms needs to be addressed as well. Aylmer picks up yard waste and Malahide should too.

5/13/11 8:13AM View Responses

Living on farm land allows us to many of these things to the benifit to the envirnonment

5/12/11 9:27PM View Responses

without adequate markets for "recyclables" they are just garbage.

5/12/11 8:54PM View Responses

If most of the food wastes are in one bin, a more localized composting program should be implemented, maybe even include free compost in the spring for those who bring the compostables.

5/12/11 7:19PM View Responses

put the special recycling days scedule in our taxes, I currently do not know when they are until after the event

5/12/11 12:21AM View Responses

Expand beyond just #1&#2 plastics. Alot of the plastics I throw in regular garbage are#5.The green bin wouldn't be of benefit to me. I live on a farm and just throw compost in the field.

5/10/11 9:42PM View Responses

very limited alternatives for hazardous and e-waste other than municipal depot, they are not provide the alternative drop offs as once thought

5/10/11 2:45PM View Responses

One annual haz. waste depot with the town of Aylmer is totally insufficient!

5/10/11 12:39AM View Responses

politcal program to stop the excessive packaging

5/10/11 8:54AM View Responses

some n/a here.

5/9/11 10:12AM View Responses

Paint cans are a hazzard and it should be ewasier to get rid of them. Old TV's and large items should be easier to dump as well. I don;t like paying $5 which goes into the attendant'socket.

5/7/11 7:40PM View Responses

all excellent initiatives. Not sure how a bylaw could be enacted.

5/7/11 11:18AM View Responses

people need to learn how to recycle and i think some places just need a blue box given to them with instructions

5/7/11 6:58AM View Responses

collect more yard waste, I don't have room

5/6/11 9:42PM View Responses

Implementing the green bin program would be appreciated

5/6/11 7:37PM View Responses

CHECK GUELPH THEY HAVE HAD A GREAT PROGRAM FOR YEARS

5/6/11 6:15PM View Responses

Need so send more explicit directions for recycling. I know some people do not recyle as have had recyling left at the curb

5/6/11 5:08PM View Responses

We should not have to pay to get rid of hazardous and other waste. If we do pay then we should be given receipt. Otherwise I am not sure the cash gets to Central Elgin.

5/6/11 4:41PM View Responses

all above options are viable programs

5/6/11 4:20PM View Responses

Composters should be available through the Municipal office.

5/6/11 4:20PM View Responses

Question 18 - **Please rate the following special events from 1 lowest to 5 highest in order of need:**

If you have these resources close, people are more likely to use them, advertising them is also key. Sometimes it is not easy to find out where to take things are.

7/1/11 7:38AM View Responses

recycle large articles

6/27/11 10:38PM View Responses

Should make this type of disposal available more than once per year!

6/23/11 8:28AM View Responses

Large item curb side pick up once or possibly twice a year like many other similar sized municipalites/villages.

6/22/11 3:56PM View Responses

in Central Elgin these products are almost impossible to safely dispose of, I have to take the electronics to London

6/22/11 9:45AM View Responses

larger items should be removed by resident at own expense - user pay

6/22/11 9:31AM View Responses

One large item/hazardous waste day per year is unrealistic. We should consider having a curbside large item pick up 1-2 times/year, similar to Norfolk.

6/21/11 8:18PM View Responses

I live in the country and am sick of people dropping off matresses and appliances along side the road.

6/21/11 2:03PM View Responses

Taxpayers really do need to learn to reduse reuse recycle

6/14/11 9:24AM View Responses

Need a place to dipose of tree trimmings and brush! Much garden waste goes in a black garbage bag to get rid of!

6/12/11 4:17PM View Responses

#20 below-taxes are too high now

6/11/11 5:14PM View Responses

Tough to get large articles to a depot unless you have a truck!

6/9/11 4:08PM View Responses

electronic recycle is in London, not too far to take..

6/2/11 2:36PM View Responses

may help prevent people discarding in ditches and gullies

5/31/11 9:01PM View Responses

Provide non-profit organization contact information - where groups are looking for used computers

5/31/11 2:56PM View Responses

I'm the trucker now?

5/30/11 8:54PM View Responses

see 17 above

5/30/11 3:56PM View Responses

Need more specialty large item recycling - separate metals etc So much is now recyclable

5/30/11 8:14AM View Responses

very poor advertising of household hazardous waste depot

5/29/11 9:26PM View Responses

Separate metal, wood, glass, plastics, at the depot. Need to force manufacturers to get away from throwaway and replace mode. I know that I would be happy to repair items to extend their use but there is no support in the industry for this.

5/28/11 7:39PM View Responses

A once per year drop off is not enough - the amount of large items dumped in Municipality ditches makes it very clear that we need to increase the frequency. Hazardous waste depot needs to accept all household hazardous waste.

5/28/11 9:51AM View Responses

All good options to have recycling depots. The user fees is what discourages people to use these recycling depots. Federal, Provincial & Municipal gov'ts have ways of seeking funding for operating costs of recycling depots to reduce the user fee costs on to the residents/businesses Our taxes paid should be an option to assist in paying the costs of operating recycling depots with different levels of gov't providing funding too.

5/27/11 1:00PM View Responses

Better education should be done to encourage consumers to ask the store they buy the new computer or printer from, to accept the old one. This can help the proper

recycling take place without garbage piling up. People can't necessarily these types of waste year-round, so even 2x per year would help.

5/24/11 1:00PM View Responses

The depots could be open one day per month or perhaps once per season. We've missed the only collection day per year a couple of years because we were away on that day

5/23/11 3:13PM View Responses

need access to recycalables like old building materials, free of charge, to stop dumping in ditches and ravines

5/23/11 11:25AM View Responses

I currently ee these types dumped in ditches in our area.

5/16/11 7:31PM View Responses

here or it ends up in a ditch

5/14/11 2:45AM View Responses

do not charge..

5/13/11 7:44PM View Responses

Twice a year would be beneficial. Increased publication/announcement of the dates and times so more people would attend.

5/13/11 8:13AM View Responses

Would elminate large items been thrown in ditches

5/12/11 10:16PM View Responses

You are doing a good job of this from our point of view

5/12/11 9:27PM View Responses

Maybe instead of having to bring this waste somewhere and stand in line, there could be 2 or 3 times a year a special roadside collection.

5/12/11 7:19PM View Responses

That would divert alot of the trash. In tillsonburg their free recycling center for the residents is working out very well and the scrap metal and the electronics program as well as the hazardous waste such as batteries and other items that are recycleable that the township can get paid money through recyclijng offsets the cost of the program. People in Tillsonburg wait in line to go to this thing every wed evening and sat morning.

5/12/11 12:21AM View Responses

I like the Malahide year round large article depot even though there is a small cost. - User Pay.

5/10/11 1:12PM View Responses

A large article depot is fine for strong people with trucks. Many of Malahide's taxpayers, me included, do NOT fit into that category. For years I have complained to deaf ears on Council about the lack of a curbside pickup for such items. We are the only municipality I know of that denies this service. I am STRONGLY "requesting" that curbside pickup of large items be re-instituted ASAP. This exercise doesn't just help us to get rid of items we can neither lift or transport...it also aids in the whole recycling effort as "one man's garbage is another's treasure" and historically people check for things they can use and keep them from the landfill. Again, this is a service we should NOT be denied in Malahide any longer!

5/10/11 12:39AM View Responses

These are all good. We now take out large articles to a privately owned facility and pay for it.

5/7/11 8:30PM View Responses

Lots of communities have been doing this for years.

5/7/11 7:40PM View Responses

Need Spring cleanup - some items could be re-used

5/7/11 9:19AM View Responses

there are places you can take electronics to to have them recycled

5/7/11 6:58AM View Responses

Depot? I have to get into the trucking business?

5/6/11 9:42PM View Responses

PEOPLE SHOULD BE RESPONSIBLE FOR THIS THEM SELVES UNLESS PHYSICALLY CHALLENGED ENOUGH TO NOT ABLE TO DO IT THEMSELVES IN WHICH CASE THEY CALL FOR ASSISTANCE

5/6/11 6:15PM View Responses

must be FREE TAXES ARE WAY TO HIGH

5/6/11 4:14PM View Responses

twice yearly hazardous waste could be more beneficial. Many people will not store items for months.

Appendix 3

Respondent written comments - General

It would be nice if we had an annual junk pickup like Aylmer.
7/3/11 9:55PM View Responses

I have noticed lately that the recyclers are throwing back a lot of plastics....it is a shame because then they just go into the garbage.
6/30/11 7:00PM View Responses

Waste collectors should not pick up e-waste, scrap metal, appliances, wooden items. By-law banning the burning of organic (leaves etc.) waste. Monthly free drop off location of anything & everything.
6/27/11 10:38PM View Responses

Our municipal property taxes are high enough. Funding for any waste program needs to be sourced from the existing tax levy!
6/23/11 8:28AM View Responses

Don't decrease bag number or start charging for tags, as in the past and other communities, a lot of garbage tends to end up in rural ditches, etc.
6/22/11 3:56PM View Responses

I don't know how much I pay at present. Depends where and how often the community displays are presented.
6/22/11 12:54AM View Responses

Consistency in what the municipality provides and what it collects, when and how would go a very long way towards improved waste diversion. Easily 90% of all household waste could be diverted if the politicial will to do so was present.
6/22/11 9:45AM View Responses

Service should be available but amounts picked up reduced and anything extra should be user pay model. If you generate more garbage pay more. Increase diversion.
6/22/11 9:31AM View Responses

Not all people have access to personal computers. A lot of seniors I know don't have electronic means of access and don't intend to at this stage in their lives.
6/21/11 2:03PM View Responses

Please don't waste our taxes on useless printed or video Media, 90% never even pay attenion to it
6/20/11 4:03PM View Responses

Maybe you could have one recycling day - end of May or middle of June for plastic flower containers etc. that can't go in the blue box and that the nurseries don't want back because it takes too long to disinfect them to re-use.
6/17/11 9:48AM View Responses

The present system is adequate enough for our present needs. We are a two person dwelling and sometimes wwe only put our garbage out every two weeks. We recycle and compost ALL our biodegradable material whenever we have some.
6/17/11 9:32AM View Responses

In my opinion user pay develops corruption and illegal dumping
6/17/11 9:28AM View Responses

Please keep our taxes in mind when considering waste disposal
6/15/11 10:20AM View Responses

I have thrown some containers that fruit is bought in with " 1 or 2 " in the recycle bin just to have them left in the box and ended throwing them in the garbage just to get rid of them. Are they not recycable?
6/13/11 8:52PM View Responses

Garden waste is a big item for me! I cannot compose the waste fast enough - need a location to dispose of throughout the year.
6/12/11 4:17PM View Responses

Our taxes are high enough that I would not consider paying more for enhanced waste management. I take my blue boxes to a depot when full rather than place them at the curb because it's actually more convenient. I'd like to see a green box program and given the amount of bags I see along my street, I see no reason to have pick-up every week. Making pick-up a bi-weekly event may finally get some people to think more about what they are throwing out. If we can somehow recycle food stuffs,our personal amount of garbage would be reduced significantly.
6/12/11 12:01AM View Responses

Our garbage collectors are doing a good job and I hope you share this comment with them. Most people would not take advantage of #21.
6/11/11 5:14PM View Responses

I know for a fact a family of 5 only requires aprox. 50 garbage tags, will use 2 or 3 blue boxes per week and will compost fruit and vegtables yearly which will fill one backyard composter and when is easily added in the spring to soil to enhance the soil of a small garden each spring in the MCE. If the MCE encourages the 3 R's waste diversion is acheivable. If the public is enouraged to recylce and discouraged from sending 2 bags of garbage a week to landfill the cost of the waste collection will possible decrease as many of the changes will be public awareness and manpower not added services.
6/8/11 1:48PM View Responses

Our taxes (Malahide) continuously increase by over 5%. While others are able to maintain a 0 to little increase. I would not be in favour a user pay program for garbage or recycling because of this. Get your finances in order. We can't afford to pay any more.

6/8/11 11:59AM View Responses

thank you for allowing residents to participate in thsi initiative.
6/7/11 5:45PM View Responses

Looking forward to the results! There's definitely room for improvement - short term costs are probably your biggest hurdle (voters are fickle, and no one likes increased taxes), but the long term gains are almost immeasurable. Good luck!
6/7/11 8:30AM View Responses

We should very strogly persue the generators of waste and make them pay their fair share. Packaging is not a very environmental thing.
6/2/11 9:45PM View Responses

Make these changes with little to no impact to residents... Our taxes keep going up but no real changes for all residents...
6/2/11 2:36PM View Responses

I compost 50% by weight. Can not recycle more plastic, they leave it in the box. No one should put out more than 4 bags.
6/2/11 2:10PM View Responses

bayham has a good programme now but a second annual "dump day" would be a good thing. Also a large item disposal system would assist even if it was "fee based"
6/1/11 4:15PM View Responses

your hazourdous waste day, needs to be much more organized. everyone needs to come from one direction, not from any direction they like, that way everyone has equal wait time and your help let anyone in line that they liked because they were possibly friends, when other people have been waiting for at least a half hour..your friend Ted Lemay liked to let anyone he liked ahead of the rest of us who were waiting patiently.they waited 5 minutes and we waited at least 45 minutes, what is fair about this? He was very smug about this when I approached and asked him, why we were second class to these others, maybe that is why everything ends up in the ditch....cannot figure this out, can you???
5/31/11 9:01PM View Responses

Allow more items to be included in recycling program.
5/31/11 2:56PM View Responses

I would be willing to pay a fee for a depot if open 1 day durning week & weekends . ? # 20 if I am paying now thru taxes I don't know how much I am paying. Imight be willing to pay 10 percent more..
5/31/11 5:54AM View Responses

Bayhams Hazardous Waste Management day was a disaster. I was in line at 0917. I never got into the site until 11:00. I will address my concerns to Council in letter format.
5/30/11 10:17PM View Responses

Central Elgin is far behind other communities in their recycling programs. To much is considered garbage. Other communities are doing a far better job and they have found it is more cost effective and actually saves money. NO ADDITIONAL COSTS
5/30/11 4:35PM View Responses

In Malahide we must expand the range of materials that can be recycled if we are really serious about decreasing the amount of garbage going to land fill.
5/30/11 3:56PM View Responses

thankyou for inviting me to complete your survey. I believe there is so much more can be done to divert waste through packaging, change throwaway manufacturing mentality by improving quality and repairability etc.
5/28/11 7:39PM View Responses

Next time you have depot day, only accept traffic from north and south. We waited almost 2 hours in line from the north and the vehicles that came from east and west (Jackson sideroad) were getting in within 5 to 10 minutes of arriving. You will have cars jumping lines if that continues in future years.
5/28/11 1:20PM View Responses

Need more than 1 bulk and electronics drop off per year. Why not a curbside pick-up? The drop off depot, although run smoothly by those involed it still creates a hazard on # 19 with some vehicles not even slowing down as they approach the corner where everyone is lined up. The line ups are way too long. It took me 2 hours to get into the depot this morning.
5/28/11 11:44AM View Responses

Our garbage & recycling program does need to improved and expanded to allow other items for pick-up. Share information with residents and recycling companies that receive the collection contracts to know what is allowed to be pick-up and what is not. Recycling depots are a good idea and are needed. Create a funding program for business to receive funding from other sources of the Federal/Provincial/Municipal gov'ts to assist in funding of the operating costs for a better garbage & recycling progams and if possible lowering or eliminating costs to the residents for these programs is always a good thing. However, if we use these programs, a fair economical user fee should be considered. After all, we do pay taxes for services etc., so being fair to the residents is a better approach.
5/27/11 1:00PM View Responses

Education is key to getting the community on-board with the existing program or an enhanced program. Many residents "just can't be bothered" to recycle. There needs to be a means of forcing the issue with some.

5/27/11 8:59AM View Responses

we need to be able to recycle a larger variaty of items here...there are third world countries that do better. we should be ashamed
5/26/11 9:02PM View Responses

My son & daughter-in-law live in Burlington. Halton Region has an excellent waste management program and I would encourage the municipality to pattern future programs here on that model.
5/26/11 4:33PM View Responses

a comrehensive yard waste composting program wood divert material from land fill and provide some return on the cost involved
5/26/11 10:07AM View Responses

We did not understand the instructions for 16 17 etc.
5/25/11 7:53PM View Responses

Above all, we should aim to get a very high rate of composting yard and kitchen wastes. Anyone on a rural lot should be encouraged/required to compost. We haven't thrown any yard wastes or food scraps in our garbage in the 24 years that we have lived in S.Dorchester/Malahide.
5/23/11 3:13PM View Responses

Bi-weekly collection during winter months ONLY. Our costs exceed Bayham & Malahide and we get much less service now! Province's 60% goal is not based on anything, just an arbitrary figure. Bag tags are waste of money,must be eliminated!
5/23/11 11:25AM View Responses

I am sure education is the key on this issue. People must take the time and effort to dispose of thier waste in a more eco friendly way. Green bins and more acceptable blue box items should be highly considered. Thank you
5/19/11 3:03PM View Responses

Backyard composting should be targeted. We currently composte so why should I have to pay for a Green Bin program in my taxes because others cannot be bothered to help themselves. People need to take responsibility for their own actions, so if someone does not want to do backyard composting then hit them in the pocket book but not everyone. After all this is a Rural community and the taxes are already TOO high..
5/19/11 2:03PM View Responses

There is a great need to recycle all agricultural plastics. Their use is increasing every year.
5/16/11 7:31PM View Responses

I am really disappointed that yard waste properly bagged in brown bags is not picked up at curbside in Malahide township. After all isn't this also recycling and being environmentally friendly by trying to compost? Dumping clippings, leaves and other yard waster in a farmers field is not an acceptable course to take as recommended by one of the staff at the Municiple office of Malahide.
5/13/11 11:23AM View Responses

I believe a township drive/day to clean up the roadsides as other communities like London do and have it televised and or covered in the AE would be a positive strategy. I also believe that if the township snowplowing inadvertantly alters the roadside allowances that are maintained by citizens with grass cutting then in the early spring township employees should be sent out to rectify the damage. The unsightly piles of soil/grass should be raked and corrected. Gravel should be replaced where holes have been left. Pot holes in tar and chip should be addressed sooner as well.
5/13/11 8:13AM View Responses

It's time for an expanded recycling progam. I have more plastic that I can't recycle than I can. I take my recyclables to Guelph where they have an excellent recycling program.
5/12/11 9:29PM View Responses

Why isn't Aylmer included. Are they doing there own. Maybe compare when all are done. This an important topic. With just the two of us the present works well.
5/12/11 9:27PM View Responses

raising taxes or using tags/bag reductions are one and the same and are unacceptable. Partnering with others to share costs can be good..... if there are actual savings. Green bin collection is a waste as this can be composted at home more efficiently. I take care of my own green bin recycling as well as paper and cardboard.
5/12/11 8:54PM View Responses

More waste diversion may not be more cost effective without changes other factors. Being able to do more locally, could be cost saving, rather than transporting the waste. Incentives for recycling business locally should be considered. If service clubs could benefit from picking up all paper and keep the profit, this shuld be encouraged. Or youth groups consistently collecting pop cans. Recycling of glass should be more researched and made easier. The blue box now contains all of the recycables; people can be asked and educated to separate the items with an adequate system, whihc could be a cost saving as well.
5/12/11 7:19PM View Responses

I think you should partner with private companies to each take a valuable part of the waste stream and let specialize, so a main location, sorting and value adding business onsite.
5/12/11 4:31PM View Responses

for the recycling we currently have, we should have 1 box for each recycling so the drivers do not have to sort anything and that way more would get recycled. Iam not going to spend 20 -30 on a blue box with our current driver not taking everything that we put into it. if one this is not right he will leave it. but I do not know what the issue is. so I throw it all out the following week and I get pissed of and i don't recycle for a while.
5/12/11 12:21AM View Responses

We need a leaf/yard waste depot in Springfield. It is ludicrous to send leaves to a landfill.
5/11/11 8:31PM View Responses

our taxes are too high, now...we need to lower them....not raise them....ours has more than doubled ...ridiculously high..
5/11/11 6:29AM View Responses

My main request is to be able to recycle more plastics and to be able to get 2 free blue boxes from the municipality.
5/10/11 9:42PM View Responses

As You can see from age (65+ As You can see from my age(65+) and the fact that I don't own a truck nor a trailer I find it very difficult to take windfall and cut branches to drop zones, and feel that a program for pickup of theses items for chipping into mulch could bring income from same by other locals for their gardening needs.
5/10/11 1:22PM View Responses

Focus on schools for educating students on recycling changes.
5/10/11 1:12PM View Responses

I think I was very clear in my comments above. We NEED an annual large item roadside pickup as is provided in the majority of municipalities. Our taxes are comparatively VERY HIGH to not be receiving this service!
5/10/11 12:39AM View Responses

I'm not in favour of garbage tags - why waste the money on such things - it's garbage - pick it up and take it away - that's why we pay taxes!!! REDUCE COSTS!!!! IF you MUST use tags - they should be free. People need to be more educated on how to recycle and everything should be recyled to some point - if they can't recycle - they don't deserve to have their garbage picked up.
5/10/11 12:12AM View Responses

I believe that the ratio of garbage to recycle is not being measuref accurately because individuals are going out prior to official truck and "cherry picking" blue boxes, mainly for alluminum
5/9/11 5:23PM View Responses

Cat Litter!!!!!!!
5/9/11 3:54PM View Responses

Hoping all this will not lead to a change in garbage and recycle people from Emterra. We have excellent service on Southdale. Always on time, rain or snow, everything picked up nicely, even spills, cans placed correctly after picked. Great bunch of fellows. Manage to drive their very large trucks perfectly down our small road, even down very large hill. Would hate to loose them.
5/9/11 10:12AM View Responses

Education for all ages is key and children are the best overseers. They will remind adults to recycle.
5/7/11 8:30PM View Responses

Disposal of hazardous waste and large items should be a priority. One step at a time, and we don't need to re-invent what has been done successfully in other areas for years.
5/7/11 7:40PM View Responses

I would like to see Lynhurst to have Central Elgin have a day when they pick up items such as furniture etc. a cleanup day like they do in Dorchester.
5/7/11 3:05PM View Responses

I am willing to do what I can to reduce the amount of waste going into landfill, providing it is as cost efficient as possible.
5/7/11 1:52PM View Responses

If our municipality could have more than 1 large collection/drop off a year - twice a year would be great (1 in spring and another in the fall)
5/7/11 10:27AM View Responses

Have a day when everyone can put out their unwanted items for others to help themselves.
5/7/11 9:19AM View Responses

I live in a rural area and there is a creek just down the road. Every week there is something dumped down there, be it garbage bags, furniture and appliances. We do not know who dumps it but it looks awful. I think picking up garbage weekly is a must. We have offshore workers who also recycle so I think tips on recycling would be helpful too.
5/7/11 6:58AM View Responses

Isn't yard waste a recyclable item? Chipped into mulch and used by gardeners, city, farmers
5/6/11 9:42PM View Responses

more recycling information is needed - ie I have 2 boxes - can I just throw in all the paper or does it need to be separated, need a FAQ section on website where people can ask such questions and other people can read the answers to gain knowledge. Our taxes are high enough!!
5/6/11 5:08PM View Responses

Since I pay for my own blue boxes, it would be nice if the guys didn't throw and break them
5/6/11 5:05PM View Responses

I realize this can be a huge undertaking, but I also feel we are being taxed to death, a market that purchases the recyclables should be used to absorb the additional cost if possible
5/6/11 4:20PM View Responses

why does one person living in a small home get the same amount of tags as a family living in a large home??? we know the taxes aren't the same i hate having to dump my garbage in the city so I don't run out of tags and yes i put 2-3 recycle bins out weekly and recycle everything i can.
5/6/11 4:14PM View Responses