THE CORPORATION OF THE
TOWNSHIP OF BILLINGS
BY-LAW 2014-013

Being a By-law to accept the
Comprehensive Waste Management Plan

WHEREAS, the Township of Billings has decided it is advantageous to develop a Comprehensive Waste Management Plan.

NOW THEREFORE, the Council of the Corporation of the Township of Billings accepts the Comprehensive Waste Management Plan

Read a first, second this 5th day of May, 2014

Read a third time and enacted this 5 day of May, 2014

Austin Hunt, Mayor

Kathy McDonald, Clerk Treasurer

COMPREHENSIVE WASTE MANAGEMENT PLAN

For Billings Township Landfill

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1. INTRODUCTION

This Comprehensive Waste Management Plan was prepared for the Township of Billings Landfill Site. The Township is located in the north central region of Manitoulin Island, Ontario. It includes Billings Township and the eastern half of Allan Township. The Landfill Site is accessed by Highway 540 in the Township of Allan (Lot 4, Concession 9), which is approximately 2.5 km west of the settlement of Kagawong, Ontario. The purpose of this Comprehensive Waste Management Plan is to provide an integrated approach to the management of waste in the Township that would provide the support for short-term and long-term waste management planning purposes.

Currently Provincial regulatory and policy requirements place the responsibility of managing residential solid waste on the municipality. Therefore, the main focus of this Comprehensive Waste Management Plan will be on the residential waste stream. The objectives of this plan can be summarized as follows:

- To review the performance of the Township's current waste management system and to develop projections in relation to future waste management practices.
- To review the Township's current waste diversion strategies and to analyze adequate alternative diversion approaches for future consideration.

Waste management planning consists of conducting an evaluation of the various aspects that are interdependent in relation to the management of waste. This plan covers the interdependent aspects of policy framework, background information, evaluations of alternative prevention and diversion, and residual disposal. A conclusion of the plan is presented along with key recommendations.

2. POLICY FRAMEWORK

The responsibility of waste management in Canada is shared by the federal, provincial, and municipal governments. The following provides a brief overview of each government's policies and strategies initiatives related to waste management. Information was compiled from various sources, including:

- Government of Canada
    - Environment Canada
- Province of Ontario
    - Ministry of the Environment (MOE)
    - Environmental Protection Act (EPA)
    - Waste Diversion Act (WDA)
    - Waste Diversion Ontario (WDO)
    - Blue Box Program Plan (BBPP)
    - Waste Electrical & Electronic Equipment (WEEE) Program Plan
    - Municipal Hazardous or Special Waste (MHSW) Program Plan

- Used Tire Program Plan (UTPP)
- Municipality of Billings
  - Waste Recycling Strategy
  - Design and Operation Plan

2.1. FEDERAL GOVERNMENT POLICY & STRATEGIC INITIATIVES

The Government of Canada focuses on the broad view in relation to municipal solid waste. This broad view includes issues related to sustainable development, toxic substances, international movement, federal lands and operations, and air emissions (including greenhouse gas emissions). The responsibilities of municipal solid waste collection, diversion (recycling and composting), and disposal operations are placed on local municipal government. The responsibilities of approvals, licensing, and monitoring of operations are placed on the Provincial and Territorial Governments.

2.2. PROVINCIAL GOVERNMENT POLICY & STRATEGIC INITIATIVES

As part of the Integrated Environmental Planning Division, the Ontario Ministry of the Environment and its Waste Management Policy Branch are responsible for the development of policies, regulations, and legislation for waste management in Ontario. The development of these policies and programs for waste management involves working with municipalities, the private sector, and associations. These policies and programs promote waste minimization, diversion, and recycling activities. The Waste Diversion Act (WDA) was passed on June 27, 2002, which provides the development, implementation, and operation of waste diversion programs and the main objectives of the act are to reduce, reuse, and recycle (3R's) waste.

2.2.1. Waste Reuse

There are a number of programs available in Ontario that promote the reuse of waste such as the Waste Electrical and Electronic Equipment (WEEE) program, the Ontario Deposit Return Program (ODRP), and the reusable bag program.

The WEEE program was developed to reduce the amount of electronics being disposed of in landfills, by promoting the reuse and recycling of old electronics. The ODRP program was developed to promote consumers to return used wine and spirit bottles for a refundable deposit. The reusable bag program promotes consumers to use a reusable bag instead of using disposable plastic bags.

On the Municipal level, the reuse of products can be promoted through education at the Municipal level, reuse can be promoted through education and support for goods exchange programs. Also, reuse is promoted through private and non-profit organizations such as local thrift stores, Habitat for Humanity and Salvation Army.

2.2.2. Waste Recycling

Through the WDA, a non-crown corporation was created called Waste Diversion Ontario (WDO) it is responsible for developing, implementing and operating waste diversion programs and waste management policy for various materials. Material is designated through the WDA and a waste diversion program is established by WDO. It is a requirement under the WDA that the WDO work collectively with an Industry Funded Organization, the public, and the MOE. Materials that are designated under the WDA include:

- Blue Box Waste
- Used Tires
- Waste Electrical and Electronic Equipment
- Municipal Hazardous or Special Waste

2.2.3. Residual Waste Management

The Environmental Protection Act provides the foundation and standards for waste diversion and waste management. There is limited standards on residual waste management, but the main focus is on promoting increased diversion and "zero waste" initiatives which reduces the amount of residual waste. Ontario Regulation 347, regulates the handling and disposal of waste. A Certificate of Approval (CofA) is required from the MOE, for the transfer, processing, and disposal of waste in Ontario.

2.2.4. Public Education

The proper management of waste is promoted by the Provincial Government with public education with various print material and partnerships with industries and environmental organizations, including WDO and IFOs.

2.3. MUNICIPAL GOVERNMENT POLICY & STRATEGIC INITIATIVES: TOWNSHIP OF BILLINGS

The Township has a Waste Recycling Strategy, which was developed to improve the efficiency and effectiveness of its recycling program and increase the amount of materials diverted from disposal. The Township has a Design and Operations Plan, which outlines the site design and development, environmental control measures, daily operations and maintenance, contingency measures, site closure, and post closure monitoring and maintenance. The Township also has a Waste Site Regulations By-Law 2013-45, which outlines the basic operations of the landfill and associated violations. The strategic initiatives that are included in the above reports include the following:

- Conserve residual waste disposal space at the landfill
- Maximize diversion efforts
- Develop and implement waste management solutions
- Minimize the short and long term risk to public health and the environment
- Support and promote regular environmental monitoring programs

- Maintain and optimize the development capacity of the landfill site

The Township's current policy and strategic initiatives that are intended to increase diversion and conserve disposal capacity are summarized in the following sections.

2.3.1. Waste Prevention

The Township passed the Waste Site Regulations By-Law 2013-45, which states mandatory recycling and set fines in accordance with violations. The Township's Waste Management Advisory Committee has held some public education sessions explaining the new options for recycling at the landfill and to hand out recycling bins. These two initiatives were to put into place to help with reduction of the amount of waste being disposed of at the landfill.

2.3.2. Waste Reuse

The Township does have a small area where residents can drop off items that can be reused. There are also a number of reusable items and clothing drop-off and/or pick-up programs available in the surrounding areas. These programs are in place through the local thrift shops, websites, local shelters, churches, and other local agencies.

2.3.3. Waste Recycling

The Municipality has the following initiatives currently in place:

- Depot drop-off for the diversion of recyclables
- Drop-off tire collection through a Waste Diversion Ontario (WDO) initiative
- Drop off household special waste collection event
- Drop off scrap metal collection
- Drop off waste electrical and electronic equipment

2.4. Policy Framework Summary of Findings

In general, the Township is largely responsible for the waste management system for its residents. The Province provides little direction with respect to the management of residual waste. However, the Province does provide a policy framework that has emphasis on a 3R's program for waste management that decreases the amount of residual waste being disposed. The Provincial Policy and Framework provides direction and/or assistance with the following:

- Blue Box Materials
- Used Tires
- WEEE
- MHSW

3. BACKGROUND INFORMATION

This section provides the Township's background information so that proper evaluation of waste management alternatives and to provide informed recommendations. The following data has been compiled from various sources:

- Statistics Canada
  - Community Profile 2011: Billings Township
- Township of Billings
  - Waste Recycling Strategy
  - Design and operations Plan
  - Staff
- Waste Diversion Ontario (WDO)
  - Residential 'Generally Accepted Principles' (GAP) Diversion Rate (2010-2011)
  - Annual Municipal Datacall (2010-2011)

3.1. COMMUNITY PROFILE

The Township consists of an area of approximately 209.3 km^2 and is located in the north central region of Manitoulin Island. This area includes the Township of Billings and the eastern half of Allan Township. In 2011, the permanent population of the Township was 506[1] with a population density of 2.4 persons/km^2. The total dwelling count was 704, of which 244 are occupied by usual residents making that 35% permanent residents and 65% seasonal residents. The Township is largely rural with the majority of the development being primarily situated along shorelines.

3.2. EXISTING SERVICES

The Township provides blue box recycling through a drop-off depot and the collection services are contracted out. The residual waste is disposed of at the Township's landfill. The landfill accepts all residential waste from the Township and charges tipping fees for certain items. The Township provides drop-off bins at the landfill site for the collection of recyclables. There are bins for cardboard, paper, and commingled recyclables. Used tires, electronics, and scrap metal can also be dropped off at the landfill for recycling. The landfill layout is shown in Appendix 1.

4. MUNICIPAL DISPOSAL SITE

4.1. Site Description

The approved Kagawong Landfill is located in the Township of Allan, District of Manitoulin and is located on the eastern half of Lot 4, Concession 9, off of Highway 540. The landfill is located approximately 2.5 km west of the settlement of Kagawong. The Provisional CofA issued in 1980 permits landfilling of waste on 0.81 ha on the east half of Lot 4, and includes a 30 m buffer zone. The Kagawong Landfill is accessed directly from Highway 540. The total property is owned by the

[1]Statistics Canada, 2011 Census.

Municipality which totals an area of approximately 60.2 ha. Surrounding lands are designated by the Township of Billings as "Rural" with some commercial and residential development. The site is presently used solely for solid non-hazardous waste disposal. The nearest residence is approximately 0.75 km southeast of the site on Lake Kagawong, and the nearest permanent residence is approximately 1 km east of the site on Highway 540.

4.2. Capacity Determination

There are limitations that the available volume remaining are dependent upon at the Kagawong landfill. These limitations on the site are placed by the Certificate of Approval, applicable provincial regulations, municipal zoning, and official plan requirements. The primary constraint is the 0.81 ha area for landfilling which was originally defined in the 1980 Certificate of Approval Number A550501.

Based on a recent survey, the Kagawong Landfill is estimated to have approximately 27,000 m^3 of compacted waste. The current estimated annual volume of waste received at the site is approximately 750m^3 per year. Based on a maximum allowable limit of 40,000 m^3 of solid non-hazardous waste, there is approximately 17 years of allowable use at the Kagawong Landfill.

The defined area of 0.81 ha was defined prior to the municipality purchasing the lands surrounding the landfill, which now comprise a total of 60.2 ha that includes the area landfilled. The amount of waste currently comprises approximately 0.93 ha of the 60.2 ha of land. As such, the Township of Billings is applying to the MOE for an extension to the current landfill to be adjusted to 4.0 ha of waste disposal area, within 60.2 ha landfill. A current survey of the landfill is provided in Appendix 1.

4.3. Site Operation

4.3.1. Hours of Operation

The WDS is planned to operate according to the following schedule:

Day of Week	Hours
Tuesday	4 pm – 8 pm
Thursday	4 pm – 8 pm
Saturday	10 am – 6 pm
Sunday	1 pm – 6 pm

4.3.2. Site Access

The Site is accessed by Highway 540 (on the north side) in the Township of Allan, District of Manitoulin, approximately 2.5 km west of the settlement of Kagawong, Ontario. A sign indicating the direction of the landfill is posted on Highway 540, as well as at the entrance to the landfill. The landfill is only to be accessible during the approved operating hours and is locked by gate during non-operating hours.

5. RESIDENTIAL WASTE GENERATION & DIVERSION

5.1. Waste Generation

Residential waste generation consists of everyday household material that cannot be reused, recycled, and are non-hazardous. It is important to take into consideration what is being generated in the residential waste stream because it all ends up in a landfill. Residential waste generation in the Township is disposed of at the Kagawong landfill. At the landfill, the waste is disposed of in a garbage truck that compacts the waste and then dumps the full load in the designated landfilling area. The area where it was dumped is later covered to prevent attracting pests and windblown litter.

5.2. Waste Diversion

Waste diversion is achieved by reducing, reusing, and recycling materials. Waste diversion prevents these materials from ending up in landfills. The definition for the waste diversion rate is the total amount divertible content (including waste reuse, recycling, and organics) over the total amount of waste produced (including divertible waste and residual waste). These waste diversion rates are usually expressed as percentages. The current provincial targets for waste diversion are 60%.

5.3. Waste Reuse

In many cases materials that are considered waste can actually be reused for another purpose or used by someone else. It is harder to determine what the diversion rate is for reused material because often times they do not go through the landfill. Residents may actively reuse materials by giving them away, having yard sale, or by donating them. Although a diversion rate cannot be well determined, reusing materials is a great way of reducing the amount of residual waste generation.

5.4. Waste Recycling

5.4.1. Blue Box Materials

The Township provides six drop off bins at the landfill site for the collection of recycling materials. Three bins are used to collect cardboard, one for paper and two for comingled recyclables. Municipal Waste and Recycling Consultants are responsible for collecting the recyclables every two weeks and every week in the summer months. Table 2 below shows what recyclable materials are acceptable at the landfill.

Table 1: Recyclable Blue Box Materials
Paper
• Newspaper • Magazines • Phone books • Paperbacks • Hardcover books • Household Paper
Cardboard
• Boxboard • Corrugated (no waxed)
Comingle
• Food tins • Pop cans • Aluminum foil and trays • #1 PETE plastic containers and trays • #2 HDPE screw top plastic bottles (no plastic bags) • #3 V plastic bottles • #4 LDPE plastic bottle • #5 PP plastic bottles, tubs, lids, and bottle caps • #6 PS plastics

5.4.2. Ontario Deposit Return Program

Although the Municipality is not directly involved in the deposit return program for beer and liquor bottles, the local LCBO collects these items for return.

5.4.3. Waste Electrical & Electronic Equipment (WEEE)

There is a storage container at the landfill for the collection of electronic waste. The electronic waste is then picked up by Byers Recycling Services Ltd.

5.4.4. Municipal Hazardous or Special Waste (MHSW)

The Township of Central Manitoulin provides a "Household Hazardous Waste Collection Event" once a year for communities in the surrounding area, including the Township of Billings. Residents can drop off the following household special waste:

- Adhesives, glues, resins
- Hobby supplies
- Latex and oil based paints
- Stains, thinners, strippers and solvents
- Car and dry cell batteries
- Degreasers
- Engine oil and transmission fluid
- Anti-freeze
- Fluorescent light tubes
- Insecticides, pesticides, herbicides
- Propane tanks
- Swimming pool chemicals
- Wood preservatives
- BBQ lighter fluid
- Aerosol cans
- Oven and drain cleaner
- Pharmaceuticals
- Rat and mouse poisons

Collection and diversion of these materials are contracted to Drain-All Ltd. The Township of Central Manitoulin invoices the Township of Billings according to the number of participating households from Billings that use the HSW collection event.

5.4.5. Used Tires

Residents are permitted to drop off four tires per year free of charge at the Landfill site, as permitted by Ontario Tire Stewardship (OTS). Tires are kept in a designated area at the Landfill until they are collected and recycled by the OTS. The Township accepts the following types of tires as part of the OTS program:

- Passenger and light truck tires
- Medium truck tires
- Agricultural drive and logger skidder tires
- Small and large industrial tires
- Small, medium, large and giant OTR ("off the road") tires

5.4.6. White Goods & Scrap Metal

Scrap metal is collected in a designated spot at the Landfill site in a 40 yard roll off bin. Residents can drop off materials such as aluminum, steel and iron. Collection is provided by Island Salvage on a call-in basis as the bin reaches capacity. Revenue is collected by the Township based on the quality and weight of metals per load.

6. CURRENT PERFORMANCE

6.1. Residual Waste Generation

According to the landfill attendant, the Township does not weigh or record volumes of waste disposed at the landfill. The landfill attendant did, however, provide the number of times the truck was filled for the year 2013, which is 18 cubic yards. Using volume to weight conversion guidelines[2], approximately 350 tonnes of waste was disposed at the landfill for 2013. By adding the blue box recycling and scrap metal tonnes, the total residential waste generated for the Township is 413.52 tonnes.

6.2. Residential Blue Box Recycling Program

In 2013, the Township diverted approximately 49.2 tonnes, or 12% of the total waste stream, through its blue box depot recycling program. Currently, the most common material recycled is fibrous materials (i.e., paper and cardboard). Table 6 below summarizes the amount of waste being diverted through the Township's current Blue Box program.

Table 2: Blue Box Recyclables Diverted for 2013

Residential Waste Stream	Tonnes Diverted	Percent of Materials Diverted
Cardboard (OCC)	27.51	55.9%
Paper (ONP)	13.3	27%
Co-mingle	8.41	17.1%
Total Diversion	**49.22**	**12%**

* Does not include scrap metal, which is not a Blue Box diversion item.

6.3. Scrap Metal

In 2013, the Township diverted an estimated 14.3 tonnes of scrap metal, or 3.4% of the total waste stream through its scrap metal collection at the landfill. Scrap metal is collected by Island Salvage.

6.4. Summary

The Township's divertible materials that are recorded and can be used to calculate a diversion rate are the blue box recyclables and scrap metal. Electronic waste and used tires are collected at the landfill but are difficult to get records for in order to calculate a more accurate diversion rate. The total amount of divertible materials in tonnes divided by the total amount of waste generated (includes residual waste and divertible materials), gives the Township a diversion rate of 15.4% for 2013.

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[2] Standard Volume to Weight Conversion Factors, U.S. Environmental Protection Agency (EPA). http://www.epa.gov/osw/conserve/tools/recmeas/docs/

7. WASTE DIVERSION POTENTCIAL

In order to determine the Township's waste composition and potential diversion, Billings Waste Management Advisory Committee conducted a waste sorting activity at the landfill on April 13, 2013. The committee collected ten random bags of waste at the landfill and sorted the waste. Their findings are summarized in table 3 below.

Table 3: Township's Waste Composition	
Category	**Mass (lbs)**
Electronics	3.6
Styrofoam	1.2
Cartons	2.0
Aluminum Cans	0.8
Metal	5.0
Plastics 1-6	21.4
Cardboard	4.5
Paper	13.8
Compost	38.0
Glass	7.6
Garbage	23.4
Total	**121.3**

Figures 1 and 2 below illustrates in a graph the estimated composition of waste in the Township's residential waste stream for 2013 with composting and without composting. As seen in Figure 1, approximately 73% of the Township's waste stream is comprised of recyclable materials which includes composting. Of this, the greatest proportion would be composting (31%), followed by comingle recyclables (20%), recyclable paper (11%), metals (4%), recyclable cardboard (4%) and electronics (3%). In Figure 2, approximately 42% of the Township's waste stream is comprised of recyclable materials without composting. Of this, the greatest proportion would be comingled recyclables (20%), recyclable paper (11%), metals (4%), recyclable cardboard (4%) and electronics (3%).

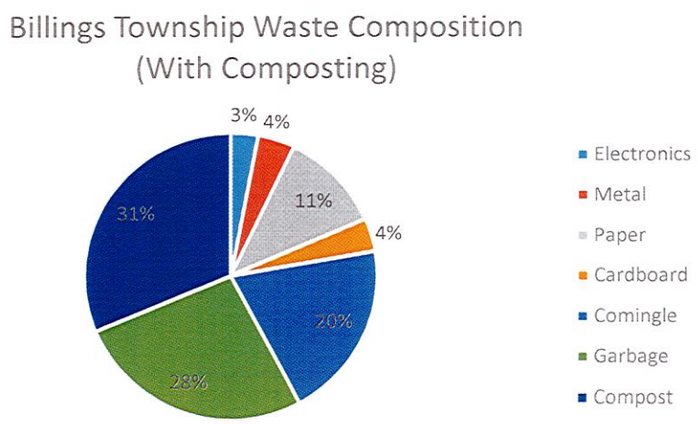

Figure 1: Billings Township Waste Composition (With Composting)

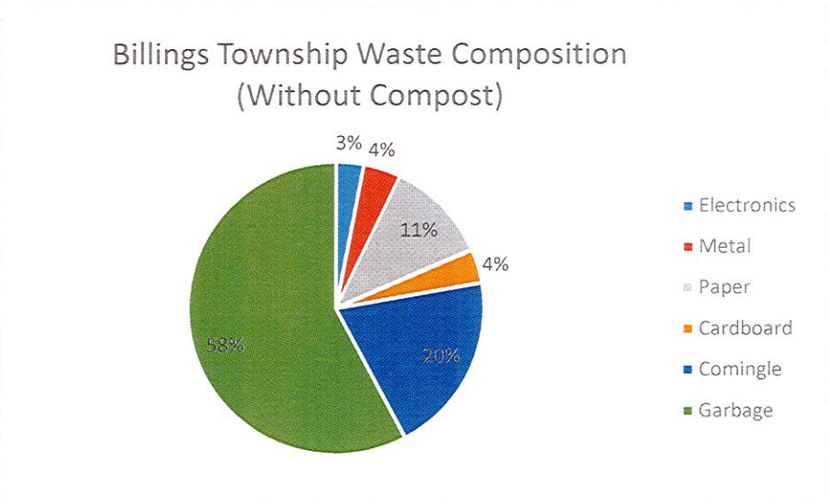

Figure 2: Billings Township Waste Composition (Without Composting)

Tables 4 and 5 presents the tonnage of materials in the residential solid waste composition with and without composting. In Table 4, the total waste generated is estimated at 350 tonnes and the available recyclable material for diversion with composting is 255.5 tonnes. In Table 5, the available recyclable material for diversion with composting is 147 tonnes.

Table 4: Residential Solid Waste Generated (With Composting)		
Residential Waste Stream	**Estimated Tonnes Generated**	**Percent of Total**
Electronics	10.5	3%
Metal	14	4%
Paper	38.5	11%

Cardboard	14	4%
Comingle	70	20%
Compost	108.5	31%
Garbage	94.5	27%
Recyclable Material Available for Diversion	**255.5**	**73%**
Total Waste Generated	**350**	**100%**

Table 5: Residential Solid Waste Generated (Without Composting)		
Residential Waste Stream	**Estimated Tonnes Generated**	**Percent of Total**
Electronics	10.5	3%
Metal	14	4%
Paper	38.5	11%
Cardboard	14	4%
Comingle	70	20%
Garbage	203	58%
Recyclable Material Available for Diversion	**147**	**42%**
Total Waste Generated	**350**	**100%**

8. PROJECTED FUTURE WASTE MANAGEMENT NEEDS

According to a population and housing needs and supply study performed by the Manitoulin-Sudbury District Services board (MSDSB) in 2009, the Township's population is projected to grow by 7% by 2031, to 578[3]. Housing projections indicate a growth of 7% by 2031 as well. As a result of population and housing growth, solid waste generated rates in the Township are expected to increase slightly over that time span. Table 6 below depicts the expected growth rates for solid waste generation and blue box material, based on projected population and housing growth rates.

[3] Manitoulin-Sudbury Housing Needs, Supply, and Affordability Study. September 2009. https://www.msdsb.net/index.php/local-reports/social-housing

Table 6: Anticipated Future Growth					
	2013	**2016**	**2021**	**2026**	**2031**
Population	506	564	569	574	578

Total Waste Generated (tonnes)	350	390	394	397	400
Blue Box Material Available (tonnes)	89	99	100	101	101

9. EVALUATION OF ALTERNATIVE PREVENTION & DIVERSION METHODS

Through the Policy and Strategic Initiatives and background information presented above, it was concluded that, the Township still needs to increase its diversion rate. The Township should investigate methods to increase its diversion rate, to meet the average total residential waste diversion rate for its municipal grouping, which is 21% but also to ensure environmental security and that waste is managed efficiently and effectively. To facilitate this goal, alternative prevention (reduction) and diversion (reuse and recycling) methods and improvements to the existing waste diversion methods are evaluated by considering what is viable for the Township.

9.1.Recycling Initiatives

The majority of the Township's diversion is through recycling. Currently, the Township offers a wide range of recyclables under the blue box program. Ultimately, the types of materials available for recycling are dependent on a market for the materials. The Township recognizes the importance of a successful blue box program and has invested in improving the program and has invested in improving the program through developing a Waste Recycling Strategy. The Waste Recycling Strategy provided in Appendix 2 discusses in detail the current blue box program and future initiatives. A summary of the blue box recycling initiatives is provided below. For more details regarding the blue box recycling initiatives, please refer to the Waste Recycling Strategy.

- **Expansion of Acceptable Recycling Materials:** For maximum diversion a wide variety of recyclable materials is required. Deciding on which recyclable materials to include in the blue box program typically depend on the availability, collection costs, and market viability for the respective material. Markets are constantly changing; therefore, it is important for municipalities to stay abreast of material markets.
- **Expansion of Acceptable Recycling Materials:** For maximum diversion a wide variety of recyclable materials is required. Deciding on which recyclable materials to include in the blue box program typically depend on the availability, collection costs, and market viability for the respective material. Markets are constantly changing; therefore, it is important for municipalities to stay abreast of material markets.
- **Bag limits:** implementing bag limits encourages residents to divert more recyclable materials to avoid exceeding bag limits.
- **Enhancement of Recycling Depot:** improving site aesthetics and convenience can encourage more usage.

- **Multi-municipality Recycling Collection and Processing Contract:** investigate the possibility and potential cost savings of a collaborative hauling and processing contract for recyclables with other neighbouring municipalities.

9.2. Waste Reduction & Reuse Initiatives

Ultimately the best way to reduce the amount of waste generated is through reduction and reuse initiatives, because it reduces the amount of energy and resources that are required to transport, process, or dispose of the waste. The implementation of reduction and reuse initiatives could be achieved at a fairly low cost. These initiatives include the following:

- **Promote Reusing Items:** encourage residents to find ways to reuse items that they no longer need. Examples would be to give away or sell the items.
- **Clothing Donations:** encourage residents to donate their used and unwanted clothing to thrift shops or other reuse organizations.
- **Implementation of bag limit:** the implementation of a bag limit has been proven to reduce the amount of residual waste generation by encouraging users to become more conscious of the amount of waste they generate.

9.3. Organics Diversion Initiatives

Organics in waste generation contribute a large amount of weight. Organics in waste generation are food scraps. The following is an initiative that the Township can encourage residents to do on their own, that would reduce the amount of organics going into the landfill:

- **Backyard Composting:** Backyard composting is ideal for rural properties and single detached homes which have the capacity and increased convenience for composting. It is recognized that some residents do not compost for fear of attracting bears. However, through proper management of the composting activities (e.g. keep aerated, compost only plant based materials, etc.) the likelihood of bears becoming a nuisance is low. Public education through local media and newsletters can educate residents on the benefits of backyard composting and methods to avoid attracting bears.

10. EDUCATION, OVERSIGHT, & ENFORCEMENT

It should be recognized that waste reduction, reuse, and recycling relies largely on behavioural changes. Behavioural changes are typically established through educational programs, policy changes, and/or enforcement.

10.1. Information Distribution

Information regarding the Township's waste management practices and educational information on waste diversion initiatives has been distributed to residents through mail. The information has also been placed on the Township's website. The combination of these two

methods of distributing information is considered to be an adequate means of ensuring that the Township's residents are getting the information. Another means of distributing information is through the local newspapers. It is recommended that the Township continues to provide diversion and general waste management information through mail outs, local newspapers, and through the Township website. It should be ensured that the information provided include:

- Recyclable blue box materials list and sorting guide.
- Household hazardous waste collection events and acceptable waste
- hours of operation
- Composting options

The information should be presented in a way that is easy to read and understand. Pictures are also a great way to make it easy for residents to understand. This will help to achieve a higher level of public education on the diversion options at the landfill. Since there is a high seasonal population, there should be a summer promotion of recycling.

10.2. Potential Educational Initiatives

Providing educational materials to residents strengthens the commitment from the community with respect to waste diversion. As previous stated, the Township currently provides residents with waste management information and diversion initiatives through mail and the Township website. These methods of informing residents of the waste diversion options available and any changes to waste management practices in the community is considered to be the most cost effective.

It is recommended that any new and existing waste diversion initiatives be distributed to residents in a similar manner. This increased education and promotion of waste management information would be to increase the communities commitment to the waste diversion options made available to the residents. Increased encouragement of diversion, including composting is recommended in future communications.

10.3. Oversight & Enforcement

For waste diversion programs to be successful it relies on the compliance and commitment from the community. In order to achieve this, the implementation of policies and/or By-laws can be effective provided that they are properly enforced.

Currently, the Township does have a By-law in place that encourages residents to divert their waste. The By-law requires that acceptable recycling material be properly sorted from residual waste. Residents are require to use clear bags so that it enables visual inspection by the landfill attendant to ensure that waste is sorted properly. Waste that is not properly sorted will not be

allowed to be disposed of. If that resident continues to not sort their waste, a fine may be imposed.

11. Conclusion

In conclusion, this comprehensive waste management plan was prepared for the purpose to provide an integrated approach to the management of waste in the Township that would provide the support for short-term and long-term waste management planning purposes. The plan reviewed the performance of the Township's current waste management system and presented the Township's potential waste diversion. The Township's current waste diversion strategies and adequate alternative diversion approaches for future consideration were also reviewed.

It is concluded, that the Township has the potential to improve the current waste management system by adopting additional diversion strategies. The potential for waste diversion shows that the Township can obtain a diversion rate of 73% with diverted compost and 42% without the diverted compost. The diversion rate with the composting as a divertible would surpass the provincial target of 60%. In addition, these additional diversion strategies would assist in prolonging the life span of the landfill. Educational material and promotion of these additional diversion strategies would greatly assist in making them a success for the Township.

This plan should be reviewed and taken into consideration for the planning of short-term and long-term waste management purposes for the Township's landfill.