



March 2014

TOWNSHIP OF LANARK HIGHLANDS

Integrated Waste Management Plan

Submitted to:

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Lanark, Ontario K0G 1K0

REPORT

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TOWNSHIP OF LANARK HIGHLANDS INTEGRATED WASTE MANAGEMENT PLAN

This Project has been delivered with the assistance of Waste Diversion Ontario's Continuous Improvement Fund, a fund financed by Ontario municipalities and stewards of blue box waste in Ontario. Notwithstanding this support, the views expressed are the views of the author(s), and Waste Diversion Ontario and Stewardship Ontario accept no responsibility for these views.



Executive Summary

The Township of Lanark Highlands (the Township) is located in the eastern extent of Ontario's Ottawa Valley district, approximately 100 km west of the City of Ottawa. The Township provides waste management services to a total of 3,210 households (including 1,081 seasonal dwellings) and 3 multi-family households.

Only residents of Lanark Village (i.e., 357 single-family households and three (3) multi-residential units) receive weekly curbside Blue Box and residual waste (i.e., garbage) collection. All other residents use one of the Township's seven (7) recycling depot/transfer stations for recycling and garbage disposal. Each Township recycling depot/transfer station has separate receptacles for the collection of Blue Box recyclables, leaf and yard waste, waste electronics, scrap metal and used tires. The Township also operates a Municipal Hazardous Waste Depot at the Middleville landfill from Victoria Day through Thanksgiving weekend. A group of local volunteers, in partnership with the Township, operates a Reuse Centre at the McDonald's Corners site.

Delivery of waste management services in the Township has been challenged by limited budgets and personnel for waste management initiatives, a small population in a large geographic area, and shrinking disposal capacity of Township's landfills. In 2011, the Township initiated the development of an Integrated Waste Management Plan (IWMP) and Waste Recycling Strategy to address some of the specific challenges facing the Township with respect to delivering waste management services.

The Township has realized a steady increase in waste diversion in recent years, with a 42.6% waste diversion rate in 2011.

The Township utilizes a combination of revenue sources to finance their waste management system, including municipal taxes, waste levies, material sales, grants, producer fees, and tipping fees. The cost for blue box recycling in the Township amounts to \$533.75 per tonne, or \$37.82 per capita, which is below the average for other similar municipalities in Ontario.

A comparative evaluation of options considered to increase waste diversion identified the following as best practices identified for the Township:

- User Pay System or Bag Limits;
- Optimization of Contracts;
- Development of an enhanced promotion and education program; and
- Training of Key Program Staff.

The public was consulted through the development of the IWMP. Residents generally rated the current drop-off services at the transfer stations and waste disposal site and the customer service for waste management as good or excellent. The ratings for the Township's promotion and education for waste management and the website were generally poor or fair, with only one respondent giving a "good" rating.

A disposal ban on recyclables, training of key program staff, enhanced promotion and education programs, backyard composting, improving re-use programs, increasing diversion of construction and demolition waste and hazardous waste diversion days were ranked as the most important initiatives to reduce the amount of waste going to landfill.



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There was strong support to have tipping fees cover the cost of recycling and waste programs, with some support for charging a fee per bag to cover the cost of recycling and waste programs. There seemed to be less support for charging a flat fee per household to cover the cost of recycling and waste programs. Generally, there was strong opposition to reducing the operating hours at the waste sites or to closing some of the waste sites to reduce operating costs.



List of Abbreviations

| | |
|-----------------|---|
| AMRC | Association of Municipal Recycling Coordinators |
| C&D | Construction & Demolition |
| CIF | Continuous Improvement Fund |
| ECA | Environmental Compliance Approval |
| EPR | Extended Producer Responsibility |
| FCM | Federation of Canadian Municipalities |
| GAP | Generally Accepted Principle |
| Golder | Golder Associates Ltd. |
| HST | Harmonized Sales Tax |
| IC&I | Industrial, Commercial and Institutional |
| IWMP | Integrated Waste Management Plan |
| MHSW | Municipal Hazardous or Special Waste |
| MHWD | Municipal Hazardous Waste Depot |
| MOE | Ministry of the Environment |
| MRF | Materials Recycling Facility |
| OES | Ontario Electronic Stewardship |
| OMBI | Ontario Municipal Benchmarking Initiative |
| O.Reg. | Ontario Regulation |
| OTS | Ontario Tire Stewardship |
| OVWRC | Ottawa Valley Waste Recovery Centre |
| P&E | Promotion and Education |
| REOI | Request for Expressions of Interest |
| RTR | Return to Retailer |
| SSO | Source Separated Organics |
| WDO | Waste Diversion Ontario |
| WDS | Waste Disposal Site |
| WEEE | Waste Electrical and Electronic Equipment |
| WRS | Waste Recycling Strategy |



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1.0 INTRODUCTION AND BACKGROUND

The Township of Lanark Highlands (the Township) is interested in identifying opportunities to maximize its waste management programs and increase waste diversion rates. As such, the Township issued Request for Proposal RFP # PW-2011-02 to undertake an Integrated Waste Management Plan (IWMP) including a Waste Recycling Strategy (WRS) completed in accordance with the Continuous Improvement Fund (CIF)'s *Guidebook for Creating a Municipal WRS*.

The focus of the IWMP is to:

- Determine a feasible waste diversion goal;
- Assess the overall efficiency and effectiveness of the Township's waste management programs;
- Guide the municipality on how to maximize its waste management programs;
- Increase participation in current waste diversion programs;
- Implement new programs to divert waste from landfill; and
- Extend the life of the Township's landfills.

The overall objective of the IWMP is to identify best practices that are environmentally sound, compliant with regulations, feasible and easy to implement, cost effective and affordable, and can be adopted by the Township to maximize waste diversion and optimize remaining landfill capacity.

The IWMP and WRS were originally completed in 2012 based on verified Waste Diversion Ontario (WDO) data available at that time (2010 data). Wherever possible, the IWMP has been updated to include data available as of September 2013. The WRS was completed based on 2010 data and has been submitted to WDO. For that reason, the WRS, which is included in Appendix A of this report is based 2010 data.

1.1 Overview of the Planning Process

The preparation of the IWMP included the following steps:

- A review of Township's waste management documentation;
- A meeting between Golder Associates Ltd. (Golder) and Township representatives: Scott Cameron (Public Works Superintendent), Doug Bowes (Engineering Technician), Cathie Green (Public Works Assistant) and waste collection contractor Ewen Alexander, to review documentation, visit waste management facilities, and discuss IWMP approach and;
- Public notification of the IWMP on the Township's website;
- Assessment of the current waste management system and performance;
- Projection of future waste management needs;
- Assessment of the Township's Blue Box program (WRS);
- Evaluation of current waste management costs;



- Identification and evaluation of practical options for increased waste diversion and system optimization;
- Development of an implementation program as well as a monitoring and reporting program.
 - Preparation and submission by Golder of a draft IWMP to Township representatives for review and comment;
- Facilitated meeting of a local Focus Group to receive input on draft documents from the public, and,
- Preparation and submission of a final IWMP.

The next steps in this process include:

- Council endorsement of the IWMP;
- Adjustment of Township's Draft 2013 promotion and Education Plan as necessary;
- Implementation of preferred waste diversion and system optimization initiatives; and
- Performance monitoring of initiatives and evaluation against established targets.

1.2 Waste Recycling Strategy

As previously described, one component of the IWMP is to develop a WRS that aligns with Waste Diversion Ontario's (WDO) best practice requirements. WDO has identified having a current WRS as a Best Practice (KPMG, 2007) and has begun tracking whether municipalities have a current WRS through its annual request for information on municipal recycling programs. WDO defines a WRS as being current if it has been prepared or updated within the past five (5) years. Municipalities without a current WRS will be penalized by receiving less annual Blue Box program funding. A WRS helps the municipality plan how to effectively and efficiently recycle its Blue Box materials into the future.

Specifically, the purpose of the WRS is to:

- Identify and evaluate practical options to increase diversion of Blue Box materials;
- Develop an implementation plan to reach defined Blue Box diversion targets, including monitoring of progress;
- Extend the remaining capacity of the Township's landfills by increasing diversion of waste; and
- Maximize WDO Best Practice funding.

This WRS embedded in this IMWP is based upon the CIF's *Guidebook for Creating a Municipal WRS*.

The majority of statistics used for the calculation of diversion rates in the WRS were sourced from the Township's Municipal Datacall (2010 and 2011 Datacall), published by the WDO and available on-line through the WDO website (www.wdo.ca).



1.3 Study Area

The Township is located in Lanark County, in the eastern extent of Ontario's Ottawa Valley district, approximately 100 km west of the City of Ottawa. The Township makes up the northwest corner of Lanark County and is bordered to the north by Renfrew County and to the west by Frontenac County.

The Township is approximately 1,033 square kilometres (km²) in area and has a population of approximately 5,180 residents. It is understood that this population data is consistent with the 2006 Statistics Canada Census, and does not include seasonal residents. The Township's population in 2010 has not fluctuated significantly from the 2001- estimated population of approximately 5,000 persons (Official Plan, 2003).

The current township was incorporated on July 1, 1997 by amalgamating the former Townships of Darling, Lanark, and the previously combined Townships of Lavant, Dalhousie and North Sherbrooke with the Village of Lanark. Lanark Village is the primary settlement area in the Township, while Elphin, Hopetown, Middleville, Poland, Watson's Corner's and McDonald's Corners are small communities within the Township that have historical context as villages. The geographic area of the Township is in Figure 1. The municipal office for the Township is located in Lanark Village.



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Figure 1: Township of Lanark Highlands Map

Source: The Township of Lanark Highlands Website, <http://www.lanarkhighlands.ca/About/Map.php>, Accessed on October 26, 2011.

1.4 Community Characteristics

The Township has a population of 5,180 permanent residents. It is understood that this population data is consistent with the 2006 Statistics Canada Census data.

The municipality has a total of 3,210 households (including 1,081 seasonal dwellings) and 3 multi-family households. Since seasonal residents represent more than ten (10) percent of the population base, they are required to be reported on in the 2011 Datacall.

Using the WDO Generally Accepted Principled (GAP) calculation method, the number of seasonal residents calculated, assuming each seasonal dwelling is occupied by 2.5 people for 1/6th of the year, equates to an 'equivalent population' of approximately 450 people.



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The total population for the Township, including both permanent and equivalent seasonal residents is calculated to be 5,630.

Only residents of Lanark Village (i.e., 357 single-family households and three (3) multi-residential units) receive weekly curbside Blue Box and residual waste (i.e., garbage) collection. All other residents use one of the Township's seven (7) recycling depot/transfer stations for recycling and garbage disposal.

The IWMP will address the following sectors:

- Residential single family dwellings;
- Residential multi-family dwellings; and
- Seasonal residences.

It is noted that the number of multi-family units is a significantly small percentage of the overall number of households in the Township (i.e., 3 units). As a result, the primary focus of the IWMP will be on single family units.



2.0 STATED PROBLEM

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

The specific challenges facing the Township of Lanark Highlands include:

- Limited budget and personnel for waste management initiatives;
- Large geographic area and relatively small population;
- Large proportion of seasonal residents (approximately one third of the reported population) influenced by different and diverse waste management programs;
- No long-term diversion target for recyclables;
- Concern that not all materials being taken to the Materials Recycling Facilities (MRFs) are being recycled;
- Inconsistency with what local MRFs process and how they accept materials; and
- Shrinking disposal capacity of Township's landfills.

The Township has no bag tag system or policies in place to promote recycling. In 2008, a \$39 per household waste disposal fee paid through property taxes replaced bag tags in response to a concern that the number of bag tags sold did not account for (i.e., pay for) the volume of garbage and recyclables collected.



3.0 DESCRIPTION OF THE CURRENT WASTE MANAGEMENT SYSTEM

The Township has a number of waste management contracts, facilities and short-term diversion and disposal options in place in order to deliver waste management services to its residents.

3.1 Waste Management By-laws and Contracts

The Township has implemented the following waste management By-Laws and contracts:

- By-Law No. 2009-993 - Schedule 'A' Tipping Fees for the Disposal of Waste Materials

Following the installation of weigh scales at the Middletown landfill, this By-Law was amended (September 2011) to revise tipping fees to include a fee per tonne which is more accurate for the Township and users. The former method of payment for Construction and Demolition (C&D) and un-bagged waste was by the cubic yard which has some variance in accuracy when measuring irregularly shaped loads of waste. This By-Law sets the tipping fee rate at \$155/tonne to cover the operational costs of diversion. Refer to Table 2 in Section 3.3.2 for the complete tipping fee schedule.

- By-Law No. 2008-922 – By-Law to Authorize the Execution of an Agreement for the Provision of Waste & Recycling Services at Waste Sites/Transfer Stations

This By-Law authorizes the execution of an agreement (contract) between the Township and Ewen Alexander, for the provision of Waste and Recycling Services at Waste Sites/Transfer Stations. The contract term ended December 31, 2011, and upon mutual agreement by both parties, was extended for an additional two (2) years. Note: the Township accepted this waste collection tender with a By-Law.

- Contract 2010-006 - Provision of Services for the Collection and Processing of Recyclable Materials & Household Waste in Lanark Village

The work to be performed by Waste Management Ltd. (WM) under this contract consists of the weekly collection and processing of recyclable material and household waste from residential households, small commercial establishments and multi-unit residential buildings within the Village of Lanark. This contract term ends on December 12, 2013 and may be renewed up to two (2) additional one - year periods at the Municipality's sole option.

- By-Law No. 2010-1061 – Reuse Centre Operating Procedures

This By-Law outlines the rules for 'ReUsers', the volunteer group that operates the Reuse Centre located at the McDonald's Corner Waste Disposal Site (WDS). These rules pertain to the fair use of the Reuse Centre and ensure that the volunteer operation does not result in any users turning a profit.

- By-Law No. 2010-1030 – By-Law to Set Fines Under the Provincial Offences Act

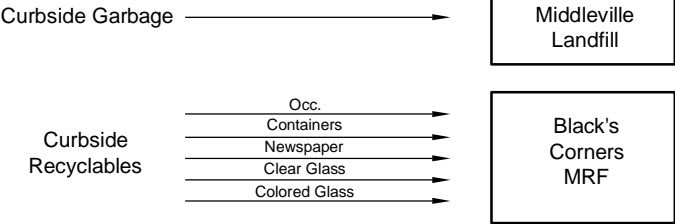
The purpose of this By-Law is to outline enforcement and penalties for littering.



3.2 Blue Box Recycling and Garbage Disposal

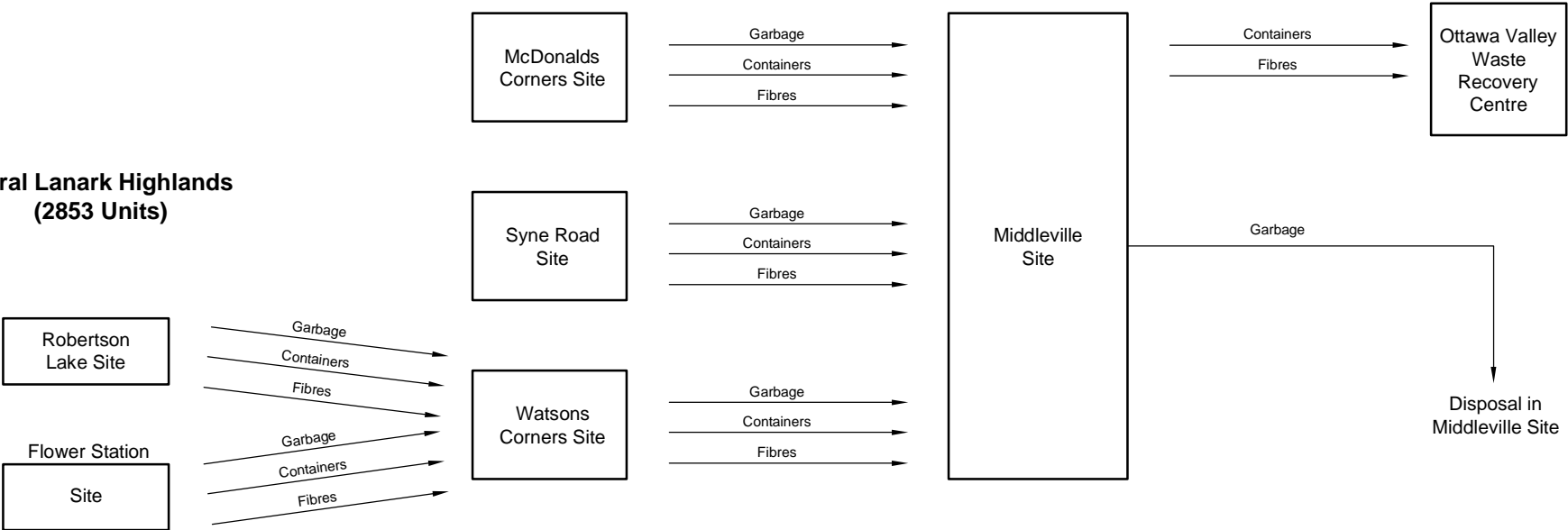
Curbside garbage and recycling collection services are provided to residents and Industrial, Commercial and Institutional (IC&I) establishments in Lanark Village, through a private contract service agreement with Waste Management (WM). Depot garbage and recycling services are provided to all Township residents through a contract with Ewen Alexander. This section describes the collection and diversion programs for the Township, which are shown schematically in Figure 2.

**Lanark Village
(360 Units)**




Note : Service currently provided by Waste Management

**Rural Lanark Highlands
(2853 Units)**



Note : Service currently provided by Ewen Alexander

| | | | | |
|---|--------------------------|-----|-----------|---------------------|
| PROJECT | | | | |
| Township of Lanark Highlands Integrated Waste Management Plan | | | | |
| TITLE | | | | |
| WASTE SYSTEM SCHEMATIC | | | | |
|  | PROJECT No. 11-1188-0038 | | | FILE No. AA01 |
| | DESIGN | | | SCALE AS SHOWN REV. |
| | CADD | PJV | Nov. 2011 | FIGURE 2 |
| | CHECK | | | |
| | REVIEW | | | |



The Township currently has both depot and curb side collection programs in place for the collection of residential garbage and recyclables. These programs are discussed in the sections that follow.

In addition, there are currently 13 public space bin locations within the Village of Lanark serviced by Township staff.

3.2.1.1 Curbside Collection of Blue Box Recyclables and Garbage

The Township currently implements a weekly curbside collection program for garbage and comingled Blue Box materials generated by residents of Lanark Village. The total number of households receiving curbside collection service in Lanark Village was 357 single-family units and three (3) multi-family units. Ten (10) businesses in Lanark Village also received curbside collection.

The Township does not currently have a bag-tag or clear bag system in place; however, a bag limit program is enforced. Residential households are allowed to set out a weekly maximum of two (2) bags per week, with a limit of five (5) bags per week for IC&I establishments (e.g. schools). Additional bags in excess of these limits can be taken to any waste site during normal operating hours for disposal without incurring any additional charge. Refer to Section 3.2.1.2 for a description of recycling depot / transfer station operations and hours.

Curbside collection occurs once weekly, on Fridays. With the exception of Christmas and New Year's Day, collection takes place as usual when a Statutory Holiday falls on a regular collection day. When the Christmas and New Year's holidays fall on a regular collection day, collection is delayed by one day (*Contract 2010-006*). The maximum allowable weight for each container or bag is 45 pounds.

The following recyclable materials are accepted as part of the Township's Blue Box curbside and depot collection programs:

- Glass Jars and Bottles
- Metal Beverage and Food Cans
- Empty Aerosol Cans and Empty Paint Cans
- Aluminum Foil and Aluminum Pie Plates
- Corrugated Cardboard
- Boxboard
- Mixed Household Paper (including junk mail, envelopes, paper bags, egg cartons, gable-end milk and juice cartons, aseptic cartons, toilet paper and towel cores and other clean paper packaging)
- Newspaper (and all inserts)
- Magazines/Catalogues
- Telephone Books
- Books (hard and soft cover)
- Office Paper
- PET Containers (#1)
- HDPE Containers (#2)



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- Polystyrene Containers (rigid and foam)
- Wide-mouthed Plastic Tubs (e.g. yogurt and margarine containers)
- PVC Containers
- Plastic Film Bags (LDPE/HDPE)
- Other Plastics with recycling symbols 1 - 7

The following items are NOT acceptable for collection in the Township's Blue Box program:

- Blister plastic packaging
- Cat litter and animal feces
- Ceramic dishes
- Chip/candy wrappers
- Diapers
- Mirrors
- Motor oil containers
- Window glass
- Paper coffee cups
- Plastic film wrap
- Plastic toys
- Rigid reusable containers (e.g. Tupperware)

All non-acceptable materials are left in the resident's Blue Box with a courtesy tag explaining why it was not picked up.

The Township currently supplies 14 gallon Blue Box containers to its residents for a fee of \$9.04 per container. The Blue Boxes are offered for sale on a 'cost recovery' basis; in other words, the retail price is the municipality's actual cost plus HST. Clear recycling bags are not accepted as a substitute to the Blue Box container.

The curbside collection of garbage and comingled Blue Box materials is managed under a private collection contract (*Contract No. 2010-006*) with WM. This three - year contract was awarded to WM on January 1, 2011, with an option to extend the contract until 2016 without retendering.

Blue Box materials are collected by WM and separated into a five-compartment collection vehicle with separate sections for clear glass, coloured glass, containers, newsprint and old corrugated cardboard (OCC). The material is subsequently delivered to the Black's Corners MRF at Highway 15 and 9th line in Beckwith Township, Lanark County.

This facility is owned and operated by WM. The Black's Corners MRF uses a curbside sort system that has been operational since 1991. The system consists of an eddy-current separator to pull out aluminum materials and a large magnetic separator to remove ferrous metals (i.e. steel). All remaining materials, such as mixed plastics and paper, are sorted by hand. The reported residue from the processing of Blue Box materials at the Black's



Corners MRF was 16.82 tonnes in 2011 (2011 Datacall). This represents 4.6% of the total tonnage of Blue Box material collected in 2011 (i.e. 369.09 tonnes), which is typical for sorted streams. In contrast, single stream systems may have up to 20% residue. The Township receives 50% of the revenue from the recyclables marketed.

All garbage collected at the curb by WM is currently brought to the Township-owned Middleville WDS for disposal. Prior to 2011, this garbage was brought to the Lanark Village WDS, which is currently at capacity.

3.2.1.2 *Depot Collection of Blue Box Recyclables and Garbage*

In 2009, the Township converted all WDS locations into recycling depot / transfer stations. Middleville WDS, in addition to operating as an active landfill, also operates as a recycling depot that accepts C&D waste and large household items in addition to recyclables (i.e. Blue Box materials, brush, leaves, tires, waste electrical and electronic equipment (WEEE) and scrap metal). All other recycling depot/transfer stations accept only bagged household garbage (for transfer to Middleville WDS) and the recyclables listed above.

The Blue Box materials accepted as part of the Township's depot collection program, are the same as for the curbside collection program. Refer to Section 3.2.1.1 for a listing of acceptable and non-acceptable Blue Box materials.

All households in the Township have full access to the recycling depots during normal operating hours (refer to **Table 1** for a summary of public drop-off hours). Residents of Lanark Village, who receive weekly curbside collection, are also allowed to bring their garbage and recyclables to any recycling depot/transfer station during normal operating hours without incurring an additional charge. They may choose to do so for bags of garbage that they generate in excess of the two (2) bag per week curbside limit. There is no charge to residents for recyclables or bagged garbage delivered to these sites.



TOWNSHIP OF LANARK HIGHLANDS INTEGRATED WASTE MANAGEMENT PLAN

Table 1: Township Waste Recycling Depot / Transfer Station Hours and Locations

SUMMER HOURS – MAY 15th to SEPTEMBER 14th

| Waste Site | Address | Mon. | Tues. | Wed. | Thurs. | Fri. | Sat. | Sun. |
|--------------------|-------------------------------------|---------|---------|----------|---------|------|-----------|----------|
| Flower Station | 770 Hills of Peace Road | | | 4 – 6pm | | | | 4 - 6pm |
| Lanark Village | 115 Forbes Road | | | 12 - 3pm | | | 9am - 1pm | |
| McDonald's Corners | 800 10 th Con. Dalhousie | | | | 4 - 7pm | | 9am - 1pm | 2 - 7pm |
| Middleville | 4686 Wolf Grove | 3 - 6pm | | 5 - 8pm | | | 9am - 3pm | |
| Robertson Lake | 3962 South Lavant Road | | | 5 - 7pm | | | 3 - 6pm | 3 - 6pm |
| Watson's Corners | 2240 3 rd Con. Dalhousie | | 4 - 7pm | | | | 2 - 7pm | |
| Snye Road | 171 Snye Road | | | | 5 – 7pm | | | 12 - 6pm |

WINTER HOURS – MAY 15th to SEPTEMBER 14th

| | | | | | | | | |
|--------------------|-----------|---------|--------|----------|---------|--|-----------|-----------|
| Flower Station | See Above | | | 3 - 5pm | | | | 3 - 5pm |
| Lanark Village | | | | 12 - 3pm | | | 9am - 1pm | |
| McDonald's Corners | | | | | 2 - 5pm | | 9am - 1pm | 12 - 5pm |
| Middleville | | 3 - 6pm | | 5 - 8pm | | | 9am - 3pm | |
| Robertson Lake | | | | 3 - 5pm | | | 1 - 4pm | 1 - 4pm |
| Watson's Corners | | | 2-5 pm | | | | 2 - 5pm | |
| Snye Road | | | | | | | | 12 - 4 pm |

Source: Available at <http://www.lanarkhighlands.ca/Services/WasteManagement.php>, Accessed on Oct. 28, 2011.

Holiday Waste Site hours for 2012 were as follows:

- Holiday Weekends: All waste sites normally open on Sunday will be closed Sunday & open Monday with Sunday hours.
- Victoria Day: Closed Sunday May 20, Open Monday May 21
- Canada Day: Closed Sunday, July 1, Open Monday, July 2
- Civic Holiday: Closed Sunday August 5, Open Monday August 6
- Labour Day: Closed Sunday September 2, Open Monday September 3
- Thanksgiving Day: Closed Sunday October 7, Open Monday October 8
- Christmas Eve: Closed from noon onwards
- Christmas Day: Closed Tuesday December 25,
- Boxing Day: Closed Wednesday, December 26



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- New Year's Eve: Closed from noon onwards.

Garbage collected at the recycling depot/ transfer stations is shipped off site in compaction bins for final disposal at one of the Township's active landfills – currently the Middleville WDS (refer to Section 3.3).

Each Township recycling depot/transfer station has separate receptacles for the collection of Blue Box recyclables in two (2) streams: containers and fibres. All containers (i.e. plastics, metal and glass) are collected in large container bins, while fibres (i.e. newspaper, cardboard, boxboard and mixed paper) are collected in large compactors. Combination transfer units are used at Robertson Lake WDS and Flower Station WDS to collect containers and fibres in a single unit. These combination transfer units are used to periodically deliver recyclables to Watson's Corners WDS (Refer to Figure 2 for a Waste System Schematic).

Blue Box recyclables are periodically transferred from each of the four (4) primary recycling depot/transfer stations (i.e., Lanark Village, McDonald's Corners, Watson's Corners and Snye Road) to the Middleville WDS where they are filled to capacity. From there, Blue Box recyclables are transported to Ottawa Valley Waste Recovery Centre (OVWRC) for processing through a contract with Ewen Alexander under *By-law No. 2008-922*. The OVWRC requires that containers not be compacted in order to facilitate processing.

Ewen Alexander is the contractor responsible for the management of the Township's waste disposal sites / transfer stations, including: employing waste site attendants, providing compactors and roll-off containers, compacting and covering waste at the active landfill, snow plowing, and transporting. Observations made at the time of the site visits to the Lanark Village, McDonalds' Corner's, Middleville and Watson's Corners recycling depot/transfer stations suggest that the signage present is adequate and the sites are well maintained.

Blue Box material collected at the recycling depots are transferred to the OVWRC. Containers are hauled in bins measuring 24' long x 8' wide x 8' high. Fibre is hauled in rear load packers. Images of the collection bins used at the various sites are shown in Figures 3 - 9.



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Figure 3: Lanark Village Waste Site - Blue Box Containers Bin



Figure 4: Lanark Village Waste Site - Blue Box Fibres Compactor



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Figure 5: Lanark Village Waste Site 1 - Garbage Compactor



Figure 6: Middleville Waste Site - Blue Box Containers Bin



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Figure 7: Middleville Waste Site - Blue Box Fibres and Garbage Compactor



Figure 8: Watson's Corners Waste Site - Blue Box Containers Bin



Figure 9: Watson's Corners Waste Site - Garbage Compactor

3.2.2 Leaf and Yard Waste

The Township accepts leaf and yard waste at the landfill and transfer stations at no charge. This material is left to decompose in place and is not actively composted. In accordance with the landfill Certificate of Approval (CofA)¹, now referred to as an Environmental Compliance Approval (ECA), brush brought to the landfill can be burned, providing the site is staffed while the burning takes place.

Backyard composters were provided by the Township to residents at cost (i.e., \$50.85 per composter), however the Township currently does not have any backyard composters in stock.

3.2.3 Used Tires

Residents can deliver both on-road and off-road used tires to any Township recycling depot/transfer station free of charge. In 2012, 4,425 tires were collected and hauled away from the Township to be recycled by Ontario-based scrap tire processors and manufacturers producing recycled products. The diversion of used tires is managed through the Ontario Tire Stewardship (OTS) programs established by WDO.

This Program benefits the Township by turning a waste management expense into a source of revenue. In 2009, prior to the implementation of the Program, the Township paid \$8,870 to have stockpiled tires hauled away from

¹ As of October 31, 2011, Environmental Compliance Approvals (ECA) are the new approvals that will be issued instead of Certificates of Approval (C of A) for activities mentioned in subsection 9(1) and 27(1) of the Environmental Protection Act (EPA), and Approvals granted for activities mentioned in subsection 53(1) of the Ontario Water Resources Act (OWRA).



waste sites. In 2010, the Township obtained a rebate of approximately \$6,300 as a Used Tire Collector through the Program. Used tires are picked up by Liberty Tire Recycling Canada LTD. .

3.2.4 WEEE

WEEE (i.e. unwanted electronics) typically contain steel, glass, copper, aluminum, plastics and/or precious metals, which can be recovered and reused to make new products. Moreover, many electronics contain elements such as lead, cadmium and mercury which can have environmental impacts and cause health and safety concerns if not handled properly. As such, the diversion of waste electronics is managed through the Ontario Electronic Stewardship (OES) program established by WDO, to ensure that unwanted electronics are reused or recycled, and to stop the flow of these materials to landfill or improper processing in developing nations.

The Township collects WEEE at all recycling depot/transfer stations, free of charge, so that it can be sorted and processed at approved facilities in Ontario and Quebec, instead of being landfilled or shipped to developing nations. In 2012, the Township diverted over 37 tonnes of WEEE from its waste disposal sites.



Figure 10: WEEE Collection Bin at Lanark Village Site

Designated WEEE materials includes all items accepted by OES:



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- Desktop, portable and hand held computers
- Computer peripherals
- Monitors
- Televisions and radios
- Printing devices, copies, scanners, typewriters
- Telephones, cellular phones, PDA's and pagers (and accessories)
- Audio and video players and recorders
- Cameras
- Equalizers, (pre) amplifiers
- Radios, receivers, speakers and tuners
- Turntables
- Video players/projectors

3.2.5 Municipal Hazardous Waste Depot

The Township also operates a Municipal Hazardous Waste Depot (MHWD) at the Middleville landfill from Victoria Day weekend in May through Thanksgiving weekend in October. The MHWD is shared with residents from Tay Valley Township. This service is provided to the residents of both municipalities free of charge; operational costs are covered by both municipalities and subsidized by Stewardship Ontario and (as of 2013) the Recycling Council of Ontario (RCO.)



Figure 11: Middleville Landfill MHWD

The Township has a contract with Drain-all Ltd. for the transportation, recycling and/or safe disposal of MHSW.

Waste items accepted at the MHWD include:



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- Acid or base corrosives (cleaners, drain openers, rust remover);
- Aerosol cans (containing residual materials);
- Batteries (lead acid vehicle and dry cell batteries – single use and rechargeable);
- Fire extinguishers;
- Flammable liquids (gasoline, solvents, strippers, turpentine);
- Latex paint, oil paint and stain;
- Motor oil, antifreeze, oil filters;
- Organic flammable material (adhesives, driveway sealant, caulk, resin);
- Oxidizers (pool chemicals, fertilizer);
- Pathological waste (syringes);
- Pharmaceuticals (prescription or non-prescription drugs for human or veterinary use);
- Pesticides; and
- Pressurized containers (propane tanks and cylinders, oxygen and helium tanks).

Waste items NOT accepted at the MHWD include:

- Ammunition, explosives or flares
 - Should be taken to any detachment of the Ontario Provincial Police.
- Asbestos
 - A licensed demolition expert should be called.
- Compact Fluorescent Light (CFL) bulbs and fluorescent tubes
 - Can be recycled at Canadian Tire, Rona, and IKEA. .
- Mercury (i.e. mercury filled thermometers or thermostats)
 - A number of retail locations across Canada collect mercury-containing products. Go to <http://www.switchthestat.ca/eng/dropoff.php> to find a public drop-off location.
- PCB contaminated waste
 - A licensed disposal expert should be called.
- Radioactive waste (e.g., smoke detectors)
 - According to the Ontario Ministry of the Environment, smoke detectors should be discarded with regular household waste. The amount of radioactive waste contained in these units is negligible.



An increasing number of local retailers participate in TAKE IT BACK programs for recycling and safe disposal of hazardous materials that the retailers sell such as paint, batteries, and compact fluorescent bulbs.

The Township has also established a Re-Use Table at the MHWD where residents can obtain leftover MHSW materials such as paint, household cleansers and lubricants. Re-using these items instead of sending them to the landfill helps preserve the natural environment, extends the life of the Township's waste sites, and saves the Township money on recycling and disposal. To be eligible for re-use all items must be in their original manufacturer's (undamaged) containers with a clearly legible label containing the product use information and product hazards.

3.2.6 Reuse Centre



A group of local volunteers, in partnership with the Township, operates a Reuse Centre at the McDonald's Corners WDS. This facility collects useful goods for donation in an effort to divert such items from the landfills. Diversion from the landfill increased with the new and improved facility from an estimated 16 tonnes of material in 2009 to approximately 37 tonnes in 2010, to 75 tonnes in 2011 – a 370% increase in diversion.

Accepted materials at the Reuse Centre include: books, clothing, house wares, craft materials, furniture, electronics, small appliances, sports and garden equipment, reusable windows and doors. Due to limited storage capacity and volunteer labour, donations from outside the Township are discouraged. The Reuse Centre is open during regular waste site hours.

The Township has established *By-Law No. 2010-1061* to outline the rules for 'ReUsers' (i.e., the volunteer group that operates the Reuse Centre). These rules pertain to the fair use of the Reuse Centre and ensure that the volunteer operation does not result in any users turning a profit.

The Township has provided volunteers with a budget for facility repair and construction costs, and also provides free hydro to the Centre.

An image of the interior of the Reuse Centre is provided in Figure 12.

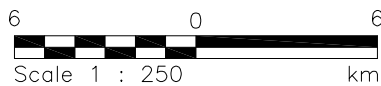


Figure 12: McDonald's Corners Reuse Centre

3.3 Disposal

The Township currently owns and operates seven (7) WDS locations within the Township's boundaries. One (1) of these sites is an open landfill and operates as a transfer station (i.e., Middleville WDS). Three (3) sites have remaining landfill capacity but are temporarily closed and operating as recycling depot/transfer stations (i.e., McDonald's Corners WDS, Snye Road WDS and Robertson Lake WDS). The Watson's Corners WDS, Lanark Village WDS, and Flower Station WDS are officially closed and operating as recycling depot/transfer stations.

The waste disposal site location plan is shown in Figure 13.



REFERENCE

Base plan provided by Aecom, entitled "Waste Disposal Site Location Plan", Project No. 60154207, Drawing No. 1, Dated March 2011.

PROJECT

TOWNSHIP OF LANARK HIGHLANDS

TITLE

**WASTE DISPOSAL SITE
LOCATION PLAN**



| | |
|--------------------------|-------------------------|
| PROJECT No. 11-1188-0038 | FILE No. 1111880038AA13 |
| DESIGN | SCALE AS SHOWN |
| CADD MK Feb. 2012 | REV. 0 |
| CHECK | |
| REVIEW | |

FIGURE 13



3.3.1 Public Drop-off Hours

Residual garbage is hauled by the Township's waste collection contractors to the Middleville WDS. The Middleville WDS is also open to the public year-round for drop-off at the following times:

Monday: 3:00 pm - 6:00 pm;

Wednesday: 5:00 pm – 8:00 pm; and

Saturday: 9:00 am – 3 pm.

3.3.2 Middleville WDS and Tipping Fees

The Middleville WDS, located at 4686 Wolf Grove, accepts domestic and C&D waste, white goods and bulky items such as mattresses, as well as recyclables. The Middleville Landfill and all other waste disposal sites are operated under contract with Ewen Alexander from January 1st, 2009 until December 31st, 2011; an option to extend the contract for a period of two years has been exercised. The current contract will end on December 31, 2013.

Currently Blue Box materials, scrap metal, e-waste, tires and leaves/brush are diverted from landfill and recycled. The other material is landfilled or set aside and stockpiled in accordance with the Site's Design and Operations Plan.

All other recycling depots accept bagged household garbage and recyclables (including blue box, tires, e-waste, scrap metal, leaves and brush.)

The licensed waste footprint for the Middleville Landfill is 1.0 hectares, and the current waste footprint is 0.84 hectares. According to the 2012 Annual Report, the Middleville Landfill has an estimated remaining capacity of 4,430 cubic metres at the onset of 2013 (AECOM, 2012).

All vehicles using the Middleville WDS are subject to waste disposal charges (i.e., tipping fees). Weigh scales were installed at the site in 2011. *By-Law No. 2009-993* was revised by Council in September 2011 to establish tipping fees for the disposal of material as outlined in Table 2.



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Table 2: Township Waste/Recycling Tipping Fees

| Description | Fee |
|---|---|
| Drywall | \$155/tonne |
| Asphalt Shingles | |
| Construction Waste | |
| Un-bagged Waste (Garbage) | |
| Sofas, Box Springs and Mattresses | |
| Refrigeration Units (All units must be tagged to certify that refrigerants have been removed) | Tagged units – NO CHARGE |
| | Non-tagged units – the charge shall be established by current contract price for removal of refrigerants. |
| *Recyclables (includes Blue Box materials, leaf and yard waste, tires, WEEE and scrap metal) | NO CHARGE |

Notes:

1. Minimum fee (anything less than 0.03 tonnes or 4 cu.ft.) of \$5.00.
2. Only debris originating from the Township will be accepted.
3. In the event that the weigh scales are inoperable, a \$32.50/cu.yd. fee will apply.
4. Illegal dumping fine is \$1000.

Scrap metal is picked up by Glenview Iron & Metal.

3.3.3 Landfill Capacity

The benefit of having Township owned landfill capacity includes access to predictable and reliable waste disposal in relatively close proximity to the waste generation source. Municipalities that no longer have operating waste disposal sites are reliant on other municipalities or private services to dispose of their waste, which may not be close to the municipality. Outsourcing waste disposal activities limits the control that municipalities have over the cost of waste disposal services that they are obliged to provide to their residents. Therefore, diversion activities will provide a critical role in preserving the Township's valuable remaining landfill capacity.

In 2007, the Township submitted to the Ministry of the Environment (MOE) a report entitled "*Service Area Changes, Interim Closure Plans and Transfer Station Design and Operations Plans for Township Waste Disposal Sites*". This report proposed consolidating landfilling operations at one (1) active landfill site and temporarily closing the remaining sites and converting them into recycling depot/transfer stations. Once the active site reaches capacity, it will be permanently closed and capped while one of the other temporarily closed sites will open. This process will continue, with sites being filled one at a time in succession, until all sites are filled and closed. In 2008, this plan was accepted by the MOE and came into full effect on January 1, 2009. In theory, this system should reduce overall disposal costs and increase existing landfill capacity due to improved garbage compaction at the active site(s).

Up until the end of 2010, all garbage collected from Lanark Village was taken to Lanark Village WDS for disposal. The remainder of the Township's garbage was landfilled at the Middleville WDS, except for a small portion, which was directed to Lanark Village WDS. This small portion consisted mainly of garbage from McDonald's Corners WDS because of its proximity to Lanark Village WDS. Starting in 2011, due to the absence of remaining capacity at the Lanark Village WDS, all of the Township's garbage was directed to the Middleville



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WDS. In future years, once waste capacity at Middleville WDS is consumed, garbage will be directed in succession to McDonald's Corners, Robertson Lake and Snye Road WDS, respectively.

Based on topographic site surveys and final design contours, the remaining capacity at each site in 2012 was calculated in the 2012 Annual Report on Waste Disposal Site Operations (2012 Annual Report; AECOM, 2013):

- Lanark Village* – 0 m³ (No remaining capacity)
- McDonald's Corners** – 30,930 m³* (Possibility to expand site)*
- Middleville – 4430 m³
- Snye Road – 20,645 m³
- Robertson Lake – 19,425 m³
- Watson's Corners (Closed)

* A Closure Plan and Transfer Station Design and Operations Plan for the Lanark Village WDS were submitted to the MOE in February 2011, along with an application to amend the site's ECA.

** Estimated remaining capacity of the McDonald's Corners WDS at the onset of 2013 is 30,930 m³ (AECOM, 2013)

According to the 2012 Annual Report, all of the Township's landfills combined will have an estimated remaining capacity of only 75,430 cubic metres at the onset of 2013, which is an additional 13 years (AECOM, 2013).

The 2012 Annual Report uses an estimated fill rate and the remaining capacities shown above to determine the expected closure date for each WDS. It is predicted that these landfills should service the Township until 2026. However, it is noted that lifespan predictions longer than ten (10) years are subject to change due to changing conditions in the Township such as increased operational efficiency, increased diversion, population and industry changes, and new disposal opportunities. If future fill rates continue to be below predictions, as was the case in 2011 and 2012, the lifespan of the sites may be extended (AECOM, 2013). Increasing the amount of waste diverted from the Township's remaining landfills will extend their operating life and preserve the Township's valuable remaining waste disposal capacity.



4.0 WASTE MANAGEMENT SYSTEM PERFORMANCE

4.1 Generation and Diversion

Typical waste generation rates for smaller and more rural municipalities range from 0.75 to 1.9 kg per person per day (AECOM, 2013). The 2010 Annual Report projected future usage at 0.9 kg per person per day across the Township (AECOM, 2011). This rate reflects the diversion efforts that are in effect, and the fact that most of the waste accepted for disposal is domestic waste. Commercial waste, generated by campgrounds and other tourist related facilities, contributes an additional 5 % of the domestic waste stream (AECOM, 2013).

The volume of waste expected to be deposited in the Township's landfills from year 2010 onwards, is summarized in Table 3:.

Table 3: Waste Generation Projections

| Year | Service Population | Waste Generation | | Total Waste | | Cover Material (m ³) | Total Volume (m ³) |
|--------|--------------------|---------------------|-----------------|-------------|---------------------|----------------------------------|--------------------------------|
| | | • Domestic (tonnes) | • IC&I (tonnes) | • (tonnes) | • (m ³) | | |
| 2011 | • 5880 | • 1931 | • 97 | • 2028 | • 4056 | • 1014 | • 5070 |
| • 2012 | • 5938 | • 1951 | • 98 | • 2048 | • 4097 | • 1024 | • 5121 |
| • ↓ | • ↓ | • ↓ | • ↓ | • ↓ | • ↓ | • ↓ | • ↓ |
| 2024 | • 6691 | • 2198 | • 110 | • 2308 | • 4616 | • 1154 | • 5770 |
| • 2025 | • 6758 | • 2220 | • 111 | • 2331 | • 4662 | • 1166 | • 5828 |
| • 2026 | • 6826 | • 2242 | • 112 | • 2354 | • 4709 | • 1177 | • 5886 |

Source: AECOM, 2013

All seven (7) Township WDS, whether recycling depots or active landfill, receive a portion of the Township's total waste stream. The proportion of the waste delivered to each site is dependent on the total population serviced by the site and does not vary significantly year to year (AECOM, 2013). Since bagged household garbage is not weighed at the landfill no detailed weigh-scale or bag count numbers are available for the Township. In 2012, quantities of waste collected were estimated by service population and historical records. Estimates of waste stream proportion and quantities collected at each site in 2012 are shown in Table 4.

Table 4: Portion of Waste Stream and Expected Waste Quantities per Site

| | McDonalds Corners Transfer Station | Lanark Village WDS | Middleville WDS | Snye Road WDS | Robertson Lake Transfer Station | Watsons Corners Transfer Station |
|-------------------------|------------------------------------|----------------------|----------------------|--------------------|---------------------------------|----------------------------------|
| Portion of Waste Stream | • 20% | • 20% | • 36% | • 11% | • 7% | • 7% |
| Waste Received (est.) | 1,009 m ³ | 1,027 m ³ | 1,868 m ³ | 544 m ³ | 336 m ³ | 336 m ³ |

Source: AECOM, 2013



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It is noted that landfill waste volumes contributed by businesses (e.g. IC&I waste) are not differentiated from residential waste in Table 4.

Because bagged household garbage is not weighed at the landfill, the 2011 Datacall assumes a total residential waste tonnage generated for the Township based on a waste per capita rate for similar municipalities. For consistency with the 2011 Datacall, the remainder of this report uses an annual total waste generation rate for the Township of 2,303 tonnes of waste per year. The 2011 Datacall also reports that the Township landfilled 1,336 tonnes of waste in 2011, or 237.2 kilograms per person.

There are a number of different approaches to calculating waste diversion. The most accepted methodology in Ontario is the GAP analysis. GAP analysis has been adopted as a standard for municipal waste measurement reporting in the province. The GAP analysis process was initiated in late 1999 to address a need to develop a common reporting framework that could be used by municipalities across Canada to track waste generation, diversion and disposal. The information reported through the WDO Municipal Datacall system is used to calculate a residential GAP analysis diversion rate for each municipality participating in the Datacall.

The Municipal Datacall residential GAP analysis diversion rate includes;

- An allowance for provincial deposit systems (i.e. Beer Store);
- An allowance for residential on-property management through backyard composting, grasscycling and evapotranspiration resulting from the use of aerated carts for organics programs;
- Municipality operated (directly or through contracted services) reuse activities;
- Municipality operated (directly or through contracted services) recycling activities including Blue Box materials, Other Recyclables, WEEE and MHSW;
- Municipality operated (directly or through contracted services) centralized composting activities for household organics, leaf and yard waste; and
- Disposal of residual garbage, and recycling and composting processing residues through energy-from-waste and landfill.

Based on the GAP process, the waste residential diversion rate for the Township was 37.6% in 2008. This is generally consistent with waste diversion from 2009 (36.1%), 2010 (37.6%.) and 2011 (41.99%). A breakdown of programs accounted for in calculating the Township's 2011 GAP analysis diversion rate is provided in Table 5.



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Table 5: Residential Waste Diversion Rate

| Program | Diverted (Tonnes) | Disposed (Tonnes) | Total Generation (Tonnes) |
|--|-------------------|-------------------|---------------------------|
| <i>GAP</i> | | | |
| Deposit Return and Stewardship Program | 28.54 | | 28.54 |
| Backyard Composting | 225.10 | | 225.10 |
| Grasscycling | 0.08 | | 0.08 |
| Reuse | 7.5 | | 7.5 |
| Organics ¹ | 2.76 | 0.49 | 3.25 |
| Blue Box Recycling ² | 659.79 | 2.27 | 662.55 |
| MHSW | 28.69 | 1.51 | 30.20 |
| Garbage | | 1,326.00 | 1,326.00 |
| TOTAL | 952.46 | 1,335.73 | 2,288.19 |
| GAP Waste Diversion Rate | 42.62% | | |

Notes:

1. Organic waste includes leaf & yard waste and Christmas trees.
2. The Township reported the total tonnage of recyclable material collected in 2011 as 662.55 tonnes. This includes both curbside and depot collection. Of this material, the audited 2011 Datacall indicates a total of 659.79 tonnes of Blue Box material was marketed. The marketed tonnage was used in the remainder of the calculations for consistency.

WDO publishes the GAP waste diversion rates for all Ontario municipalities annually, based on the audited Municipal Datacall information submitted. By comparison, the overall GAP waste diversion rate for all municipalities across the province was 46.5% in 2011. The average GAP waste diversion rate for the WDO municipal grouping "Rural Depot – South", which includes the Township, was 28.68% in 2011.



5.0 FUTURE WASTE MANAGEMENT NEEDS

The landfill capacity predictions use a predicted population growth rate of 1.35 % per year (AECOM, 2011). Based on a permanent population of 5,180 in 2010 (2010 Datacall) and a predicted annual growth rate of 1.35 % per year for both the number of permanent and seasonal residents, an equivalent population was calculated for 2015 of 6,020 and an equivalent population for 2020 of 6,438.

Based on the growth rate assumption of 1.35 % per year, solid waste generation rates in the Township are expected to grow over the next 10 year planning period. Table 6. This depicts the expected growth rates for solid waste generation and Blue Box material recovery (assuming a 70% target capture rate).

Table 6: Anticipated Future Waste Management Tonnages

| Anticipated Future Solid Waste Generation Rates and Available Blue Box Material | | | |
|--|----------------------|-------------|-------------|
| | 2010 (Actual) | 2015 | 2020 |
| Population | 5,180 | 6,020 | 6,438 |
| Total Waste (tonnes) | 2,381 | 2,768 | 2,960 |
| Blue Box Material Available (tonnes) | 883 | 1,027 | 1,098 |



6.0 CURRENT WASTE MANAGEMENT COSTS

6.1 Overall System

Based on the Township's 2013 Budget, expenditures for waste management services were expected to total \$1,090,049 in 2013. Revenue was budgeted to offset these expenditures from the Site Closure and Capital Reserve Fund (\$315,000), the waste tax levies (\$185,000), WDO funding (\$96,000), material revenues and other grants (\$35,775), and tipping fees charged at the landfill (\$70,000). This resulted in a net cost for waste services of \$394,274, which was allocated in the municipal tax bill.

Table 7: Township of Lanark Highlands Waste Management Costs

| Program | Expenditures | Revenues | |
|--|--------------|-----------|---------------------------------------|
| | | Amount | Source |
| Administration | \$44,814 | \$20,775 | Material Sales and Grants |
| Waste and Recycling Collection (village) | \$51,500 | \$51,500 | Curbside Levy |
| Waste Site Contract | \$282,000 | \$133,500 | Household Waste Levy |
| Recycling (OVWRA) | \$17,000 | \$52,000 | WDO Funds |
| MHSW | \$34,950 | \$38,000 | WDO Funds |
| Middleville Landfill | \$76,129 | \$70,000 | Tipping fees |
| Transfer Stations | \$480,056 | \$315,000 | Site Closure Fund and Capital Reserve |
| Reporting and Waste Plan | \$18,500 | \$15,000 | CIF Fund |
| Waste Reserve Fund | \$85,100 | | |
| Total | \$1,090,049 | \$695,775 | |

As shown in Table 7, the cost of operating the Middleville WDS is almost fully funded through tipping fees. The operation of the transfer stations are either fully, or partially funded through municipal taxes.

6.2 Blue Box Recycling

In 2011, the total net annual recycling cost for the Township was reported as \$195,919 (2011 Datacall). A summary of all costs associated with the Blue Box program, including the administration costs eligible for funding, is presented in Table 8.



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Table 8: Township Blue Box Recyclable Program Costs (2011)

| Item | Cost |
|---|---------------------|
| Blue Box Curbside Collection Costs | \$ 31,966.52 |
| Blue Box Depot Costs | \$150,196.01 |
| Processing Cost | \$ 12,217.20 |
| Promotion and Education Costs | \$2,975.02 |
| Administration Costs (3.49%) ¹ | \$ 6,905.12 |
| Interest on Municipal Capital Debt ² | \$482.13 |
| Total Gross Residential Costs | \$204,742 |
| Revenue ³ | \$8,823 |
| Net Costs | \$195,919.07 |

Notes:

1. Administration costs are calculated as follows: 3% of reported contract costs and 5% of reported municipal costs.

2. Interest on municipal capital debt is calculated as follows: for capital expenditures with an amortization period of 7 years or more commissioned in or after 2004, the average of the prime interest rate for the year in which the capital commissioned will be utilized as the factor to calculate interest.

3. Revenue from the sale of blue boxes and other sources.

This amounts to \$533.75 per tonne, or \$37.82 per capita. As the table below shows, net annual recycling costs for the Township are below average for its WDO municipal grouping "Rural Depot – South".

Table 9: Recycling Cost per Tonne (2011)

| Net Recycling Cost (per tonne per year) | |
|--|-----------|
| Township of Lanark Highlands | \$ 533.75 |
| Municipal Grouping: Rural Depot - South | \$ 551 |

The CIF Guidebook suggests net cost target of \$390/tonne for Rural Depot – South municipalities, which may not be achievable when you consider the average costs being achieved by similar municipalities.



7.0 WASTE SYSTEM OPTIMIZATION OPTIONS

7.1 Priority Initiatives Identified through the WRS

The Continuous Improvement Fund's *Guidebook for Creating a Municipal Waste Recycling Strategy* provides an Overview of Waste Recycling Options and criteria for evaluating the options. As part of a Waste Recycling Strategy, the recycling option evaluation is to be completed in Worksheet 8, which is included in Appendix B.

The list of suggested Best Practice / Options for improving the Blue Box recycling system were scored based on the suggested criteria, which included:

- Waste Diverted
- Proven results;
- Reliable market / end use;
- Economic feasibility;
- Accessibility to the public; and,
- Ease of implementation

Based on the relative score received by each of the best practice options presented in the table, a relative ranking was made of each of the potential initiatives. Out of the suitable practices described in Worksheet 8, the top four (4) best practices identified for the Township through this exercise are:

User Pay System – Bag Limits (score of 25 out of 30);

Optimization of Contracts (score of 24 out of 30);

Development of an Enhanced P&E Program (score of 21 out of 30); and

Training of Key Program Staff (score of 21 out of 30).

Each of the options considered are discussed in more detail in the following sections.

7.1.1 Collection Frequency – Biweekly Garbage Collection

Comparisons of municipal waste programs have shown that decreasing the collection frequency of garbage typically leads to increased diversion rates. According to the *Blue Box Enhancement and Best Practices Assessment Project or "Best Practices" (KPMG, 2007)*, the most effective programs in the province, with respect to tonnage diversion, provide weekly collection of recyclables and household organics with biweekly collection of garbage (and an effective garbage bag limit). A biweekly collection approach sends the message to residents that recycling is more important and convenient than setting out garbage.

In a presentation entitled *Waste Diversion at the Curbside*, the Ontario Municipal Benchmarking Initiative (OMBI) Solid Waste Expert Panel outlined that providing bi-weekly waste collection as opposed to weekly garbage collection resulted in an increase of at least 10% in waste diversion (OMBI Spring Forum – April 17, 2011).



However, municipalities where biweekly garbage collection has shown to be effective typically have a weekly green bin collection program for Source Separated Organic (SSO) wastes such as food waste, wet and soiled paper and other household organics. Residents therefore have an option for getting rid of the odorous portion of the waste stream on a weekly basis.

The selection of a collection frequency for garbage must take into consideration the types and volume of materials recovered through diversion programs, the type and volume of household containers supplied to residents, along with the type of collection equipment available. Moving to the biweekly collection of garbage is often more acceptable from the public's perspective when existing diversion programs are relatively inclusive. Having larger blue box containers also supports a biweekly garbage collection system since residents will not be limited by bin space for their recyclables.

Potential risks associated with a biweekly garbage collection system include increased contamination in diversion streams, as well as communication issues with the public as to what items can be set out and when. Any major change to the collection system such as biweekly garbage collection should be accompanied by an effective Promotion and Education (P&E) campaign.

Highlights

- *Implement a bi-weekly curbside collection system for garbage in Lanark Village and maintain weekly collection of recyclables.*

7.1.2 User Pay System for Garbage – Bag Limits

A user-pay waste program is based on a “polluter pays” principle, where residents pay a direct fee for the quantity of waste set out. The objective of the program is to provide an incentive for residents to decrease the amount of waste they generate and to increase their participation in waste diversion programs. There are generally two (2) types of user pay systems:

- A **full user pay program** allows users to pay for all the garbage they want collected in advance and generally on an annual basis by purchasing a tag, custom bag or selected size container.,
- A **partial user pay program** is one in which the municipality decides on a maximum number of bags or containers of garbage with collection paid for by taxes. Should the user exceed the permitted amount, additional bags or containers can be disposed of for a fee (e.g., bag tag fee).

In a study completed by the Association of Municipal Recycling Coordinators (AMRC, 2008) it was found that in 2008, nearly 45% of the households in the province paid directly to dispose of at least some of their waste. The Township does not currently have a user pay program in place.

In 2008, the Township replaced their bag tag program with a flat rate annual waste disposal fee paid through property taxes in response to a concern that the number of bag tags sold did not account for (i.e., pay for) the volume of garbage and recyclables collected. If effectively implemented, an incentive based pay structure has the potential to increase diversion and extend the lifespan of municipal landfill(s).

A full user pay program or partial user pay program with very limited “free” bags provides the greatest incentive to reduce waste. It was found that recycling tonnage increases ranged from 22% to 86% and waste tonnage



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decreases ranged from 6% to 61% following implementation of user pay systems in six Ontario municipalities that allowed one or no free bags per week (AMRC, 2008).

The following municipalities in WDO's municipal groupings "Rural Collection – South" and "Rural Depot – South" currently have a user pay program in place:

- Township of Central Frontenac ((\$1.00/bag)
- Township of Tay Valley (1.00/ tag; 40 FREE tags per household per year)
- Township of North Frontenac (\$2.00/tag)
- Township of South Frontenac (\$2.00/tag; 50 FREE tags included with March tax notice)
- Township of Stone Mills (\$2.00/tag)
- Township of Rideau Lakes (\$2.00/tag).

Typically with a user pay program, residents are required to purchase a tag or sticker to be placed on the garbage bags. A partial pay program might allow residents to exchange a bin of recyclables for a free bag of garbage, otherwise any bags of garbage not matched by a bin of recyclables would require a tag or sticker. An incentive such as this would further encourage and promote recycling. There are other forms of partial user pay systems such as a municipality setting a limit to the amount of garbage bags that can be accepted free of charge, and anything above this limit would require a purchased tag or sticker. However, a system that allows users to exchange a bin of recyclables for a free bag of garbage has the added benefit of promoting diversion. Adopting a partial user pay system, over a full user pay system, also has the added benefit of generate less public opposition.

When a municipality implements a user pay program, they may decide to remove the corresponding cost for waste services from the general tax levy. The revenue received for the sale of bag tags may be utilized to fund new waste diversion programs and/or the administration costs of the program. The costs to administer a user pay program vary depending on how the tags are distributed, but are generally not significant.

Typically, the main barrier to the implementation of a full user pay program is public opposition and lack of political support. Objections typically include the fear of illegal dumping, the perception of double taxation and the concern for low-income families. According to the Federation of Canadian Municipalities (FCM) Review of Waste Policies (FCM_a, 2004), evidence suggests that the root of public opposition lies in the perception of waste as an essential service, rather than a utility. It was also noted that British Columbia was relatively successful at changing this perception by having municipalities move towards utility-style billing for waste, prior to introducing user fees. Concerning low-income families, a partial user pay program, where a certain level of service is provided by the tax base and anything above is charged a fee, is often an acceptable compromise. Alternatively, low income families can be provided with free bag tags, with the program administered by the Social Services department, who are able to determine who would qualify for this service.

Highlights

- *Implement a partial user pay program where residents are allowed to exchange a bin of recyclables for a free bag of garbage, otherwise a purchased tag or sticker is required.*



- *Update the Township's waste management by-law to include a section on the user pay / bag tag program, as well as ensure that there are policies in place to ensure proper enforcement and prevent illegal dumping; and,*
- *Increase enforcement staff and resources for overseeing the programs*

7.1.3 Training of Key Program Staff

Training of key waste management staff (including front line staff such as depot attendants) is important to ensure that the Township's recycling program is run effectively and knowledgeably and that adequate customer service is provided.

In a report entitled *Evaluation of Best Practices of Rural Recycling Depot Programs* prepared for Quinte Waste Solutions by SGS Lakefield Research Limited (April 2006), it was identified that the depot attendant is a key factor in:

- Preventing material contamination;
- Promoting the waste diversion program;
- Encouraging proper material; and,
- Increasing the perceived and actual effectiveness of the diversion program.

Training opportunities available to the Township may include:

- CIF Ontario Recycler Workshops (includes webcast option);
- Stewardship Ontario Blue Box Recycler Training Courses (course available on contract management, promotion and education, markets and marketing and data management); and
- Development of in-house training session for front line staff (including customer service representatives).

While these third party courses are free, the cost of travel and accommodations must be borne by the municipalities. In addition, the majority of these course offerings are held in southern Ontario. Therefore, the cost of this initiative assumes a requirement for staff to travel to southern Ontario and pay for overnight accommodations.

Highlights

- *Waste management staff (in particular depot attendants) should participate in training sessions where possible and applicable. Some training sessions can be held via webinars and webcasts to avoid the need for travel.*
- *An in-house training program could also be developed and delivered to all waste management staff. If a summer student is hired for a summertime communications campaign, he or she could assist with this program.*

7.1.4 Contract Modifications

The Township has two separate contracts for the management of waste:



- A contract for the collection of waste and recyclables from Lanark Village and the processing of the recyclables collected; and
- A contract for the provision of waste and recycling services at the Township's seven transfer station/recycling depots.

Historically, waste collection and processing contracts have followed the traditional approach whereby the municipality defines the scope and specifies the services, and the contractor supplies those services. These types of contracts worked well for defined packages of work, however as waste management systems become more complex, there are advantages for municipalities to allow bidders to design the most efficient and competitive system. The contract should also reflect the inherent limitations associated with the inability to foresee and cover every eventuality. The challenge is to be clear in defining the desired outcomes without being so prescriptive that the contractor cannot provide innovative solutions. A contract that is too specific about how services must be provided, for example by designating the use of particular trucks or specific processors, reduces opportunities for innovation by contractors. Instead, contract terms should specify standards of outcomes, such as frequency of service, materials to be recycled, and other clearly definable and measurable goals.

In general, the procurement process should:

- Identify and define the desired outcomes;
- Show transparency and accountability in spending public money;
- Ensure fair treatment of all parties;
- Give consideration to maintaining a competitive market; and
- Ensure flexibility to allow for changes in the waste management program.

Innovation in service delivery from contractors is desirable and should be encouraged in the procurement process. The Township can encourage innovation that leads to diverting waste from landfill or improvements in the quality of materials by providing incentives in the contract for developing solutions that result in a reduction in residual waste stream sent to landfill.

The contract(s) should be structured to take best advantage of opportunities that exist for the processing of recyclables. It is important to find processing facilities that are in reasonably close proximity to reduce hauling costs, and that make the number and types of collection streams that residents are accustomed to recycling. A listing of processing opportunities that currently exist in Eastern Ontario is shown in Table 10.



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Table 10: Processing Opportunities for Recyclables in Eastern Ontario

| Owner | Location | Streams | Estimated Fee |
|---|-------------------|--|-----------------|
| Beauman Waste Management (Private) | Renfrew | 2-stream (Accepts polystyrene, film, aluminum foil & trays, tubs & lids) | \$40/tonne |
| Tomlinson Environmental (Private) | Carp | 3-stream (cardboard, white paper, glass/metal/plastic) | \$110/tonne |
| Cascades Recovery Inc. (Private) | Ottawa | 2 facilities | Varies |
| Waste Management Corp of Canada | Carleton Place | 5 stream | As per contract |
| Kimco (Private) | Kingston | 2-stream | Varies |
| HCG Management Inc. (Private) | Belleville | 2-stream | Varies |
| Manco (Private) | Napanee | 2-stream | Varies |
| Recycling Alexandria Recycling Equipe (RARE) (Public) | Alexandria | | Varies |
| City of Cornwall (Public) | Cornwall | 2-stream (also single stream effective April 2012) | \$25/tonne |
| Township of North Dundas (Public) | Winchester | 2-stream | Varies |
| City of Kingston (Public) | Kingston | 3-stream (glass must be separated) | Varies |
| Ottawa Valley Waste Recovery Centre (Public) | Pembroke | 2-stream | As per contract |
| Laflèche Environmental Inc. | Beckwith Township | Single stream | Varies |

To ensure that municipalities obtain good value for money, they should follow generally accepted principles (GAP) for effective procurement and contract management. Key aspects of GAP include planning the procurement well in advance, issuing clear procurement documents, obtaining competitive bids, and including performance-based incentives. In order to promote the development of functional, proper and competitive procurement documents, CIF has implemented a program to financially assist municipalities (up to a total of \$15,000) in the development of procurement documents for the provision of blue box recycling services.

CIF has also set up a database that allows municipal staff to search through model contracts for specific tips, ideas and suggestions on different aspects of the collection and processing procurement process.

7.1.4.1 Multi-Municipal Partnerships

It is noted that 8.3% of the Best Practice portion of the WDO funding is allocated based on a positive response to the WDO Datacall question regarding the use of a multi-municipal approach to implementing the Blue Box recyclable program. The Township may wish to explore opportunities to work with neighbouring municipalities in support of improving efficiencies in its Blue Box recyclables program. The development of an inter-municipal committee can be an effective means of initiating and continuing beneficial discussions between neighbouring municipalities.

It is commonly understood that efficiencies of scale and economy are achievable when activities are carried out on a large scale. This principle applies to all aspects of business, and recycling programs are a good example of where this principle can be applied. In fact, according to the Best Practices Report (KPMG, 2007), it is



considered a “fundamental best practice for municipalities to explore a multi-municipal approach to planning recycling activities,” and a “considerable amount of industry research and data analysis indicate that nearly all municipalities can benefit from a co-operative approach to planning and/or providing recycling services”.

Some of the benefits of a co-operative planning approach include, but are not limited to:

- Economies of scale;
- Optimized program funding;
- Shared costs/staff/time;
- Improved supplier/contract relations;
- Increased capacity to adopt new technologies and methods;
- Material markets and pricing advantages; and,
- Shared risk management and capital requirements.

Revenues for larger amounts of recyclables often increase because of shipping, storage and handling economies. Recyclable markets are also usually willing to pay better prices for larger, continuous supply of good quality material. A multi-municipal approach to planning/marketing material may provide some of these benefits.

In addition, many municipalities struggle to attract bidders for recycling RFP's or tenders. Multi-municipal planning can take advantage of larger tonnages under co-operative contracts to attract more bidder, as well as non-local bidders. WDO Datacall statistics confirm that recycling costs are steeply reduced when greater quantities of materials are collected and processed above a threshold value of 10,000 tonnes per year. In other words, the more tonnage that can be combined under a single contract, the more contractors are willing to participate and to pass on savings to municipalities

A seven (7) step approach for the implementation of this best practice is defined in the Best Practices Report (KPMG, 2007), along with potential challenges and suggested solutions. For example, if the Township is concerned about the potential for loss of autonomy, the suggested solution is to clearly document roles and responsibilities, such that control is not lost, but economies are gained.

Highlights

- *Review contracts to determine if opportunities exist to improve the efficiency and effectiveness of the collection and processing services.*
- *Investigate alternative opportunities for processing of recyclables to ensure the township is receiving competitive pricing for the processing of recyclables.*
- *Initiate the formation of an inter-municipal committee to discuss a multi-municipal planning approach to implementing the Blue Box recyclable program (and other waste programs). Discuss the potential for partnerships around collection, Material Recovery Facility (MRF) processing, joint RFP's, capital purchases (e.g. backyard composters), joint P&E programs, etc.*



7.1.5 Enhanced Promotion and Education

A well-designed and implemented P&E program can have positive effects on virtually all aspects of the Blue Box system, including planning, collection, processing, marketing and policy development. Moreover, having a P&E plan contributes toward the amount of WDO funding a municipality receives as identified in the Best Practices section of the WDO municipal data call.

Ideally, P&E programs should begin with the development of a current and effective communications plan, which should include a statement of goals and objectives, target audiences, key messages, tactics, timing, and plans for monitoring and evaluation. The CIF offers municipalities free assistance in the development of a Communications Plan for their Blue Box recycling strategy (see following section on resources).

The Township prepared a Draft 2010 Blue Box Communications Plan which contained realistic and actionable goals. While this plan was not formally presented to Council, the communications strategies were implemented by staff in 2010, 2011 and 2013. To date staff have monitored the blue box diversion goals via tonnage reports but have not yet begun formal reporting to Council and the community.

The new 2014 Blue Box Promotion & Education Plan is attached as Appendix C. The Township has a \$5000 grant confirmed from the Continuous Improvement Fund for implementation in 2014, along with a budget allocation of \$2500 from Council. This plan includes a process for tracking and monitoring the impact of the P&E Plan, using benchmarks and metrics compatible with this report. It is recommended that the Township update its Blue Box communication strategy every three years.

It is anticipated that the implementation of an effective P&E program would result in the following key benefits and outcomes:

- Increased community involvement in the Blue Box diversion program;
- Proper separation of recyclables from landfilled waste;
- Lower residue rates at processing facilities resulting in higher recovery rates, lower costs, and potentially higher revenue for marketed material; and,
- Higher waste diversion rates overall.

It has also been found that successful P&E programs employ a mix of media, including:

- Print (calendar, newspaper inserts, utility bill inserts, paid ads, brochures, newsletters, welcome package for new residents);
- Broadcast (radio ads, Public Service Announcements, TV ads);
- Electronic (regularly updated and highly branded website, emails)*;
- Outreach (special events, presence at community celebrations, school visits, facility tours for students, community education centres, door to door campaigns, landfill/depot contract, etc.);
- Icons & Incentives (magnets and other gifts, community mascots, etc.); and



- Rewards & Recognition (e.g., County of Northumberland's Get Caught Recycling Clean Program & City of Hamilton's Gold Box program – discussed in greater detail below).

County of Northumberland's Get Caught Recycling Clean Program

The County of Northumberland has introduced a rewards and recognition program called *Get Caught Recycling Clean*. The program looks for residents who put the proper materials into their recycling bins, and rewards those who do. The reward is \$50 in cash or a rotating backyard composter, along with the publicity of being a clean recycler. The program is carried out between the months of April and October and targets a different constituent municipality each month. A total of fifty homes are audited each month and each home receives a door-hanger indicating what was found and areas for improvement. The program also serves as an opportunity to educate residents face-to-face.

City of Hamilton's Gold Box program

The City of Hamilton has established a highly successful and branded "Gold Box" program, along with a dedicated website (mygoldbox.ca). In this program, yellow recycling bins called Gold Boxes are given to homes that demonstrate proper sorting of their recycling and garbage. The program is carried out through a series of random visual waste audits as opposed to weight-based audits. Households demonstrating high capture rates and low contamination rates, and that have sorted items into the proper containers or bags, are eligible to win a Gold box.

The effectiveness of each of these best practices is community specific, and should be evaluated through a Township P&E plan. For example, very limited access to high speed internet in some areas of the Township reduces the appeal and effectiveness of electronic communications tools.

The Township might also consider hiring a summer student (full or part-time) to implement a summer education program to encourage greater recycling and awareness. Educational components of such a program could include: updated print materials (e.g., a magnetic fridge card, welcome packages for new residents), door to door canvassing (answering questions and delivering brochures), staffed recycling kiosks in public areas (e.g., community centres, libraries), and/or an emphasis on waste prevention and reuse. The summer student could also address public concern that not all materials being taken to the MRFs are being recycled.

A statistical analysis of P&E spending in 2005 (as analyzed by KPMG for the *Blue Box Enhancement and Best Practices Assessment Project, 2007*) suggests that there is a correlation between P&E spending and heightened diversion, even though the correlation is somewhat weak. The Township has budgeted \$500 for P&E activities in 2013, or \$0.12 per household (including seasonal households).

Funding is available through the CIF Request for Expressions of Interest (REOI) for general Blue Box material promotion and education. In order to receive this funding, the Township would likely be required to create an up-to-date Communications Plan. As previously mentioned, assistance in creating this plan is available through the CIF.

There are a number of resources available to help the Township design and implement a cost-effective and successful P&E program. Several resources include:

- CIF's 'One-stop P&E Shop for Small Programs':



- FREE P&E material & program guidance
- WDO CAN/OCNA Advertising Program:
 - FREE newspaper lineage
- WDO 'Ad Bank' :
 - FREE P& E sample ads and graphics
- P&E module on the 'Recyclers' Knowledge Network' (<http://vubiz.com/stewardship/Welcome.asp>):
 - Best practices and program guidance
 - Municipal P&E Workbook
- E & E Fund Approved Communication and Education Projects

For information on promoting the importance of the P&E budget with Council, visit http://www.stewardshipontario.ca/bluebox/pdf/eefund/reports/68/PE_Workbook.pdf

Signage at Recycling Depots

The majority of Township residents currently bring their recyclables to Drop-off Depots (transfer stations).

Drop-off Depots are considered the Best Practice to collect overflow Blue Box materials and additional recyclable materials, for which curbside collection is not practical or cost-effective. The KPMG Best Practices Report identifies a number of key attributes for effective recycling depots, including:

- Safe and accessible location and convenient to use;
- Designed to limit the potential for contamination and illegal dumping;
- Trained and knowledgeable staff;
- Attractive and well maintained (removal of materials with adequate frequency);
- Appropriate signage and clear instructions for residents;
- Robust record keeping process; and,
- Optimized container design and transportation system.

With respect to appropriate signage, the report notes that signs should be biased towards graphics, photos or displays of acceptable and unacceptable items, rather than text. The signs should use bright colours and complement the depot appearance. Each bin should be clearly labelled to indicate the types of materials it can receive.

The report entitled *Optimizing Peterborough County's Recycling Depots (September 2009)*, prepared for the County of Peterborough by 2cg Inc. and available on Stewardship Ontario's website (www.stewardshipontario.ca/bluebox/pdf/eefund/reports/326/326_final_report.pdf) also noted the use of excessive text on and around the County of Peterborough's recycling depot bins was not as effective as visual graphics/pictures displaying the correct materials for each bin.

Examples of the graphics-based container labels from this report are in Figure 14:.



Figure 14: Example of Depot Bin Signage



Photo Source: http://www.stewardshipontario.ca/bluebox/pdf/eefund/reports/326/326_final_report.pdf

Additional Resources: The KPMG report (July 2007) notes that additional examples of depot graphics and signage examples are available through the 'Recyclers' Knowledge Network'. (www.recyclersknowledgenetwork.ca)

Highlights

- Develop and execute an updated Communications Plan for 2014 and every 3 years afterwards.
- Consider utilizing the resources of a summer student to develop and implement a summertime promotion and education campaign.
- Future container signage at recycling depot/transfer stations should include visual graphics/photos

7.2 Other Options

The following section discusses additional waste diversion and optimization options for the Township, which extend beyond the Blue Box / Waste Recycling Strategy Options.

7.2.1 Processing of Organic Waste

Part II of *Ontario Regulation 101/94 Recycling and Composting of Municipal Waste* (O.Reg. 101/94) stipulates that municipalities with populations of 5,000 residents or more, that perform municipal collection or accept leaf and yard waste at a centralized location separated from other garbage at the source, must implement a Leaf and Yard Waste System.

The *Environmental Protection Act, R.S.O. 1990* (sections 27 and 41) requires that systems used for waste management purposes, including leaf and yard waste, have an Environmental Compliance Approval (ECA) from the MOE. Given that the Township's population exceeds 5,000 permanent residents, a Leaf and Yard Waste System is mandatory. Exceptions do not apply to existing or new composting operations at an approved landfill site. In this situation, an application is required to amend the existing ECA for the WDS.



To support the installation of a Leaf and Yard Waste System, infrastructure would be required including expanding the existing leaf and yard waste drop off area to manage a fully operational turned windrow composting area which is the most commonly adopted approach due to low capital investment requirements and the seasonal nature of leaf and yard waste generation. Figure 2.2 in Appendix D depicts the typical layout of an outside windrow composting operation.

A windrow composting operation requires a staging area for inbound material to be dropped off and allows for manoeuvrability of traffic flow on the site for residential vehicles as well as contracted services such as brush chipping or private collection vehicles. The area where the leaf and yard waste material is to be windrowed should be level with a minimum of a gravel pad with preference for a harder surface such as a concrete or asphalt pad to allow for loading and turning tolerance from rubber tired loaders and vehicles during the receiving and turning stage of the composting operation. The use of a loader with a grapple bucket will be required a minimum of once per week to turn the windrows during the peak composting phase (where temperatures reach 55 degrees Celsius).

During the composting timeframe, temperature monitoring, and record keeping will be required as part of the windrow process. A part-time employee would conduct the daily temperature and monitoring of the leaf and yard waste site during the timeframe temperatures have been achieved. Temperature probes can be readily purchased on-line and delivered to the Township for approximately \$300. The temperature probes require minimal training to use and are portable. Once material is composted, a curing area will be required to allow finished compost to rest for a minimum of six (6) months. During this time, material is to be turned less frequently.

It is estimated that approximately 321 tonnes/year of new leaf and yard wastes could be captured with this system based on a capture rate of 100 kg/household(hh)/year(yr) from the 3,210 permanent households in the Township. The expanded composting pad should be sized to manage a minimum of 500 tonnes per year in order to accommodate additional drop off tonnages from seasonal residents, the IC&I sector and larger item drop offs from the residential sector.

A compost facility to accommodate 500 tonnes a year of leaf and yard waste should have an approximate pad area of 60 m x 70 m.

The facilities and equipment needed to develop a Leaf and Yard Waste Composting Site include:

| | |
|---|----------|
| ■ Amendment to the Landfill Certificate of Approval | \$15,000 |
| ■ Temperature probe | \$300 |
| ■ Loader to turn windrows (shared 50% with other site duties) | \$75,000 |
| ■ Expanded composting pad (using recycled asphalt) | \$85,000 |

The estimated capital costs to set up the composting operation are \$175,300.

The estimated annual operational costs for a leaf and yard waste composting operation are \$20,000, which includes:

Development of ongoing promotion and education (P&E) program of \$3,000/year;



- Contracted grinding services of brush and leaves once per year at a rate of approximately 50-60 tonnes per day @ \$400/hr x 16 hours (2 days) = \$6,000/yr;
- Fuel for loader operations = \$6,000 – \$8,000/year;
- Screening services of finished compost once per year @ \$400/hr x 8 hours (1 day) = \$4,000/year; and
- Part-time casual employee assigned for compost operations and to operate loader approximately 1-2 days per week

Potential revenues exist if the Town chooses to sell the compost back to the residents either by the bag or by the truck load (tonne). Providing that the compost meets the provincial compost standards, material could be sold as soil amendment at average rates of \$20-\$30/tonne.

Once the Township has been able to successfully compost leaf and yard waste at the windrow operation, they may wish to consider expanding the operation to include other SSO waste from Township residents.

Highlights

- *Provide more education to residents regarding the opportunity to divert leaf and yard waste*
- *Implement a program to compost leaf and yard waste delivered to the Middleville WDS, in accordance with O. Reg. 101/94.*

7.2.2 Backyard Composting

The simplest and most cost-effective way to remove residential kitchen and garden waste from the waste stream is through backyard composting. Residents can benefit directly from their own efforts by producing compost. Pests and nuisances can be mitigated through proper education as materials entering the composter do not include meat or dairy related items. In remote locations where bears are a risk factor, residents can be requested not to include materials such as coffee grounds or tea bags to reduce the food aromas generated by these materials

O. Reg. 101/94 requires that all municipalities with populations over 5,000 provide backyard composters to residents along with information on their use. The regulation specifies minimum requirements with which municipalities must comply. Backyard composters must be made available to residents by the municipality at cost or less. The Township currently supplies backyard composters to its residents at cost. The municipality must publicize the availability of home composters, explain their proper installation and use, and encourage home composting.

The WDO Datacall uses the GAP approach to waste management that assumes each backyard composter diverts 100kg/hh/y of organic waste per year per unit. It has been found that typically 25% of households will use a backyard composter in moderately promoted programs and 50% in an intensely promoted program. If the Township achieved 50% participation in the backyard composting program and each household diverted 100 kg/hh/yr (3,213 households in total), this would represent approximately 160 tonnes of additional diversion from landfill.



Port Colborne is an example of one of the more aggressive backyard composter programs where free backyard composters were delivered and installed for all 20,000 households in the City. Approximately 80% of the households initially agreed to participate during the launch. Student employees trained in backyard composting went door-to-door to assist residents with their composters after installation. Four (4) years after the program was launched, 63% of households were still using their composters representing approximately 28% diversion of the City's waste stream.

According to Norseman Environmental Products (Norseman), composter units average \$40/unit (delivery fees included). A minimum quantity 100 units must be purchased. The Township may wish to subsidize the cost of the composters at \$10/unit, which would result in a net cost for residents of only \$30/unit. The Township may also wish to hold an annual event day to promote backyard composting and sell composters, at a centralized location (i.e., local school or town-hall), once per year. The two potential options for implementing a backyard composting program are:

- Subsidizing composters at \$10 off the unit cost for approximately 800 units (assumes 25% participation) = $\$10/\text{unit} \times 800\text{units} = \$8,000$.
- Fully subsidize composters with initial capital investment of 800 units ($\$40/\text{unit} \times 800\text{units} = \$32,000$) with a *full rebate* for residents upon purchase of units.

In both cases, the level of promotion of units will impact the payback on investment.

In contrast, the cost for municipal Green Bin organics collection would be well above \$8,000. The cost of kitchen mini bins alone, at \$5/unit, would be approximately \$16,000 for 3,210 households. This does not include collection, processing, P&E roll-out or administration costs associated with the program.

Highlights

- *Distribute backyard composters to residents and provide education on backyard composting (e.g., methods to reduce pests and other nuisances). The Township may also wish to consider subsidizing the cost of backyard composters to residents.*

7.2.3 Disposal Bans and Clear Bags

Waste disposal bans (also called mandatory recycling policies) target the portion of readily divertible waste not being captured through voluntary household participation in available waste management programs. In doing so, enforcement is dependent on the waste being visible for inspection. Most commonly, the implementation of this strategy is reliant on the waste collector (or depot attendant) refusing the collection of waste that is not properly sorted.

In an effort to expand the extent of waste collection bans, clear bag policies that require residents to set-out their residual garbage in transparent bags are being implemented by waste management authorities. Replacing the common opaque (black/green) residual garbage bag with a bag that is transparent allows for greater ease of enforcing the use of waste diversion programs and reduces overall residual garbage tonnages.

As of April 1 2011, residents of the Township of Central Frontenac will be required to purchase \$2.00 clear bags from the Township. The clear bags will give waste site attendants the opportunity to scan the bags to ensure that



recyclables are not sent for disposal. Recyclables will be removed from the bags and placed in recycling bins. According to the Township's waste management coordinator, even experienced recyclers find that from 20% to 40% of the material in the clear bags can be pulled out and recycled (Frontenac Feature, Jan 2012). Refer to the WRS for a listing of other municipalities that have implemented a clear bag program.

Municipalities in the province of Nova Scotia, where provincial law prohibits the landfill disposal of recyclable, compostable or household hazardous wastes, were amongst the first in Canada to launch clear bag collection strategies. Greater than half of the Nova Scotia municipalities currently have clear bag programs in place. Data collected for 13 of these municipalities since 2005 has shown significant positive effects on waste diversion, including:

- a decrease in residential residual garbage of 41%;
- an increase in recycling tonnage of 35%; and
- an increase in organics tonnage of 38%.

In evaluating the effect of clear bag policies on increased waste diversion in other municipalities, it is important to note that other initiatives, including user pay, bag limits or Source Separated Organics (SSO) diversion introduced simultaneously may also be attributable to any observed improvements.

Research conducted by Quinte Waste Solutions through Stewardship Ontario's Effectiveness and Efficiency Fund details the results of multiple clear bag programs in Canada, the results of which can be attributed as directly related to the implementation of a clear bag policy (Quinte Waste Solutions, 2008). This is due to the fact that the implementation of other waste diversion strategies pre-dates the initiation of the clear bag program. Program results, which according the Quinte Waste Solutions study can be directly attributable to clear bag requirements, demonstrate improved program efficiencies ranging as follows:

- 25% to 37% decreases in residential garbage tonnages;
- 12% to 100% increase in residential recycling tonnages; and
- 24% to 27% increases in residential organics tonnages.

A disposal ban on recyclables, implemented through the Township's current by-law and reinforced by a clear bag policy, would likely have a positive effect on the Township's diversion rate. Rather than administering a fine for violations, the by-law might require that all contaminated bags be denied collection until the material is removed. In the case of curbside collection, the bag would be left at the curb with a notice of violation. For example, the City of Hamilton uses "OOPS!" stickers, indicating the reason why the bag was rejected.

In order to promote a ban on disposing of recyclable materials, a number of municipalities in Ontario have implemented different tipping fee rates for unsorted versus sorted waste. In other words, a higher rate is assigned to unsorted mixed waste and a lower tipping fee rate to sorted waste. Refer to Table 11 for a comparison of these dual tipping fee rates amongst three example municipalities.



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Table 11: Unsorted and Sorted Waste Tipping Fee Rates

| Example Municipality | Unsorted Mixed Waste | Sorted Waste |
|-----------------------|--------------------------|---------------------------|
| Hanover, Town of | \$160/tonne | \$100/tonne |
| Orillia, City of | \$230/tonne | \$115/tonne |
| Ottawa, City of | \$192/tonne | \$96/tonne |
| Peterborough, City of | \$90/tonne (over 100 kg) | \$45/tonne* (over 100 kg) |
| Simcoe, County of | \$230/tonne | \$115/tonne |

*For recyclables (cardboard, green waste, blue box material, drywall and scrap metal)

These dual tipping fee rates emphasize the value of diversion and offer an “abuser pay” system to penalize those who don’t recycle and benefit those who do.

It is difficult to estimate the additional diversion that would be achieved by implementing a ban on recyclable materials and a complimentary clear bag policy.

Highlights

- *Implement a ban on recyclable materials being mixed with garbage in the curbside collection program and garbage being brought to the Township’s Recycling Depot/Transfer Stations.*
- *Implement a clear bag policy for garbage bags which allows for easier screening of recyclables in the waste stream and greater ease of enforcing the disposal ban.*
- *Implement higher tipping fee rates for unsorted mixed waste versus sorted waste brought to the landfill.*

7.2.4 Re-Use Programs

It is well recognized that a significant amount of material that is sent for disposal is still quite useable. Many people would be pleased to be able to purchase or receive used furniture, clothing, and kitchenware that are no longer desired by the original owner. The difficulty is in providing the infrastructure to ensure that good useable items are available to people who would be able to use them. Furthermore, quantifying the contribution of reuse programs to a municipality’s waste diversion rate can be challenging.

The Municipal Datacall Residential GAP Analysis diversion rate calculation includes municipally operated (directly or through contracted services) reuse activities. Reuse activities operated by other third party agencies within the community (e.g. Goodwill, Salvation Army, etc.) are not considered municipal tonnages. Although municipal waste diversion calculations completed independently of the Municipal Datacall process can provide for the contribution of non-municipal reuse strategies, obtaining accurate and consistent means of measurement may be challenging.

The Township, in partnership with a group of local volunteers, operates a Reuse Centre at the McDonald’s Corners WDS. This facility collects useful goods for donation in an effort to divert such items from the landfills. The Township reported a total of 36.7 tonnes of material diverted for reuse in 2010 (2010 Datacall), 75 tonnes in 2011 (2011 Datacall.), and 118 tonnes in 2012, from which a clear increasing trend can be identified.



The Reuse Centre at the McDonald's Corners WDS accepts a wide variety of useful goods for donation. Some of this material is stored indoors, while the rest is placed outdoors in front of the facility for display, or beneath a covered roof, as shown in Figure 15.



Figure 15: McDonald's Corners Reuse Centre

Diversion from landfill due to the Reuse Centre increased from an estimated 16 tonnes of material in 2009 to approximately 118 tonnes in 2012. No weigh scales are currently in place at the Centre and all tonnages were estimated using average assumed weights for each item dropped off.

During the winter season, many large items must be turned away due to the lack of covered storage capacity at the Centre. In the summertime this is not an issue, since certain material can be displayed out in front of the Centre, without a cover.

Expanding the covered portion of the Reuse Centre would provide additional space for storing goods and eliminate the need to turn away material during the winter due to snow / moisture. Expansion would also protect material from summertime elements such as rain. To limit the amount of moisture entering the storage area, awnings or vinyl flaps could be installed on the covered portion of the facility. Shelving units or storage bins might also be constructed to keep the material organized and maximize space.

In addition to reuse centres or drop-off areas, a variety of programs have been established across municipalities to encourage and facilitate reuse of lightly used residential goods. These include, community reuse events, electronic reuse forums and return to retailer programs. All options are discussed in detail in the sections that follow.



Community Reuse Events

The City of Ottawa provides a good example of the promotion of reuse by means of community reuse event days. On two (2) designated weekends each year, the City of Ottawa encourages residents to place unwanted good quality household items at the curb open for browsing by “treasure hunters”. Items are to be marked “free” and are to be set-out for browsing only during daylight hours. The Give Away Weekends are advertised by the City of Ottawa in advance. In encouraging diversion before disposal, residents are saved from transporting readily reusable goods to a charitable donation site or municipal waste disposal site, and “treasure hunters” are able to search out a wide number of goods in a very convenient manner. As participants, residents are asked to follow Health’s Canada’s *Facts for Garage Sale Vendors* and refrain from putting goods that pose a potential health and safety concern (e.g. car seats, bath chairs, mattresses) at the curb. The City of Ottawa does not report significant concerns with respect to the cleanup of items at the close of each event.

The City does not keep track of the amount of material that is exchanged, so it is difficult to estimate the amount of waste that is diverted from landfill as result of the Give Away Weekends.

Electronic Forums

The internet has become a readily accessible, convenient means of advertising and coordinating the sale of unwanted household goods, often across vast distances. Public internet sites, such as EBay, Kijiji and Craig’s List are well known searchable electronic classifieds where individuals and organizations can seek out and sell anything from toys and games to jewellery to art. Meanwhile, goods exchange software programs are appearing on the market for purchase by municipalities to facilitate their reuse strategies (e.g. iWasteNot Systems). The City of Peterborough’s (PeterboroughReuses.com) website and the City of Ottawa’s Take It Back!’ program offer good examples of municipally facilitated reuse systems.

PeterboroughReuses.com is an internet based resource established through collaborative efforts of the City of Peterborough, County of Peterborough and the local environmental group, Peterborough Green-Up. The website serves as an online “classifieds” database for individuals looking to either purchase or sell used goods. In addition, PeterboroughReuses.com features a green business guide, providing residents with tips on sustainable purchasing practices. The website is jointly administered by the contributing parties. However, users of the site arrange their own exchange of goods.

The City of Peterborough reports that their cost share for the project, which is provided to Peterborough Green-Up to cover their responsibilities relating to the website, is \$5,250 annually. An evaluation of the effect of the website on the City and County’s waste generation rates has not been completed. It is reported that the site receives approximately 750,000 hits per month, which is likely not an accurate indication of the website’s success as each visit to the website, whether it results in a completed transaction or not is recorded as a hit.

The Township would be responsible for the local management of the site and any local marketing efforts.

CIF also provides funding and support for municipalities to set up a website to include an online waste exchange for residents to use for free. In addition, the website can be used to:

- Advertise local waste management events/news; and
- Provide a “recyclopedia” of information on how and where to recycle special materials.



Return to Retailer

Return to Retailer (“RTR”) programs are considered a means of advancing the principle of EPR. Through RTR programs, responsibility for the physical and financial management of a product is transferred away from the municipal waste management system towards a supplier, importer and/or manufacturer. Often RTR programs function on a very local scale and are advertised at a grass roots level.

The City of Ottawa’s Take It Back! Program provides a good example of an RTR program. Through the Take It Back! Program, residents can search and access a database of nearly 600 local retailers registered with the City of Ottawa as either a reuse or recycle depot for a specific waste good(s). Retailers are responsible for sustainable management of the waste types collected at their own cost. In partnering with the City of Ottawa to increase improved product stewardship, retailers receive increased awareness of their business through City-wide advertising of the program and participating partners.

Alternatively, many communities are now posting website links to various online databases for RTR collection on their websites or advertising the URLs in local newspapers, newsletters, etc. Current databases for the collection of WEEE, MHSW, scrap tires can be found at recycleyourelectronics.ca, makethedrop.ca and greenmytires.ca respectively. As an example, at recycleyourelectronics.ca there are currently 6 listings for WEEE collection in the Township.

Highlights

- *Expand the covered portion of the Reuse Centre, so that capacity restrictions do not limit diversion potential.*
- *Consider installing a large platform weigh scale at the Reuse Centre to accurately monitor diversion amounts and success.*
- *Develop additional reuse program(s) such as those described above. An application could be submitted for CIF funding to supplement the cost of these programs.*

7.2.5 Construction and Demolition Waste Diversion

C&D waste refers to waste generated by construction and demolition activities. It generally includes materials such as brick, painted wood, drywall, scrap metal, cardboard, doors, concrete, windows, wiring, etc. It excludes materials from land clearing on areas not previously developed. C&D waste can come from residential sources such as house renovations or from non-residential sources, for example the construction or demolition of office buildings.

Key materials in the C&D waste stream that are generally targeted for diversion include:

- Wood;
- Concrete;
- Asphalt (e.g. shingles);
- Gypsum (e.g. drywall); and
- Metals.



In addition to Blue Box recyclables, e-waste, tires and scrap metal, the Township also accepts C&D waste (e.g., wood, shingles, concrete, drywall), white goods and bulky items such as mattresses according to the tipping fee schedule provided in Table 2. However, currently only Blue Box materials, scrap metal, e-waste and tires are diverted from landfill and recycled. The rest of remaining materials is landfilled or set aside and stockpiled in accordance with the Site's Design and Operations Plan.

Another challenge to diverting C&D waste is the uncertain markets for this material. For example, certain materials are not always appropriate or simple to recycle (e.g. chemical substances on gypsum board), while other types of materials may not have an end market within a reasonable transportation distance.

The Township does not currently have a specific program in place for the diversion of C&D waste (except for scrap metal). The two closest C&D processing facilities are the Tomlinson facility in Ottawa and the OVWRC; however, both of these facilities are not currently able to accept C&D waste from the Township. Given the circumstances, the Township may wish to consider alternative diversion activities for their C&D waste, which is discussed in the following sections.

Wood Waste (and Brush)

Wood waste and brush can be mechanically chipped / ground and used for a number of applications, such as landfill cover, by landscaping companies, as a bulking agent for composting, or as a feedstock for fiber boards manufactures.

Based on the quantity of wood waste being generated in the Township, it is anticipated that a grinding contractor would need to be brought in at least twice a year to grind the stockpiled wood and brush waste. According to National Grinding, located in the Town of Renfrew, the grinding rate to process approximately 25 tonnes/hour of wood is an estimated 500\$/hr. Mobilization charges are separate. National Grinding currently has a minimum mobilization fee of \$400 per unit or \$2.45/km (one way only). All costs would need to be confirmed via formal quote. In the case of wood grinding, 2 units would be required (i.e., mobile Maxi-Grinder unit plus a float excavator/loading device).

Some municipalities have tendered for grinding rates on a cubic meter basis (e.g., County of Wellington and County of Northumberland). Rates have been quoted at \$4/cubic meter for finished grindings for a three year contract.

Clean wood waste can be ground and used at the leaf and yard waste composting site. According to the proposed revised guideline for composting facilities in Ontario², wood waste is cited as an approved feedstock and is referenced most often for its use as a bulking agent, bedding material and to control odours. As stated in the guideline, "Wood suitable for composting generally includes lumber, tree trunks, tree branches or other wood wastes, except for particle board, that are not contaminated by glue, paint, preservatives or other materials or attached to non-wood material."

The Township currently stockpiles clean wood and brush separate from wood waste that is contaminated by glue, paint, preservatives or other materials. Wood chips from the clean wood pile could be used as a bulking agent for future leaf and yard waste composting operation and the ground chips from the other material could be

² Guideline for Composting Facilities and Compost Use in Ontario, November 2009 – Draft for Consultation, Ministry of the Environment



used as landfill cover. An amendment to the Township's ECA would be required to use wood chips as daily landfill cover. Depending on the landfill's current ECA, the amendment may also be required to include provision for additional stockpiling quantities. The grinding contractor would operate independently under their own mobile unit ECA. It may be necessary to conduct grinding operations several times a year due to concerns regarding the size of the wood waste pile and associated fire hazards.

Asphalt Shingles

Asphalt shingles can be ground and either recycled into new shingles or used as landfill cover. For example, the OVWRC has their asphalt ground and uses it as daily cover on their waste disposal site.

Based on the quantity of asphalt shingles being generated in the Township, it is anticipated that a grinding contractor would need to be brought in once a year to grind the stockpiled material. This processing could occur in conjunction with wood waste grinding. According to National Grinding, the grinding rate to process approximately 25 tonnes/hour of asphalt shingles at an estimated \$575/hr. Mobilization charges are separate, as previously described. All costs would need to be confirmed via formal quote.

Specific to the Township, an amendment to the ECA would be required to use asphalt as alternative daily cover. Operational costs require third party grinding services from a service provider capable of grinding shingles which excludes many smaller tub grinding systems.

Concrete, Brick, Slag, Rock and Rubble

Crushed concrete, brick, slag, rock, rubble, and even porcelain toilets can be crushed and used for a number of purposes, including on-site landfill roads, road beds or ditch drainage material.

The City of Brantford accepts this type of material at their landfill at a reduced tipping fee. The material is stockpiled on-site, and when the stockpile is large enough a crusher is brought in to crush material on-site. The crushed material is stockpiled on-site and use for on-site needs, or as road materials when it passes the specifications (i.e., Granular B) for municipal projects. The OVWRC also accepts this material from partner municipalities and uses it for on-site road construction.

Drywall

Currently, New West Gypsum located in Brampton Ontario, is the only licensed processor for drywall within the province. Tipping fees are approximately \$57.50/tonne, which does not include hauling costs. OVWRC hauls material to New West Gypsum using a walking floor trailer to haul approximately 24 tonnes per load at a rate of \$1,440 per trip. Material should be covered if it is going to be outside for longer than three months. Drywall is heavy to manage as a result, saw-tooth bin designs are preferable to reduce health and safety risks on site for both operators and residents.

Alternatively, consideration could be made to encourage a central transfer point within the area for the central hauling of drywall material. Discussions with local haulers may result in the ability to establish a transfer point in Eastern Ontario for drywall transfer. This could be encouraged as a joint venture between the Township and neighbouring municipalities.

Other Materials for Diversion

New processing opportunities are emerging for additional materials such as white goods and bulky goods (e.g., mattresses) and ceramics. However these tend to be expensive, especially when long haul distances are



involved. For these items, encouraging reuse wherever possible may be the best course of action. This could be achieved through additional signage at the landfill advertising the Township's Reuse Centre or via education provided by site attendants. It is also recommended that the Town continue to track materials coming into the landfill site in order to determine the quantities of specific materials.

7.2.5.1 Infrastructure Needs for C&D Waste Diversion

In order to be able to capture C&D materials for diversion from the landfill site, it is important to have areas that different material types can be properly segregated and stored so that it can be sent away for further processing.

The infrastructure to collect segregated materials typically incorporate elevated ramps, with rolloff bins sitting at a lower level, so that materials can be dropped down into the bin, and hinged counterweighted lids that are easy to move. It is important that safety features such as guard rails be incorporated to prevent people from falling into a bin, and stop logs or bars to prevent vehicle accidents.

Full containers are picked up by a rolloff truck, and transported singly or in pairs by a truck/pup arrangement, to a secondary processor. An empty container is deposited by the same truck that picks up the full one. Rolloff bins often achieve their legal load limit without compaction. For example, the legal payload for a 38 m³ (50 cu yd) bin is about 8 tonnes, which is equivalent to a density of about 210 kg/m³.

This system is fairly economical in terms of capital cost, is capable of accepting several different types of materials, is uncomplicated, is flexible because more containers can be added when volumes increase, and is generally well accepted by the public.

Providing adequate staffing of the Material Segregation Area is of utmost importance and offers multiple benefits. Ideally staff can do all of the following:

- Maintain good housekeeping;
- Operate loader to clean up around the bin and move materials within the site;
- Track participation data;
- Educate residents on what can be brought to the site; and
- Prevent scavenging and contamination.

Figure 16 depicts an example of a saw-tooth design for recoverable materials such as scrap metal, shingles and wood.

Poured concrete or block walls are effective for the staggered walls. Municipalities typically contract out the roll-off bins and collection to a third party hauler to reduce the costs/liability associated with owning and maintaining roll-off bins. Common sizes of bins are 50 cubic yard bins which are approximately 6-7 feet in height. The retaining walls are somewhat lower so the bin wall exceeds the height of the retaining wall for safety measures and to



Figure 16: Saw-Tooth Design for Material Segregation Area



reduce the need for barrier railings. In the instance of using a bin for drywall, third party haulers may provide tarp/ coverings for the bins for moisture protection.

This type of Material Segregation Area provides convenient collection for materials such as scrap metal, wood, drywall and WEEE. Materials such as shingles, brush, concrete, brick, rock and rubble may be better stockpiled in an isolated area of the site awaiting sufficient quantities to accumulate to justify bringing in a grinder or crusher.

The estimated capital cost for a six-dock poured concrete Material Segregation Area that could accommodate six bins is \$290,000, which includes the following:

| | |
|---|-----------|
| ■ Design costs | \$15,000 |
| ■ Poured concrete retaining wall | \$150,000 |
| ■ Poured concrete pad for base area to support bins | \$50,000 |
| ■ Loader to turn windrows (shared 50% with other site duties) | \$75,000 |

Highlights

- *Implement C&D diversion activities at the Middleville Landfill site) such as those described above*

7.2.6 Household Hazardous Waste Diversion Days

MHSW is currently only collected at the MHWD located at the Middleville landfill. An annual collection / diversion event would provide improved access for residents to take unwanted MHSW materials to an appropriate location where it will be diverted from landfill. Such an event could also serve to further promote the Township's MSHW program and educate residents about the benefits of diversion. Stewardship Ontario could work with the Township to support the event by providing promotional material that the Township could use to encourage resident participation. Stewardship Ontario could also work with the Township to identify the best method to receive and handle the wastes properly, and would be responsible for having the MHSW collected from the site following the event and treated in an environmentally sound manner.

The Township might consider running the MHSW collection day in partnership with a local school(s), which would educate the youth and the public about environmental issues, and develop a sense of community responsibility.



8.0 EVALUATION OF OPTIONS

In this Section, each of the options discussed in Section 7.0 are evaluated based on the following factors:

- Advantages;
- Disadvantages;
- Potential impact on waste diversion;
- Cost implications (capital and operating); and
- Ease of Implementation.

The following criteria were used to quantify the cost of each option:

- Low = under \$1,000 annually
- Medium = between \$1,000 to \$10,000 annually
- High = over \$10,000 annually

The Ease of Implementation ranking is based on potential risks relative to each option. In the table following, criteria were developed to quantify the risk and ease of implementation implications of each option.

- Easy = little or no public opposition anticipated, low capital requirements and/or no negative impact on diversion
- Moderate = generally acceptable options, medium capital requirements and/or little negative impact on diversion
- Difficult = public opposition anticipated / private sector resistance, potential high capital requirements and/or major negative impact on diversion

Table 12 provides an analysis and evaluation of each of the options and makes recommendations regarding which options should be included in the Preferred Waste Management System.



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Table 12: Evaluation of Waste Management System Options

| Option | Advantages | Disadvantages | Ease of Implementation | Capital Cost Implications | Operating Cost Implications |
|-------------------------------|---|---|--|---------------------------|-----------------------------|
| Biweekly Garbage Collection | Impact on diversion small due to limited curb side collection | Possible odours if no green bin collection | Difficult due to public opposition | None | Cost reduction |
| User Pay System – Bag Limits | Increases diversion Increases revenue | Potential for increase in illegal dumping | Moderate | None | Net cost reduction |
| Training of Key Program Staff | Increases diversion Better customer service | Some costs and staff time | Easy | None | Medium (~\$5,000/year) |
| Contract Modifications | Cost efficient due to economy of scale Consistency with other municipalities | Rely on cooperation of other municipalities | Moderate due to Staff time to coordinate | None | Potential cost reductions |
| Enhanced P&E Program | Increases diversion Decreases contamination More revenue from recyclables | Cost | Easy | None | Medium (\$5,000-\$10,000) |



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| Option | Advantages | Disadvantages | Ease of Implementation | Capital Cost Implications | Operating Cost Implications |
|--|--|---|------------------------|---------------------------|---|
| Processing Organic Waste | Increases diversion of organic waste Compliance with Reg 101/94 | Cost | Moderate | ~\$175,000 | High (~\$20,000/year) |
| Backyard Composting | Increases diversion of organic waste | Cost | Moderate | None | Med – High (~\$8,000 - \$16,000/year) |
| Disposal Bans and Clear Bags | Increases diversion | Requires monitoring and enforcement | Moderate | None | May increase revenue if penalty is charged for unsorted waste |
| Re-use Centre Improvements | Increases diversion of reusable materials | Cost and staff time | Moderate | ~\$10,000 | Low |
| C&D Waste Diversion | Increases diversion of C&D waste | Cost of managing recovered materials Distance to markets | Difficult | ~ \$290,000 | High |
| Household Hazardous Waste Diversion Days | Increases diversion | Cost and staff time | Moderate | None | Some subsidy by WDO & RCO. |



9.0 IMPLICATIONS OF IMPLEMENTING WASTE SYSTEM OPTIONS

In order to implement some of the recommended waste diversion programs, the Township will need to invest in capital infrastructure, and some of the programs will also result in an ongoing increase in operational costs. As indicated in Table 12, the implementation of these options may also increase the ongoing cost of operating the waste management system. On the other hand, some of the options (i.e., contract modifications) may reduce the operating costs of the waste system.

It is anticipated that implementing these waste diversion initiatives would decrease the quantity of waste being landfilled in the Township. Based on an estimated fill rate and the remaining capacities for each landfill, it is anticipated that the Township's landfills will reach capacity in 2025. If the Township's waste diversion rate can be increased from the current rate of 42.6% to 50% by 2016, the site life of the Township's landfills would be extended until 2027.

10.0 FINANCING STRATEGIES

There are several mechanisms that municipalities typically utilize to fund the waste services that they provide to their residents, including:

- Property taxes;
- Tipping Fees charged on waste and other materials brought to waste management facilities;
- Variable rate user fees (e.g., bag tags);
- Flat rate fees per household; and
- Extended Producer Responsibility fees (EPR).

The Township, like most municipalities, currently utilizes a combination of these revenue sources to finance their waste management system. Based on the 2013 Township Budget, the funding sources for the waste management system in 2013 is expected to include:

- 39% from municipal taxes;
- 29% from the Site Closure and Capital Fund;
- 17% from waste levies;
- 12% from material sales, grants and EPR fees; and
- 6% from tipping fees.

Although the public has strong support for producers taking on more of the financial responsibility for waste management through EPR programs, the authority for the implementation of these programs rests with the Province. The proposed Waste Reduction Framework for the Province envisions transferring the costs of waste management programs to the individual producers that generate the materials. This fundamental shift in responsibility is expected to take a minimum of four years to implement. In the interim, many municipalities are moving towards a more direct fee system for funding waste management programs. This can be accomplished through user fees (e.g. bag tags, tipping fees) that are quantity based, or through a flat rate



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per household. The relative advantages and disadvantages of tax-based funding systems and direct fee funding is outlined in Table 13.

Table 13: Advantages and Disadvantages of Funding Mechanisms

| | Tax-Based System | Direct Fee System |
|---------------|---|--|
| Advantages | <ul style="list-style-type: none">• Can easily subsidize desirable behaviours (recycling, composting)• Ease of implementation | <ul style="list-style-type: none">• Residents see the cost of waste services provided• Provides a steady revenue source• Removes political interference and competition with other municipal services for funds• Fees can be altered to reflect external influences (material revenues)• Residents have some “control” over what they pay for waste management by adjusting behaviour (buying habits, recycling) |
| Disadvantages | <ul style="list-style-type: none">• Residents have no incentive to reduce waste• Costs for waste management compete with other municipal services (roads, social services)• Difficult to adjust services for different sectors (industry, large multi-family units) | <ul style="list-style-type: none">• Administration of user fees |

The Township is considering a number of initiatives to reduce the amount of waste going to landfill and improve the overall waste management system. It is typical that in order for a municipality to increase waste diversion, operating costs will increase. However, it is also recognized that the cost of waste disposal in the Province of Ontario is expected to increase significantly in the future as landfill capacity continues to be depleted.

10.1.1 User Pay Programs

User Pay Programs were discussed in Section 8.0 as a means of encouraging residents to participate in waste diversion programs.

A study completed by the County of Northumberland in 2004 found that the user fees required to fund the waste management system were as follows:

- A fee of \$2.00 per bag of garbage would cover the cost of collection of garbage and recycling;



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- A fee of \$2.60 per bag of garbage would cover the cost of collection of garbage and recycling and garbage disposal; and
- A fee of \$3.50 per bag of garbage would cover the cost of collection of garbage and recycling, garbage disposal and recycling processing.

The Township may wish to consider funding waste management services with the exception of the landfill operations (which should be funded through landfill tipping fees) through user fees being charged on each bag of waste being set at the curb. Based on the 2013 Budget (see Table 7), the total amount to be funded is \$527,774, which includes the following:

- The \$394,274 currently being funded through municipal taxes; and
- The \$133,500 currently being funded through the household waste levy.

The curbside levy which is charged to residents that receive curbside collection would continue to fund the cost of waste and recycling collection.

Assuming that each permanent household generates an average of 52 bags of garbage a year and that seasonal households generate 9 bags of garbage a year (total 120,437 bags), the Township would need to charge a user fee of \$4.40 a bag in order to fund the waste collection and waste diversion programs offered to the residents.

The advantage of funding all of the waste management costs through a bag-based user fee is that the people who generate the most waste pay the most towards the waste management programs. Residents can reduce their costs by reducing the amount of waste that they generate. This system also ensures that any businesses that are utilizing the municipal waste system also pay for the services.

10.1.2 Increased Tipping Fees

The Township recently installed weigh scales at the Middleville Landfill and established a tipping fee of \$155/tonne for drywall, asphalt singles, construction waste, sofas, box springs, mattresses and other unbagged garbage. The daily operational costs for the Township landfills are being almost fully funded by the tipping fee revenue being received. Whereas as in 2011, only 41% of the cost to operate the Middleville Landfill was recovered from tipping fees, in 2013 it is expected that tipping fees will cover 92% of the cost to operate the landfill.

The Township should monitor tipping fees and adjust them as required if they do not cover the cost of the landfill operations.

10.1.3 A Flat Fee per Household

One of the issues with paying for waste management services through the municipal tax levy is that waste management costs are then allocated to both municipal residents and businesses. However, typically businesses do not receive municipal waste and recycling collection services therefore they are subsidizing the cost of these services that are only available to the residential sector. Some municipalities have removed waste management costs from the tax levy, and charge a flat fee to each household for waste management services. The Town of Arnprior charges \$122 a year to each household to pay for the cost of collection and



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management of waste and recyclables. Residents are then allowed to place two bags of garbage out each week and pay a bag fee of \$2.50 a bag for every additional bag.

The Township of Lanark Highlands currently charges a fee of \$39.00 per household for waste management services and a special curbside levy to residents that receive curbside collection services. These levies bring in a revenue of \$185,000 annually, and the remaining \$394,274 in waste management expenditures are funded through municipal taxes. The Township may wish to consider implementing a per household fee to cover the net costs for providing all waste management services, with the exception of the cost to operate the Middleville Landfill (which would continue to be funded through tipping fees) and waste and recycling collection costs (which would continue to be funded through the curbside levy). Based on the 2013 Budget, a fee of \$164 per household would need to be charged to each household.

A flat fee for waste services more equitably allocates waste management services to the residential sector that receive the bulk of the services. It does not however, provide any incentive for residents to reduce the amount of waste that they place out for collection. It also does not take into account that some residents only use the Township's waste management programs through a limited seasonal period.



11.0 MONITORING AND REPORTING PROGRAM

The Township plans to implement some of the priority initiatives listed in Section 8.0 in order to increase diversion of waste from landfill. As such, the following milestones for monitoring progress relative to the Township's set targets are as follows:

- Divert 23.5% of municipal solid waste **through the blue box program** by 2019;
- Divert 28.2% of municipal solid waste **through the blue box program** by 2024; and
- Divert 32.9% of municipal solid waste **through the blue box program** by 2029.

To track and measure the effectiveness of the initiatives and to meet the requirements as set out in the WDO Municipal Datacall question "Does your plan include a monitoring and evaluation component?", the Township will need to implement a measurement plan.

The model adopted for direct measurement is based on the process developed by Stewardship Ontario, for use by local partners, to measure the impacts from various advertising campaigns. This approach includes the following steps:

- Populating a spreadsheet to track recycling system performance (through collected and marketed recyclables);
- Completing an annual report that provides comments on the performance outcome; and,
- Providing a summary of other measures (e.g. website hits, user surveys, etc.) generated after discreet promotional events.

The Township currently tracks its outgoing recyclable waste quantities through weigh bills provided by the contractors for processing recyclables.

Beginning in 2014, the Township should track outgoing recycling tonnages and review the data on a bi-annual basis to determine trends and what impact the implementation of Priority Initiatives may be having on the tonnage of recyclables being captured.

The spreadsheet should include:

- Collected tonnage;
- A conversion of this data into kilograms per household served; and,
- A calculation of the percentage change in kilograms per household, as compared with the previous 6 months.

In addition, spreadsheet data (both tonnes collected and kilograms per household) will be charted for comparison with the previous two (2) years of similar data.

The Township should also review the data on an annual basis to determine the influence of other factors on the performance of the recycling program, including:

- Introduction of additional initiatives;



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- Revision of Township waste management policies;
- Addition of new residences (single or multi-residential), or commercial or institutional buildings; and,
- Any changes to the collection or processing.

At the end of each calendar year, the Township should prepare a brief summary for Council to update them on the progress of the Township towards their stated diversion goals.

After 2 years, a summary will be created by the Township to comment on the progress made towards reaching their stated diversion goals of 50% capture rate for Blue Box materials.

After 5 years, a summary will be created by the Township to comment on the progress made towards reaching their stated diversion goals of 60% capture rate for Blue Box materials. At this time this Waste Recycling Strategy will be updated and the current 10 year goal of 70% will be evaluated and revised accordingly.



12.0 PUBLIC CONSULTATION PROCESS

The public consultation process followed in the development of the IWMP consisted of the activities outlined below.

- 1) Posting of a public notice of the IWMP for residents through the Township's website and in the Lanark Era newspaper.
- 2) Submission of a draft IWMP to Township personnel and request for feedback.
- 3) A focus group (consisting of Township residents) was formed to review and comment on the draft IWMP.

The final IWMP will be submitted to the Township and presented to Council for their approval.

12.1 Input Received from the Public

Prior to the Focus Group meeting, three (3) submissions were received from the public. A summary of the comments received in those submissions are outlined below:

- Reintroduce an incentive based structure to pay for the disposal of recyclables and garbage (i.e., bag tags).
- Expand the Township's collection programs to include food / kitchen waste collection (and composting).
- Although the idea of a composting facility appealed to one resident, they believed that a composting facility would get little to no use from rural residents, a little up-take from Village residents, and a little up-take from cottage residents.
- There is a need to explain things in economic terms.
- Residents should pay for their garbage by selling stickers, punch cards, etc at the local stores.
- Publicize waste diversion results and remaining landfill capacity.
- Look at how Edmonton has achieved 90% waste diversion.
- Consider a County wide waste management program.
- Sort waste plastics into each of the 10 categories that have economic value.
- Use wood heat to melt plastics into pellets (for sale) or ingots.
- Sell scrap metal to the highest bidder.
- Develop an aerobic digestion facility to create compost and clean fill.

Copies of the public comments received regarding the IWMP are provided in Appendix E. Where possible, effort was made to capture and address the suggestions brought forth by these residents in the draft IWMP.



12.2 Focus Group Meeting

Notification for the formation of the Focus Group and the online survey was provided by the following methods:

- Advertisements in the Lanark Era newspaper on November 7 and 14, 2013;
- Article in the Lanark Era on November 5th, 2013; and
- Posting on the township website.

Surveys were also available for pick-up in the municipal office. Copies of the advertisement and the article that were in the Lanark Era are included in Appendix F.

The Focus Group meeting was held on November 21st, 2013 from 6:00 pm to 8:00 pm at 75 George Street. There were nine people in attendance, including two Township staff and seven Focus Group members. The focus group included representation from the following stakeholder groups:

- Township Council;
- Downtown businesses;
- McDonald's Corners ReUsers
- Four out of seven municipal wards.

Materials available at the Focus Group meeting included copies of the draft IWM report, municipal recycling statistics, and a survey on waste management.

A presentation was given covering the following topics;

- Introduction to the objective of the IWM Plan and the WRS;
- Identified challenges for waste management programs in the Township;
- The Public Consultation process;
- The current waste management system;
- Current waste diversion rates;
- Current waste management system costs;
- Future waste management needs;
- Options to optimize waste diversion;
- The evaluation of waste diversion options;
- Potential financial strategies; and
- Conclusions and Recommendations.

A copy of the presentation is included in Appendix G.



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Following the presentation there was a discussion regarding the current waste management system and options for optimizing the system. A summary of the comments that were recorded during the discussion are included in Table 14.

Table 14: Summary of Focus Group Meeting Discussion

| Area of Interest | Comments |
|----------------------|---|
| Clear bags/User Pay | Go to clear bags – take a long term perspective |
| | Go to clear garbage bags - two bags/week limit |
| | Use clear bags! \$1 per bag paid through waste levy with taxes |
| | Clear bags – should get one warning if recyclables found in garbage bag |
| | Wants clear bags, more ReUse Centres |
| | Wants bag tags |
| | Transition to clear bags – long lead-in time. Cost & availability of clear bags? |
| Waste Disposal Sites | Include value of filling landfill in total cost of operation (e.g. cost of opening new landfill or trucking away) |
| | Concern that increasing cost of garbage disposal will increase littering |
| | Keep unlimited bags at depots |
| | CLEAR MESSAGES thru signage at WDS |
| | Some cottagers show up at Snye Rd waste site with 5 bags of garbage on Thursday night in summer – bringing garbage from the city where they have bag limits |
| | New signage at WDS: what materials accepted, what you pay for, what goes to landfill, where is landfill, how to get there. |
| | Believes in limiting bags at WDS |
| | Wants MHSW collection day at Snye Rd WDS |
| | Keep hazardous waste out of the landfill! |
| | Increase cost to take into account the creation of a new landfill? |
| Recycling | Request for information re: “what is actual cost of landfill space?” |
| | Encourage people to bring garbage to WDS & put materials in proper stream |
| | Businesses should pay their cost of recycling |
| Composting | Motivation for recycling – what can we do to inspire people? |
| | What level of recycling contamination is OK? (Need instructions in P&E about how clean containers need to be.) |
| | Doesn't want to compost at home – wildlife |
| | Backyard composting brings animals |
| | No support for compost facility at WDS – people will not want to drive their compost to WDS & animal issue will relocate to WDS. Too stinky |
| | Promote backyard composting as essential means of diverting solid waste, 'wet waste.' Stock composters at municipal office again & sell at cost or less |



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| Area of Interest | Comments |
|-----------------------|--|
| | Make design plans available to build a backyard composter. Offer workshop |
| Promotion & Education | Wants to see direct links to waste & recycling on Township website. Clutter on main page – waste management hidden under 'services' and hard to find |
| | More composting education would result in more garbage being diverted to composters |
| | Use statistics to promote what people should do. BC has good programs. COMPOST! |
| Miscellaneous | Would like to see local small scale demonstration project processing plastic |
| | Do waste audit to see what blue box materials people are throwing away |
| | Waste Audits upset the public if they see you doing it |
| | Create a ReUse Centre at Middleville WDS |
| | BAN single use plastic bags in township |
| | Hard stance on policy enforcement |

Focus Group Survey Responses

An important component of the Focus Group meeting was the implementation of a survey. The survey asked for feedback on the following topics:

- Rate Us: respondents were asked for feedback on current services including curbside collection, promotion and education, customer service, and depots or drop-off locations;
- Respondents were asked where they would typically look to get information on township waste management programs;
- Options to improve program participation: respondents were asked to rate the importance of possible changes to existing programs aiming to increase program participation and diversion;
- Financial Strategies: respondents were asked to rate their support for bag fees, tipping fees, flat fees; or reducing services as a method to fund waste management;
- Other ideas: asked participants to provide their ideas for reducing the amount of garbage going to landfill; and

A copy of the survey is included in Appendix H.

The survey was available online, distributed in hard copy at the Focus Group meeting, and available for pick-up at the municipal office. A total of five Focus Group members completed the survey. One other resident completed the survey and returned it to the municipality.



Rate us – how are we doing?

Respondents were asked a series of questions to evaluate their satisfaction with current waste management services, including curbside collection programs, drop-off services, promotion and education programs and materials, and responses to customer service inquiries. The results are shown on Figure 17. It was apparent that none of the respondents who filled in the survey received curbside collection of recyclables or garbage. Overall, the majority of respondents rated the drop-off services at the TS and WDS and the customer service responses as good or excellent, with one “poor” rating for drop off services. The ratings for the Township’s P&E and website were generally poor or fair, with only one respondent giving a “good” rating.

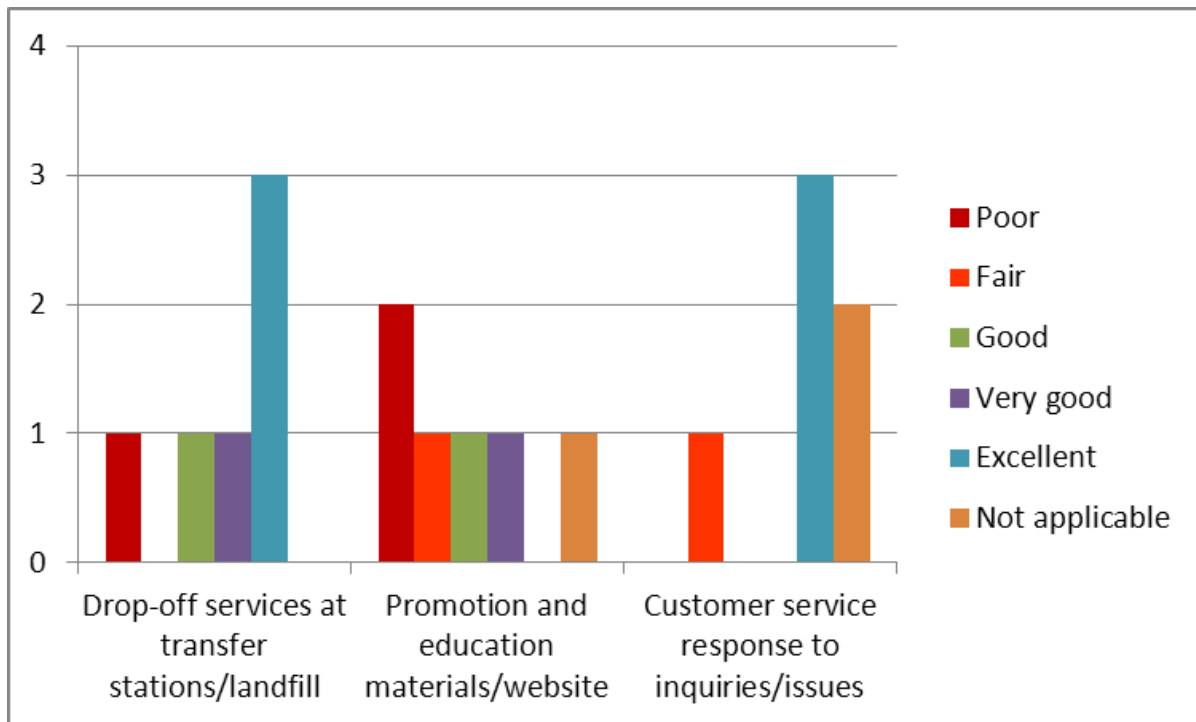


Figure 17: Summary of Responses on Satisfaction with Existing Services

Additional comments received with respect to this section of the survey include:

- Need for better promotion at the transfer sites, better signage listing what can be dumped and what cannot. Alternatives need to be posted (i.e., Middleville for construction material and directions to get there). Possibly there could be a supply of handouts with a map and hours of operation for Middleville.
- A request for education for disposal of CFL bulbs and fluorescent tubes with short term “bins” and information at waste sites.
- The scrap metal area (McDonald's corners) is not contained as much as it could be. Once metal is carted away there are sharp objects (screw, nails) left behind. These can damage tires. Consider a barrier (6 inch to 1 foot) that could separate vehicle access area from metal drop off.



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- The start of good household waste management is composting. Keeping material that will decompose from the waste stream has a positive effect on that which remains.
- As one of the largest employer and taxpayers in our ward I receive no service what so ever. the service provided is of no use to our business.
- The Snye Road site needs to accommodate some method for its clients to get rid of construction/demolition waste. A high percentage of residents do 'do-it-yourself' projects throughout the year. Using the Middleville site requires a one hour drive out of the municipality. A construction waste bin several times during the summer/fall would be appreciated.

Where to Obtain Information on Waste Management Programs

Respondents were asked where they would typically look to obtain information on the Township waste management programs. The majority of respondents would look on the Township website or in the *Highland Voice*, with some suggesting mailouts with tax bills or at the Municipal Office. No one stated they would look to obtain the information from the newspaper.

Waste Management Optimization Options

Next, respondents were asked to rank ways to reduce the amount of waste going to landfill based on importance. The results are shown on Figure 18. A disposal ban on recyclables, training of key program staff, enhanced P&E programs, backyard composting, improving re-use programs, increasing diversion of C&D waste and HHW diversion days were ranked as the most important initiatives. A biweekly garbage collection system was the initiatives identified most frequently as not important.

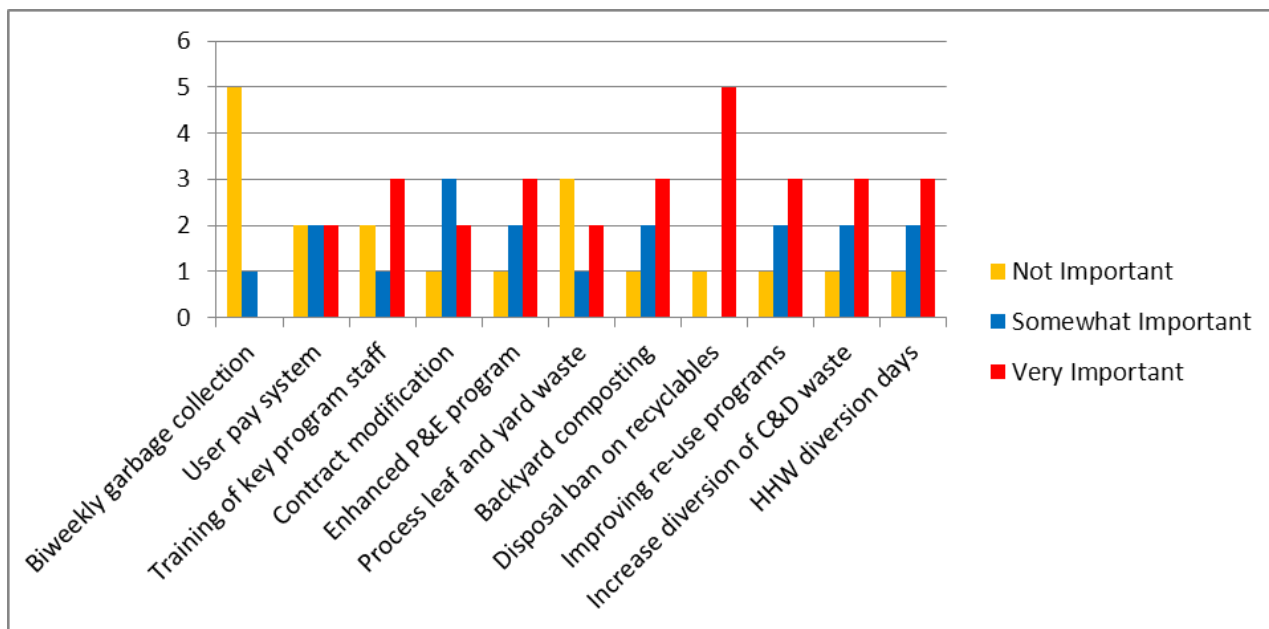


Figure 18: Summary of Responses on Waste System Optimization Options



Additional comments received with respect to this section of the survey include:

- User pay could be implemented after a “one free bag” limit. It should be with 50 tags sent out at tax time. This would allow each household 2 bags a week but would have the perception of a “user pay” system without any actual cost to the family. Cost of tags and policing this would have to be addressed and deemed worthwhile or not.
- Clear bags may be a good idea as again the perception would be that contents of the bag can be seen. Some sort of regulation would have to be set up as to what happens when people’s household garbage is sent away from the site. Without a clear understanding of the program and the consequences for both the individual and for the township. This program could become difficult to maintain and may add to the roadside garbage. We also have to think of the site workers. Are they really paid enough to police this issue with their neighbours and friends?
- Diversion of construction materials would be nice but not likely feasible as we are many miles away from the facilities that would be needed to make this reasonable.
- The ability to have a well advertised hazardous waste day once or twice a year at the Snye Road site would be a benefit.
- Pests are a problem with composting at one’s home. Community composting will help provide enough bulk to sell the compost produced.
- Add “wet waste” kitchen waste to composting at Middleville. Charge \$2 for blue box full.
- No free bag tags. Combine with blue box “donation” one for one or a limit on the number of bags. Then pay an overall yearly limit since people likely accumulate bags in order to reduce the number of trips to waste sites (difficult to organize and manage)
- Clear bags and assistance at waste sites.
- Unfortunately the lack of service. Makes your initiatives irrelevant.
- One of the biggest expenses is probably “fuel costs” with garbage pick up. If all types of garbage were collected in one truck and taken to a central recycling/sorting building, might be a better idea. The facility to be shared by other communities in County
 - Creates jobs/employment
 - End products are valuable
 - Shared cost of building allows poorer townships to participate in a bigger program
- It’s time for municipalities to get together to solve the garbage/landfill problem. Landfill is just a problem delayed for the next generation. It is not a solution. Money spent now is an investment in the future. There is money in waste.



Financial Strategies

As stated previously, the Township currently funds the waste management program through tipping fees, municipal taxes, waste levies, material sales, grants and producer fees. Respondents were asked what strategies they thought the Township should implement in order to finance the waste management system. The results are shown in Figure 19. As indicated, there was strong support to have tipping fees cover the cost of recycling and waste programs, with some support for charging a fee per bag to cover the cost of recycling and waste programs. There seemed to be less support for charging a flat fee per household to cover the cost of recycling and waste programs. Generally, there was strong opposition to reducing the operating hours at the waste sites or to closing some of the waste sites to reduce operating costs.

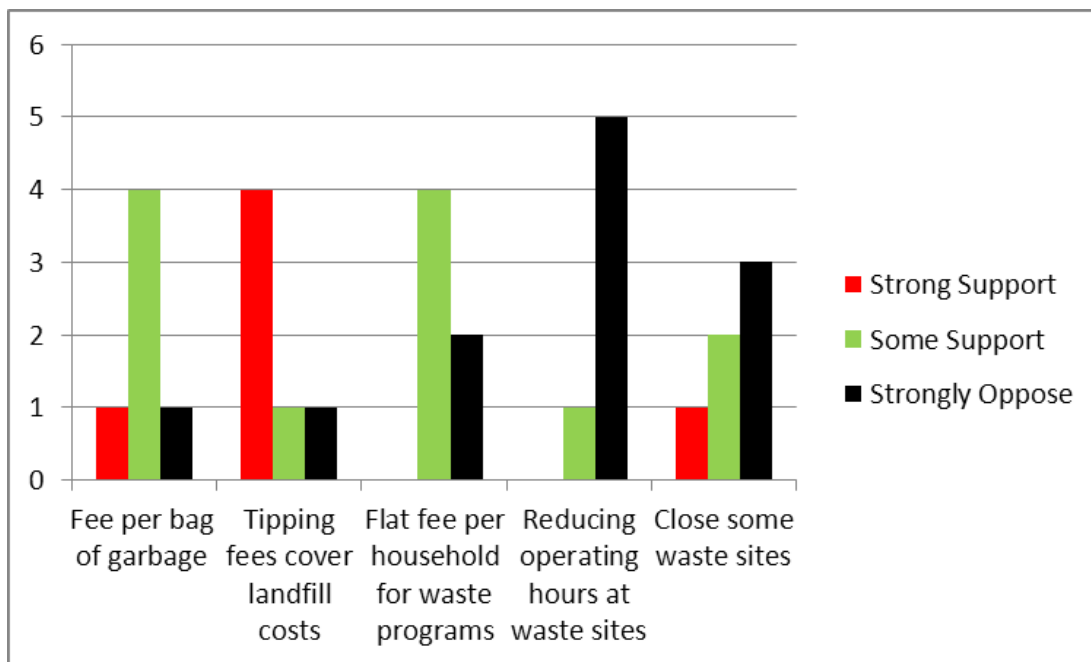


Figure 19: Summary of Responses on Financial Strategies

Additional comments received with respect to this section of the survey include:

- Tipping fees should not only cover the cost of tipping but also be sufficient to create a fund for future capital pertaining to waste management.
- Bag fees or flat rate charge to cover cost of recycling. Either one, but it needs to be out there and in people's face so that we are all aware of the huge cost of managing our waste. The numbers quoted in report were very high and more residents need to be aware of this.
- If the Lanark Village site is still open I would suggest that this one is not needed as there is curbside pickup in the Village. Additional waste disposal is available at Middleville, just a short distance away.
- I am impressed with the policy of Tay Valley – 1 container of recyclables = 1 free bag of garbage.



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- With diversion incentives like this in place, there is nothing wrong with the balance of the waste management costs being “hidden” in the tax bill. After all, roads and plowing are not 100 percent user pay. Education is not user pay, etc.
- Typically Ward 2 is the first to lose services, therefore I oppose closure (of waste sites) as I am sure ours would be first to go.
- In the south end of L.H. many of the rural area communities are linked by good roads thus giving access to a central transfer station. The number of sites could be reduced and the number of hours at a central site could be increased.

Other ideas

The survey included an open ended question for respondents to provide any other ideas they had to reduce the amount of waste going to landfill. Here is a summary of some of the suggestions submitted:

- Lanark Highlands need additional income, has a budget problem, a waste management problem, has seasonal unemployment and has a lot of remote unused land accessed by roads that we can't afford to maintain. Is it time that we evaluated all these issues and consider a large scale waste site of some type that would include sorting and recycling on a proper level and add money to the budget by accepting waste from other municipalities. Waste and recycling has been a growth industry for some time now. I know this is “way out there” but we need to start thinking “outside the box” sometime soon about these issues.
- Promote/encourage/support a Re-Use Centre at Middleville.
- Investigate Township wide ban on single use plastic bags.
- Township offer by sale home composters along with blue boxes.
- More and more regions are going to central building /locations where sorting/recycling takes place. Several towns/municipalities/counties could/should share in this idea. The time for “NIMBY” is over.



13.0 CONCLUSIONS AND RECOMMENDATIONS

- 1) Several options for improving the effectiveness and efficiency of the Township's Waste Management System were identified and evaluated. The Township formed a focus group to review and comment upon the potential Waste Management System Options.
- 2) Specific challenges facing the Township of Lanark Highlands in the delivery of waste management services include limited budget and personnel for waste management initiatives and a large geographic area and relatively small population.
- 3) The Township currently operates seven waste disposal sites/transfer stations. Based on current waste generation and diversion rates, these landfills should have sufficient capacity to service the Township until 2026.
- 4) If the Township increased their waste diversion rate from 42.6% to 50%, the lifespan of their landfills would be expected to increase to 2027.
- 5) Residents in the Village of Lanark have curb side collection of waste and recyclables, while all other Township residents take their waste and recycling to a waste disposal site/transfer station.
- 6) Based on the GAP process, the waste residential diversion rate for the Township was 42.62% in 2011. The average GAP waste diversion rate for the WDO municipal grouping "Rural Depot – South" was 28.68% in 2011.
- 7) The Township's costs for blue box recycling are \$533.75 per tonne, or \$37.82 per capita, which is below the average for the WDO municipal grouping "Rural Depot – South". The implementation of the Priority Initiatives identified in this plan may increase some operational costs at the same time as increasing diversion rates.
- 8) A number of financing strategies were identified for funding the Waste Management System, including property taxes, tipping fees, user fees, and flat rates per household.
- 9) The Township should implement a monitoring and reporting program to track progress toward achievement of the waste diversion targets specified in the Waste Recycling Strategy.



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Report Signature Page

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APPENDIX A

Waste Recycling Strategy



WASTE RECYCLING STRATEGY

The Waste Recycling Strategy (WRS) was completed based on the Continuous Improvement Fund (CIF)'s *Guidebook for Creating a Municipal WRS*. The WRS guideline outlines a framework and principles for decision-making for waste managers. It provides direction to develop long-term municipal waste recycling plans for blue box materials.

It is an expectation of Waste Diversion Ontario (WDO) that all communities put in place a recycling plan or strategy. Future WDO funding is dependent on implementing the WRS and meeting the targets established by the WRS.

Existing Programs and Services

Currently the Township of Lanark Highlands has the following policies in place to manage municipal solid waste:

Bag limit enforcement for curbside garbage collection in Lanark Village (two (2) bags per week per residential household and five (5) bags per week per commercial and industrial establishments);

A tag and leave policy for unacceptable Blue Box set outs.

Despite the bag limit enforcement, residents in Lanark Village are permitted to drop off bagged garbage, free of charge, at any of the Township's recycling depot/transfer stations.

As previously discussed, waste disposal services for garbage and recyclables are provided to residents through weekly curbside collection and residential drop off depots / transfer stations. Disposal and recycling services are paid primarily through general tax revenue, supplemented by the cost sharing agreement with WM for the sale of marketed recyclables.

Up until mid 2008, residents were charged a \$1.00 fee for each bag of garbage. Residents were to purchase a punch card, which was punched each time they brought a bag of garbage to the waste sites. This was discontinued because it was difficult to implement and the Township was not receiving sufficient revenue from the program. Currently each household is charged a waste levy of \$39.00 per year on their tax bill to cover the cost of waste disposal. The same household fee applies to residents receiving curbside collection and those who use depot drop-off. Residents of Lanark Village who receive curbside collection pay an additional fee to cover the cost of this service.

A cost-sharing agreement with WM for the processing/sale of curbside collected recyclable materials is in effect. All revenues derived from the processing/sale of the recyclable material collected under this contract must be split 50/50 with the Township. As market prices for recyclables fluctuate, this will also be reflected in the revenues received by the Township. The Township's contract with Ewen Alexander and agreement for processing blue box materials at OVWRC is such that no revenues are received for the sale of recyclable materials. The Township currently pays a tipping fee on blue box materials at OVWRC of \$60 per 1000 kg.

Current Blue Box Diversion

Of the total amount of waste generated, 373.54 tonnes, or 15.7%, is diverted through the Blue Box program (2010.) Currently, the most common material recycled is paper (11.1% by weight), while the remainder is a combination of glass (2.1% by weight), plastics (1.4% by weight) and metals (1.0% by weight). Table 1 summarizes the Township's current waste generation and Blue Box diversion rates.



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Table 1: Residential Solid Waste Generated and Diverted through Blue Box (2010)

| Residential Solid Waste Generated and Diverted through Blue Box | | |
|---|------------|------------------------|
| Residential Waste Stream/Blue Box Material | Tonnes | Percent of Total Waste |
| Total waste generated | 2,381 | - |
| Papers (ONP, OMG, OCC, OBB and fine papers) | 265 | 11.1% |
| Metals (aluminum, steel, mixed metal) | 24 | 1.0% |
| Plastics (containers, film, tubs and lids) | 34 | 1.4% |
| Glass | 50 | 2.1% |
| Total Blue Box material currently diverted | 374 | 15.7% |

As **Table 2** indicates, the Township's current blue box diversion rate is less than the average for its WDO municipal grouping. Again, the WDO municipal grouping for "Rural Depot – South" was also included for contrast purposes since the Township operates more similarly to this grouping than the "Rural Collection – South" grouping.

Table 2: Average Blue Box Diversion Rate

| Average Blue Box Diversion Rate | |
|--|----------|
| Township of Lanark Highlands | 15.7 % |
| Municipal Grouping: Rural Collection - South | 21.4 % * |
| Municipal Grouping: Rural Depot - South | 21.3 % * |

* Provided in the *Guidebook for Creating a Municipal Waste Recycling Strategy* (Section 3.7, Table 2, Column A)

Potential Blue Box Diversion

In the absence of waste audit data from the Township, the Township's waste composition was calculated using the waste audit sample generated through WDO from the Region of Muskoka (Rural Regional) provided in the *Guidebook for Creating a Municipal Waste Recycling Strategy*. It was noted that the Region of Muskoka is similar to the Township due to its large geographic area, dispersed population and large proportion of seasonal residents.

Table 3 outlines the estimated quantities of the various Blue Box materials for the Township, based on sample waste composition data established for the Region of Muskoka. As shown, an estimated 1,119 tonnes of Blue Box material is available in the waste stream generated in the Township.



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Table 3: Estimated Potential Available Blue Box Material (2010) – Rural Regional

| Material | Composition (%) (from the Region of Muskoka) | Total Residential Waste Generated (tonnes/year) | Total Blue Box Material in Waste Stream (tonnes) |
|---|---|--|---|
| Papers (ONP, OMG, OCC, OBB and fine papers) | 28 | 2,381 | 667 |
| Metals (aluminum, steel, mixed metal) | 3 | | 71 |
| Plastics (containers, film, tubs and lids) | 9 | | 214 |
| Glass | 7 | | 167 |
| Total | 47 | 2,381 | 1,119 |

The *Guidebook for Creating a Municipal Waste Recycling Strategy* has recommended a target capture rate for the Township's WDO grouping (Rural Collection – South) of 70% (i.e. capturing 70% of the available Blue Box materials in the total waste stream).

Using the 70% capture rate as a target, it is calculated that a total of approximately 783 tonnes of Blue Box recyclable materials are available for diversion, of which approximately 374 tonnes are still currently in the waste stream. Estimates of Blue Box material available for diversion are listed in the following table.

Table 4: Potential Available Blue Box Materials (Assuming a 70% Capture Rate) – Rural Regional

| Current and Potential Diversion | | | |
|---|--|---|---|
| Material | Total Available in Waste Stream (tonnes/year) | Currently Recycled (tonnes/year) | Potential Increase (tonnes/year) |
| Papers (ONP, OMG, OCC, OBB and fine papers) | 467 | 265 | 202 |
| Metals (aluminum, steel, mixed metal) | 50 | 24 | 26 |
| Plastics (containers, film, tubs and lids) | 150 | 34 | 116 |
| Glass | 117 | 50 | 67 |
| Total | 783 | 374 | 410 |

If the Township were to capture 70% of the available blue box materials, it would raise its blue box diversion rate for the Township to **32.9 %**.

Comparison with Neighbouring Municipalities

To assess the Township's waste diversion performance in comparison with adjacent municipalities, a high-level comparison of Blue Box programs offered by several neighbouring municipalities was conducted based on a review of the municipalities' websites and published WDO performance ranking (based on the 2009 Datacall). This comparison is provided in Table 5, and identifies the key Blue Box program elements and WDO performance ranking for municipalities in both the "Rural Depot – South" and "Rural Collection – South" WDO Municipal Groups. Although the Township is now classified under the Rural Depot – South Group, both Groups are included in the comparison.



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Table 5 Overview of Blue Box Recycling Programs Offered by Neighbouring Municipalities

| Municipality | 2011 WDO Performance Factors | WDO Municipal Grouping | Curbside Blue Box Collection (Yes/No) | Clear Garbage Bags (Yes/No) | Bag Tags (Yes/No) | Blue Box Program Considerations | Special Considerations |
|--|--|--------------------------|--|-----------------------------|-------------------|--|--|
| Admaston/ Bromley (Township of) | Recycling rate ¹ : 52.0 % Net cost per tonne ² : \$ 431.93 Performance factor ³ : 58% | Rural Depot – South | No | No | No | Free household garbage and blue box disposal at the landfill | N/A |
| Beckwith (Township of) | Recycling rate ¹ : 28.4 % Net cost per tonne ² : \$ 627.81 Performance factor ³ : 34% | Rural Collection – South | Yes | No | Yes (\$2.00/bag) | Yearly allotment of 80 free bag tags | Large appliances placed at curb with 3 tags |
| Brudenell, Lyndoch and Raglan (Township of) | Recycling rate ¹ : 20.2 % Net cost per tonne ² : \$ 404.03 Performance factor ³ : 39% | Rural Depot – South | No | No | No | Residents take waste to transfer station or landfill site | N/A |
| Carleton Place (Town of) | Recycling rate ¹ : 54.0 % Net cost per tonne ² : \$ 390.03 Performance factor ³ : 40% | Small Urban | Yes | No | Yes (\$2.00) | Yearly allotment of 60 free bag tags | Large appliances placed at curb with 2 tags |
| Carlow Mayo (Township of) | Recycling rate ¹ : 30.0% Net cost per tonne ² : \$ 594.98 Performance factor ³ : 39% | Rural Depot – South | No | N/A | N/A | N/A | Blue bins can be purchased for \$10 from the township |
| Central Frontenac (Township of) | Recycling rate ¹ : 18.5 % Net cost per tonne ² : \$ 436.84 Performance factor ³ : 31% | Rural Depot – South | No. Recyclables brought to one of three (3) waste sites. | Yes (As of April 2012) | Yes (\$1.00/bag) | N/A | Clear bags must be purchased from the Township for \$2.00 |
| Drummond- North Elmsley (Township of) | Recycling rate ¹ : 51.6 % Net cost per tonne ² : \$ 368.91 Performance factor ³ : 65% | Rural Collection – South | Yes | No | Yes (\$1.00/bag) | Bag limit of 2 bags/unit per week. | Tipping fee: \$75.00 per metric tonne, minimum charge of \$5.00 |
| Dysert et al. (Township of) | Recycling rate ¹ : 50.0 % Net cost per tonne ² : \$ 311.40 Performance factor ³ : 84% | Rural Depot – South | No | Yes | No | Free household garbage and blue box disposal at the landfill | Landfill User Identification Cards Must Be Shown At Landfill Sites |



TOWNSHIP OF LANARK HIGHLANDS INTEGRATED WASTE MANAGEMENT PLAN

| Municipality | 2011 WDO Performance Factors | WDO Municipal Grouping | Curbside Blue Box Collection (Yes/No) | Clear Garbage Bags (Yes/No) | Bag Tags (Yes/No) | Blue Box Program Considerations | Special Considerations |
|---------------------------------|--|--------------------------|---|-----------------------------|---|--|--|
| Greater Madawaska (Township of) | Recycling rate ¹ : 23.0 % Net cost per tonne ² : \$ 454.28 Performance factor ³ : 39% | Rural Depot – South | No | N/A | N/A | N/A | Blue bins can be purchased for \$10 from the township |
| Lanark Highlands (Township of) | Recycling rate ¹ : 38.3 % Net cost per tonne ² : \$ 461.77 Performance factor ³ : 42% | Rural Collection – South | Only in Lanark Village | No | No | N/A | N/A |
| Mississippi Mills (Town of) | Recycling rate ¹ : 46.9 % Net cost per tonne ² : \$ 346.82 Performance factor ³ : 63% | Rural Collection – South | Yes | No | Yes (\$2.00/tag) | Yearly allotment of 55 free bag tags | N/A |
| Montague (Township of) | Recycling rate ¹ : 49.4 % Net cost per tonne ² : \$ 486.57 Performance factor ³ : 50% | Rural Collection – South | Yes | No | Yes (\$1.00/tag) | Yearly allotment of 90 free bag tags | N/A |
| North Frontenac (Township of) | Recycling rate ¹ : 13.8 % Net cost per tonne ² : \$ 987.50 Performance factor ³ : 27% | Rural Depot – South | No. Recyclables brought to one of seven (7) waste disposal sites. | Yes | Yes (\$2.00/tag) | 1 free bag tag in exchange for 1 container of recyclables | N/A |
| Perth (Town of) | Recycling rate ¹ : 71.2 % Net cost per tonne ² : \$ 410.24 Performance factor ³ : 48% | Small Urban | Yes | No | Yes (\$2.50/tag) | Yearly allotment of 40 free bag tags | N/A |
| Rideau Lakes (Township of) | Recycling rate ¹ : 38.8 % Net cost per tonne ² : \$ 356.86 Performance factor ³ : 53% | Rural Collection - South | Yes | Yes | Yes (\$2.00/tag) | Limit of 2 garbage bags per week, otherwise bag tag required | No bag tags required when waste brought directly to landfill. |
| South Frontenac (Township of) | Recycling rate ¹ : 33.4 % Net cost per tonne ² : \$ 430.99 Performance factor ³ : 41% | Rural Collection - South | Yes | No | Yes (\$2.00/tag) 50 FREE tags included with March tax notice | N/A | Residents must bring a tax notice with them to landfill or other proof of residency. |



TOWNSHIP OF LANARK HIGHLANDS INTEGRATED WASTE MANAGEMENT PLAN

| Municipality | 2011 WDO Performance Factors | WDO Municipal Grouping | Curbside Blue Box Collection (Yes/No) | Clear Garbage Bags (Yes/No) | Bag Tags (Yes/No) | Blue Box Program Considerations | Special Considerations |
|---------------------------|--|--------------------------|--|-----------------------------|---|---|--|
| Stone Mills (Township of) | Recycling rate ¹ : 62.7 % Net cost per tonne ² : \$ 581.33 Performance factor ³ : 53% | Rural Collection - South | Only within the Village of Newburgh. Other residents must bring recyclables to one of three (3) waste sites. | Yes | Yes (\$2.00/bag) | 10 free bags provided to households that participate in roadside litter pick-up program | N/A |
| Tay Valley (Township of) | Recycling rate ¹ : 39.0 % Net cost per tonne ² : \$ 545.63 Performance factor ³ : 57% | Rural Depot – South | No. Recyclables brought to one of three (3) waste sites. | No | Yes (\$1.00/ tag) 40 FREE tags per household per year. | 1 free garbage bag disposal (without tag) in exchange for 1 container of recyclables | "Waste Site Card" needed in order access any of the waste disposal sites |

1) **Recycling Rate:** A program's recycling rate for Blue Box materials compares the material estimated to be generated by households served by the program (based on Stewardship Ontario's historical waste composition data) to the Blue Box tonnes marketed by that program and has a maximum value of 90%. *It is noted this calculation is different from the Average Blue Box Diversion Rate which is a measure of the quantity of blue box materials diverted compared to the total waste generated.*

2) **Net Cost per Tonne:** A program's net cost per tonne is net Blue Box program cost (gross program cost including calculated interest on municipal capital and administration less gross program revenue) divided by Blue Box tonnes marketed.

i) **Performance Factor (within Group):** The Performance Factor evaluates the relative efficiency and effectiveness of a program using normal probability methods. The Performance Factor determines the share of funding allocated to the program relative to other members of the municipal group.

Assumption: This comparison of municipal services and programs was based on information obtained online from each of the Township's respective websites. Golder accepts no responsibility for the accuracy of the information provided on these websites



Goals and Objectives

Two (2) of the key objectives in the development of a Waste Recycling Strategy are:

Increase the Blue Box material capture rate; and,

Preserve landfill capacity by eliminating landfilling of Blue Box recyclables.

Performance measure suggested in the Continuous Improvement Fund's *Guidebook for Creating a Municipal Waste Recycling Strategy* are shown in **Table 6**.

Table 6: Waste Recycling Goals and Objectives

| Waste Recycling Goals and Objectives | |
|---|--|
| Goals | Objectives |
| To increase the capture rate ¹ of the Blue Box recycling program | To monitor current capture rate with the aim of increasing Blue Box capture rate to: 50% in 5 years 60% in 10 years 70% in 15 years |
| To increase diversion of Blue Box materials ² from landfill | Divert 23.5% ³ of municipal solid waste through the Blue Box program in 5 years Divert 28.2% ³ of municipal solid waste through the Blue Box program in 10 years Divert 32.9% ³ of municipal solid waste through the Blue Box program in 15 years |

Notes:

1. The CIF Guidebook suggests a 70% capture rate target of potential Blue Box materials for both Rural Collection – South and Rural Depot – South municipalities. The Township is currently achieving a capture rate of approximately **33.4%**. In this case, capture rate is equal to the total quantity of Blue Box material that is currently diverted for recycling (i.e., 374 tonnes) as a percentage of the total estimated quantity of that Blue Box material generated (i.e., 1,119 tonnes).
2. The Township is currently achieving a Blue Box diversion rate of **15.7%**.
3. The diversion rate (%) is based on the capture rate goal for each target year.

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APPENDIX B

Worksheet 8: Overview of Recycling Plan Options

Worksheet 8: Overview of Recycling Plan Options

| A | B | C | D | E | | | | | | F |
|-------------------------------|--|---|-----------|---------------------------|----------------|-----------------------------|--------------------------|-------------------------|---------------------------|----------------------------|
| Suitable? Y/N | Description of Options/Best Practices (For more information on these options and other best practices, see Appendix B or read to document <i>Blue Box Program Enhancement and Best Practices Assessment Project Final Report, Volume 1</i> , available on the Stewardship Ontario website) | Approximate Cost per Household | | Criteria (Score out of 5) | | | | | | Total Criteria Score |
| | | Implementation (including Infrastructure) | Operation | % Waste Diverted | Proven Results | Reliable Market/ End Use | Economically Feasible | Accessible to Public | Ease of implementation | |
| Promotion and Outreach | | | | | | | | | | |
| Yes | <p>Public Education and Promotion Program</p> <p>Public education and promotion programs are crucial for ensuring the success of local recycling programs. Well-designed and implemented education and promotion programs can have impacts throughout the municipal recycling program, including participation, collection, processing, and marketing of materials. Furthermore, having a P&E plan contributes toward the amount of WDO funding a municipality receives as identified in best practice section of the WDO municipal datacall. For example, benefits of public education and promotion programs include:</p> <ul style="list-style-type: none"> • Greater participation levels and community involvement • Higher diversion rates • Less contamination in recovered materials, potentially leading to higher revenues • Lower residue rates at recycling facilities <p>Stewardship Ontario has prepared a Recycling Program Promotion and Education Workbook and other materials, which are available on Stewardship Ontario's Recyclers' Knowledge Network (http://vubiz.com/stewardship/Welcome.asp).</p> | \$1 | \$1 | 5 | 5 | 4 | 4 | 5 | 4 | 21 |


| A Suitable? Y/N | B Description of Options/Best Practices (For more information on these options and other best practices, see Appendix B or read to document <i>Blue Box Program Enhancement and Best Practices Assessment Project Final Report, Volume 1</i> , available on the Stewardship Ontario website) | C Approximate Cost per Household | | E Criteria (Score out of 5) | | | | | | F Total Criteria Score |
|-----------------------|--|--|--------------------------------------|--------------------------------|----------------|-----------------------------|-----------------------|----------------------|------------------------|---------------------------|
| | | Implementation (including Infrastructure) | Operation | % Waste Diverted | Proven Results | Reliable Market/ End Use | Economically Feasible | Accessible to Public | Ease of implementation | |
| 4 Yes | Bag Limits Bag limits restrict the number of bags of garbage a resident can dispose of per collection. This encourages residents to divert more recyclable materials in order to not exceed the bag limit. Bag limits can also be used in conjunction with bag tags (e.g., user fees). For example, some municipalities allow residents to dispose of a number of bags for free, with additional bags requiring a purchased bag tag. | n/a | Covered in cost of education program | 4.5 | 4.5 | 4 | 5 | 3.5 | 3.5 | 25 |
| 5 No | Enhancement of Recycling Depots Where curbside collection programs are not feasible, recycling depots provide an inexpensive means for municipalities to divert recyclable materials from disposal. Enhancements to recycling depots may include (but are not limited to): <ul style="list-style-type: none"> • Providing satellite depots to improve public access and convenience; • Enhancing the conditions at the landfill depot (e.g., landscaping, general cleanliness, maintenance); • Incorporating friendly, easy-to-read signage; • Providing additional part-time staff to address seasonal fluctuations and visiting traffic. | \$1-\$3 | \$1-\$2 | N/A | | | | | | |

| A | B | C | D | E | | | | | | F |
|------------------|---|--|-----------|---------------------------|----------------|-----------------------------|-----------------------|----------------------|------------------------|----------------------|
| Suitable? Y/N | Description of Options/Best Practices (For more information on these options and other best practices, see Appendix B or read to document <i>Blue Box Program Enhancement and Best Practices Assessment Project Final Report, Volume 1</i> , available on the Stewardship Ontario website) | Approximate Cost per Household | | Criteria (Score out of 5) | | | | | | Total Criteria Score |
| | | Implementation (including Infrastructure) | Operation | % Waste Diverted | Proven Results | Reliable Market/ End Use | Economically Feasible | Accessible to Public | Ease of implementation | |
| 6 | No Provision of Free Blue Boxes Providing free blue boxes helps to ensure that residents have sufficient storage capacity for recyclables. While this is initially done at the roll-out of the blue box program, many municipalities offer free boxes to new residents or residents moving into new homes. Some municipalities also offer one extra free box or bin for residents per year. However, in municipalities offering only basic recycling services, one blue box container may be sufficient. | | | N/A | | | | | | |
| 7 | Yes Collection Frequency (Biweekly Garbage Collection) The efficiency of curbside collection is dependent on a number of factors, including the rural nature of the community, the types of recyclable materials included in the recycling program, the type of equipment used to collect the recyclables, among other things. In some circumstances, bi-weekly collection of recyclable and/or garbage can be more cost-effective than weekly collection, assuming that collected tonnages remain the same overall and residents have enough storage capacity to accommodate storing their blue box materials for two weeks. | variable | variable | 4 | 3 | 2.5 | 5 | 2 | 2 | 18.5 |

| | A | B | C | D | E | | | | | | F | |
|---|-------------------------|--|--|-----------|--|----------------|-----------------------------|--------------------------|-------------------------|---------------------------|----------------------------|--|
| | Suitable? Y/N | Description of Options/Best Practices (For more information on these options and other best practices, see Appendix B or read to document <i>Blue Box Program Enhancement and Best Practices Assessment Project Final Report, Volume 1</i> , available on the Stewardship Ontario website) | Approximate Cost per Household | | Criteria (Score out of 5) | | | | | | Total Criteria Score | |
| | | | Implementation (including Infrastructure) | Operation | % Waste Diverted | Proven Results | Reliable Market/ End Use | Economically Feasible | Accessible to Public | Ease of implementation | | |
| | Transfer and Processing | | | | | | | | | | | |
| 8 | No | Optimization of Processing Operations Similar to the optimization of collection operations, the purpose of optimizing processing operations is to process more blue box materials for less cost. Processing operations may be optimized either through upgrading or maximizing the use of existing processing equipment, or by partnering or contracting with processing facilities in other communities. Because processing and collection are directly linked, examination of one must be reviewed with the other. | variable | variable | N/A | | | | | | | |
| | Partnerships | | | | | | | | | | | |
| 9 | N/A | Multi-Municipal Collection and Processing of Recyclables Small and medium-sized municipalities often face considerable cost and capital challenges when looking to collect and process recyclables from its residents. However, working collaboratively with other municipalities to provide these services can increase economies of scale and allow for the sharing of resources. | variable | variable | Included under “Optimization of Contracts” | | | | | | | |

| | A | B | C | D | E | | | | | | F |
|----|------------------|--|--|-----------|--|----------------|-----------------------------|-----------------------|----------------------|------------------------|----------------------|
| | Suitable? Y/N | Description of Options/Best Practices (For more information on these options and other best practices, see Appendix B or read to document <i>Blue Box Program Enhancement and Best Practices Assessment Project Final Report, Volume 1</i> , available on the Stewardship Ontario website) | Approximate Cost per Household | | Criteria (Score out of 5) | | | | | | Total Criteria Score |
| | | | Implementation (including Infrastructure) | Operation | % Waste Diverted | Proven Results | Reliable Market/ End Use | Economically Feasible | Accessible to Public | Ease of implementation | |
| 10 | No | Standardized Service Levels and Collaborative Haulage Contracting Collaborative haulage contracts for blue box materials can take advantage of increased purchasing power through municipal partnerships and ensures that the partner municipalities provide common levels of services to its residents. Standardizing collection programs among municipal partners increases the amount of materials being diverted from disposal, allows for common education and promotion materials, increases collector efficiencies, and can potentially reduce overall costs. | | | N/A | | | | | | |
| 11 | N/A | Intra-Municipal Committee A committee comprised of representatives from local municipalities can help municipalities work toward common regional goals. Committee members can identity opportunities for beneficial collaborations between municipalities and can provide support and feedback on each others waste diversion programs. | | | Included under “Optimization of Contracts” | | | | | | |

| A | B | C | D | E | | | | | | F |
|--|---|--|-----------|---------------------------|----------------|-----------------------------|-----------------------|----------------------|------------------------|----------------------|
| Suitable? Y/N | Description of Options/Best Practices (For more information on these options and other best practices, see Appendix B or read to document <i>Blue Box Program Enhancement and Best Practices Assessment Project Final Report, Volume 1</i> , available on the Stewardship Ontario website) | Approximate Cost per Household | | Criteria (Score out of 5) | | | | | | Total Criteria Score |
| | | Implementation (including Infrastructure) | Operation | % Waste Diverted | Proven Results | Reliable Market/ End Use | Economically Feasible | Accessible to Public | Ease of implementation | |
| Additional Research | | | | | | | | | | |
| 2 < | | | | | | | | | | |

| A | B | C | D | E | | | | | | F |
|------------------|---|--|-----------|--|----------------|-----------------------------|-----------------------|----------------------|------------------------|----------------------|
| Suitable? Y/N | Description of Options/Best Practices (For more information on these options and other best practices, see Appendix B or read to document <i>Blue Box Program Enhancement and Best Practices Assessment Project Final Report, Volume 1</i> , available on the Stewardship Ontario website) | Approximate Cost per Household | | Criteria (Score out of 5) | | | | | | Total Criteria Score |
| | | Implementation (including Infrastructure) | Operation | % Waste Diverted | Proven Results | Reliable Market/ End Use | Economically Feasible | Accessible to Public | Ease of implementation | |
| Administration | | | | | | | | | | |
| 13 N/A | Following Generally Accepted Principles for Effective Procurement and Contract Management A considerable number of municipalities in Ontario contract out the collection and processing of recyclables. To ensure that municipalities obtain good value for money, Municipalities should follow generally accepted principles (GAP) for effective procurement and contract management. Key aspects of GAP include planning the procurement well in advance, issuing clear RFPs, obtaining competitive bids, and including performance-based incentives. | | | Included under “Optimization of Contracts” | | | | | | |
| Other Options | | | | | | | | | | |
| 14 | | | |  | | | | | | |
| 15 | | | | | | | | | | |
| 16 | | | | | | | | | | |



APPENDIX C

2014 Blue Box Promotion and Education Plan



2014

Introduction

Planning and executing consistent and professional Promotional and Education (P&E) activities is an important element, and a best practice¹ of any blue box program. With ongoing communications a community becomes more comfortable with recycling, the benefits it offers to the community and the impact it can have on the global environment. Furthermore, residents that are aware of their community's program are more likely to participate in the program, increasing diversion rates and helping the municipality meet program targets and objectives.

This document outlines the strategic and tactical direction for P&E activities for the Township of Lanark Highlands. The plan is broken down into the following sections:

P&E Strategy for Lanark Highlands

- **Program Guiding Principles** – Key marketing principles that will be incorporated into every aspect of the program;
- **Goals** – Defines the overall objectives of the program;
- **Key Messages** – Outlines the main points the program will work to communicate;
- **Target Audiences** – Summarizes the main audiences we hope to influence and educate;
- **Resources** – Provides guidance as to the budget and amount of staff time needed to successfully implement the program.

¹ In 2006, Waste Diversion Ontario (WDO) directed a KPMG-led consortium to identify Best Practices in Ontario municipal Blue Box recycling as part of a process to identify opportunities for improvement among recycling programs.

The resulting Final Report for the KPMG Blue Box Program Enhancement and Best Practices Assessment Project (2007) defined Best Practices 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.'

P&E Program Implementation

- **Tactics** – Defines the tools recommended for our program;
- **Tracking** – Provides information on how to monitor the success of the program.

P&E Program Guiding Principles

There are a number of recurring best practices in promotion and education that should be followed when determining and executing the P&E activities. These guiding principles include:

- **Consistency** – From design to messaging to the tools used, consistency creates a recognizable campaign with greater impact making audiences aware of the campaign and more likely to change their behaviours.
- **Follow a schedule** – Plan out P&E activities to meet the fluctuations of the year and the community, and then stick to this schedule. Recurring, regular activity will have a much greater impact than one big activity only one time.
- **Tracking** – There are ways to see if P&E activities are working. Tracking should be part of any program. This can include tonnage reports, website tracking, incoming call tracking, online surveys and more.
- **Allow for feedback loop** – Community members are more likely to buy into, and participate if they feel their voices are heard. Make sure there is a 360° feedback mechanism in place to allow residents a way to express concerns, give suggestions or simply ask questions.
- **Keep it simple** – Too many messages and too much information can be overwhelming. Keep it short and sweet.
- **Make it about the audience** – People are more receptive to information about them. Make sure the primary message is a personal one, to make it more meaningful.
- **Demonstrate the outcome** – It is motivating to know the effort is making a difference. Ensure people are aware they are doing a good job.
- **Keep the brand pure and clean** – The idea of recycling is to keep the environment (large and small) clean. This should be reflected in P&E activities as well as all the communications regarding the program.
- **Be green** – It is easier to be taken seriously when “walking the talk”. Be sure the whole community is recycling, including the municipal government.
- **Seek partnerships** – P&E can be time consuming and expensive. Look for ways to offset those costs by taking advantage of partnership opportunities.
- **Match the message** – There are two types of messaging: Educational and Motivational. The type of messaging that is most predominant will depend on the program’s goals. Ensure the type of message supports the end goal.

P&E Program Goals

Each community across Ontario is working to promote participation in their Blue Box recycling program. The general **goals** of the Promotion and Education Programs are:

1. **Increase awareness of *why* you should recycle** – As part of the education portion of the program, residents should be made aware of the reasons for recycling and the benefits to the community. (**“RECYCLING PAYS”**)
This is tracked as capture rate.
2. **Increase education on *what* is recyclable and *how*** – Only specific items are recyclable and ensuring a clean collection makes the recycling process better & more efficient. (**“ALL PLASTIC BOTTLES & CONTAINERS”**)
This is tracked as capture rate.
3. **Increase participation** – With increased knowledge about the benefits of recycling and what materials are recyclable, participation should increase. ***This is tracked as participation rate.***
4. **Increase tonnage** – Increased knowledge & increased participation means diverting more waste from landfill which can be tied to funding. ***This is tracked as diversion rate.***

Township of Lanark Highlands Objectives

SMART (Specific, Measurable, Attainable, Realistic and Timely) objectives are a great way to focus program activities and planning. The specific Blue Box recycling program objectives for The Township of Lanark Highlands for the next three years are:

Increase diversion rate

- ❖ *Increase the capture rate of the blue box recycling program by 3.5% each year for five years, thereby achieving a 50% recovery of available blue box material by 2018.*
- ❖ *Increase diversion of blue box materials from landfill by 1.5% each year for five years, thereby diverting 23.5% of municipal solid waste through the Blue Box program by 2018.*
- ❖ *Document participation rates in the curbside blue box program in Lanark Village, with a goal of achieving 100% participation by 2018.*
- ❖ *Document participation rates in the blue box program at Lanark Highlands’ depots, with a goal of achieving 85% participation by 2018.*

Key Messages

Key messages enable a consistent and comprehensive direction for what a program is trying to communicate. **BOLD** phrases will be worked into recycling slogans for Lanark Highlands. (Information in brackets gives the detail/context for the slogan and will inform P&E materials, e.g. photos, symbols, etc.)

- **ALL PLASTIC BOTTLES & CONTAINERS** can be recycled in Lanark Highlands. (New materials accepted in 2014 include film plastic, ALL plastic bags, Tupperware, blister packs & paper coffee cups.)
- **RECYCLING MEANS SORTING YOUR WASTE** (That's it, that's all. It's easy!)
- **RECYCLING PAYS** (... for municipal services & helps control increasing property taxes.)
- **WASTE MATTERS** (Recycling reduces the amount of garbage in the landfill, reducing the risk of water and air contamination.)



Target Audiences

A target audience list reflects those primary audiences P&E activities work to reach. Typically they reflect the largest population groups in the community, and are therefore more highly catered to in communications so that P&E activities have the greatest impact possible. *The target audiences for the Township of Lanark Highlands are:*

Families

Communities with a high representation of families must focus on not only the adults but also the children in the community. *Integration of easy to use materials, use of icons and images for communication and keeping materials fun and light will ensure this group can easily participate in the recycling program.*

Retirees

When dealing with retirees, there is usually time to recycle but the barrier is often lack of program understanding or a resistance to change. Communication can be an issue due to declining eyesight. *Keep materials visual, simple and accessible, and ensure a phone number is available for questions or comments.*

Cottagers

This population is enjoying leisure time when they're in Lanark Highlands. Recycling is no doubt available in their home community and is easily adopted at the cottage, where they come to enjoy the unspoiled countryside. *Use the message that it is simple and will preserve the natural environment with this audience.*

Resources (Budget and Staffing)

Resources for smaller municipalities are often stretched to the breaking point, and P&E activities can be put on the back burner. The intention of this plan is to make it easier to manage what needs to be done to keep the program on track.

Budget

To properly reach our community with P&E activities and to implement this plan, a budget must be allocated. Best practice indicates that for most communities a budget of \$1 per household is the baseline to meet the needs of a well executed P&E plan. For smaller communities, this rule may leave a budget that is too low to complete even the smallest P&E activities. Periodic grants and budget increases will allow for investment in brochures, waste site signage, and other items that do not need to be produced on an annual basis.

In 2014, Lanark Highlands has a grant in the amount of \$5000.00 approved by the Continuous Improvement Fund, and Council has approved \$2500 to supplement that funding. An additional estimated \$2000 in the corporate budget annually supports ongoing P&E tactics such as tax inserts, web site maintenance, Highland Voice publication, and recycling PSA's in the weekly 'Municipal Matters' newspaper column.

Staffing Resources

The following chart suggests a division of tasks for our P&E program. This can be modified as necessary.

| Task | Description | Person Responsible | Timeline |
|------------------------------------|--|--|---|
| Write Recycling PSA's | Short, catchy, encouraging PSA's to run in the weekly 'Municipal Matters' newspaper column. | Cathie/CAO | Ongoing. Provide CAO with rotating PSA's for 3-4 months at a time. |
| Design brochures | Public Information re: materials accepted at curbside & depots. | Cathie/Tom | To be prepared in early 2014 for distribution in spring. Work with Twp. of Mississippi Mills to adapt their branding. |
| Display in Municipal Office | Public Information: posters catch the eye; brochures & handouts may be taken away. Residents waiting for appointments at the municipal office are observed reading waste management info & taking brochures with them. | Cathie | Public Information area to be given a facelift in 2014. Proposal for low cost improvements has gone to CAO. 2014 P&E budget includes funding for low cost fixtures (additional bulletin boards & brochure racks.) |
| Articles for Lanark Era | Public Information to increase understanding of municipal waste management systems & diversion programs. | Cathie/Tom | Starting March 2014 to provide info re: new materials accepted & blue box diversion goals. |
| Grant proposals | To increase funding to support increased diversion. | Cathie/Tom | As required dependent on application deadlines. |
| School presentations | New initiative: to train recyclers at a young age. Reduce, Reuse, Recycle message could include field trips to local ReUse Centre. | Cathie/ McDonalds Corners ReUsers | Consult with 2 elementary schools in Lanark Village as to best timing for them. |
| | | | |

Tactics

It is recommended that year two tactics be added to year one tactics and year three tactics be added to year two tactics. In this way, ideally, over a three year period, eight different tactics will be used in the P&E program to promote recycling in Lanark Highlands.

Year One (2014)

MEDIA RELATIONS: cultivate waste diversion interest with Lanark Era Editor. Develop four (4) 2014 articles on waste diversion.

WEBPAGE – (continuous improvement)

- *Improve access to waste & recycling info per public feedback*
- *ADD analytics program for tracking*

BROCHURE: branding per Mississippi Mills' model; design, print (10,000) distribute (3500) full colour tri-fold Brochure

OUTDOOR SIGNS AT WASTE DISPOSAL SITES:

- Material sorting & fees
- Roadside Signage at WDS Entries

OCNA ADS: Year 4 of multi-municipal approach:

- Lanark Era
- Perth EMC

Year Two (2015)

MEDIA RELATIONS: if successful in year 1, continue working with Lanark Era Editor on waste diversion articles.

WEBPAGE – (continuous improvement)

- *Add Annual Report on community recycling statistics.*

REDISTRIBUTE (3500) BROCHURE
Full colour tri-fold Brochure

POSTERS: re: material sorting:

- All Community Centres
- Arena
- Civitan Hall

Fridge Magnet (if doing school presentations)

OCNA ADS: Year 5 of multi-municipal approach:

- Lanark Era
- Perth EMC

Year Three (2016)

MEDIA RELATIONS: if successful in years 1 and 2, continue working with Lanark Era Editor on waste diversion articles.

WEBPAGE – (continuous improvement)

- *ADD Recycling FAQs*
- *ADD 'what materials are turned into'*

REPRINT BROCHURE (with edits as required.) Full colour tri-fold Brochure

Flyers/Stuffers in Other Municipal Mailings

OCNA ADS: Year 6 of multi-municipal approach:

- Lanark Era
- Perth EMC

Note: Branding to be used on all materials including brochure, web page, WDS signs, posters, OCNA ads, and fridge magnets.

Budget Work Sheet

| <u>Year One Tactics</u> | <u>Budget</u> | <u>Year Two Tactics</u> | <u>Budget</u> | <u>Year Three Tactics</u> | <u>Budget</u> |
|--|----------------|--|----------------|--|------------------|
| MEDIA RELATIONS: 4 Newspaper articles in Lanark Era | 0.00 | MEDIA RELATIONS: 4 Newspaper articles in Lanark Era | 0.00 | MEDIA RELATIONS: 4 Newspaper articles in Lanark Era | 0.00 * |
| OCNA advertising – Lanark County municipalities pool lineage | 0.00 | OCNA advertising – Lanark County municipalities pool lineage | 0.00 | OCNA advertising – Lanark County municipalities pool lineage | 0.00 |
| BROCHURE including BRANDING: Full colour tri-fold Brochure (Print 10,000) | 1200.00 | REDISTRIBUTE BROCHURE Full colour tri-fold Brochure | 1200.00 | REPRINT BROCHURE (with edits as required.) Full colour tri-fold Brochure (10,000) | 1200.00 |
| WEBPAGE (improve layout to make waste & recycling info more accessible. ADD analytics program for tracking) | 0.00 * | WEBPAGE (Add Annual Report on community recycling statistics.) | 0.00 * | WEBPAGE (ADD Recycling FAQs & ADD Examples of what things are recycled into.) | 0.00 * |
| WASTE SITE SIGNAGE/Roadway Signage: 2 ea @ 7 Depots | 1800.00 | Fridge Magnets (for School Programs | 300.00 | | |
| WASTE SITE SIGNAGE: re: material sorting. 2 ea @ 7 Depots | 2800.00 | POSTERS for community centres, Arena, other public places. | 350.00 | | |
| Facelift to Public Info area in Municipal Lobby | 300.00 | Flyers/Stuffers in Other Municipal Mailings | 175.00 | Flyers/Stuffers in Other Municipal Mailings | 175.00 |
| Weekly PSAs in newspaper | 600.00 | Weekly PSAs in newspaper | 600.00 | Weekly PSAs in newspaper | 600.00 |
| Total Budget Year 1: | 6700.00 | Total Budget Year 2: | 2625.00 | Total Budget Year 3: | 1975.00 + |

*** Note:** Lanark Highlands' Public Works Dept. makes use of corporate budget lines that contribute another \$1200 annually to Blue Box P&E for web site maintenance and publication & distribution of the annual municipal services magazine *The Highland Voice*. That core budget is in addition to this budget worksheet.

Tactics Roll-Out Schedule

By scheduling these activities pro-actively, we have an easy, quick reference to keep the program rolling; it also helps when more than one person is responsible for the Blue Box P&E program.

| Activity | Year One | | | | Year Two | | | | Year Three | | | |
|---|----------|----|----|----|----------|----|----|----|------------|----|----|----|
| | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| Media Relations | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Brochure | | ✓ | | | | ✓ | | | | ✓ | | |
| Webpage | | | ✓ | | | ✓ | | | | ✓ | | |
| Waste Site Signs | | ✓ | | | | | | | | | | |
| Fridge Magnet | | | | | | | ✓ | | | | | |
| Posters | | | | | | ✓ | | | | ✓ | | |
| School Programs | | | | | | | ✓ | | | | | |
| Flyers/Stuffers in Other Municipal Mailings | ✓ | | ✓ | | ✓ | | ✓ | | ✓ | | ✓ | |
| Newspaper Advertising (OCNA) | | | ✓ | ✓ | | | ✓ | ✓ | | | ✓ | ✓ |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

Tracking & Monitoring:

Lanark Highlands will complete its first waste audits and set-out audits as one means of collecting data on the impact of the P&E campaign.

- **BLUE BOX CAPTURE RATE:** Waste Audits spring & fall 2014 will sample garbage bags from both curbside & depot collections to supply data on whether the proportion of recyclables mixed in with garbage has changed following implementation of Year 1 P&E tactics.

- **BLUE BOX TONNAGE & VOLUME:** Tonnage & Volume of recyclables transferred to the Lafleche Transfer Station will be tracked on an ongoing basis. *In 2014 we will also convert collected tonnage and diversion goals into kilograms per households to put the figures into a 'human scale.'*
- **BLUE BOX SET-OUT RATE IN LANARK VILLAGE:** Participation audits (as determined by visual inspection) will be completed in spring & fall 2014 to establish baseline data on curbside participation in Lanark Village, and to determine whether implementation of the P&E plan results in increased participation in the curbside blue box collection program.
- **BLUE BOX PARTICIPATION AT DEPOTS:** Participation audits (as determined by visual inspection) will be completed in spring & fall 2014 to establish baseline data on Blue Box participation at Lanark Highlands' depots, and to determine whether implementation of the P&E plan results in increased participation in the Depot Blue Box recycling program.

| Tracking Methodology | Data Collection Point | Timeline | Current (2014) | Goal (2018) |
|-----------------------------------|---|--|----------------|-------------|
| Blue Box Diversion (WDO Datacall) | Contractor weigh slips + number of loads delivered | Yearly, spring | 15.70% | 23.50% |
| Capture of recyclables | 1. Waste audits, curbside 2. Waste audits at depots | Spring & Fall 2014, then annually thereafter. | 33.40% | 50% |
| Blue Box Participation (curbside) | 1. Setout survey in Lanark Village. 2. Resident calls & emails to office | 1. Spring & Fall 2014, then annually thereafter. 2. Ongoing | Unknown | 100% |
| Blue Box Participation (depots) | 1. Resident Survey at Depots 2. Resident calls & emails to office | 1. Spring & Fall 2014, then annually thereafter. 2. Ongoing | Unknown | 85% |



EXPLANATORY NOTES: What, Why & How-To²

Year One Tactics

Media relations

Description

Ongoing communications and building a relationship with the local media is a critical element to keeping your community informed. Foster good working relationships then use them to spread the word on your blue box program.

General Use

News Releases must be sent for any significant change, event, accomplishment or other news about your blue box program. These simple updates are often a single page of information on an item of interest to the community, and therefore a news story for the media.

Production Hints and Tips

When creating a release keep in mind that there must be a potential news story, or hook, that increases the value to the reader and the chance of it being picked up as a story.

Releases often follow a simple formula which makes them easy to create. Here is one suggestion:

- Intro paragraph: answers the 5 w's (who, what, where, when, why) and includes the hook and key message for the story
- 2nd paragraph: offers a quote from a high-profile participant or stakeholder
- 3rd paragraph: provides more information on the story or issue
- 4th paragraph: elaborates on the effect on the community (could be through another quote)
- 5th paragraph: gives some boilerplate information on the program and municipality
- Provide a contact for more information

Ideally there would be a release sent every two months, to keep you top-of-mind in the media and community.

BROCHURE/General Information piece

Description

A Blue Box program overview piece which provides details for sorting is a critical element that ensures all residents are aware of your program specifications. A single resource can provide important details and information to assist with compliance and participation in the program.

General Use

² This information is an edited version of explanatory notes from the Continuous Improvement Fund's P&E Plan Template which was used to develop this plan.

As research has shown that the complexity of recycling programs can be a deterrent to participation, this piece must be simple, easy to follow and valuable enough to retain for reference over time. To this end, it is recommended that the piece be as clear as possible, as few words as possible and be printed inexpensively on environmentally-responsible paper to allow households to have multiple copies. You may also consider offering the piece electronically, for those who are inclined to use on-line resources.

Production Hints and Tips

Content for this piece should include:

- Collection schedule (for curb side)
- Depot locations and hours (for depot)
- Acceptable recycling containers (blue boxes, bags, etc.)
- Applicable recyclables
- Specifics including labels to be removed, etc.
- Where to get more information.

A single page format is recommended, no larger than 8.5" x 11". This standard size will make the piece easier to retain for reference.

Lanark Highlands plans to work with Mississippi Mills' to adapt their branding and materials for our own use. Other Lanark County municipalities have done this; there is an advantage to using similar branding throughout the County as it creates higher visibility and allows us to benefit from the visual recognition factor. Should the inexpensive printing option be chosen, it is recommended that the piece be mass-distributed at least yearly to every household (which allows for changes in the program) as well as having easy access to additional copies in key locations around the community.

These locations could include:

- *Lanark Arena*
- *Municipal office*
- *Library*
- *Waste depots*
- *Community Centres*

Webpage

Offering information online is not only a quick and simple way to share information, it is an environmentally-conscious choice which fits with the messaging around recycling. Hosted as a subpage on the municipality's website, this page will be referenced in all P&E activities bringing higher profile to the site, and potentially reducing the number of callers phoning to ask questions.

Every municipality must have at least one page communicating the details of their Blue Box program in the community. A single, quick resource, the minimum required information includes:

- Collection schedule (for curb side)
- Depot locations and hours
- Acceptable recycling containers (blue boxes, bags, etc.)
- Applicable recyclables

- Specifics including labels to be removed, etc.
- Where to get more information.

As resources are available to include more information or additional pages on recycling on our municipal website, we may add these items:

- *Frequently asked questions page*
- *Community recycling statistics*
- Recycling tips and tricks to make it easier
- *Examples of what things are recycled into*
- Tips to increase recycling in your home
- *How to shop recycle friendly (what to buy and not buy)*
- Links to other recycling resources

Content for the website can be pulled from existing P&E materials and supplemented by municipal staff. Programming for the site will be completed by the webmaster for our municipal website. For Search Engine Optimization purposes the content for the site should be rich in appropriate key words. To help determine keywords, we can use the free Google Keyword tool at <https://adwords.google.com/select/KeywordToolExternal>.

The webpage should have Google Analytics, or another analytics tool. This allows us to get information on who is visiting our site, how long they spend, what pages they visit, how they found the site and where they go when they are done. Having this free tool installed will help with program tracking. More information about Google Analytics can be found at <http://www.google.com/analytics/>.

Waste Site Signs

Focused on keeping recycling top-of-mind, waste site signs are an easy way to ensure every person in our community is aware that recycling is encouraged and practiced in the Township of Lanark Highlands.

Increased information on signs at municipal waste disposal sites (WDS) has been requested by the public (via 2013 survey & focus group) as a primary means of increasing public information about recycling in Lanark Highlands. 'Guidelines for Designing Effective Signage' (a report prepared for the CIF) will be used to guide the design of our new WDS signs.

With any outdoor advertising it is important to keep the messaging as simple as possible, and the words as minimal as possible.

Re: placement of outdoor signs, the public has requested

- ***Roadside at entrance to waste disposal sites to indicate location of transfer stations and landfill;***
- ***At waste disposal site gates, detailing what can be disposed of, recyclable materials, and fees.***

The design for outdoor advertising should also follow the existing design for other communications pieces as closely as possible. Using a similar design/branding will ensure that even if the sign is not read, the tie-in to a recycling program is evident and the brand is recognized (increasing awareness and helping to maintain top-of-mind presence).

Fridge Magnet

Providing residents and businesses with an easy to understand, long-term sorting guide just makes sense. Typically significant changes to a recycling program do not occur on a regular basis. As such, it is imperative to effectively communicate changes when they do happen.

A large size magnet with sorting lists is a resource that most people will appreciate and keep posted where most of the recycling happens at home: in the kitchen.

Using graphics rather than words, this resource will allow residents to quickly and easily reference what is recyclable. The use of images will make it accessible to those for whom literacy may be an issue including children, the elderly and those for whom English or French is not their first language.

The recommended size for these magnets is 6" wide x 4" high. In order to keep images large enough to be easily seen it is recommended that only the top 8 items which are most often recycled be included.

For additional information, the municipal logo, webpage and phone number should also be on this magnet.

Year Two Tactics

Posters

A simple poster that keeps recycling top-of-mind and reminds residents how simple recycling can be is an important part of the P&E mix.

In order to save on printing costs, the poster can be printed and laminated in a simple 11" w x 17" h format at the municipal office. These posters should be placed in all municipally-owned facilities (above blue boxes) at events where recycling is accessible and throughout community notice boards. ***In Lanark Highlands, posters will be distributed to all community centres and public buildings to assist in increasing capture of available blue box materials.*** Consider updating the poster after a year to have a new spin on the existing message.

School Programs

Schools are often including information on the natural world and the effect humans have on their environment. This information, as well as tips on how to live green, is an important part of modern education and children are comfortable with these concepts, often more than their parents or grandparents. The knowledge of students is often taken home and can affect the household's choices and participation in programs such as a Blue Box Recycling Program.

We may use this vehicle to promote what our community is doing in the area of recycling. This can include:

- Providing resource information to teachers
- Hosting school trips (*McDonald's Corners ReUse Centre*)
- Doing classroom presentations

The two Lanark Village elementary schools appear to have robust recycling education & collection programs in place. School presentations may focus on the "Reduce & ReUse" sections of the '3 R's' to talk about purchasing choices that

reduce packaging, as well as options for ReUse. A field trip to the McDonald's Corners' ReUse Centre may present a hands-on opportunity to show these ideas in action.

Year Three Tactics

Flyers/Stuffers in Other Municipal Mailings

Flyers and stuffers work to remind residents about a recycling program on a continual basis. Used as a notifier and a reminder, these pieces work as an attention getter, providing either:

- a) Information about the program and/or a change to the program;
- b) Motivational item which offers updates on the program's effectiveness and/or interesting facts about recycling in your community or across Ontario.

The flyers/stuffers are 3.67" w x 8.5" h and use minimal copy to get the message across. Consider distributing these items through:

- Tax bills (*Lanark Highlands mailings go out annually in January & July.*)
- Other community mailings
- Mailings from partner organizations such as community groups
- Holder at recreation/arts centres

Use of stuffers more than once a year (we do it twice annually in Lanark Highlands) keeps momentum in the program and consistent communications at a reasonable price.

Newspaper Advertising

Local papers are often well read, as they feature the information that is of specific interest to local residents.

Newspapers should be used for:

- Promoting recycling in the community
- Changes to the recycling program – new materials accepted in 2014.
- Updates on program progress (reporting on diversion goals)
- Special events or days
- Ongoing recycling awareness

When planning budget for our newspaper advertising remember the Township has CNA/OCNA lines available that will help off-set the cost. *For the last several years Lanark Highlands has pooled lines with other Lanark County municipalities to increase coverage of shared information in all local newspapers.*

To see what our line allotment is, visit the website at <http://www.wdo.ca/content/?path=page80+item86507>.

Tracking Options

Tracking the effectiveness of our P&E activities allows for a clear Return On Investment (ROI) calculation on the funds and hours invested in the program. Best practices indicate that this is an important part of the project; integration into our P&E program can make it a simple and easy process.

There are a number of low to no cost ways to track our activities and the number of impressions they make or actions they inspire. A number of different tracking options for all P&E programs are recommended. These methods allow for a wide range of inputs to feed into the results which indicate the overall effectiveness of our program. These options include:

- **Hits on website** – load an analytics program onto website to allow for tracking traffic to site. Google Analytics is a free program that can be loaded onto our website and will give us information such as number of visitors, which pages they visit, how long they visit, etc. This information can be useful in tracking how effective the site is, or how effective other P&E activities (which direct audiences to our site) have been.
- **Tonnage changes** – it is already required that tonnage is tracked for the Data Call. We also use this information to look for trends in our recycling program. Have diversion rates been increasing or decreasing? When we launch a new P&E activity, is there any change in the coming months? These can help us see the affect our P&E activities are having. *In 2014 we will convert collected tonnage and diversion goals into kilograms per households served to put the figures into a 'human scale' and assist with community engagement.*
- **Incoming calls or inquiries** – any changes to our program, be it P&E or otherwise, often drives more inquiries. We track incoming inquiries to help determine what is happening in our community, and what questions are being asked. *Currently we track the following information on waste management enquiries to the Lanark Highlands municipal office:*
 - Number of inquiries
 - Method of enquiry (phone, email, in person)
 - Subject of the inquiry
- **Community surveys** – Conducting community surveys are an effective way to get the opinions of our community.

In 2013 Lanark Highlands received public input via

- Online surveys sent out via email and posted to our webpage
- Hard copy surveys available at the municipal office
- A Focus group that touched on increased P&E as well as other options of optimizing our blue box program.



E-marketing

In January 2014 Lanark Highlands adopted a social marketing policy; we are about to launch a Facebook page and Twitter Feed which will present new avenues for distributing blue box information to some of our target groups.

While many audiences are becoming more and more comfortable with online communications, offering more than one option to obtain that information is pivotal to the success of any program. E-marketing is a waste neutral communication tool and will allow for real time updates on your blue box program. More than a website, e-marketing can include:

- Facebook – building a community of those who are interested in recycling in our municipality
- Twitter – short, concise and timely updates posted in 140 characters or less
- Blogging – an ongoing conversation posted on a website
- Online customer service chat – website based communication option allowing for the posting and answering of questions, real time in a method similar to other online chat facilities
- Email blasts/newsletter – sending out information directly to audience's inboxes regarding your program
- Footprint calculator – website based calculator that allows residents and businesses to estimate their environmental impact and get some suggestions for improvement based on activity
- Feedback form – create a 360° feedback loop on our program using an online comments platform

Partnerships

With smaller communities there are often fewer resources to execute programs to their full potential. Research has shown that best practices include using partnering to meet the goals of a blue box P&E program. Partnerships allow each municipality to reach beyond their limited resources to create and deliver more from their investment. There are two types of possible partnerships: inter-community and intra-community.

Inter-community partnerships – these partnerships see more than one community coming together to create P&E program materials that meet the needs of both communities. It is often the case that recycling programs in neighbouring communities are very similar, if not identical. Further, the aims of the programs are the same: to increase participation, awareness and acceptance of recycling by a larger portion of the population.

Even when the recycling program is not exactly the same, there are awareness activities that can be done in partnership. Some activities that can be done in partnership with other communities:

- Advertising
- Billboards
- Rink boards
- Events

Intra-community partnerships – these partnerships use resources within a community to cooperatively spread shared messages. Partners can include community and service groups, government agencies, schools, faith groups, etc. These organizations will often help with spreading the word, and promoting events, contests, etc, as it is to the benefit of their group and community.

We can consider using these partners when planning our P&E activities such as:

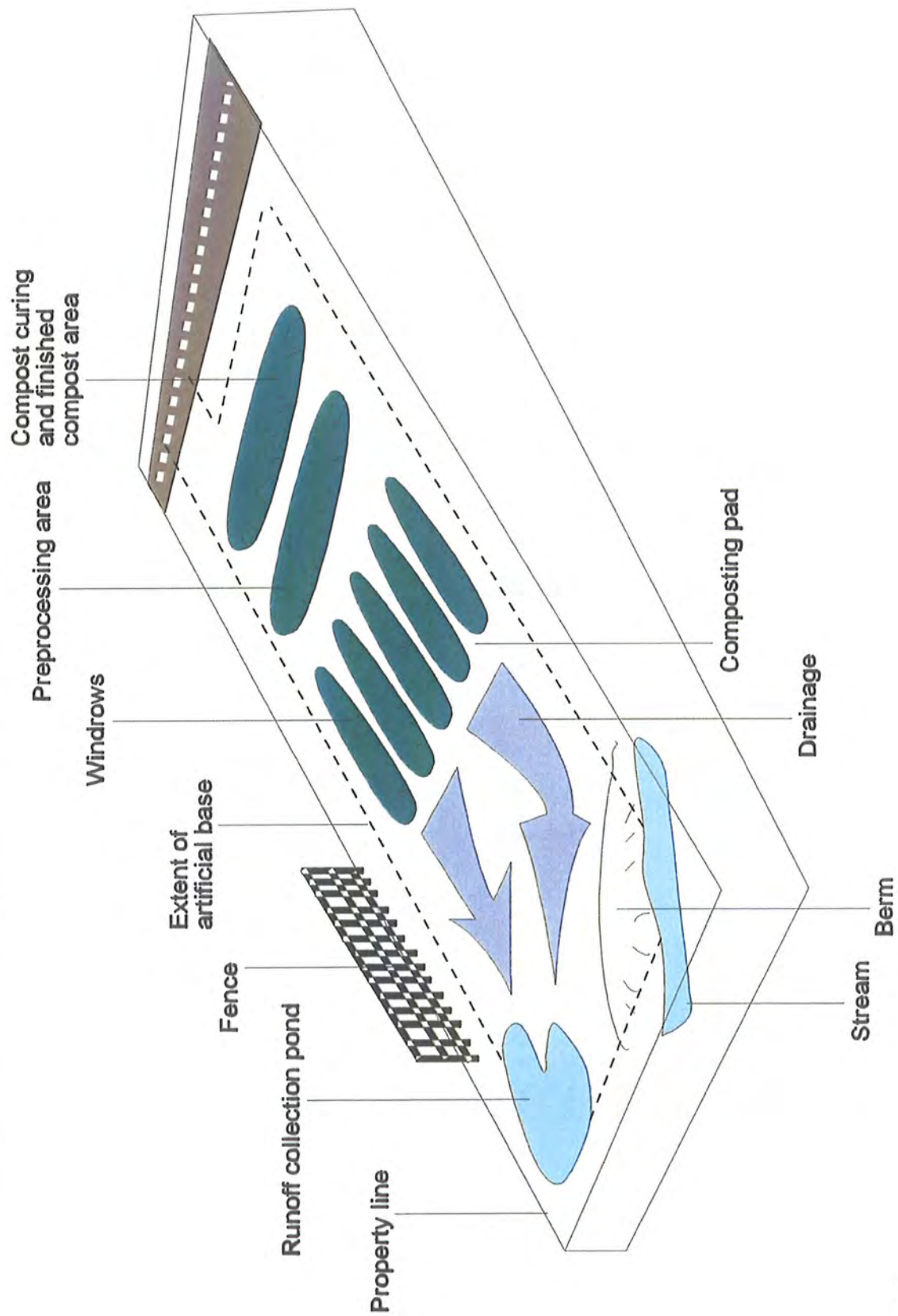
- School programs
- Events
- Newsletter distribution
- Print and radio advertising



APPENDIX D

Typical Layout of Windrow Composting Operation

Figure 2.2: Typical Layout of Windrow Composting Facility





APPENDIX E

Public Comments Received

Comments Received January 5, 2012

RE: Integrated Waste Management Plan

Dear Scott,

I read the Notice in the Courier about your Integrated Waste Management Plan development.

I am very happy that the McDonald's Corners dump, maybe all area dumps, takes all numbers of plastics to recycle. Please keep that up! I know Drummond area does not, and that is sad.

A couple of summers ago, I wrote to the Mayor, with no response, lamenting the loss of buying garbage stickers. I believe that if people had to pay for their garbage they would try to have less, and recycle more. I do not understand why that was dropped. Please consider re-implementing it.

I live in Watson's Corners area but run the Green Team at Drummond Central School. We do our best to reduce garbage at the school and recycle all we can.

I hope that you can divert more garbage into recycling. Good work!

NAME KEPT CONFIDENTIAL

Comments Received January 12, 2012

RE: Integrated Waste Management Plan

Thanks for the invitation to comment on the Integrated Waste Management Plan in the Lanark Highlands. While I am a member of the ReUsers, a volunteer group that manages the McDonald's Corners ReUse Centre, these thoughts are my own. As a regular volunteer during the last 6 years, I have had the opportunity to observe the operation of the McDonald's Corners Landfill and am encouraged with the numerous improvements over the years: improved physical layout, upgrade and support of the ReUse Centre, the introduction of ewaste collection and the hiring of cooperative and involved site attendants come to mind. Can the current system be improved? Can the diversion rates be increased? The answer is yes. While there are many ways of increasing diversion I would like to offer two for your consideration.

1. Reintroduce an incentive based structure to pay for disposal of recyclables and garbage.

Bag Tags in some form should be implemented, but not necessarily as a source of revenue. Perhaps the first bag of garbage would be free when matched by an equal quantity of recycling. Most will not be affected, as they already recycle and will not need to change any of their waste disposal habits. This incentive will encourage more recycling than at present. Users will enjoy avoiding use of a bag tag by recycling. It is a game they can always win. The contact between the user and the site attendant is important, keeping recycling in the picture in a positive manner. Those who recycle are thanked. And those who do not, can be shown how they also can avoid the bag charges by recycling at home or at work. While I applaud the attitude of our current staff, they must working within a system that is flawed.

If bag tags (or some form of user pay) were reintroduced, the public would be better informed, and the township will attain higher diversion. The current method of paying for disposal costs - a flat rate annual levy on the property taxes - has the advantage of being easy to collect, and reduces problems of garbage accounting. Some people will always respond to diversion positively, however, there are others who need to be confronted with an "abuser pay" structure before they respond. Consider an analogy. How much easier it would be to collect traffic violation fines by a flat increase on the license plate charges. Yes, some would continue to comply with traffic laws, others will speed. The revenue could be made neutral; however, those who drive above the speed limit would do so more often. With traffic fines levied against the abusers, the result is an increased compliance.

2. While the collection of yard waste for composting is commendable, the facilities for composting should be expanded to include kitchen waste. It is my experience that composting at home is the best way to begin on a garbage reduction plan.

And yet many do not compost because of the animals attracted by the compost pile. Yes, animals would be a problem at the municipal compost sites, however it would be easier to solve the problem at the dumps (or other compost collection sites) than at everyone's home. There are many stories of municipal compost being turned into garden fertilizer, which has the advantage of turning diversion into income generation. In closing, I would wish you well on your review of diversion in Lanark Highlands and I remain ready to discuss these or other issues at the appropriate time.

Yours truly, NAME KEPT CONFIDENTIAL

To: Cathie Green

Subject: Waste Diversion Strategy

I was speaking with [REDACTED], and he suggested I submit my thoughts to you about the waste diversion strategy. These are my thoughts, in no particular order:

Your consultants have done a pretty thorough job on the report, but I think they missed some of the more salient points.

First, the idea of a composting facility appeals to me: I was involved in the preliminary design by the Composting Council of Canada for the famous composting facility in Edmonton, and I went to school with one of the people who now runs it. Its great. Except, of course, that there was a economic driver that forced it into being, and that economic driver isn't present in Lanark Highlands. I would think that a composting facility would get little to no use from rural residents, a little up-take from Village residents, and a little up-take from cottage residents.

Instead, we have to explain things in economic terms. Every kg of plastics that are recycled is worth \$1 to the community, and reduces the need to turn someone's backyard playground into a new landfill. If we do the recycling 'in-house' (either as municipal employees or as contractors), then that money stays in the community, rather than being shipped out to Renfrew or Carleton Place. Over a year, if Lanark Highlands recycled all of it's plastics, we'd make about \$150,000 for the municipality, reducing our taxes by that amount.

Yes we should pay for our garbage. Sell stickers, punch cards, etc at the local stores. Don't allow people to drop off a bag for a buck - that eliminates the paper trail to track how much people are using.

Publicize how it's going. How much waste is being generated, how much waste is being diverted, and how long before the current landfills are full. Out of mind is not out of sight.

In 15 years time, we won't have a waste solution. I would suggest we figure out how to do what Edmonton has done (90% waste diversion), but at our scale, using our strengths. We have high unemployment, so employing a few people isn't a bad idea. Municipal employees would be ultimately cheaper for the community than contractors, but would be harder politically to sell. Maybe some form of public/private partnership?

As economies of scale go, a County wide waste management program makes sense. But so does local scale, for some aspects. Is there a reason that we can't:

- sort all of our waste plastics into each of the 10 categories that have economic value? Its fine if we have to train and pay someone to do this.
- use wood heat to melt our plastics into pellets (for sale) or ingots (for storage)?
- store those waste plastics until we have 20T collected - enough for a truck load to be delivered to a buyer?
- sell our scrap metal to the highest bidder?

This is similar to what we do right now. Only it would be more in-house. And the presence of a plastic source may encourage local industry taking up the challenge and making saleable products from the waste. I'm thinking water-proof timbers, but the list of possibility is fairly endless.

If we don't want to landfill:

In the next 15 years, we would need to develop a design, obtain the approvals, and construct a facility to shred our garbage, and feed an anaerobic digester the bits. Floaties, (some plastics, wood products, and oils), would be separated from Sinkies (glass, metals, dirt, construction wastes), and the remainder would be a mix of organics, plastics, and water. Waste heat from burning waste wood products would keep the system hot through the winter, and that would keep the system 'small'. After a long anaerobic stage (20 days?), a short aerobic 'polishing' stage would reduce the left overs to compost, the liquids to just water, and the inert solids could be screened to remove plastics and metals for sale, and the bits of glass, gravel, plaster, etc that would be left over would be able to be used as clean fill.

With clean fill, there wouldn't be a challenge of finding places to put it - we could give it away if we wanted to.

We're dealing with a relatively small facility - say 2300 tonnes/year/20 day residency/ 10% solids = about 1200m³. Waste from the transfer stations would be brought to the digester daily, and 80% of the volume would be removed = 50% through digestion, 30% from post processing diversion. The remaining 20% would be effectively inert.

Heating it with wood waste would require about 16 cords of wood waste per year. This should be simple to arrange. If we burn twice as much wood, it would be hot enough to use much shorter residency (and thus smaller facility).



APPENDIX F

Advertisement and Article in the Lanark Era



The Township of Lanark Highlands is identifying opportunities to maximize its waste management programs & increase diversion of materials from the landfill.

**Are you interested in waste management & recycling?
Do you have opinions you'd like to share?**

The Township will hold a FOCUS GROUP to receive public input on the draft Integrated Waste Management Plan /Waste Recycling Strategy.

These documents set out goals to increase diversion of blue box materials over the next 15 years, and explore different options to help meet these goals. The FOCUS GROUP is meant to obtain diverse ideas in a setting that fosters the expression of different points of view with no pressure to reach consensus.

A maximum of 12 participants should represent the following sectors in Lanark Highlands:

- Each municipal ward;
- The business community (LHBTA);
- the McDonald's Corners ReUsers;
- Municipal Council.

Eligible participants must be residents or taxpayers in Lanark Highlands Township, able to attend the meeting for two hours on the designated day, willing to review the draft documents prior to the meeting & express opinions on the topic both verbally & in writing.

To express interest in Focus Group participation, please email cgreen@lanarkhighlands.ca or call 613.259.2398 Ext. 249.

The Focus Group will be held on Wednesday NOV 20 from 6-8PM at 75 George Street, Lanark.

The draft Integrated Waste Management Plan /Waste Recycling Strategy will be available at www.lanarkhighlands.ca. All community members are invited to review the documents and send feedback.

Highlands works on waste strategy

By Gena Gibson
Era staff

Local residents can join a focus group to help increase the amount of recycling done by Lanark Highlands Township residents.

The township received more than \$72,000 from the provincial Blue Box recycling program for 2013, and the province requires all Ontario municipalities to monitor their municipal diversion rates and report back on the results. Public-works assistant Cathie Green explained to council at the Oct. 15 committee-of-the-whole meeting that in order to be eligible for the approved grant, the township has to consult the public about the development of a waste-recycling strategy.

She said the focus group would have about 12 members, with one from each township ward, one from the business community, one from the McDonald's Corners Reusers, and a representative from council. She said the group would "walk through the waste-recycling strategy and talk about some of the recommendations for strengthening our Blue Box program."

She said the township should put the draft plan on its website and advertise the fact that it is available, so people can look at it and send feedback directly to staff.

Back in 2011, council approved having staff take advantage of the province's Continuous Improvement Fund for 75 per cent of project costs, to a maximum of \$15,000, to develop the waste-recycling plan. Green explained that the strategy describes the current system

for recycling, and compares the township's diversion rates and program costs to similar municipalities.

It then sets targets for the next 15 years to increase the portion of solid waste diverted through the Blue Box program, with an aim to achieving provincial target rates in those 15 years. Green said the goal is to have the Integrated Waste Management Plan and Waste Recycling Strategy finished by the end of 2013, so it can offer information for waste-management services being tendered this fall.

She said the other component is a promotion and education plan. In 2010, staff members attended a course and developed a three-year plan for promotion and education, which was put in place at the staff

level from 2011 to 2013.

The purpose is to increase volumes of materials diverted from the landfill into the recycling program, and to decrease the percentage of garbage in the Blue Box material that goes to the recycling facility. She said the plan will help inform local residents about materials that are accepted, what happens to the materials once they leave the Blue Box, "and

how that forms an integral part of Lanark Highlands' waste-reduction plan."

Green said the tonnage of materials diverted from the landfill has decreased every year since 2009, which is typical in municipalities across Ontario and probably beyond. To turn that around, she stressed, the township needs to increase the efficiency and effectiveness of its Blue Box program.

Water Well Drilling

• One Day Service

• Pressure Grouting

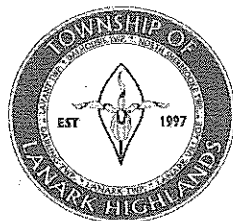
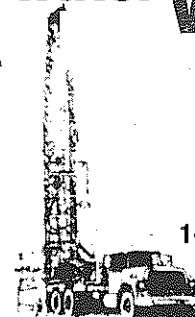
Wilf Hall & Sons

613-278-2933

1-888-878-2969 • Cell: 613-223-5082

www.wilfhallandsons.com

McDonald's Corners



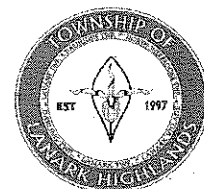
NOTICE Snow Removal 2013/2014

The Township of Lanark Highlands will not be responsible for damages to mailboxes, newspaper boxes or parked vehicles where the boxes or vehicles interfere with the snowplowing of Township Roads.

Parking of vehicles on Township Roads and Village Streets from 12:00 midnight to 7:00 a.m. will not be permitted from November 15, 2013 to April 15, 2014. The prohibition of parking applies to the entire road right-of-way, normally 10m (33') from the centre of the road.

It is an offence under the Ontario Highway Traffic Act to push snow onto or across a Township Road or Street. The removal of such snow piles by the Township will be charged to the adjacent property owner.

For further information contact:
Township of Lanark Highlands
Dave Ennis, Superintendent of Public Works
75 George Street, Lanark, ON K0G 1K0
T: 613-259-2398 ext. 239
F: 613-259-2291
E: dennis@lanarkhighlands.ca
www.lanarkhighlands.ca



The Township 2013 Awards

The Township of Lanark Highlands is pleased to announce its Awards Program:

Seniors Achievement Award
Economic Growth Award
Young Entrepreneur Award

To assist in the selection of a recipient for an award, residents are asked to submit the name of a deserving person for consideration. In making a recommendation, please provide a brief history of the accomplishments and contribution to the community. Please make your submission by **4:30 p.m. Monday November 25, 2013.**

Submit nominations to:

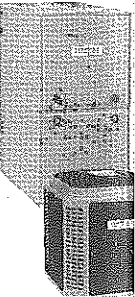
Township of Lanark Highlands
Attention: Ross Trimble CAO/Clerk
75 George Street Lanark, Ontario K0G 1K0
T: 613-259-2398

Please check our website at www.lanarkhighlands.ca

Note: Personal information is collected under the Access to Information and Protection of Privacy Act, and Questions about the collection of information should be directed to the CAO.

SAVE
IN AN
SEAS

Energy-E



TEMP
Heating and Co

QUALITY YOU

tempst

*Timely registration required for all installations. Jurisdictions where a compressor, coil, or heat exchanger is replaced with a new one-time replacement with a coil. APUE stands for Annual Fuel Utilization Efficiency. www.energytar.gov © 2013 Inter

people we meet as we travel across the country.

"It is time to step forward for our planet, and our future!"

"The diversity of individuals who have signed-up to march is impressive," reports march director Zach

her as she marches. She hopes that her participation will help recruit more Canadians to the march.

"I am excited to be part of something significant that will affect the changes we so desperately need," she said.

Submitted by Dave Murphy.

Perth celebrates its heritage

The Town of Perth will hand out Architectural Conservation Awards in February to recognize, promote and encourage excellence in heritage conservation in the town's buildings.

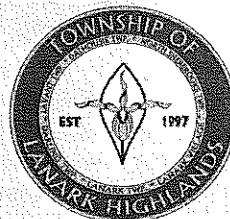
As Perth approaches its 200th anniversary in 2016, the awards program helps

to recognize the stewardship and pride of ownership that exists in Perth. Many original features of the community still exist, as Perth continues to grow and change among the backdrop of its early buildings.

You can nominate properties in the categories

of buildings, landscapes and education – related to heritage awareness. E-mail krennie@perth.ca to receive a nomination form.

The deadline for nominations is Dec. 31, with the awards presented at the Perth town council meeting next February.



The Township of Lanark Highlands is identifying opportunities to maximize its waste management programs & increase diversion of materials from the landfill.

Are you interested in waste management & blue box recycling?

Do you have opinions you'd like to share?

The Township will hold a FOCUS GROUP to receive public input on the draft Integrated Waste Management Plan /Waste Recycling Strategy.

These documents set out goals to increase diversion of blue box materials over the next 15 years, and explore different options to help meet these goals. The FOCUS GROUP is meant to obtain diverse ideas in a setting that fosters the expression of different points of view with no pressure to reach consensus.

A maximum of 12 participants should represent the following sectors in Lanark Highlands:

- ☒ Each municipal ward;
- ☒ The business community (LHBTA);
- ☒ the McDonald's Corners ReUsers;
- ☒ Municipal Council.

Eligible participants must be residents or taxpayers in Lanark Highlands Township, able to attend the meeting for two hours on the designated day, willing to review the draft documents prior to the meeting and express opinions on the topic both verbally and in writing.

To express interest in Focus Group participation, please email cgreen@lanarkhighlands.ca or call 613.259.2398 Ext. 249.

The Focus Group will be held on Thursday NOV 21 from 6-8PM at 75 George Street, Lanark.

The draft Integrated Waste Management Plan /Waste Recycling Strategy will be available at www.lanarkhighlands.ca. All community members are invited to review the documents and send feedback.



APPENDIX G

Focus Group Presentation



INTEGRATED WASTE MANAGEMENT PLAN

TOWNSHIP OF LANARK HIGHLANDS
NOVEMBER 20, 2013



- Introduction
- Current Waste Management System
- Future Waste Management Needs and Options
- Evaluation and Implementation of Options
- Financial Strategies
- Conclusion and Recommendations

INTRODUCTION



- Township of Lanark Highlands initiated the project to identify opportunities to
 - Determine a feasible waste diversion goal
 - Assess efficiency and effectiveness of our waste management programs
 - Maximize waste management programs
 - Increase participation in waste diversion programs
 - Divert waste from landfill
 - Extend the life of the Township's landfills

WASTE RECYCLING STRATEGY



- The Integrated Waste Management Plan (IWMP) includes a Waste Recycling Strategy (WRS)
 - Both originally developed based on Waste Diversion Ontario (WDO) 2010 data
 - IWMP updated to include available data as of Sept 2013
 - WRS developed based on Continuous Improvement Fund (CIF)'s *Guidebook for Creating a Municipal WRS*

OBJECTIVE AND NEXT STEPS



- The objective of the IWMP is to Identify best practices that are:
 - **Environmentally** sound
 - Compliant with **regulations**
 - Feasible and easy to **implement**
 - **Cost** effective and affordable
- Next Steps
 - Council endorsement of the IWMP
 - Adjustment of Township's Draft 2013 Promotion and Education Plan as necessary
 - Implementing initiatives
 - Performance monitoring and evaluation against established targets

IDENTIFIED CHALLENGES

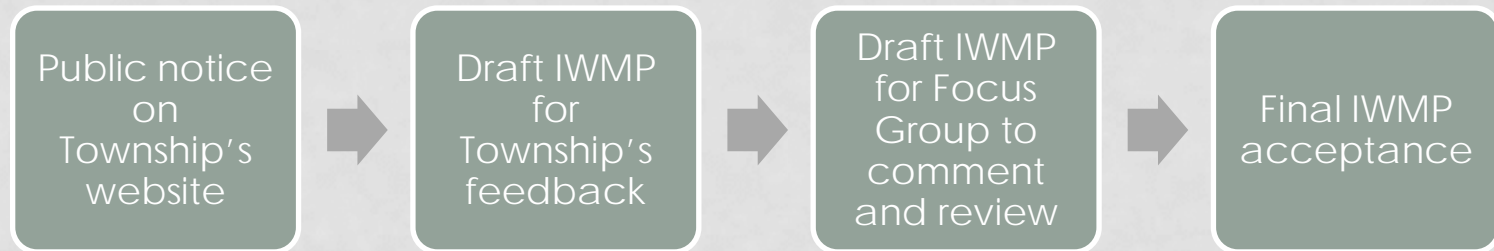


- The specific challenges include:
 - Large geographic area and relatively small population
 - Large proportion of seasonal residents
 - 4,294 households in total
 - 3,210 permanent + 1,081 seasonal
 - 3 multi-family
 - Limited budget and personnel for waste management initiatives
 - Shrinking disposal capacity at the Township's landfill
 - Lack of long-term waste diversion target
 - Inconsistency among local materials recycling facilities (process, acceptable material types)

PUBLIC CONSULTATION



- Public consultation during the development of the IWMP involves



- Where possible, efforts were made to capture and address the suggestions brought forth by the residents who provided comments

CURRENT SYSTEM



Curbside collection of
recyclables and garbage

Depot collection of
recyclables and garbage

- Village of Lanark only
- Weekly
- Bag limit: 2 (residential); 5 (IC&I)
- Contract with Waste Management Ltd.
- 7 depot locations
- Also accept C&D waste and large household items

Final disposal of
garbage at

Middleville waste
disposal site (WDS)

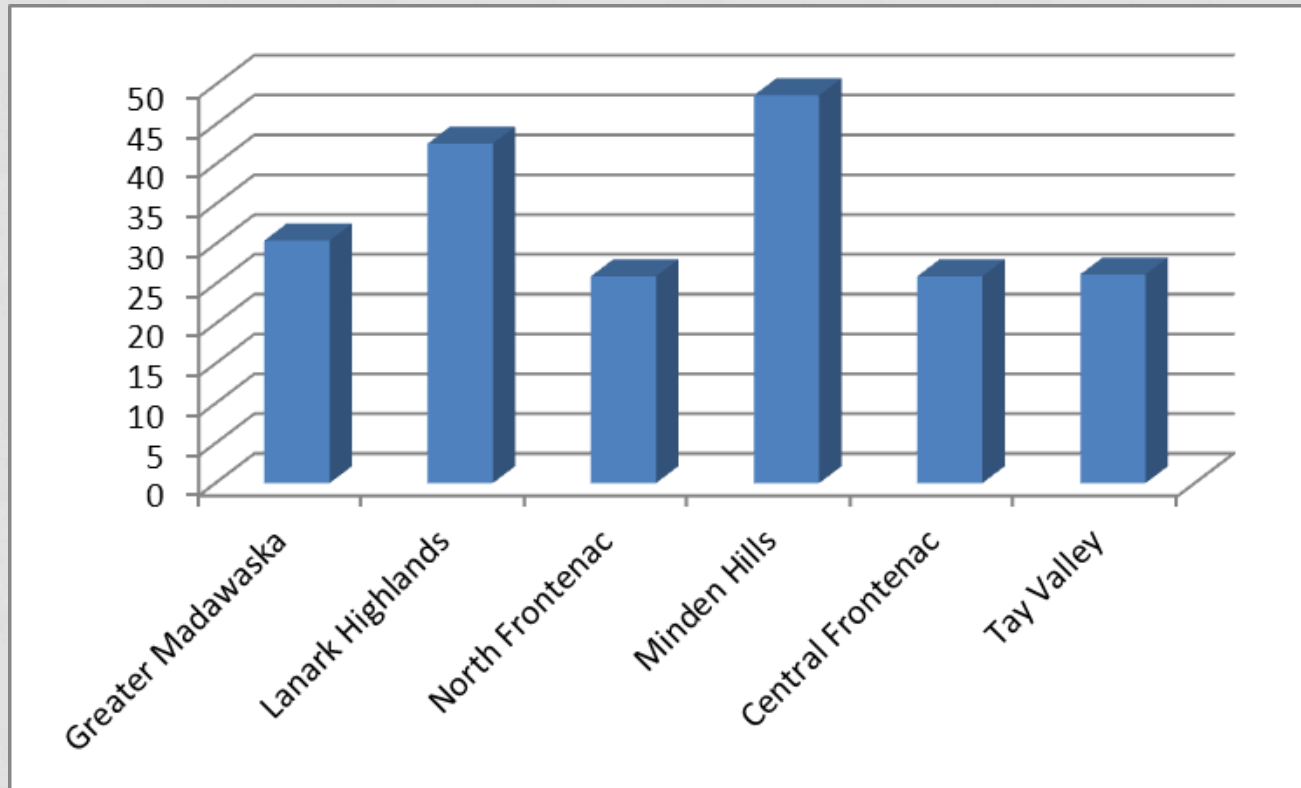
Processing of **Blue Box
materials** at
Ottawa Valley Waste
Recovery Centre
(OVWRC)
Through a contract with
Ewen Alexander

WASTE DIVERSION



- Residential GAP waste diversion rate: 42.62% (2011)
 - Leaf and yard waste
 - Accepted at the Middleville WDS and transfer stations at no charge
 - Left in place to decompose, no active composting
 - Used tires
 - Accepted at transfer stations at no charge
 - Cost saving benefit
 - Used tires picked up by Liberty Tire Recycling Canada Ltd.
 - WEEE
 - Accepted at transfer stations at no charge
 - Managed through the Ontario Electronic Stewardship program
 - Municipal Hazardous Waste Depot
 - Accepted at the Middleville WDS May through October at no charge
 - Operation costs subsidized by Stewardship Ontario and the Recycling Council of Ontario
 - Reuse Centre
 - Operated by community members at the McDonald's Corners WDS

2011 WASTE DIVERSION RATES



Comparison with selected municipalities in WDO rural depot south municipal grouping

WASTE DISPOSAL



| Site | Operating Hours | Status |
|------------------------|-----------------|--|
| Middleville WDS | 12 hours/week | • Active landfill and transfer station |
| McDonald's Corners WDS | 12 hours/week | • Has remaining capacity but temporarily closed • Currently operated as recycling depot/transfer stations |
| Snyc Road WDS | 8 hours/week* | |
| Robertson Lake WDS | 8 hours/week | |
| Watson's Corners WDS | 8 hours/week | • Officially closed • Currently operated as recycling depot/transfer stations |
| Lanark Village WDS | 7 hours/week | |
| Flower Station WDS | 4 hours/week | |

* hours reduced in winter

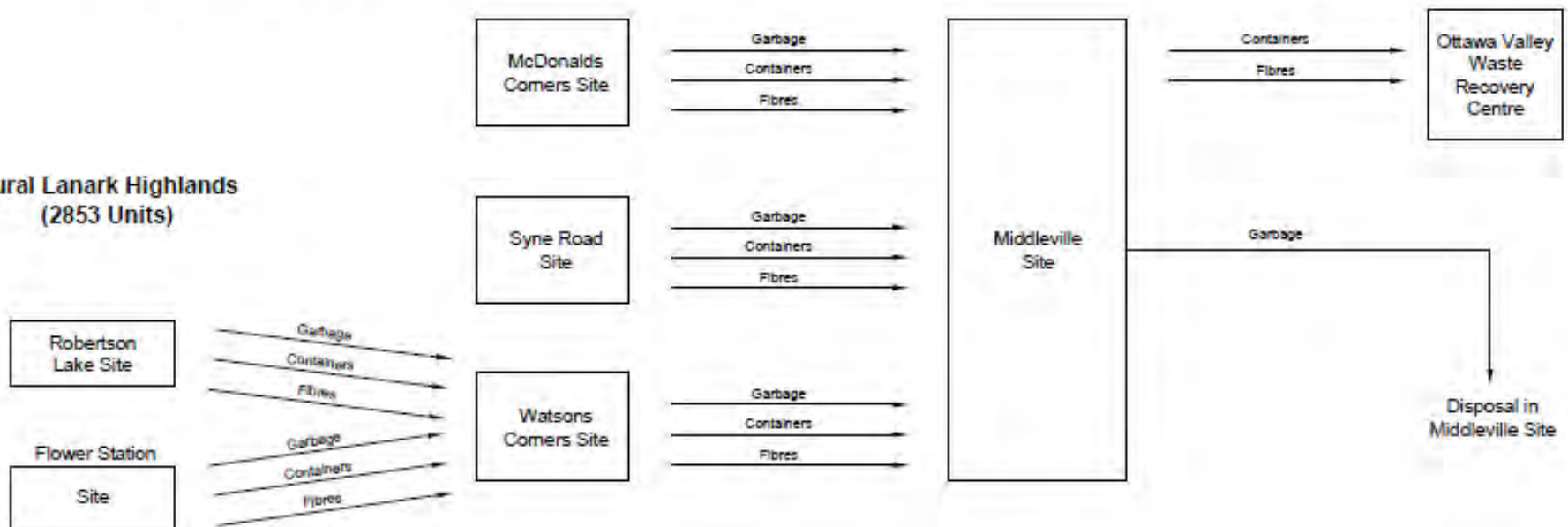
- Tipping fees
 - \$155/tonne for drywall, asphalt shingles, construction waste, un-bagged garbage, sofas, box springs and mattresses
 - No charge for tagged refrigeration units and recyclables
- Landfill capacity
 - Total of 75,430 m³ remaining - an additional 13 years starting 2013
 - Assumed a predicted population growth rate of 1.35% per year

CURRENT WASTE SYSTEM



Note : Service currently provided by Waste Management

Rural Lanark Highlands (2853 Units)



Note : Service currently provided by Ewen Alexander

CURRENT SYSTEM COST



- Overall system (2013)
 - Gross cost for waste services of \$1,090,000
 - Township receives funding through grants, levies, tipping fees, and material sales
 - Net cost for waste services of \$394,274 – allocated in the municipal tax bill
 - Middleville WDS: almost fully funded through tipping fees
- Blue Box recycling (2011)
 - Gross cost for blue box recycling \$204,700 – (\$195,919 net of material sales)
 - Net recycling cost of \$533.75 per tonne (\$37.82 per capita)
 - Lower compared to \$551 per tonne for WDO municipal grouping "Rural Depot – South"

FUTURE NEEDS



- Projections of waste to be deposited at the landfill

| Year | Service Population | Waste Generation | | Total Waste | | Cover Material (m ³) | Total Volume (m ³) |
|------|--------------------|------------------|---------|-------------|----------------|----------------------------------|--------------------------------|
| | | Domestic (t) | ICI (t) | t | m ³ | | |
| 2012 | 5,938 | 1,951 | 98 | 2,048 | 4,097 | 1,024 | 5,121 |
| 2026 | 6,826 | 2,242 | 112 | 2,354 | 4,709 | 1,177 | 5,886 |

- Anticipated future waste management tonnages

| | 2010 (Actual) | 2015 | 2020 |
|---------------------------------|---------------|-------|-------|
| Population | 5,180 | 6,020 | 6,438 |
| Total Waste (t) | 2,381 | 2,768 | 2,960 |
| Blue Box Material Available (t) | 883 | 1,027 | 1,098 |

OPTIMIZATION OPTIONS



- Priority initiatives identified through the WRS
 - Collection frequency – biweekly garbage collection
 - Recycling is more important and convenient than setting out garbage
 - User pay system for garbage – bag limits (at depots)
 - A tag or sticker to be placed on the garbage bags
 - Challenges: illegal dumping, concern for low-income families etc.
 - Full user pay program vs. partial user pay program
 - Training of key program staff
 - Including front line staff such as depot attendants
 - Free provincial training courses available
 - Contract modifications
 - Defining the desired outcomes while leaving room for contractors to innovate
 - Take best advantage of opportunities for processing recyclables
 - Consider multi-municipal partnerships for larger tonnages under co-operative contracts
 - Enhanced Promotion and Education
 - Township's Draft 2013 Blue Box Communication Plan, to be updated every 3 years
 - Improving signage at recycling depots

OPTIMIZATION OPTIONS



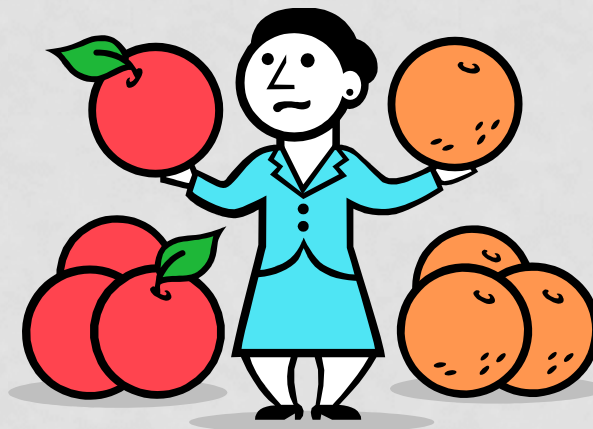
• Other Options

- Processing of organic waste
 - Windrow composting facility
- Backyard composting
 - Sell composters and promote their use
- Disposal bans and clear bags
 - A ban on recyclable materials being mixed with garbage
 - Clear bags allow easier screening of recyclables
- Re-Use programs
 - Re-Use centres and community reuse events
 - Consider weigh scale at Re-Use centres to monitor diversion amounts
 - Opportunity for CIF funding
- Construction and demolition waste diversion
 - Wood, concrete, asphalt (shingles), gypsum (drywall) and metals
 - Incorporate material segregation areas at the Middleville WDS
- Household hazardous waste diversion days
 - In partnership with local schools to promote a sense of community responsibility

EVALUATION OF OPTIONS



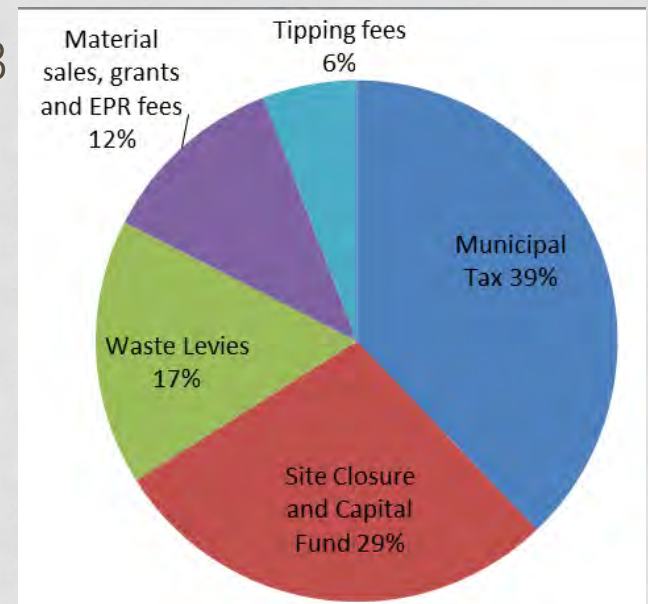
- Options were evaluated based on the following factors:
 - Advantages
 - Disadvantages
 - Ease of implementation
 - Cost implementation (capital and operating)
- Details are in Table 12 of the Integrated Waste Management Plan



IMPLEMENTING WASTE SYSTEM OPTIONS



- If the Township's waste diversion rate can be increased from the current rate of 42.6% to 50% by 2016, the site life of the Township's landfill would be extended (another ## years to) 2027.
- Funding sources for the system in 2013



FINANCIAL STRATEGIES



- Identified financing strategies include
 - User pay programs
 - Charge a bag fee to fund the recycling and waste programs
 - Ensures that businesses utilizing the municipal waste system pay for the services
 - Provides incentive to reduce waste
 - Tipping fees
 - Currently at \$155/tonne
 - The Township should monitor and adjust as required
 - A flat fee per household
 - Waste management fee removed from tax levy
 - \$122 per household to cover the net costs for providing all waste management services (except for operating Middleville landfill, and waste and recycling curbside collection costs)
 - Does not provide incentives for reducing waste
 - Does not take into account limited use by seasonal residents

MONITORING AND REPORTING PROGRAM



- Proposed milestone targets:
 - Divert 23.5% of municipal solid waste **through the blue box program** by 2019
 - 28.2% by 2024
 - 32.9% by 2029
- A measurement plan needs to be implemented
 - As a suggestion, starting 2014, the Township should use a spreadsheet to
 - to track outgoing recycling tonnages
 - to review the data on a bi-annual basis to determine trends
 - to compare with the previous 2 years of similar data
 - to assess the impact of implementation of Priority Initiatives on the tonnage of recyclables

Are there additional measures that should be used to track waste management performance (e.g., participation rates, waste/capita going to landfill)?

MONITORING AND REPORTING PROGRAMS



- Annual review of data for the impacts from other factors:
 - Introduction of additional initiatives
 - Revision of Township waste management policies
 - Addition of new residences (single or multi-residential), or commercial or institutional buildings
 - Any changes to the collection or processing
- Reporting by the Township

| | |
|------------------|--|
| End of each year | <ul style="list-style-type: none">• A brief summary for Council and the community, updating on the progress towards diversion goals |
| After 2 years | <ul style="list-style-type: none">• A summary to assess the progress towards the goal of 50% capture rate for Blue Box materials |
| After 5 years | <ul style="list-style-type: none">• A summary to assess the progress towards the goal of 60% capture rate for Blue Box materials• Updating WRS, evaluating the 10 year goal of 80% and revise WRS accordingly |

CONCLUSION AND RECOMMENDATIONS



- Specific challenges facing the Township
- Available landfill capacity to serve until 2026
- Current waste diversion rate of 42.6%; positive impact of increased diversion on landfill lifespan
- Current cost for Blue Box recycling is \$533.75 per tonne; implementation of the Priority Initiatives may increase diversion rates and operational costs
- Financial strategies identified
- Monitoring and reporting programs recommended

THANK YOU



Questions?



APPENDIX H

Public Survey



The Township of Lanark Highlands is interested in identifying opportunities to maximize its waste management programs and increase waste diversion rates. The current landfills have approximately 13 years left until reaching capacity. It can be a lengthy process to locate, approve and build something new. With your help, this Integrated Waste Management Plan will set the strategy to maximize waste diversion and optimize remaining landfill capacity.

- How to reduce the amount of garbage being buried in the landfill
- What can the Township do to encourage people to reduce or recycle their waste
- How should the waste management system be financed

1



Integrated Waste Management Plan

Rate Us! How are we doing?

Let us know how we are doing on the waste management services you currently use. On a scale of "Poor" to "Excellent" please tell us what you think.

| | Poor | Fair | Good | Very Good | Excellent | N/A |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. Curbside collection of blue box recyclables | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Curbside collection of garbage | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Drop-off services at transfer stations/the landfill | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Promotion and education materials, website, etc. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Customer service response to inquiries/issues | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

What do you like and dislike about the waste services you receive?

Thank you for rating our services. We're also interested in knowing what you do and don't like about the services we provide, and anything else you would like to share with our staff.

Please take a minute and write your comments here

Where would you typically look to get information on the Township waste management programs?

- ☐ Website
 ☐ Newspaper
 ☐ Mailouts
 ☐ the "Highland Voice"
 ☐ Municipal Office



Integrated Waste Management Plan

Waste System Optimization Options

The Township would like to find ways to reduce the amount of waste going to the landfill. One of the ways we can do this is by improving participation in the waste diversion programs such as blue box. As part of the development process for the Integrated Waste Management Plan, we have also identified new ways to reduce the amount of garbage going to landfill. We will be using your feedback to make recommendations to Council that may change your diversion and collection programs. Please carefully select the options you think are most important.

The following symbols describe the relative cost and impact of the diversion programs:

\$ Least Cost

\$\$ Mid Cost

\$\$\$ Most Cost

♻️ Least Impact

♻️♻️ Mid Impact

♻️♻️♻️ Most Impact

| | Not Important | Somewhat Important | Very Important |
|--|--------------------------|--------------------------|--------------------------|
| 1. Change the current curbside collection (in Lanark Village) from weekly to biweekly, while maintaining weekly blue box collection. \$ ♻️ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Introduce user pay system (e.g., bag limits at depots). \$ ♻️♻️ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Training of key program staff. \$\$ ♻️ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Contract modification (e.g., reviewing contracts to identify opportunities to improve efficiency and effectiveness of current services; investigating alternative opportunities for processing recyclables). \$ ♻️♻️ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Implement enhanced promotion and education program (e.g., improving signage at recycling depot/transfer stations; developing an updated communication plan). \$\$ ♻️♻️ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Processing organic waste (e.g., implementing a program to compost leaf and yard waste delivered to the Middleville waste disposal site). \$\$\$ ♻️♻️ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Implementing backyard composting. \$\$ ♻️♻️ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Implementing a disposal ban on recyclable materials being mixed with garbage and implementing a clear bag policy for garbage bags for easier screening of recyclables. \$ ♻️♻️ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



Integrated Waste Management Plan

Waste System Optimization Options

| | Not Important | Somewhat Important | Very Important |
|---|--------------------------|--------------------------|--------------------------|
| 9. Improving re-use programs and expand activities at Reuse centres. \$ ♻️ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Increase diversion of construction and demolition waste (e.g., implementing diversion activities for wood, concrete, asphalt, gypsun, etc at the Middleville waste disposal site). \$\$\$ ♻️ ♻️ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Household hazardous waste diversion days. \$\$ ♻️ ♻️ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Additional Comments



Integrated Waste Management Plan

Financial Strategies

The Township currently funds the waste management program through tipping fees, municipal taxes, waste levies, material sales, grants and producer fees (EPR). What strategies do you think the Township should implement in order to finance the waste management system.

| | Strongly Support | Some Support | Strongly Oppose |
|---|--------------------------|--------------------------|--------------------------|
| 1. Charging a fee per bag of garbage to cover the cost of recycling and waste programs. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Ensuring that tipping fees cover the cost of operating the landfill site. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Charging a flat fee per household to cover the cost of recycling waste programs. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Do you think that the operating hours at the landfills and transfer stations should be reduced in order to save costs? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Do you think that some of the transfer stations should be closed in order to save operating costs? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Additional Comments



Integrated Waste Management Plan

Tell us about yourself

We welcome you to provide some basic demographic information. This information will be used to help us make decisions about our programs and services, including our promotion and education programs.

1. Do you live in a single family home or multi-family home (townhouse or apartment)?

☐

Single Family

☐

Multi-family

2. Are you a:

☐

Full time Township resident

☐

Seasonal Township resident

3. Where do you live?

☐

Lanark Village

☐

Elphin

☐

Hopetown

☐

Middleville

☐

Poland

☐

Watson's Corner

☐

McDonald's Corners

☐

Township of Lanark Highlands/Rural Resident

4. Are you a business owner?

☐

Yes

☐

No

5. What is your gender?

☐

Male

☐

Female

☐

Prefer not to answer

6. What is your age?

☐

0-17

☐

18-24

☐

25-34

☐

35-54

☐

55-64

☐

65 and above



Integrated Waste Management Plan

Thank you for your participation!

Do you have any other ideas?

We want to know any other ideas you have to help us reduce the amount of garbage going to landfill. We want to consider all possible options, so please take a minute to write down your idea.

What happens to your input?

- All comments and questions will be summarized in a Report.
- All input will be considered by the Project Team and Council as they consider and evaluate opportunities to improve diversion from the landfill.

Would you like to receive updates about this project?

☐ Yes

☐ No

Please provide us with your name and email address to receive updates about this project

Name:

Email:

All comments regarding this project are being collected under the authority of the Municipal Act to assist the Township of Lanark Highlands in making a decision. Under the Municipal Act, personal information such as name, address, telephone number, and property location that may be included in a submission become part of the public record. Questions regarding the collection of this information should be referred to Ross Trimble, CAO/Clerk (613-259-2398 or rtrimble@lanarkhighlands.ca).

This concludes our survey! Thank you for your time.

At Golder Associates we strive to be the most respected global group of companies specializing in ground engineering and environmental services. Employee owned since our formation in 1960, we have created a unique culture with pride in ownership, resulting in long-term organizational stability. Golder professionals take the time to build an understanding of client needs and of the specific environments in which they operate. We continue to expand our technical capabilities and have experienced steady growth with employees now operating from offices located throughout Africa, Asia, Australasia, Europe, North America and South America.

| | |
|---------------|-------------------|
| Africa | + 27 11 254 4800 |
| Asia | + 852 2562 3658 |
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