Prepared By:

# Town of Saugeen Shores

# Long-Term Waste Management Plan

**GMBP File: 219181**

**August 2020**

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**LONG-TERM WASTE MANAGEMENT PLAN**

**TOWN OF SAUGEEN SHORES**

**AUGUST 2020**

**GMBP FILE: 219181**

# 1. INTRODUCTION

The Town of Saugeen Shores (the Town) retained GM BluePlan Engineering Limited (GMBP) to assist in preparing a Long-Term Waste Management Plan (WMP). The Town occupies the west-central portion of the geographical region known as the County of Bruce. The Town of Saugeen Shores was formed in 1999 as the result of the amalgamation of the former Township of Saugeen, the former Town of Southampton and the former Town of Port Elgin. The Town of Saugeen Shores covers an area of 171.05 $km^2$ and, based on the 2016 Census data, has a permanent population of 13,715 persons not including the relatively high number of seasonal residents and the influx of tourists during the summer months.

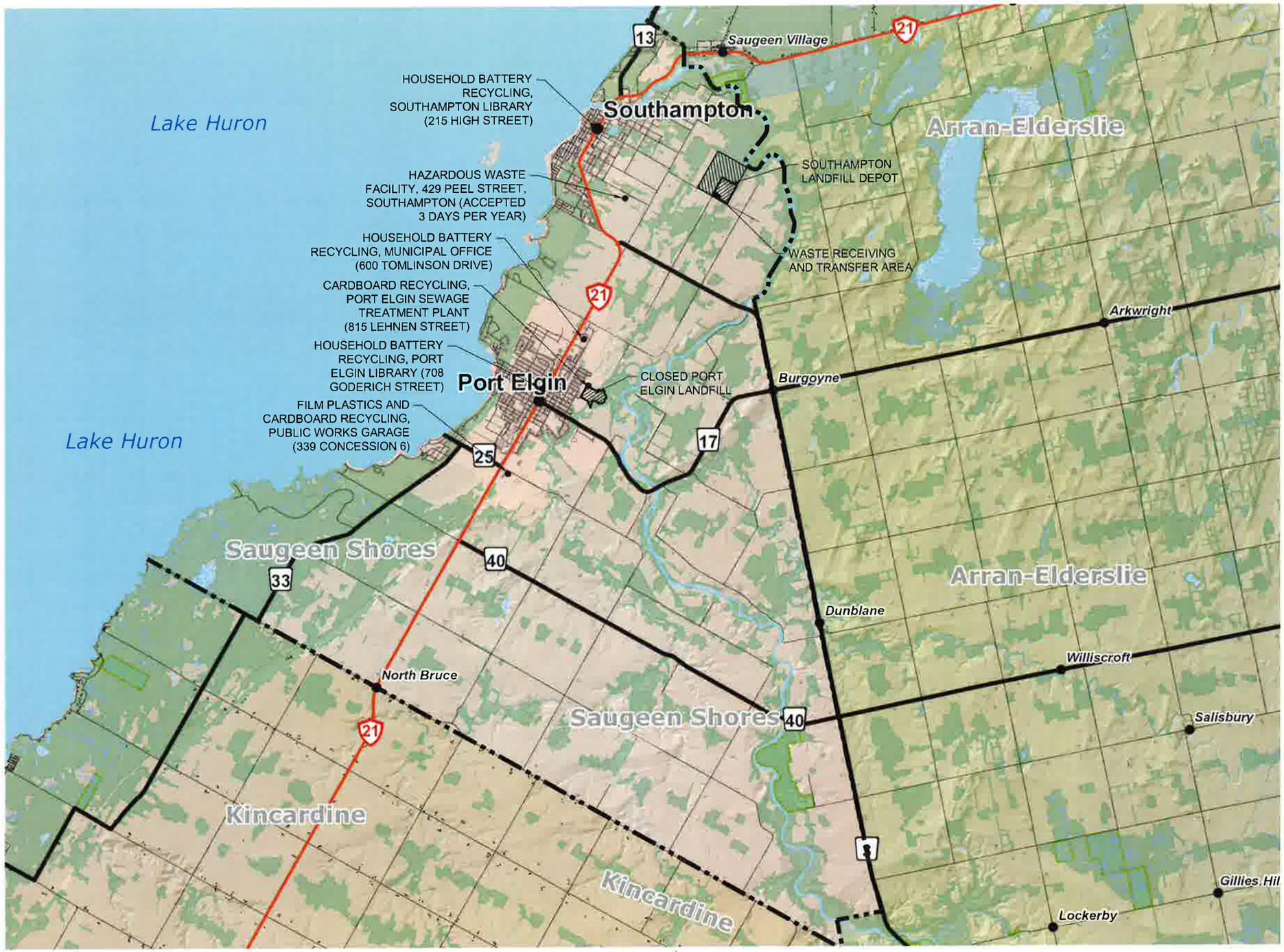
The Towns of Port Elgin and Southampton were each previously serviced by landfills, of which the Town assumed ownership of upon amalgamation. The Port Elgin Landfill was filled to its approved capacity and closed in July 2007, the Southampton Landfill Site has serviced the entire Town since that time. The municipal boundaries and the locations of the landfill sites are presented in **Figure 1-1**.

# 2. PURPOSE AND SCOPE OF STUDY

The purpose of this Waste Management Plan (WMP) is to provide a "holistic" approach to the Town's waste management program that will provide the support for both short-term and long-term waste management planning purposes. In accordance with the Environmental Compliance Approvals (ECA: formerly a Certificate of Approval), the Town's existing landfill sites are only to be used for the disposal of domestic (i.e. residential), commercial and non-hazardous solid industrial wastes. Under current Provincial regulatory and policy requirements, it is the responsibility of the local municipalities to manage the residential solid waste and the industrial, commercial and institutional sector (IC&I) is responsible for managing their own waste. Consequently, this WMP primarily focuses on the residential sector. However, consideration is also given to solid waste generated from the IC&I sector within the Town, including the tourism industry, as it is recognized that solid waste generated by this sector has been, and likely will continue to be, permitted to be disposed of at the Town's Landfill Site.

As of early 2020, the Town has an estimated ±10 to 12 years of service life for residual waste disposal at the Southampton Landfill Site based on the current waste generation rates for the entire Town (i.e. early 2032). Considering the available disposal capacity, the Town is considered to be in a moderate position in terms of residual waste disposal security for the planning period of this WMP. Therefore, the main focus of this WMP is on maximizing the site life of the existing landfill through waste diversion and operational improvement opportunities and to evaluate residual waste disposal options with respect to the long-term waste management plan for the Town.

219181
Town of Saugeen Shores
Waste Management Plan




LEGEND

LIMITS OF THE TOWN OF SAUGEEN SHORES

SOUTHAMPTON LANDFILL DEPOT
1. CARDBOARD
2. FILM PLASTICS RECYCLING
3. FLUORESCENT BULB RECYCLING
4. PROPANE TANKS
5. HOUSEHOLD BATTERIES
6. MATTRESSES AND BOX SPRINGS
7. TIRES (OFF RIM)
8. WHITE GOODS (TAGGED)
9. MERCURY CONTAINING GOODS
10. E-WASTE

SCALE : 1:100,000
DECEMBER 2019

# MAP OF THE TOWN OF SAUGEEN SHORES

Town of Saugeen Shores
County of Bruce

Figure No. 1-1

BluePlan ENGINEERING

FILE:C:\Civil 3D Projects\219181 Figures-K.dwg LAYOUT:Fig1-Site Location Map
LAST SAVED BY:Kboers, 12/10/2019 4:15:48 PM PLOTTED BY:Ken Boers - GM BluePlan 12/10/2019 4:16:10 PM

As part of this Waste Management Plan, the scope of the Study can be summarized as follows:

1) To assess the performance of the Town's current waste management system, and to develop projections regarding future waste management practices including waste volumes, types, and sources.
2) To establish baseline waste generation and diversion rates for future assessment of the Town's progress towards meeting the Waste Diversion targets set out in the Waste-Free Ontario Act (i.e. Bill 151).
3) To assess the Town's current waste diversion strategies and initiatives, and to identify and assess alternative diversion approaches for potential future consideration, including, but not limited to:
    - Waste management systems and services
    - Expansion of recyclable and reusable materials diversion, as practicable
    - User pay system structure
    - Organics diversion initiatives
    - Landfill entrance enhancements for improved site controls and oversight
    - Public promotion, education and incentives
    - Municipal by-laws
4) To review the technical and financial merits of potential additional diversion initiatives.
5) To evaluate the current operational practices and assess potential areas for improvement, particularly in relation to operational practices that may increase the site life.
6) To review the regulatory framework for the Town's existing landfill sites pertaining specifically to approved volumetric capacities, landfilling areas and design, and options/opportunities for optimizing and/or adding capacity.
7) To evaluate residual waste disposal options with respect to both the short-term and long-term waste management plan that is most suitable to the Town.

Waste management planning covers a series of complex issues that are inter-related. Consequently, the layout of this study is presented in a step-wise fashion that provides a review in the following sequence:

1) Regulatory and Policy Framework.
2) Background information, including a review of the status and performance of the existing waste management practices within the Town, including comparisons to similar Municipalities.
3) An evaluation of residual waste disposal operations.
4) An evaluation of alternative prevention and diversion programs.
5) An evaluation of the option to consolidate and enhance waste management operations via the construction of an improved waste receiving and transfer area (i.e. a Transfer Station) at the Southampton Landfill Site.
6) Implementation of initiatives, monitoring and continual improvement.

Lastly, the conclusions of the study are presented along with key recommendations.

# 3. POLICY FRAMEWORK

The federal, provincial/territorial, and municipal governments each share responsibility for waste management in Canada. The following provides a brief overview of each government's policies and strategic initiatives related to waste management, and the Town's role in relation to those policies and strategic initiatives. Information was compiled from various sources. References are listed in **Section 14** of this Report.

## 3.1 Federal Regulations

The Government of Canada is engaged in waste management issues related to sustainable development, toxic substances, international movement, federal lands and operations, air emissions (including greenhouse gas emissions), and through federal funding. The federal government places the responsibility of municipal solid waste collection, diversion (i.e. recycling, organic waste, etc.) and disposal operations on local municipal governments, while the provinces are responsible for approvals, licensing and monitoring of operations.

## 3.2 Provincial Regulations and Policy

The Ontario Ministry of the Environment, Conservation and Parks (MECP) and its Waste Management Policy Branch is responsible for the development of policies, regulations and legislation related to waste management in Ontario. The Branch works with municipalities, the private sector and associations to develop regulations, policies and programs for the management of both hazardous and non-hazardous waste, to ensure proper waste handling and disposal and to encourage waste minimization, diversion and recycling activities.

### 3.2.1 Waste-Free Ontario Act (Bill 151)

Under the previous regulatory framework, more specifically the Waste Diversion Act (WDA, 2002), it is reported that the intent was to encourage producers to adopt or design production practices that were more efficient and products would be designed to produce less (or no) waste. Under the WDA framework, product stewardship agencies were formed for their specific materials (e.g., WEEE) with "eco-fees" placed on products (similar to a tax). Under the stewardships, designated recycling contractors were used, and the recycling fees were largely paid by the consumer. However, this approach resulted in a scenario where innovation and competition between producers to create products with less environmental impact was not encouraged and, as a result, not realized.

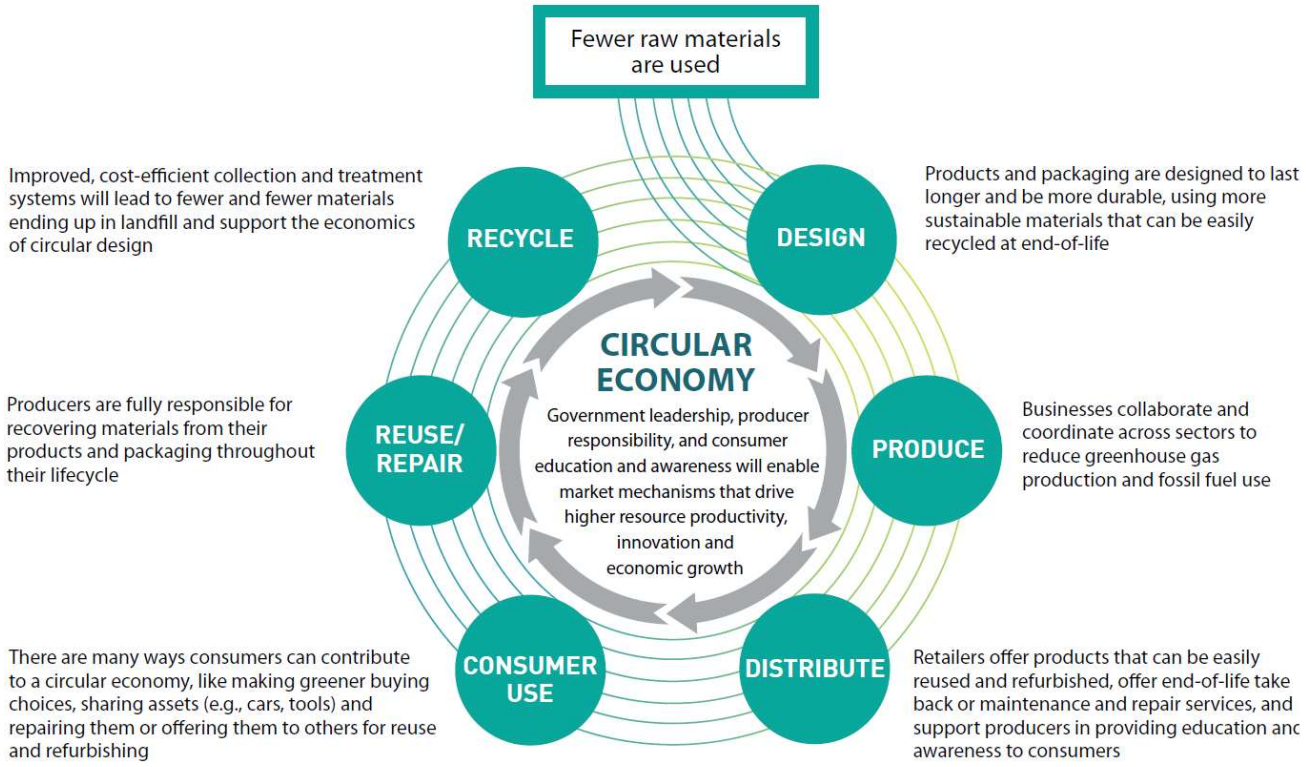
On November 30, 2016 the Waste-Free Ontario Act was proclaimed, with this new waste diversion legislation the Waste Diversion Act (WDA) was repealed. The Waste-Free Ontario Act enacted the:

i. Resource Recovery and Circular Economy Act (RRCEA); and
ii. Waste Diversion Transition Act.

The Waste-Free Ontario Act lays out Ontario's vision for a circular economy and includes goals for a zero-waste Ontario and zero greenhouse gas emissions and is described as *'a visionary goal that provides the guiding principles needed to work toward the elimination of waste'*. The legislation includes a plan to implement legislation, which will work towards systematically avoiding and eliminating the volume of waste, while maximizing the conservation and recovery of resources, with the intention to achieve set interim and long-term waste diversion goals. Reportedly, the first four years of this strategy are dedicated to establishing the foundation for this shift and transforming the existing systems. Further, the province intends to continue to mark its progress towards the interim targets of 30% diversion by 2020, which provincially has already been achieved, 50% by 2030 and 80% diversion by 2050.

As outlined by the Resource Productivity and Recovery Authority (RPRA), *'Ontario is shifting from a linear economy to a circular economy. In a linear economy, natural resources are extracted, manufactured into products, consumed and then thrown away. In a circular economy, products and packaging are designed to minimize waste and then be recovered, reused, recycled and reintegrated back into production'*. In February 2017, the Province approved a plan for resource recovery and waste reduction known as the *Strategy for a Waste-Free Ontario: Building the Circular Economy*, a schematic of the Circular Economy is provided in **Figure 3-1**.

**FIGURE 3-1: Resource Recovery and Circular Economy Schematic**
(Source: https://www.ontario.ca/page/strategy-waste-free-ontario-building-circular-economy)




A key component of the circular economy is that producers are responsible for collecting and managing their products and packaging, as well as the costs associated with the environmental impact of their products. This responsibility extends throughout the product's life-cycle, including its design, manufacturing, packaging, transportation, product use, and diversion or disposal. This is known as Individual Producer Responsibility (IPR). Initially IPR will be applied to products and packages that have existing mandated recycling programs such as tires, municipal hazardous and special waste (MHSW), electronics and Blue Box materials. Other materials such as carpets, mattresses and furniture will be considered in the future.

In order to transition to full IPR for designated materials in a smooth and orderly way, with no impact on program activities, transitioning of the existing programs will include:

- Winding up existing programs under the Waste Diversion Transition Act (WDTA); and
- Developing and enacting regulations under the Resource Recovery and Circular Economy Act (RRCEA) to make producers fully responsible.

Tires were the first material to move to IPR starting January 1, 2019. Electronics are scheduled to move to IPR in December 2020 and Hazardous and Special Waste in June 2021. In addition, due to the complexity of the transition for the Blue Box program, which is currently municipally managed and co-funded by industry and municipalities, it is anticipated that the transition of the Blue Box program to IPR occur between 2023 and 2025.

A second key proposed action towards a Waste-Free Ontario is the development of the Food and Organic Waste Action Plan to reduce the volume of food and organic waste going to the landfill. Food and organic wastes reportedly make up an estimated one-third of Ontario's waste stream. These organic wastes include residential food waste and leaf and yard waste, and food produced by the IC&I sector, such as food processors, wholesalers, grocery stores and restaurants. As part of the action plan the province has reportedly committed to eventually banning food waste from disposal to increase diversion of these wastes and reduce greenhouse gas emissions. The details and timing of such a ban are unknown.

As shown by the acceptance of the Waste-Free Ontario Act, the Provincial waste management strategies are in a dynamic state, continually changing and evolving. Consequently, with the recent passing of the new legislation it is important that the Town stay abreast of the new regulations and guidelines as they are implemented.

### 3.2.2 Regulatory Framework

Provided in the following **Table 3-1** are the current Acts and Regulations governing municipal waste management activities in Ontario that are considered applicable to this study.

**TABLE 3.1: Provincial Regulatory Framework**

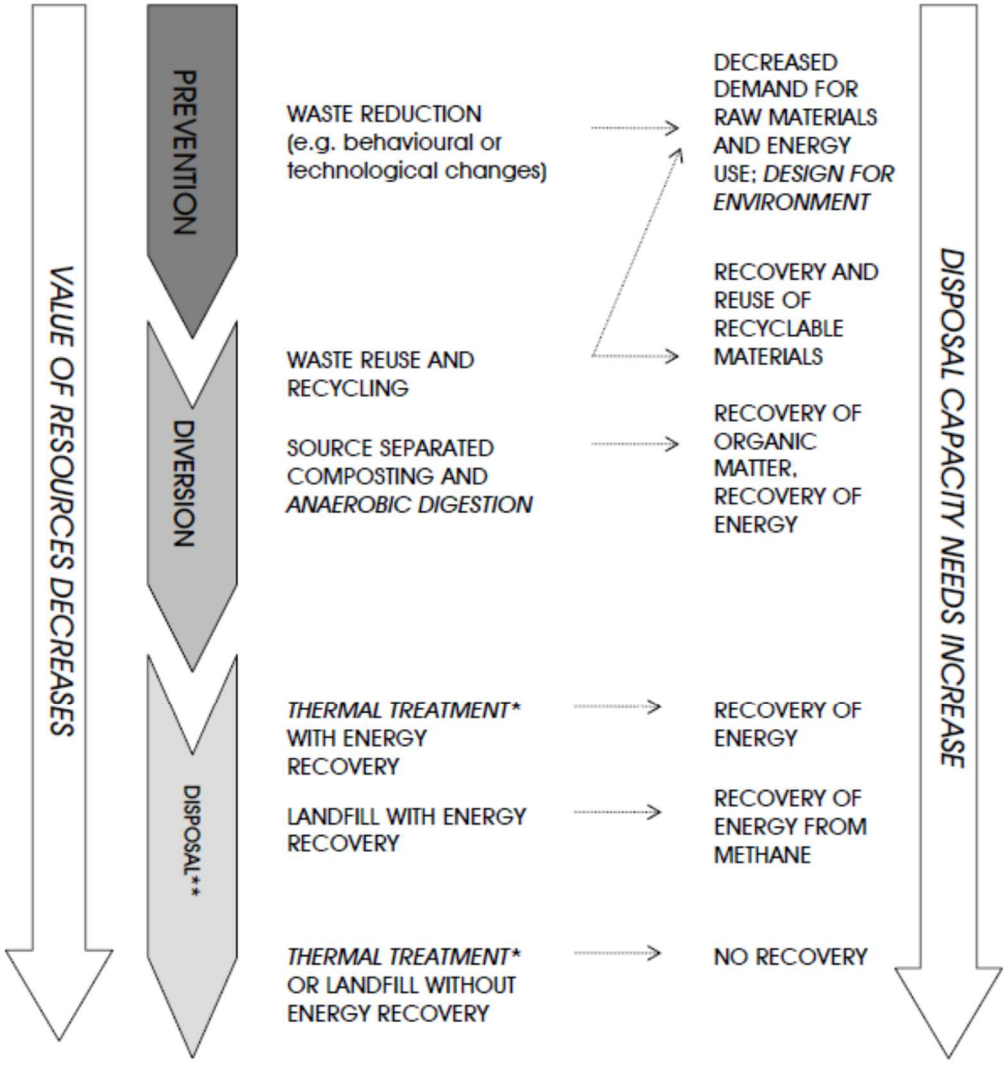
<table>
<tr><td colspan="2">Environmental Protection Act (EPA)<br>The EPA requires that all waste managers (i.e., those involved in generation, collection, transfer/processing or disposal of waste, unless exempted) obtain approval from the MECP to ensure waste is appropriately managed. The Act also provides authority for the MECP to inspect and enforce the regulated party's compliance with the Province's rules and regulations.</td></tr>
<tr><td colspan="2">Reg. 347 General - Waste Management:<br>Provides the foundation for waste management in Ontario. Categorizes and sets standards for the management of different types of waste; and provides certain exemptions from approval requirements.</td></tr>
<tr><td>O. Reg. 101/94 Recycling and Composting Municipal Waste:<br>Requires municipalities with 5,000 or more people to implement and operate curbside recycling programs and to implement programs for home composters. Municipalities with 50,000 or more people must operate a program that collects or accepts leaf and yard waste for diversion.</td><td>O. Reg. 102/94 Waste Audit and Waste Reduction Work Plans:<br>Requires owners or operators of designated establishments, including schools, retail, construction and demolition projects, hospitals, hotels, motels, office buildings, restaurants, and large manufacturers that meet or exceed specified size thresholds or other criteria to conduct a waste audit, develop and implement a waste reduction work plan and update the audit plan annually.</td></tr>
<tr><td>O. Reg. 103/94 Industrial, Commercial and Institutional Source Separation Programs:<br>Requires owners or operators of establishments listed in Ontario Regulation 102/94 and of multi-unit residential buildings with six or more units to have source separation programs for specified wastes and to make a reasonable effort to ensure that these wastes are reused or recycled.</td><td>O. Reg. 104/94 Packaging Audits and Packaging Reduction Work Plans:<br>Requires manufacturers, packagers and importers of packaged food, beverage, paper or chemical products above a minimum size threshold to conduct a packaging audit and implement a packaging reduction work plan.</td></tr>
<tr><td colspan="2">O. Reg. 232/98 Landfilling Sites:<br>Outlines the design and operations requirements for new landfilling sites or the expansion of existing landfilling sites proposed after August 1, 1998.</td></tr>
<tr><td colspan="2">Environmental Assessment Act (EAA)<br>The EAA established a decision-making process used to promote good environmental planning. It ensures that environmental problems or opportunities and alternatives are considered, and their effects are planned for before development or construction takes place. A number of waste management activities may be subject to the Act, including the siting of new landfills.</td></tr>
<tr><td colspan="2">Ontario Regulation 101/07 Waste Management Projects:<br>Prescribes the waste management projects to which the EAA applies (e.g. new landfilling sites or expansion of existing sites). Classifies waste management projects based on the type of waste to be used, the size, and in some cases, the ability of the planned facility to recover energy from waste in relation to EA requirements.</td></tr>
<tr><td colspan="2">Waste-Free Ontario Act (Bill 151): November 30, 2016<br>The WFO Act comprises the Resource Recovery and Circular Economy Act (RRCEA) and the Waste Diversion Transition Act. This legislation aims to reduce waste generation by increasing resource recovery and moving toward a circular economy. A primary concept of the plan is that producers be responsible for the end-of-life management of their products and packaging. Under the Regulation, producers are directly responsible for meeting mandatory collection and recycling targets. The Resource Productivity and Recovery Authority enforces compliance with requirements to register, report, and meet collection and recycling targets.</td></tr>
<tr><td rowspan="2">Stewardship Ontario:<br>Stewardship Ontario is the not-for-profit, industry funded organization that currently operates the Blue Box and Orange Drop Programs under the authority of the Waste-Free Ontario Act and is accountable to the Resource Productivity and Recovery Authority, which is an oversight, compliance and enforcement organization.</td><td>Blue Box Waste:<br>The Blue Box program is currently operated by Stewardship Ontario. It is anticipated that the transition of this program to the IPR model will occur between 2023 and 2025.</td></tr>
<tr><td>Municipal Hazardous or Special Waste (MHSW):<br>Currently materials designated as MHSW are managed and funded by Stewardship Ontario on behalf of industry stewards. The MECP has directed Stewardship Ontario to wind up the MHSW program on June 30, 2021. This will enable the transition of MHSW to IPR under the RRCEA.</td></tr>
<tr><td>Waste Electrical & Electronic Equipment (WEEE):<br>The Ontario Electronic Stewardship will continue to be the industry funding organization for waste designated as WEEE until December 31st, 2020. The transition of WEEE to IPR under the RRCEA will occur at that time.</td><td>Used Tires:<br>The Ontario Tire Stewardship was the program responsible for the diversion and re-use/recycling of used tires until December 31, 2018. On January 1, 2019, used tires transitioned to the new IPR framework.</td></tr>
</table>

### 3.2.3 Provincial Policy

The MECP released its *Policy Statement on Waste Management Planning: Best Practices for Waste Managers* in 2007, which discusses the Provincial direction for waste management planning primarily through the 3R's hierarchy (reducing, reusing and recycling) and achieving an overall 60% waste diversion rate from final residual disposal which was the target set at that time. The 3R's hierarchy is generally in line with the IPR philosophy where waste reduction is the preferred option followed by reuse and recycling.

The MECP Policy Statement outlines a "Waste Value Chain" that illustrates the 3R's hierarchy relative to the decreasing value of resources, and the increasing need for final residual disposal capacity. The schematic of the "Waste Value Chain" as presented in the MECP Policy Statement is provided in the following **Figure 3-2**.

**FIGURE 3-2: Waste Value Chain**




* With potential use of ash or recovery of metals.

** Waste managers should consider waste reduction as a first priority, followed by diversion. All disposal options have unique environmental concerns and should only be considered as a last option. Where disposal is necessary, waste managers should carefully reflect on these environmental concerns in light of their local circumstances. Recovering energy from landfill or thermal treatment should be considered prior to thermal treatment or landfill without energy recovery.

## 3.3 Municipal Government Policy and Strategic Initiatives

### 3.3.1 County of Bruce

The County of Bruce Official Plan (consolidated September 2017) is a document which describes the policy framework for planning and development within the County in order to manage the physical, social and economic development within the County and to protect the natural environment. The Plan recognizes the need for long-term waste management and solid waste disposal as well as the importance of waste diversion, including reduction, reuse and recycling. The County's Waste Management Plan assigns certain waste management responsibilities to the County and certain responsibilities to the Town. Relevant Sections of the Official Plan include the following:

**Residual Waste Management (Section 4.7.3.3)**

*'The residual material remaining after diversion will require disposal. The County's Waste Management Master Plan encourages the use of existing licensed landfill capacity in a shared use system rather than identify new capacity for the few areas that will require space over the next 20 years. The County has the authority to enter into agreements with local municipalities to allow the shared-use of existing sites. When the existing capacity is exhausted, the County has the responsibility to provide new disposal capacity for Bruce County residents. The County also has the responsibility to explore alternative waste disposal technologies, i.e., mixed waste processing and energy from waste incineration'.*

It is noted that the existing Environmental Compliance Approvals for the majority of the active municipal landfill sites within the County limit the service area (i.e. the origin of the residual waste) to within the municipal borders. Therefore, in addition to cooperation and successful negotiations between municipalities, the expansion of a service area, to include additional municipalities within the County, would require approval from the Ministry of the Environmental, Conservation and Parks (MECP) by way of an amendment to the Approval for a given site.

**Waste Diversion (Section 4.7.3.1)**

'*The County's Waste Management Plan assigns certain waste diversion powers to the County and certain responsibilities to the local Municipality. The County-wide diversion activities will be monitored by the County and each year a report will be submitted to the County identifying any unresolved areas of concern with respect to existing diversion programs. The County has the legislative basis to assume further waste diversion responsibilities or delegate back to local municipalities, should the need arise'.*

According to the Official Plan, the County and the municipalities within the County share diversion responsibilities with the intent of taking advantage of the economies of scale and expertise that can be offered by County involvement as well as utilizing local municipal services. The Official Plan also notes that a successful diversion program is dependent on recognizing the common goal of maximizing diversion of waste from landfills and on communication and cooperation between the County and the lower-tier Municipalities.

The County manages the Hazardous Waste Collection Program and assists in education and monitoring of waste diversion and disposal programs to ensure the continued adequacy of the existing municipal landfill sites. Local municipalities currently own and operate their waste management facilities and are responsible for their respective garbage and recycling collection services.

### 3.3.2 Town of Saugeen Shores

The Town of Saugeen Shores has its own Official Plan, but for general planning purposes the Town is also committed to support the County's waste management initiatives, including the endorsement and implementation of reasonable waste diversion strategies.

The Official Plan for the Town outlines its commitment to encourage the use of energy efficient and environmentally sound waste disposal practices and to encourage composting and recycling programs. The Town's Corporate Strategic Plan, completed in 2017, identified the desire of the community to continue to improve the Town's waste reduction, diversion and conversion rates. As part of this 'priority' the following commitments were considered:

- The completion of a waste diversion audit to help the Town move closer to the Province's waste diversion goals. The Town recognizes that additional waste diversion can come from developing a better understanding of current waste flows and waste diversion programs. This information can then be used to further reduce the volume of waste managed by strengthening the existing programs and identifying new waste diversion programs and /or opportunities.
- The implementation of a social media-oriented awareness building campaign, including a hashtag (#) branding exercise; and
- Working with school boards to build awareness about waste and waste-diversion best practices among students.

In the County of Bruce, the recent implementation of several strategic initiatives to address the goal for a Waste-Free Ontario and the intention of the Waste Value Chain continue to be overseen by the County, Bruce Area Solid Waste Recycling and by the Town of Saugeen Shores, as discussed in the following Sections.

### 3.3.3 Bruce Area Solid Waste Recycling (BASWR)

While landfilling operations continue to be managed separately within each municipality, the implementation of a 'centralized global approach' to waste collection and diversion has been recognized by Bruce Area Solid Waste Recycling (BASWR). BASWR is a not-for-profit organization (i.e. partnership) comprised of its member municipalities. Currently BASWR provides integrated waste reduction and environmental services, including collection and processing, to the majority of Bruce County (i.e. all municipalities with the exception of Northern Bruce Peninsula). In recognition of the municipal cooperative approach, the Town's website generally provides links to the BASWR website which includes schedules, publications and handouts on various topics.

BASWR primarily manages blue box collection, on a bi-weekly basis, and subsequent processing at their Materials Recovery Facility which is located within the Southampton Landfill property. In addition to the blue box collection services, recyclables are also accepted at the Southampton Landfill Site with separate transfer of recyclable materials to the BASWR facility arranged on an as needed basis. Further, BASWR has made available specialized higher volume containers, limited to 65- and 95-gallon capacity, retrofitted for their collection vehicles for use by the Industrial, Commercial and Institutional (ICI) sector and apartment customers. However, it is noted that many private businesses and institutions in the Town have opted to use an alternative private contractor for this service (i.e. campgrounds and schools). These, along with disposal bins for cardboard, aluminum and plastic, are also used at the Landfill site. Similarly, pick-up can be arranged on an as needed basis, subject to service availability.

It is our understanding that BASWR does not currently have the capacity to pursue additional waste diversion opportunities and/or provide additional services, such as a curbside cardboard pick-up program (i.e. bi-weekly or monthly), to Town residents. Alternatively, in addition to cardboard acceptance at the Southampton Landfill, two cardboard depots have been set up at other locations within the community.

### 3.3.4 Existing Waste Prevention (Reduction) and Diversion Policies and Programs

In addition to public education programs, several waste prevention & diversion policies and programs have been implemented by the Town, either directly or through Bruce Area Solid Waste Recycling, including the following:

- Bag Tag Policy: The Town participates in the 'Pay as you Throw' waste management program. Therefore, curb-side pick-up requires one tag per bag of household waste.
- The implementation of tipping fees for residual waste at the landfill site, including greater than triple the tipping fee for unsorted waste, to deter the disposal of divertible material.
- The availability of a separate disposal area for leaf and yard waste at the Southampton Yard Waste Site, located on Concession 14 beside the Southampton Landfill.
- The implementation of a program for home composting, by making composters and solar digesters available, at cost.

In addition, several waste diversion depots and programs are available for reusable and recyclable materials either at the local Landfill, at a central location within the Town or through BASWR. As tipping fees do not typically apply, the diversion of these items is encouraged. A list of the various waste diversion streams and depot locations is provided below:

**TABLE 3-2: Waste Diversion Initiatives – Managing Authority and Depot Locations**

| DIVERSION STREAM | MANAGING AUTHORITY | DEPOT LOCATION | TIPPING FEE |
|---|---|---|---|
| Blue Box Recyclables | BASWR<br>(Materials Recovery Facility) | Southampton Landfill Site<br>*Curbside Pick-up (Bi-weekly)* | Free |
| Cardboard | BASWR | Port Elgin Sewage Treatment Plant<br>Public Works Garage: 339 Conc.6<br>Southampton Landfill: 126 Conc.14 | Free |
| Film Plastics | Trash Taxi | Public Works Garage<br>Southampton Landfill | Free |
| Electrical & Electronic Equipment (WEEE) | Town of Saugeen Shores | Southampton Landfill Site | Free |
| Fluorescent Bulb Recycling | Town of Saugeen Shores | Southampton Landfill Site | Free |
| Used Tires (Off-rim) | Town of Saugeen Shores | Southampton Landfill Site | Free |
| Scrap Metal & White Goods (Tagged only: Freon Free) | Town of Saugeen Shores | Southampton Landfill Site | Scrap Metal (per tonne); White Goods: $5/unit |
| Propane Tank Recycling | Town of Saugeen Shores | Southampton Landfill Site | Free |
| Municipal Hazardous or Special Waste (MHSW) | Bruce County | Southampton: 429 Peel Street | Free (Events held 3 days per year) |
| Mercury Containing Goods | Town of Saugeen Shores | Southampton Landfill Site | Free |
| Household Batteries | Town of Saugeen Shores | Municipal Office<br>Public Libraries<br>Southampton Landfill Site | Free |
| Brush and Stumps | Town of Saugeen Shores | Southampton Landfill Site | Per tonne |
| Leaf and Yard Waste | Town of Saugeen Shores | Southampton Yard Waste Site<br>Concession 14: Beside Landfill | Free |
| Mattresses and Box Springs | Town of Saugeen Shores | Southampton Landfill Site | Charge applied |

### 3.3.5 Summary

The Town is committed to improving its policies and strategic initiatives to continually improve diversion rates. The Town currently provides various recycling programs and opportunities to residents and is actively investigating, and continues to be prepared to consider, additional reduction and reuse opportunities as well as various diversion programs.

# 4. BACKGROUND INFORMATION

## 4.1 Information Sources

The intention of the following sections is to provide adequate background information related to the Town of Saugeen Shores in order to properly evaluate waste management alternatives and to provide informed recommendations. Background information and data presented and discussed in the following sections of this report were compiled from various sources as outlined in the References of this Report (**Section 14**).

For the purpose of this Waste Management Plan, data on waste generation and diversion from 2014 through 2019 for the Town have been included to determine "existing" waste disposal and diversion rates, or benchmark values. It is noted that only data since 2014 has been included due to recent improvements to the landfill operations, as well as the Town's diversion and monitoring programs. It should also be noted that due to variations in monitoring practices and estimation methods over several years of data collection, reported values may have a degree of error associated with them and are used as general indicators for comparative purposes.

Furthermore, the main data source for waste diversion estimates and comparisons is the RPRA Municipal Datacall. It is important to note that the RPRA data is intended to be specific to the residential portion of the waste stream and to not include the Industrial, Commercial and Institutional sector (IC&I). Therefore, for the purpose of comparing the Town of Saugeen Shores with other similar municipalities within the province, only the residential sector is typically considered, where applicable and as specified.

## 4.2 Geography

The Town of Saugeen Shores (the Town) is located in Bruce County and is bordered by Lake Huron to the west. The Town formed in 1999 as the result of the amalgamation of the former Township of Saugeen, the Town of Southampton and the Town of Port Elgin. As shown on **Figure 1-1**, the Town is primarily bordered by the Saugeen First Nation to the north, and by several Municipalities including Arran-Elderslie to the east and Brockton and Kincardine to the south. The proximity to various neighboring Municipalities allows for potential service sharing.

Bruce County is itself comprised of a total of eight rural Municipalities. A table summarizing the Municipalities situated within Bruce County and their corresponding populations is provided below.

**TABLE 4-1: Municipalities within Bruce County and Population Counts (2016 Census)**

| MUNICIPALITY | Population (2016) (persons) | Area ($km^2$) | Density (Persons/$km^2$) |
|---|---|---|---|
| Town of Saugeen Shores | 13,715 | 171.05 | 80.2 |
| Municipality of Kincardine | 11,389 | 537.94 | 21.2 |
| Municipality of Brockton | 9,461 | 565.18 | 16.7 |
| Town of South Bruce Peninsula | 8,416 | 532.29 | 15.8 |
| Township of Huron-Kinloss | 7,069 | 440.76 | 16.0 |
| Municipality of Arran-Elderslie | 6,803 | 460.07 | 14.8 |
| Municipality of South Bruce | 5,639 | 487.48 | 11.6 |
| Municipality of Northern Bruce Peninsula | 3,999 | 783.99 | 5.1 |

Note: 2016 populations presented exclude the undercount.

## 4.3 Community Profile

The Town of Saugeen Shores is unique in that it is situated within the physiographic region known as the Huron Fringe. The region is characterized by wave-cut terraces that are typically comprised of gravel bars and sand dunes. The Town is characterized by an estimated 18 kilometers of shoreline along Lake Huron to the west within which the communities of Southampton and Port Elgin have been developed. The Town is rather unique when compared to the surrounding Municipalities as a large proportion of its population is situated within the urban centres rather than within the outlying rural area. Consequently, the Town has an average population density of 80.2 persons/km$^2$ within its 171 km$^2$ area. As shown in **Table 4-1**, the average population density is generally greater than four (4) times the population density within the other Municipalities situated within Bruce County.

The Town generally consists of some low density rural development with higher density development within the Town of Southampton, Town of Port Elgin and along the approximate 18 kilometers of shoreline to the west. While agriculture, small businesses and employment at the Bruce Power nuclear power station are important to the area, tourism, including camping, cottage rentals and associated services, also contribute significantly to the Town's economy, particularly during the summer months.

Based on the reported population counts provided by Statistics Canada, the population has been steadily increasing since 2001. A summary of the available census data from 2001 through 2016 is provided in **Table 4-2**. According to the Town's Corporate Strategic Plan (MDM Insight, 2017), between 2006 and 2016 Saugeen Shores' population grew by 17%, a rate greater than the Provincial average. The Town currently has a reported population of 13,715 persons. Further, available census data suggests that an estimated 85% (or approximately 11,540 persons) of the Town's population resides within urban areas including Port Elgin and Southampton.

**TABLE 4-2 Population Counts (Census Canada 2001 to 2016)**

| YEAR | POPULATION | | | | | |
|---|---|---|---|---|---|---|
| | Southampton (Town) | | Port Elgin (Town) | | Town of Saugeen Shores | |
| | Persons | % Change | Persons | % Change | Persons | % Change |
| **2001** | N/A | ---- | N/A | ---- | 11,388 | ---- |
| **2006** | 3,390 | ---- | 6,880 | ---- | 11,720 | 2.9 |
| **2011** | 3,382 | -0.2 | 7,304 | 6.2 | 12,661 | 8.0 |
| **2016** | 3,678 | 8.8 | 7,862 | 7.6 | 13,715 | 8.3 |
| | | | | | **Growth Rate (% annually)** | **1.36** |

As shown in **Table 4-3**, consistent with the Town's tourism industry the dwelling counts reported by Statistics Canada indicate a significant proportion of the dwellings within the Town of Saugeen Shores are seasonal.

**TABLE 4-3: Dwelling Counts and Total Equivalent Population**

| YEAR | POPULATION | DWELLING COUNTS (TOTAL) | | |
|---|---|---|---|---|
| | Persons | Private (total) | Permanent | Seasonal |
| 2001 | 11,388 | 6,215 | 4,650 | 1,565 |
| 2006 | 11,720 | 6,645 | 4,926 | 1,717 |
| 2011 | 12,661 | 7,228 | 5,485 | 1,743 |
| 2016 | 13,715 | 7,655 | 6,025 | 1,630 |

Based on the preliminary population projections that consider both the Town's planned development and a declining number of persons per household/unit, prepared by Hemson Consulting Limited (Hemson) as part of a *'Development Charges Background Study and By-Law'*, it is anticipated that the Town of Saugeen Shores will experience a continually increasing population, albeit at various rates. Census profiles indicate that the Town had a permanent population of 13,715 persons in 2016. However, in consideration of census undercounts and the Town's recent development, population estimates for the Town for the period between 2014 and 2020 are reported in **Table 4-4**. Population undercounts (i.e. undercoverage) refer to the census error of excluding someone who should have been enumerated.

**Table 4-4 Population Estimates (2014 to 2020)**

| YEAR | POPULATION | |
|---|---|---|
| | Excluding Undercount | Including Undercount |
| **2014** | 13,293 | 13,692 |
| **2015** | 13,504 | 13,909 |
| **2016** | 13,715 | 14,126 |
| **2017** | 14,176 | 14,601 |
| **2018** | 14,775 | 15,218 |
| **2019** | 15,150 | 15,604 |
| **2020** | 15,535 | 16,001 |

Population presented is based on that provided in preliminary population projections completed by others as part of the 'Development Charges Background Study' (Hemson Consulting Limited, February 2020).

## 4.4 Industrial, Commercial and Institutional Sector

As previously discussed, the main data source for waste diversion estimates is the RPRA Municipal Datacall, which provides information specific to the residential portion of the waste stream and does not include the Industrial, Commercial and Institutional sector (IC&I). The IC&I Sector includes hospitals, office buildings, educational institutions, industrial firms, and businesses, including the services associated with tourism, which is considered a major industry for the Town, such as camping, cottages, hotels and restaurants.

In consideration of the Town's tourism industry, the associated increase in population, particularly during the summer months has been approximated herein using information presented in the *'Explore the Bruce: Economic Impact of Tourism – 2018'* Report. Based on an assessment of the data presented in the Explore the Bruce Report, there is, on average, an estimated 4,560 persons per day that can be considered tourists. Assuming that the majority of visits occur during the peak summer season, this is equivalent to the population almost doubling during the peak season (i.e. a period of three to four months). Therefore, it is evident that tourism contributes a relatively significant proportion of waste to the landfill, estimated to be approximately one-quarter (or ±24%) of the residual waste received, with the majority being received during the peak tourist season.

Further, for the purposes of estimating a residential component for the determination of a residential diversion rate for performance evaluation later in this Report, an additional IC&I waste component of ±16% has been assigned to account for waste from the remainder of the IC&I sector including, but not limited to, the hospital, seniors home(s), and industrial firms in the Town. Therefore, a total IC&I waste component of 40% is considered within this Waste Management Plan (i.e. 24% tourism and 16% other). It is noted that, at this time, the schools and the majority of campgrounds have their waste managed by private contractors.

The screening and tracking of incoming wastes to the landfill by the Town is thought to provide accurate records in terms of incoming residual waste and divertible materials, and includes a general record of the residential, commercial and municipal wastes which are monitored separately. However, the use of these records to estimate the proportional contributions of residential versus IC&I waste is inherently challenging. For example, all curbside waste attributable to the tourism industry (i.e. cottages, businesses) would be reported as household

residential waste and some categories of waste documented are subject to interpretation (i.e. commercial/household waste). Therefore, for the purposes of establishing baseline data herein, the assumption that 40% of the residual waste received at the landfill can be considered IC&I waste is considered appropriate.

## 4.5 Existing Services

Prior to 1998, the Towns of Southampton and Port Elgin were both serviced by a landfill site, of which the Town assumed ownership upon amalgamation. As a result, the Town owns two landfill sites; the Southampton Landfill and the Port Elgin Landfill. On January 30, 1998 the Town of Southampton, the Town of Port Elgin and the Township of Saugeen amalgamated and formed the new municipality of the Town of Saugeen Shores. The Town of Saugeen Shores continued the use of both landfill sites until July 2007, at which time the Port Elgin landfill site was filled to capacity and subsequently closed. Since that time the Town has consolidated its landfill operations to the Southampton Landfill. Landfill site locations are shown on **Figure 1-1**. Under typical operations the Southampton Landfill site is open to vehicles hauling waste during the following operating hours:

**TABLE 4-5: Landfill Hours**

| DATE | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|---|---|---|---|---|---|---|---|
| All Year | 9:00 to 4:45 | Closed | 9:00 to 4:45 | Closed | 9:00 to 4:45 | 9:00 to 3:45 | Closed |

** As per Condition 2(9) of the ECA, landfill hours can be amended with written approval from the District Manager.

Weekly curb-side collection of residual waste and bi-weekly collection of blue box recyclables is provided, under contract, by BASWR to Town residents. The Town has adopted the use of bag tags, at a cost of $2.00 per tag/bag. Currently there is no limit on the number of bags of household waste per week that may be picked up by the Town. Residual waste and recyclable materials may also be dropped off at the Southampton Landfill Site. All vehicles entering the landfill are weighed upon entry. With the exception of residential waste with bag tag stickers, the Town currently charges a tipping fee of $108.77 per tonne of sorted waste and $348.08 for unsorted waste.

Blue box recyclables collected are shipped directly to BASWR's processing facility which recovers and markets the majority of all materials collected. Recyclable materials may also be dropped off at the Southampton Landfill site. In addition, depots for cardboard are available at the Port Elgin Sewage Treatment Plant and at the Public Works Yard, where shown on **Figure 1-1**.

With respect to waste diversion, in addition to the blue box recycling program, additional waste diversion is currently achieved through the available used tires, electronics, batteries, mattresses, appliances, propane tank, scrap metal and wood and yard waste drop-off areas at the Southampton Landfill. Several of these items can be dropped off at no charge. In addition, non-CFC containing white goods can be dropped off at the Site. The majority of the materials diverted are shipped off-site by various collectors for reuse and/or recycling.

Wood and yard waste, including brush, and leaf and yard waste, once decomposed, can be used as daily cover material. In addition, grinding of landfill wood waste including construction/household wood waste material, brush and/or tree stumps collected at the Site is periodically ground into woodchips. If suitable, this can be incorporated into the daily cover material used.

# 5. RESIDUAL WASTE GENERATION AND DISPOSAL

For the purpose of this Report, data on waste generation and waste diversion for the period between 2014 and 2019 have been reviewed to assess the current waste disposal practices and to establish benchmark values for the determination of the Town's progress towards meeting the Province's waste diversion targets set out in the Waste-Free Ontario legislation. Data is limited to the last 6-years due to recent improvements to landfill operations and improved monitoring and record keeping with respect to incoming wastes. In addition, the average waste disposed over a period of several years is considered more accurate relative to the measured volumes and/or tonnages for each individual year due to one-time disposal events such as building demolition or contaminated soil disposal (which may be accepted, subject to soil quality analyses and the Town's discretion), and variations in volumetric topographic survey data relative to coverage of waste disposal areas. It should be noted that due to these variations, reported values may have a degree of error associated with them and are used as general indicators and for comparative purposes.

Waste generation rates for the Town are estimated using (i) weigh scale data, which provides information on the type and quantity (i.e. tonnes) of waste accepted at the Southampton landfill site, and (ii) periodic, and more recently annual, topographic surveys completed by the Town which determine the volume of landfill capacity used on an annual basis by calculating the difference between annual volumetric surveys of the landfilled area(s). Further, based on the geographic limitations and associated logistics, the acceptance of commercial waste at the Town's landfill has occurred in the past and is likely to continue. Therefore, the commercial contribution is also included in the consideration of waste generation rates, where applicable.

Information from the RPRA Municipal Datacall is used to estimate contributions from the residential sector for the assessment and comparison of residential waste generation rates. However, data from the RPRA Municipal Datacall is intended to be specific to the residential portion of the waste stream and to not include the commercial sector. Therefore, for the purpose of comparing the Town of Saugeen Shores with other municipalities within the province, contributions from the residential sector are estimated and considered herein.

The following table presents the total landfilled waste deposited at the Southampton Landfill Site from 2014 through 2019. The volumetric capacity of residual waste presented is based on those provided in the Annual Landfill Site Reports.

**TABLE 5-1: Total Residual Waste Disposed and Estimated Residential and IC&I Contributions Town of Saugeen Shores**

| YEAR | TOTAL CAPACITY USED | | | WASTE DISPOSED | | | | |
|---|---|---|---|---|---|---|---|---|
| | Total | Interim Cover | Residual Waste | Total | IC&I | Residential | | |
| | $m^3$ | $m^3$ | $m^3$ | Tonnes | Tonnes* | Tonnes* | $m^3$/capita* | Kg/capita* |
| **2014** | 7,900 | 1,580 | 6,320 | 5,377 | 2,151 | 3,226 | 0.277 | 236 |
| **2015** | 7,775 | 1,555 | 6,220 | 5,179 | 2,072 | 3,107 | 0.268 | 223 |
| **2016** | 10,225 | 2,045 | 8,180 | 6,620 | 2,648 | 3,972 | 0.347 | 281 |
| **2017** | 9,500 | 1,900 | 7,600 | 6,544 | 2,618 | 3,926 | 0.312 | 269 |
| **2018** | 13,325 | 2,665 | 10,660 | 6,398 | 2,559 | 3,839 | 0.420 | 252 |
| **2019** | 13,225 | 2,645 | 10,580 | 6,352 | 2,541 | 3,811 | 0.407 | 244 |
| **Average** | **10,325** | **2,065** | **8,260** | **6,078** | **2,431** | **3,647** | **0.34** | **251** |

Notes:

(1) The residual waste disposal rate presented is based on information provided within the Annual Reports for the Southampton Landfill. A volume of 20% interim cover is assumed. The tonnages of residual waste are based on the Town's weigh scale records.
(2) Waste disposal rates per capita are based on the population estimates provided by Hemson (February 2020), presented in **Table 4-4**.
(3) * Assumes that 60% of the residual waste can be attributed to residential contributions.

The 6-year average rate of total residual waste disposed at the Town's Southampton Landfill site is estimated to be approximately 6,078 tonnes per year. In consideration of the estimated 40% contributions from the IC&I sector (discussed in **Section 4.4**), the average residential disposal rate is estimated to be approximately 250 kilograms per capita (0.25 tonnes).

According to information provided by Statistics Canada, including the Waste Management Industry Survey for Business and Government Sectors prepared by Statistics Canada using the 2008 and 2010 data (reports dated December 2010 and August 2013) and Statistics Canada population counts for Ontario and reported quantity of waste from residential sources, the Town's estimated waste generation rate is similar to Ontario's per capita disposal rate.

# 6. RESIDENTIAL WASTE DIVERSION

## 6.1 Resource Productivity and Recovery Authority

Each individual Municipality or *'Municipally appointed association'* is responsible for tracking materials diverted from disposal for the residential sector. This information is submitted to the Resource Productivity and Recovery Authority (RPRA: formerly Waste Diversion Ontario) on an annual basis. Based on the information provided to the RPRA, a residential diversion rate is calculated for each Municipality, or association thereof, in Ontario.

The residential diversion rate calculations include the following:

i. An allowance for provincial deposit systems based on the deposit containers returned from the residential sector.
ii. An allowance for residential on-property management (i.e. backyard composting and grass-cycling).
iii. Municipally operated (directly or through contracted services) reuse activities.
iv. Municipally operated (directly or through contracted services) recycling activities including blue box materials, other recyclables (e.g., scrap metal, bale wrap, mattresses, etc.), WEEE and MHSW.
v. Municipally operated (directly or through contracted services) centralized composting activities for household organics, leaves and yard waste.
vi. Residual waste disposed.

The residential diversion rates and related information for the individual municipalities, or associations thereof, are published annually by RPRA. This information can be used to evaluate a Town's performance relative to their municipal grouping and the Province. The municipal groupings are developed by RPRA and consist of municipalities with similar characteristics (e.g., logistics, geography, collection method, population density/size, etc.). It should be noted that at the time this report was prepared the 2018 RPRA Municipal Datacall data had not been published, therefore, the RPRA data up to and including 2017 is provided herein.

## 6.2 Town of Saugeen Shores Waste Diversion Information

The Town of Saugeen Shores is reported under an *Association of Municipalities*, referred to as Bruce Area Solid Waste Recycling or BASWR, which is part of the *Rural Regional* municipal grouping. Therefore, RPRA does not publish individual diversion data for the Town. Diversion estimates specific to the Town of Saugeen Shores provided herein are based on the following:

i. Information and data provided by the Town related to the diversion streams managed directly by the Town at the Southampton Landfill site (i.e. tires, scrap metal, and mattresses);
ii. Data provided by BASWR (i.e. blue box tonnages for 2014 through 2019);
iii. Data provided from the County of Bruce (i.e. MHSW); and
iv. RPRA allowances, adjusted to reflect the population of the Town of Saugeen Shores.

The waste diversion rate is defined as the total amount of divertible content (including waste recycling, reuse, and organics) over the total amount of waste produced (including waste diverted and residual waste disposed), which is expressed as a percent. As previously stated, for the purpose of this report, data on waste generation and diversion from 2014 through 2019 for the Town have been included in the assessment of waste diversion rates. Further, for the purpose of comparing the Town of Saugeen Shores with other Municipalities and the Province, estimated waste diversion rates specific to the residential sector are provided.

It is widely recognized that there is a general lack of reliable data for Ontario's (and Canada's) IC&I Sector. However, based on a Discussion Paper issued by the MECP entitled *'Reducing Litter and Waste in Our Communities: MECP ERO# 013-4689'* (April 2019), provincially the IC&I sector achieves an average diversion of 17%. More specifically 6% green waste, 2% construction waste and 9% other divertible materials. As a result, Town specific diversion related to the IC&I sector was estimated assuming that of the total waste generated by the IC&I sector (i.e. 2,431 tonnes annually), an additional 17% of divertible materials is generated.

**TABLE 6-1: Residual Waste Generation and Overall Diversion**

| YEAR | TOTAL WASTE | RESIDUAL WASTE | | | WASTE DIVERTED | | | DIVERSION RATE (%) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Total | Household | IC&I | Total | Household | IC&I | Total | Household | IC&I |
| | Tonnes | Tonnes | | | Tonnes | | | % Diverted | | |
| **2014** | 8,641 | **5,377** | 3,226 | 2,151 | 3,264 | 2,824 | 441 | 37.8 | 46.7 | 17.0 (See Note) |
| **2015** | 8,576 | **5,179** | 3,107 | 2,072 | 3,397 | 2,972 | 424 | 39.6 | 48.9 | |
| **2016** | 10,204 | **6,620** | 3,972 | 2,648 | 3,583 | 3,041 | 542 | 35.1 | 43.4 | |
| **2017** | 10,500 | **6,544** | 3,926 | 2,618 | 3,956 | 3,420 | 536 | 37.7 | 46.6 | |
| **2018** | 10,117 | **6,398** | 3,839 | 2,559 | 3,720 | 3,195 | 524 | 36.8 | 45.4 | |
| **2019** | 10,511 | **6,352** | 3,811 | 2,541 | 4,159 | 3,639 | 520 | 39.6 | 48.8 | |
| **Average** | 9,758 | **6,078** | 3,647 | 2,431 | 3,680 | 3,182 | 498 | 37.7 | 46.6 | |

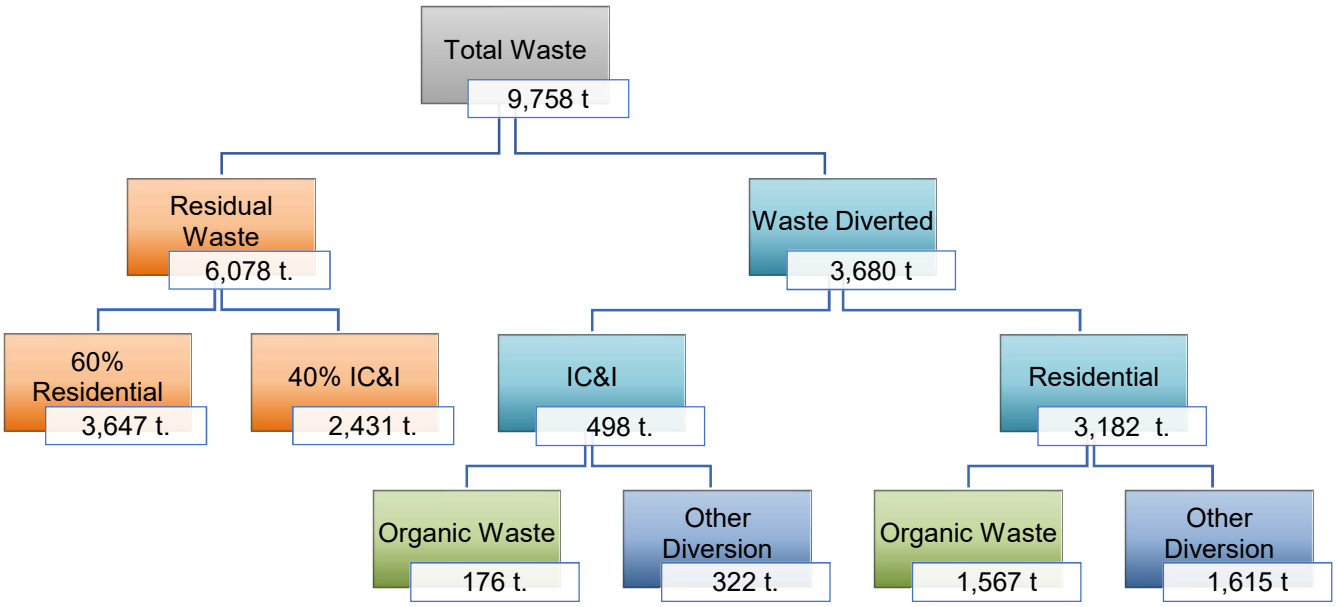
**NOTES:**

It is assumed that 40% of the total residual waste received at the Southampton Landfill Site is from the IC&I sector. Overall, it is estimated that the IC&I sector diverts ±17% of its waste generated (in other words, the total waste generation is equal to 3,182 tonnes IC&I residual waste [83%] and 498 tonnes of IC&I waste diversion [17%]).

Residential diversion rates presented herein assume that the commercial sector contributes 40% of the total residual waste received and, in addition to the residual waste generation that can be attributed to the IC&I sector, the IC&I sector diverts an estimated 17% of the waste generated.

Based on the information available, and using the assumptions outlined herein, the average diversion rate for all waste handled by the Town is 37.7%. In consideration of the IC&I waste accepted at the Southampton Landfill, the residential diversion rate is actually expected to be higher, estimated to be approximately 47%. A summary of the average annual residual waste generation and diversion rates for the Town is provided in **Figure 6-1**.

**FIGURE 6-1: Residual Waste Generation and Waste Diversion Estimates (Residential and IC&I)**




A detailed breakdown of the waste diversion achieved by the Town, by type of material, is provided in **Table 6-2.** In addition, a breakdown of the relative proportions of residual waste generation versus diversion for the Town overall (i.e. residential + IC&I sector combined) and for the residential and IC&I sector, for each waste diversion category, is provided as follows:

1. Diversion of Subject Waste (IC&I and Residential) Relative to Total Waste Generated =
   Total of Subject Waste Diverted ÷ Total Waste Generated (Residual + Diverted)
2. Diversion of Subject Waste (Residential only) Relative to Total Residential Waste Generated =
   Subject Waste Diverted (Residential) ÷ Total Residential Waste Generated (Residual + Diverted)
3. Diversion of Subject Waste (IC&I only) Relative to Total IC&I Waste Generated =
   Subject Waste Diverted (IC&I) ÷ Total IC&I Waste Generated (Residual + Diverted)
   (Note: Other IC&I waste diverted, equivalent to 11%, was assumed to be from the diversion of blue box recyclables, tires, scrap metal, WEEE and includes the 2% construction waste [equivalent to 59 tonnes])
4. Subject Waste Diverted Relative to Overall Diversion (IC&I and Residential Combined):
   Total of Subject Waste Diverted ÷ Total Waste Diverted
5. Subject Residential Waste Diverted Relative to Residential Diversion Alone:
   Total of Subject Waste (Residential only) ÷ Total Residential Waste Diverted

## TABLE 6-2: SOLID WASTE DIVERSION BY TYPE OF MATERIAL (2014 to 2019)

| | | Units | YEAR | | | | | | AVERAGE | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | | |
| **Total Waste Generated** | | Tonnes (T) | **8,641** | **8,576** | **10,204** | **10,500** | **10,117** | **10,511** | **9,758** | |
| **Residual Waste** | | | | | | | | | | |
| | **Total** | | 5,377 | 5,179 | 6,620 | 6,544 | 6,398 | 6,352 | 6,078 | |
| | **Residential** | | 3,226 | 3,107 | 3,972 | 3,926 | 3,839 | 3,811 | 3,647 | |
| | **IC&I** | | 2,151 | 2,072 | 2,648 | 2,618 | 2,559 | 2,541 | 2,431 | |
| **Waste Diverted** | | As Noted | *Tonnes* | *Tonnes* | *Tonnes* | *Tonnes* | *Tonnes* | *Tonnes* | *Tonnes* | ***Percent*** |
| | **Total** | | 3,264 | 3,397 | 3,583 | 3,956 | 3,720 | 4,159 | 3,680 | **37.7** |
| | **Residential** | | 2,824 | 2,972 | 3,041 | 3,420 | 3,195 | 3,639 | 3,182 | **46.6** |
| | **IC&I** | | 441 | 424 | 542 | 536 | 524 | 520 | 498 | **17.0** |
| **DIVERSION (Waste Tonnage and Relative Proportions)** | | | | | | | | | | |
| | **Organics Diverted (Total)** | (T) | 1535 | 1510 | 1792 | 2088 | 1755 | 1778 | 1,743 | |
| | Residential | (T) | 1380 | 1360 | 1601 | 1899 | 1570 | 1595 | 1,567 | |
| | IC&I | (T) | 155 | 150 | 191 | 189 | 185 | 184 | 176 | |
| | i. Total Waste | % | 17.8 | 17.6 | 17.6 | 19.9 | 17.3 | 16.9 | 17.9 | |
| | ii. Residential Waste | % | 22.8 | 22.4 | 22.8 | 25.9 | 22.3 | 21.4 | 23.0 | |
| | iii. IC&I Waste | % | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | |
| | iv. Diversion (Overall) | % | 47.0 | 44.4 | 50.0 | 52.8 | 47.2 | 42.8 | 47.4 | |
| | v. Residential Diversion | % | 48.9 | 45.7 | 52.6 | 55.5 | 49.1 | 43.8 | 49.3 | |
| | **Construction Material Diverted** | (T) | 129 | 318 | 187 | 249 | 291 | 690 | 311 | |
| | Residential | (T) | 77 | 268 | 123 | 186 | 230 | 629 | 252 | |
| | IC&I | (T) | 52 | 50 | 64 | 63 | 62 | 61 | 59 | |
| | i. Total Waste | % | 1.5 | 3.7 | 1.8 | 2.4 | 2.9 | 6.6 | 3.2 | |
| | ii. Residential Waste | % | 1.3 | 4.4 | 1.8 | 2.5 | 3.3 | 8.4 | 3.7 | |
| | iii. IC&I Waste | % | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| | iv. Diversion (Overall) | % | 4.0 | 9.4 | 5.2 | 6.3 | 7.8 | 16.6 | 8.4 | |
| | v. Residential Diversion | % | 2.7 | 9.0 | 4.1 | 5.4 | 7.2 | 17.3 | 7.9 | |
| | **Blue Box Recyclables** | (T) | 1252.8 | 1192.7 | 1235.0 | 1224.2 | 1286.3 | 1295.4 | 1,248 | |
| | Residential | (T) | 1052 | 1003 | 990 | 985 | 1049 | 1060 | 1,023 | |
| | IC&I | (T) | 200 | 189 | 245 | 239 | 237 | 235 | 224 | |
| | i. Total Waste | % | 14.5 | 13.9 | 12.1 | 11.7 | 12.7 | 12.3 | 12.8 | |
| | ii. Residential Waste | % | 17.4 | 16.5 | 14.1 | 13.4 | 14.9 | 14.2 | 15.0 | |
| | iii. IC&I Waste | % | 7.7 | 7.6 | 7.7 | 7.6 | 7.7 | 7.7 | 7.7 | |
| | iv. Diversion (Overall) | % | 38.4 | 35.1 | 34.5 | 30.9 | 34.6 | 31.1 | 33.9 | |
| | v. Residential Diversion | % | 37.3 | 33.8 | 32.6 | 28.8 | 32.8 | 29.1 | 32.2 | |
| | **Tires** | (T) | 15.34 | 14.87 | 15.27 | 14.43 | 22.62 | 25.20 | 17.96 | |
| | Residential | (T) | 12.89 | 12.51 | 12.24 | 11.61 | 18.45 | 20.63 | 14.72 | |
| | IC&I | (T) | 2.45 | 2.36 | 3.03 | 2.82 | 4.17 | 4.57 | 3.23 | |
| | i. Total Waste | % | 0.18 | 0.17 | 0.15 | 0.14 | 0.22 | 0.24 | 0.18 | |
| | ii. Residential Waste | % | 0.21 | 0.21 | 0.17 | 0.16 | 0.26 | 0.28 | 0.22 | |
| | iii. IC&I Waste | % | 0.09 | 0.09 | 0.09 | 0.09 | 0.14 | 0.15 | 0.11 | |
| | iv. Diversion (Overall) | % | 0.47 | 0.44 | 0.43 | 0.36 | 0.61 | 0.61 | 0.49 | |
| | v. Residential Diversion | % | 0.46 | 0.42 | 0.40 | 0.34 | 0.58 | 0.57 | 0.46 | |
| | **Scrap Metal** | (T) | 143.9 | 160.0 | 152.7 | 172.1 | 160.6 | 161.2 | 158.4 | |
| | Residential | (T) | 120.91 | 134.60 | 122.38 | 138.45 | 130.97 | 131.96 | 129.9 | |
| | IC&I | (T) | 23.02 | 25.38 | 30.29 | 33.61 | 29.63 | 29.24 | 28.5 | |
| | i. Total Waste | % | 1.67 | 1.87 | 1.50 | 1.64 | 1.59 | 1.53 | 1.62 | |
| | ii. Residential Waste | % | 2.00 | 2.21 | 1.74 | 1.88 | 1.86 | 1.77 | 1.90 | |
| | iii. IC&I Waste | % | 0.89 | 1.02 | 0.95 | 1.07 | 0.96 | 0.96 | 0.97 | |
| | iv. Diversion (Overall) | % | 4.41 | 4.71 | 4.26 | 4.35 | 4.32 | 3.88 | 4.30 | |
| | v. Residential Diversion | % | 4.28 | 4.53 | 4.02 | 4.05 | 4.10 | 3.63 | 4.08 | |
| | **Electronics (WEEE)** | (T) | 46.0 | 48.3 | 44.4 | 42.4 | 34.8 | 37.1 | 42.2 | |
| | Residential | (T) | 38.66 | 40.60 | 35.63 | 34.10 | 28.39 | 30.39 | 34.63 | |
| | IC&I | (T) | 7.36 | 7.66 | 8.82 | 8.28 | 6.42 | 6.73 | 7.54 | |
| | i. Total Waste | % | 0.53 | 0.56 | 0.44 | 0.40 | 0.34 | 0.35 | 0.43 | |
| | ii. Residential Waste | % | 0.64 | 0.67 | 0.51 | 0.46 | 0.40 | 0.41 | 0.51 | |
| | iii. IC&I Waste | % | 0.28 | 0.31 | 0.28 | 0.26 | 0.21 | 0.22 | 0.26 | |
| | iv. Diversion (Overall) | % | 1.41 | 1.42 | 1.24 | 1.07 | 0.94 | 0.89 | 1.15 | |
| | v. Residential Diversion | % | 1.37 | 1.37 | 1.17 | 1.00 | 0.89 | 0.84 | 1.09 | |
| | **Mattresses/Boxsprings** | (T) | 32.3 | 38.0 | 37.3 | 41.3 | 38.1 | 42.8 | 38.3 | |
| | i. Total Waste | % | 0.37 | 0.44 | 0.37 | 0.39 | 0.38 | 0.41 | 0.39 | |
| | ii. Residential Waste | % | 0.53 | 0.63 | 0.53 | 0.56 | 0.54 | 0.57 | 0.56 | |
| | iv. Overall Diversion | % | 0.99 | 1.12 | 1.04 | 1.04 | 1.03 | 1.03 | 1.04 | |
| | v. Residential Diversion | % | 1.15 | 1.28 | 1.23 | 1.21 | 1.19 | 1.18 | 1.20 | |
| | **MHSW** | (T) | 30.6 | 35.9 | 38.6 | 41.1 | 42.6 | 41.5 | 38.4 | |
| | i. Total Waste | % | 0.35 | 0.42 | 0.38 | 0.39 | 0.42 | 0.40 | 0.39 | |
| | ii. Residential Waste | % | 0.51 | 0.59 | 0.55 | 0.56 | 0.61 | 0.56 | 0.56 | |
| | iv. Overall Diversion | % | 0.94 | 1.06 | 1.08 | 1.04 | 1.15 | 1.00 | 1.04 | |
| | v. Residential Diversion | % | 1.09 | 1.21 | 1.27 | 1.20 | 1.33 | 1.14 | 1.21 | |
| | **Container Return Allowance** | (T) | 75.4 | 76.6 | 77.8 | 80.5 | 83.8 | 86.0 | 80.0 | |
| | i. Total Waste | % | 0.87 | 0.89 | 0.76 | 0.77 | 0.83 | 0.82 | 0.82 | |
| | ii. Residential Waste | % | 1.25 | 1.26 | 1.11 | 1.10 | 1.19 | 1.15 | 1.17 | |
| | iv. Overall Diversion | % | 2.31 | 2.26 | 2.17 | 2.03 | 2.25 | 2.07 | 2.17 | |
| | v. Residential Diversion | % | 2.67 | 2.58 | 2.56 | 2.35 | 2.62 | 2.36 | 2.52 | |
| | **Batteries** | (T) | 1.96 | 1.98 | 2.49 | 1.78 | 2.20 | 1.42 | 1.97 | |
| | i. Total Waste | % | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.01 | 0.02 | |
| | ii. Residential Waste | % | 0.03 | 0.03 | 0.04 | 0.02 | 0.03 | 0.02 | 0.03 | |
| | iv. Overall Diversion | % | 0.06 | 0.06 | 0.07 | 0.04 | 0.06 | 0.03 | 0.05 | |
| | v. Residential Diversion | % | 0.07 | 0.07 | 0.08 | 0.05 | 0.07 | 0.04 | 0.06 | |
| | **Fluorescent Bulbs** | (T) | 1.67 | 0.69 | 0.70 | 0.79 | 1.70 | NR | 0.93 | |
| | i. Total Waste | % | 0.02 | 0.01 | 0.01 | 0.01 | 0.02 | N/A | 0.01 | |
| | ii. Residential Waste | % | 0.03 | 0.01 | 0.01 | 0.01 | 0.02 | N/A | 0.01 | |
| | iv. Overall Diversion | % | 0.05 | 0.02 | 0.02 | 0.02 | 0.05 | N/A | 0.03 | |
| | v. Residential Diversion | % | 0.06 | 0.02 | 0.02 | 0.02 | 0.05 | N/A | 0.03 | |

## 6.3 Waste Recycling

### 6.3.1 Blue Box Materials

Curbside collection of sorted blue box recyclable materials is provided by BASWR on a bi-weekly basis. The current list of items accepted through curbside collection is provided in **Figure 6-2**. Based on the records provided by BASWR, approximately 7,500 tonnes of Blue Box materials were diverted from the Town's landfill between 2014 and 2019, averaging approximately 1,250 tonnes/year. **Table 6-2** presents the blue box tonnages diverted from the Town's residual waste stream. The six-year average indicates that blue box materials represent approximately 15% of residential waste generated, accounting for 34% of the total waste diverted and an estimated 32.2% of the residential waste diversion.

**FIGURE 6-2 Bruce Area Solid Waste Recycling: Recyclable Blue Box Materials**



### 6.3.2 Ontario Deposit Return Program

Although the Town is not directly involved in the deposit return program for beer and liquor bottles, the RPRA includes an allowance for the program based on the deposit containers returned from the residential sector. As information specific to the Town is not available, a deposit return rate based on previous allowances for deposit returns is estimated. This allowance translates to an estimated 5.5 kg/capita. Based on the population estimates for the Town, including the undercount, an estimated 80 tonnes of beer and liquor bottles are diverted from the Town's landfill annually. Based on the estimated diversion rates, deposit containers represent approximately 1.17% of the residential waste generated, accounting for 2.2% of the total waste diverted and an estimated 2.6% of the residential waste diversion.

### 6.3.3 White Goods and Scrap Metal

The Town accepts scrap metal at the Site, including empty propane tanks, bikes and white good (i.e. air conditioners, dehumidifiers, freezers, refrigerators and water coolers). White goods are only accepted if they have been certified and tagged as 'Freon Free'. Tipping fees, as specified by the Town's landfill disposal fees, are applied to the drop-off of scrap metals and white good items. The white goods and scrap metal are collected by a hauler on an as needed basis for salvage. Town records estimate that an average of approximately 158 tonnes of scrap metal is diverted from the Southampton Landfill site annually. Based on the estimated diversion rates, scrap metal represents approximately 1.9% of the residential waste generated, accounting for 4.3% of the total waste diverted and an estimated 4.1% of the residential waste diversion.

The Town also supports the use of "The Great Refrigerator Roundup" sponsored by the Ontario Power Authority (OPA). The program allows residents of Ontario to dispose of select refrigerators and freezers free of charge through the OPA. However, this program is limited to full-sized freezers and refrigerators (i.e. between 10 and 27 $ft^3$) that are at least 15 years old and still in working condition. As an alternative, non-certified appliances are accepted at Square Deal Neil's, a local business situated in Southampton.

### 6.3.4 Used Tires

Tires are the first material to move to the individual producer responsibility (IPR) framework, meaning that under the Resource Recovery and Circular Economy Act tire producers are now directly responsible and accountable for meeting mandatory collection and recycling targets for used tires. Producers can contract with registered Producer Responsibility Organizations (PROs) and service providers and must report data on progress towards meeting targets.

Under the new legislation, municipalities are not required to collect tires. It is recommended that if, at some point in time, the Town opts not to operate a tire collection site, residents be directed, either via the Town's website and/or information on the sign posted at the landfill entrance, to a registered collection site.

Municipalities that continue to collect used tires are not required to register with the Authority as a collector or to submit reports. However, municipalities that operate collection sites should ensure that their sites are included in the collection systems established by tire producers or PROs. It is thought that since the majority of producers will consult with PROs to establish their collection systems, municipalities should register with a PRO. According to the RRCEA, municipalities that operate collection sites must, at minimum, accept up to 10 passenger and light tires per day from any person and tires with rims. The acceptance of greater than 10 tires per person is subject to the collector's discretion. Used tires from the Site can be used by producers to meet their collection targets, provided they are picked up by a registered hauler. As per Section 68(3) of the RRCEA, any person operating a used tire collection system can not charge for tire collection, including on-rim tires.

The Town continues to collect, and stockpile, used tires at the Southampton Landfill Site. As a tire collector, the Town accepts used tires free of charge from its residents for which the Town will receive a resource recovery stipend from the producer (or PRO). Based on information provided by the Town, an estimated 1,500 tire units are stockpiled at the Site on an annual basis. This is equivalent to the acceptance of an estimated 18 tonnes annually. As shown in **Table 6-2**, used tires represent approximately 0.22% of the residential waste generated, accounting for 0.49% of the total waste diverted and an estimated 0.46% of the residential waste diversion.

### 6.3.5 Municipal Hazardous or Special Waste (MHSW)

The MHSW program for the Town is operated by Bruce County through the Orange Drop Program. In the Town of Saugeen Shores, the County typically provides three collection events per year. These are based out of the Southampton Works Yard (i.e. 429 Peel Street, Southampton). Under the Orange Drop program residents can drop-off the following hazardous materials free of charge.

- Paints and coatings, plus their containers
- Cleaning agents: ammonia-based, drain, oven, toilet, tub and tile, and aluminum
- Solvents, such as thinners for paint, lacquer and contact cement, paint strippers and degreasers, nail polish, and their containers
- Transmission fluid, oil filters and brake fluid
- Fuel, motor oil, gasoline and/or oil containers of 30 litres or less
- Single-use batteries and fire extinguishers
- Mercury thermometers
- Fluorescent tubes and bulbs
- Pharmaceuticals
- Furniture polish
- Antifreeze and its containers
- Pressurized containers (i.e. aerosol containers, propane tanks and cylinders, oxygen and helium tanks)
- Lawn fertilizers that contain pesticides
- Pesticides and insect sprays and their containers

Based on the summary of MHSW materials reportedly received by the County, the amount of MHSW collected through the Town's Orange Drop program is estimated to be 38.4 tonnes annually. This is equivalent to an estimated 0.56% of the residential waste received and approximately 1.2% of the residential waste diverted. Although the proportion of waste diverted through the MHSW is low compared to other diversion streams, diversion and proper disposal of MHSW is critical for environmental security.

Fluorescent Bulbs:
Fluorescent bulbs and tubes may also be dropped off at the Southampton Landfill. These are then transferred to a facility that discards mercury and other hazardous chemicals properly. Based on the information provided by the Town, the amount waste diverted via the bulb collection program is estimated to be 1.1 tonnes annually.

### 6.3.6 Automotive Batteries

Batteries are currently accepted at the Town's landfill site in an on-site shed. Batteries are to be stored in a single layer under a roof in order to prevent precipitation from coming into contact with the batteries and in a manner that provides secondary containment in the event of leakage. Based on the records provided, approximately 2 tonnes of batteries are diverted annually from the Town's residential waste. As presented in **Table 6-2**, this equates to a minimal amount of the waste diversion being achieved. However, similar to MHSW, although the proportion of waste diverted is low compared to other diversion streams, the diversion of batteries is critical for environmental security.

It is noted that currently automotive batteries are also diverted from the residual waste stream under the Orange Drop Program. Under the new legislation, batteries will be classified as WEEE waste rather than MHSW.

### 6.3.7 Waste Electrical & Electronic Equipment (WEEE)

The Town is currently registered as a collector for WEEE under the Ontario Electronic Stewardship (OES). As part of the Waste-Free-Ontario legislation, the OES will continue operations until December 31, 2020 at which time regulations under the RRCEA will make producers fully responsible. Under the new legislation, batteries will be considered classified as WEEE, therefore will no longer be included in the Municipal Hazardous and Special Waste program.

Currently, the material is recycled through the OES program and the Town is paid an incentive by the OES based on the amount of electronic material collected. In addition to the various OES Service providers and retailers that facilitate WEEE collection in the area, electronic waste can be dropped off at the Southampton Landfill site free of charge. Provided below is the list of electronic items that are accepted by the Town and other WEEE stewards under the WEEE program.

- Display Devices: Monitors, Televisions, All-in-one Computers
- Desktop and Portable Computers
- Computer Peripherals (i.e. Mouse's, Keyboards and Modems)
- Printing, Copying and Multifunctional Devices: printers and photocopiers
- Telephone and Telephone Answering Machines
- Cellular Devices and Pagers
- Home Theatre Equipment: Equalizers, Amplifiers, Speakers and Turntables
- Aftermarket Vehicle Audio and Video Devices
- Image, Audio and Video Devices (Personal/Portable and Home/Non-Portable)
- Power Cords and Wires
- Radios and Cameras

The pick-up of WEEE materials typically occurs once annually, at minimum. Based on the records provided, 42.2 tonnes of WEEE is diverted from the Town's waste stream annually. As presented in **Table 6-2**, this equates to an estimated 0.51% of residential waste generated and approximately 1.1% of the residential waste diversion. Similar to MHSW, although the proportion of waste diverted through the OES is low compared to other diversion streams, diversion of WEEE is critical for environmental security.

### 6.3.8 Mattresses

Where municipalities operate their own landfills, the recycling of mattresses may be particularly advantageous from an operational standpoint and for the site life of a landfill. The physical properties of mattresses do not allow them to compact well and the metal framing and springs can get caught-up in compaction equipment, potentially creating extra repair and maintenance expenses. Currently, a number of mattress recycling facilities are located in the Greater Toronto Area. Mattresses are either recycled by being stripped down to their base materials, of which up to 95% of the materials can be recycled or reused (depending on market availability), or the mattresses are broken down, with the metal components being recycled and the material components shredded then subsequently landfilled in a more compact manner.

The Town has initiated a mattress recycling program to divert this bulky material from the landfill. Mattresses are stored in a dry storage area, typically a truck trailer to facilitate the subsequent transportation. While there is still a cost to drop-off of mattresses at the landfill, the tipping fee applied by the Town is intended to offset the costs associated with transporting the mattresses to a recycling facility. Currently the mattresses are accepted by TRY-Recycling in London, Ontario. Based on the records provided, an estimated 1,300 mattresses and box-springs are diverted from the landfill annually, this is equivalent to an average of 38.3 tonnes per year. As presented in **Table 6-2**, this equates to an estimated 0.56% of residential waste generated and 1.2% of the residential waste diversion.

### 6.3.9 Construction and Demolition Debris (Concrete and Bricks)

It is estimated that C&D waste accounts for a significant proportion of commercial waste received at the landfill. Overall, construction and demolition debris considered to be wood products, asphalt shingles, drywall, and masonry materials. While the majority of these materials are landfilled, the concrete and bricks can be repurposed as a base layer for landfill access 'roads'. Based on the Town's waste summaries, it is estimated that the concrete and brick accounts for approximately 3.7% (or an average of ±300 tonnes, annually) of the total residential waste received at the Southampton Landfill Site. This equates to an estimated 8.4% of residential waste generated and 7.9% of the residential waste diversion.

### 6.3.10 Plastic Bale Wrap

In the past, plastic bale wrap has been accepted by the Town free of charge, then collected on an as needed basis for recycling/reuse. In recent years, many landfill sites have had difficulty retaining a consistent and reliable contractor to remove the bale wrap from the Site for the purpose of recycling/reuse, however, provided the agricultural land use in the area, the diversion of bale wrap from the residual waste stream should continue to be encouraged.

The diversion of this material is important for conserving landfill capacity as the bale wrap has a relatively low density and does not compact well. Although the Town has discontinued the acceptance of bale wrap at this time, it is recommended that the Town provided a direct link on their website to an alternative means of diversion, as available.

## 6.4 Waste Reuse

There is currently a Town-directed reuse program available for residents at the Southampton Landfill Site. Gently used items may be placed in a designated trailer located in the waste receiving area. It is noted that the majority of the Municipalities, or associations thereof, were reported to have 0% diversion for reuse. However, it is recognized that some residents actively reuse materials through kijiji, yard sales, and thrift shops. Consequently, diversion through such avenues is difficult to assess and is not tracked by the RPRA. The limited volumes associated with such efforts are not considered to affect the findings of this assessment.

## 6.5 Organics

Currently, the Town does not provide a scheduled curbside collection service for source separated organic materials, nor does it provide a residential curbside pick-up service for leaf and yard waste. As a general rule '*the management of compostable materials as close to the source as possible is usually the best approach from an economic and environmental perspective'*. As a result, a home composting program for wet organics is promoted to Town residents, and the use of a backyard composter and/or a digester to manage these types of material is encouraged.

In addition to the traditional backyard composter, the Town has also made Green Cone Digesters available to residents, at cost. Green Cone digesters are designed to efficiently breakdown kitchen waste without interference from animals. This alternative is discussed further in **Section 9.4.1** of this Report.

### 6.5.1 Off-Property Organics

Leaf and yard waste is accepted at the Town's Yard Waste Site located on Concession 14, in the parcel of land adjacent to the active portion of the Southampton Landfill Site. Further, separate areas for other organic materials, such as brush and stumps, are provided at the Southampton Landfill. These are periodically ground into woodchips. It is noted that since the information provided by the Town accounts only for the organics

delivered to the landfill, additional organics diversion is being achieved by the Town via the diversion of leaf and yard waste at the Yard Waste Site.

It is estimated that the Town accepts approximately 1,750 tonnes per year of 'grindable' clean wood, brush and stumps. The Town may use the composted leaf and yard waste and the woodchips as daily cover, as practicable. The use of organic waste as daily cover helps to decrease the residual waste volumes, thereby extending the life of the landfill. The Approval for the landfill does not allow for burning of clean wood and brush at the site.

Assuming that an estimated 6% of waste generated by the IC&I can be attributed to off-property organics contributions, it is estimated that 18.5% of the residential waste generated is accounted for via the diversion of organics, including primarily clean wood, brush and stumps (limited to off-property). Therefore, off-property organics represent approximately 18.5% of the residential waste generated, accounting for an estimated ±40% of the total residential waste diversion.

### 6.5.2 On-Property Organics

According to Ontario Regulation 101/94, all municipalities with populations of greater than 5,000 persons must establish, operate and maintain 'a leaf and yard waste system'. More specifically, this system should include encouraging home composting and the provision of home composters to residents at cost, or less.

RPRA waste diversion estimates provide for an allowance for the diversion of 'on-property' organics. This factors in the cumulative number of backyard composters supplied by the Municipality, or association thereof, and includes an allowance for grass-cycling and evapotranspiration resulting from use of aerated carts for organics programs. However, due to the ability for residents to purchase composters at their local hardware store or at the Town office, it is assumed that the diversion estimate provided for on-property organics is underestimated by RPRA. Based on a review of a Statistics Canada article, a separate analysis with reference to the RPRA per unit diversion rate, is provided below. It is noted that RPRA's standard practice to account for the effects of backyard composting is to assume a diversion rate of 100 kg/composter/year (or 100 kg/household/year).

According to Statistics Canada, based on the 2011 census data *'The type of dwelling a household occupied was directly related to the rate of composting. Over 50% of households in detached or single dwellings reported composting their kitchen waste, compared to 22% of households living in apartments'.* (Reference: *Statistics Canada, Article - Composting by Households in Canada* (July 2013)). Provided that the majority of the households in the Town of Saugeen Shores (i.e. approximately 80% to 85% of the permanent households) are considered to be detached or single dwelling households, the on-property diversion rate for residential organics within the Town is estimated to be approximately 280 tonnes per year. This is accounted for in the diversion rates calculated for the Town, provided in **Table 6-2**.

Based on the diversion estimates, on-property organics diverted from the residual waste stream accounts for approximately 4.1% of residential waste generated and 8.8% of waste diverted from the Town's landfill.

## 6.6 Summary of Diversion

**Figure 6-3 and Figure 6-4** show a breakdown of the solid waste diversion achieved by the Town, by type of material, based on the total waste received (i.e. including IC&I waste) and the estimated residential waste received, respectively, over the 6-year period between 2014 and 2019. The average diversion rate for all waste accepted by the Town is 37.7%. Collectively, when IC&I waste, estimated to account for 40% of the residual waste received at the Site plus an additional 17% attributable to waste diversion, is not included in the waste generation totals, the overall residential diversion is estimated to be approximately 46.6% with greater than an estimated 50% of the total residential waste being landfilled.

**FIGURE 6-3: Average Composition of Total Waste Generated (2014 to 2019)**

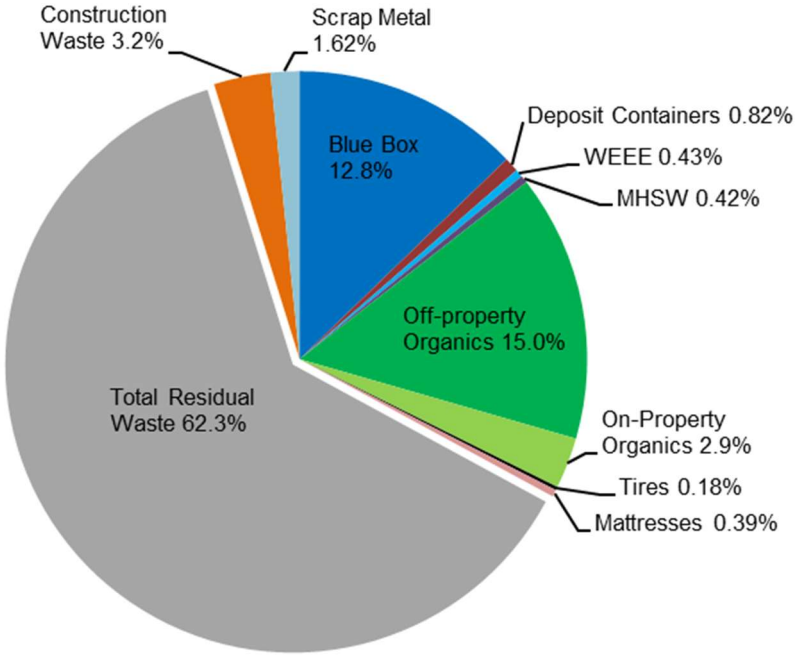
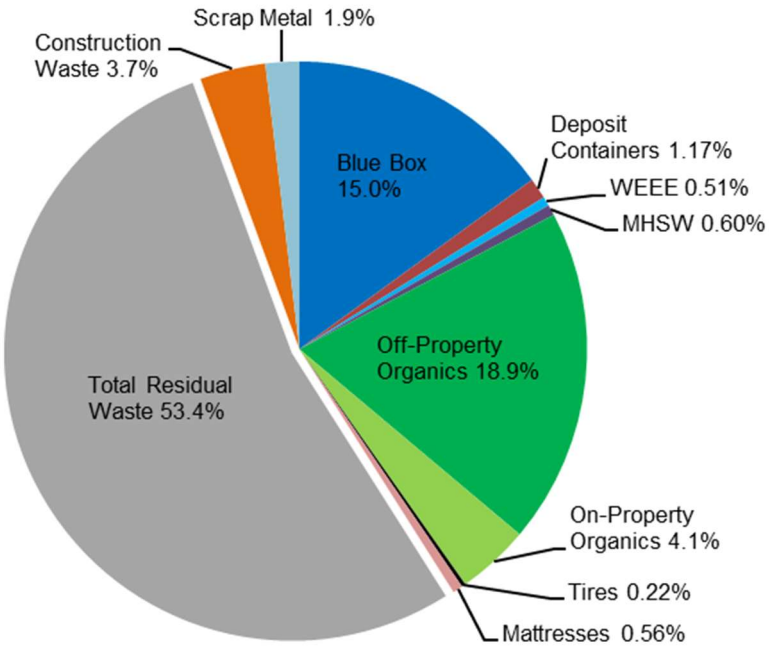
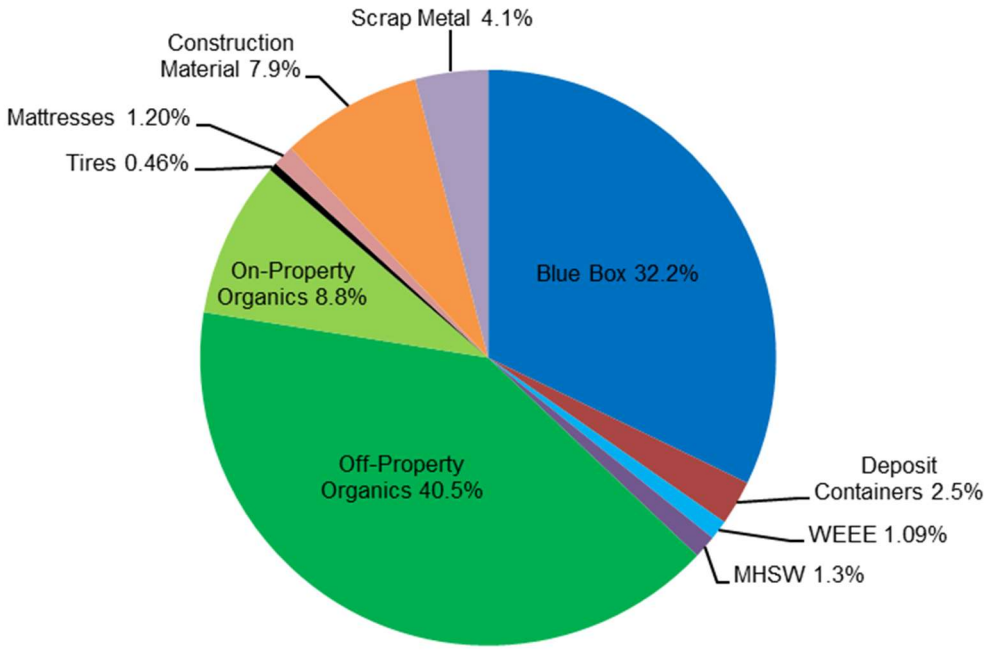



**FIGURE 6-4: Average Composition of Total Residential Waste Generated (2014 to 2019)**



As illustrated in **Figure 6-5**, organics is the most significant residential diversion program in terms of mass diversion at approximately 50.5% of the materials diverted (i.e. on- and off- property organics combined). In addition to on-property organics, this includes clean wood, brush, stumps, grindable wood. Additional diversion would be achieved via the diversion of leaf and yard waste which is placed in a separate area at the Town's Yard Waste Site. Blue box materials are estimated to be the second most significant diversion stream at approximately one-third of the materials diverted.

**FIGURE 6-5: Average Composition of the Residential Diversion Materials (2014 to 2019)**

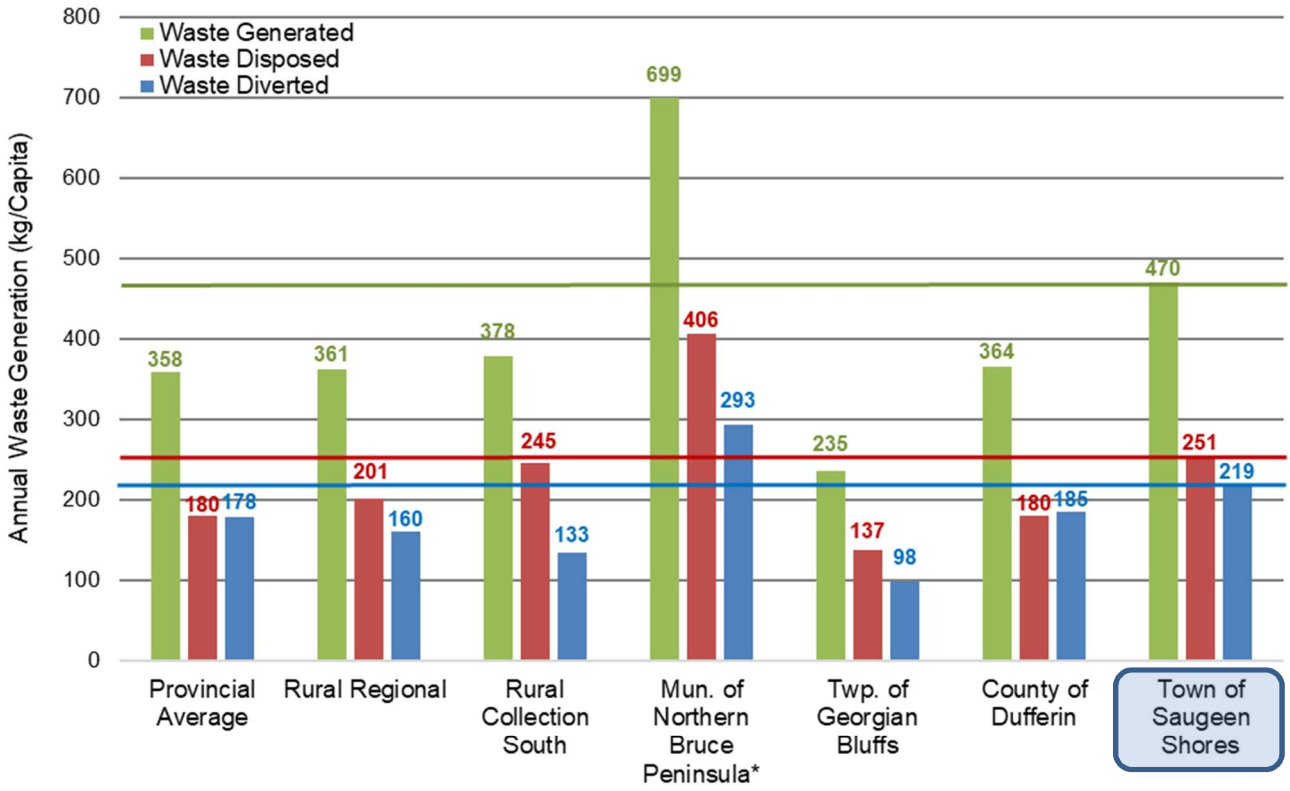


# 7. COMPARATIVE ANALYSIS: EFFICACY OF EXISTING WASTE PROGRAMS

## 7.1 Residential Waste Generated and Disposed

A key factor in reducing residual waste is by reduction in generation. Reduction is the first step of the 3 R's (i.e. reduce, re-use, recycle). A good general indicator of a Municipality's performance is the amount of waste that is disposed per capita and the estimated amount that is diverted (i.e., through recycling, MHSW, WEEE, organics, etc.). Illustrated in **Figure 7-1** below is a comparison of the Town's waste generated, residual waste disposed, and waste diverted on a per capita basis (based on the data presented in Section 6 of this Report), to that of several Municipalities in the same *Rural Regional* Grouping, as well as the averages of the *Rural Collection South* grouping, Dufferin County (which has implemented a comparatively broad range of waste diversion initiatives and programs) and the Provincial Average. The comparative data is based on the RPRA Datacall reported for 2017.

**FIGURE 7-1: Residential Waste Disposal Comparison**




Notes:
1. The Town's residential waste generation and diversion quantities are based on the average (2014 to 2019).
2. * Waste quantities reported by the Municipaity of Northern Bruce Peninsula likely include contributions from the IC&I Sector. Similar to the Town, the waste quantities are significantly affected by the IC&I Sector, namely tourism. Therefore, the per capita waste generation rates are considered to be highly overestimated.

As shown in **Figure 7-1**, the Town generated an average of an estimated 470 kg/cap of residential waste, of which an estimated 251 kg/capita was considered residual waste (2014 through 2019). The estimated residential waste generation and disposal rates for the Town are higher than both the provincial average and that reported for the Town's Grouping *(i.e. Rural Regional).* The estimated waste diversion rate of 219 kg/capita for the Town is considered slightly greater than that being achieved provincially, however overall the residential diversion rate

of approximately 46.6% appears to be similar to the diversion rate for the Province, which is approaching 50%. A more detailed assessment of the relative success of the various waste diversion programs is provided in **Section 7.3**.

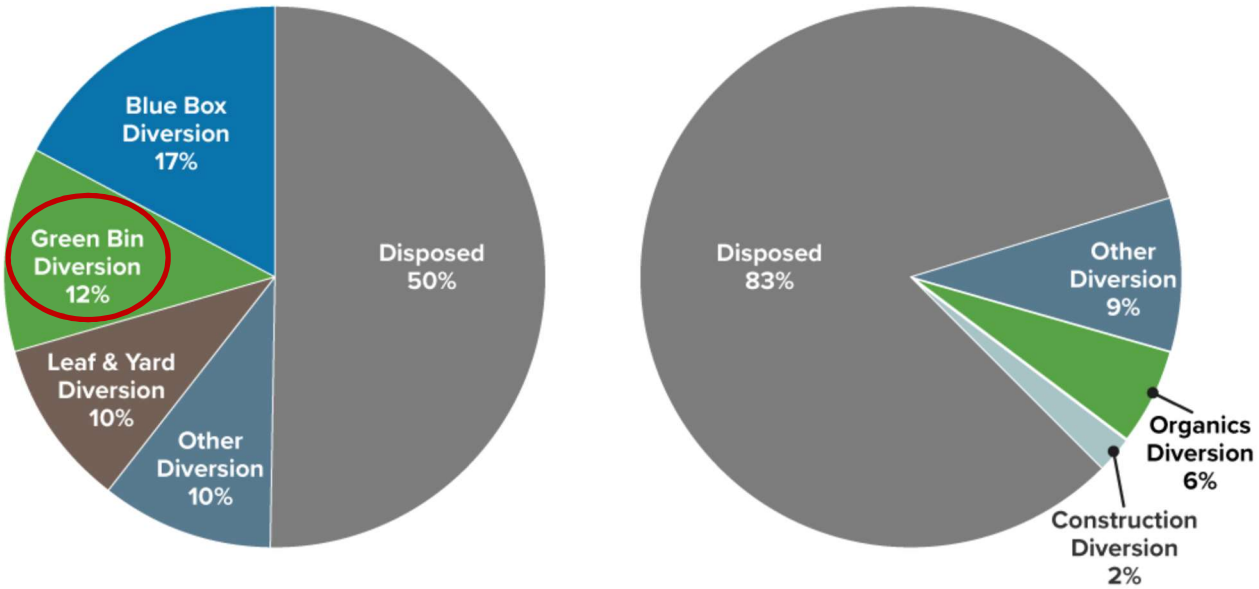
The waste generation rate of 470 kg/capita estimated for the Town does not include the estimated 2,900 tonnes of waste generated by the IC&I sector, of which a large proportion is attributed to the tourism industry. As would be expected, it is evident that the tourism industry is having, and will continue to have, a direct effect on the overall waste generation rate for the Town of Saugeen Shores, putting additional strain on its Waste Management systems. The potential effect of tourism is exhibited by the waste generation rates presented for the Municipality of Northern Bruce Peninsula **(Figure 7-1)**, which are interpreted (by GMBP) to realistically reflect the total quantity of waste received, including contributions from the IC&I sector, primarily tourism.

## 7.2 Provincial Comparison

As shown in **Figure 7-1**, the diversion rate for residential waste being achieved by the Town remains below the Provincial average. In addition, based on the information available, Dufferin County reportedly achieves a residential waste diversion rate of approximately 60%, which is amongst the highest in the Province.

As outlined in the MECP *'Made in Ontario Environment Plan: Reducing Litter and Waste in Our Communities: Discussion Paper'* (April 2019), Ontario generates nearly a tonne of waste per person each year and the overall diversion rate has stalled at about 30% over the past 15 years. Of the 11.6 million tonnes of Ontario's total waste stream, 4.7 tonnes (or 40%) comes from the residential sector and 6.9 million tonnes (or 60%) comes from the IC&I sector. As shown in **Figure 7-2**, it is estimated that the residential sector diverts nearly 50%, while the IC&I sector diverts only 17%.

**FIGURE 7-2:** Ontario's Residential and IC&I Waste Management
[Source: Reducing Litter and Waste in Our Communities: Discussion Paper (MECP ERO# 013-4689: April 2019)]



Although the waste diversion targets set by the Province have resulted in an overall increase in the diversion of household waste, currently in the range of 50% for the province, the diversion rate for the IC&I sector remains much lower. Under the recently passed Waste-Free Ontario Act, it is anticipated that waste diversion will be further increased by placing additional responsibility on the producers (i.e. the IC&I sector, manufacturing etc.). As previously discussed, the province intends to continue to mark its progress towards the interim targets of 30% diversion by 2020, which provincially has already been achieved, 50% by 2030 and 80% diversion by 2050.

In consideration of the Town's tourism industry, which is estimated to account for approximately 18% of the waste processed by the Town annually (i.e. approximately 60% of the IC&I waste), improved waste diversion rates for the IC&I sector, namely within the tourism industry, would provide a significant opportunity for achieving the targets set out in the Waste-Free Ontario Act.

In addition, comparison of the waste diversion materials for the Province to that of the Town of Saugeen Shores suggests that the Green Bin program, which essentially prevents food waste from entering the residual waste stream, would provide another significant opportunity to the Town for achieving the targets set out in the Waste-Free Ontario Act. Review of the *'Long-Term Waste Management Strategy: Executive Summary for Dufferin County' (March 2018)* suggests that Green Bin Organics make up an estimated 25% of the waste diverted from disposal, while an equivalent volume continues to remain within their residual waste stream. Based on this report, Dufferin County suggests that the Green Bin program continues to provide the greatest opportunity for increased waste diversion for their jurisdiction.

## 7.3 Residential Waste Diversion

To complete an evaluation of the Town's performance, the diversion rates of the Town are compared to other Municipalities and the Provincial average. Provided in **Table 7-1** is a comparison of the Town's average diversion rates (i.e. 2014-2019), based on the quantities provided in the previous Section of this report, to the 2017 diversion data published by RPRA. In order to effectively compare each diversion category, the percentages provided by RPRA, which reflect the proportion of total waste diverted through each specified waste diversion stream, were used to calculate (or estimate) the per capita weight diverted in kilograms.

As shown in **Table 7-1**, variations in the overall diversion of organics has a significant effect on the waste diversion rate reported for each jurisdiction. Consequently, diversion rates excluding organics are presented in order to more accurately compare the Town's performance relative to other Municipalities. It is noted that the per capita diversion rate, of an estimated 111 kilograms per capita, excluding organics diversion, is generally similar to that reported for other similar municipalities, and the representative municipal association for the Town (i.e. BASWR). Further, for direct comparison purposes; when the *'other recyclables'* reported for the Town are not considered (as is the case with the other municipalities presented), a per capita diversion rate of ±80 kilograms is estimated. This is significantly lower than the comparable per capita diversion rates for the diversion materials considered.

**TABLE 7-1: Municipal Diversion Performance Comparison (RPRA, 2017)**

| Municipality, Municipal Association or Municipal Grouping | Total Residential Waste Diverted (kg/capita) | On-Property Organics | Organics (i.e. leaf and yard waste, SSO, etc.) | Total Residential Waste Diverted (kg/capita) minus organics | Deposit Return Program | Blue Box Recyclables | MHSW | Reuse | Recyclables (Other) | Residential Diversion Rate (excluding organics) |
|---|---|---|---|---|---|---|---|---|---|---|
| Provincial Average | 178 | 8.4% (15.0kg) | 39.5% (70.1kg) | 93 | 3.1% (5.6kg) | 47.8% (85.0kg) | 0.7% (1.2kg) | 0.5% (0.9kg) | 0.0% (0.0kg) | 34.0% |
| Bluewater Recycling Association (BRA) | 111 | 11.3% (12.5kg) | 2.5% (2.83kg) | 96 | 4.9% (5.4kg) | 81.3% (90.5kg) | 0.0% (0.0kg) | 0.0% (0.0kg) | 0.0% (0.0kg) | 34.2% |
| Bruce Area Solid Waste Recycling (BASWR) | 113 | 0.9% (1.1kg) | 9.1% (10.2kg) | 101 | 4.7% (5.3kg) | 83.5% (94.0kg) | 1.8% (2.1kg) | 0.0% (0.0kg) | 0.0% (0.0kg) | 23.8% |
| Municipality of Northern Bruce Peninsula | 293 | 24.4% (71.4kg) | 30.7% (89.8kg) | 132 | 1.4% (4.1kg) | 41.0% (120.0kg) | 1.0% (3.0kg) | 1.5% (4.4kg) | 0.0% (0.0kg) | 24.5% |
| Township of Georgian Bluffs | 98 | 31.0% (30.5kg) | 1.3% (1.3kg) | 67 | 5.6% (5.5kg) | 62.1% (61.1kg) | 0.0% (0.0kg) | 0.0% (0.0kg) | 0.0% (0.0kg) | 32.7% |
| Dufferin County | 185 | 8.6% (15.8kg) | 36.1% (66.6kg) | 102 | 3.0% (5.5kg) | 51.7% (95.3kg) | 0.7% (1.3kg) | 0.0% (0.0kg) | 0.0% (0.0kg) | 36.2% |
| **Town of Saugeen Shores** | **219** | **8.8% (19.3kg)** | **40.5% (88.6kg)** | **111** | **2.5% (5.5kg)** | **32.9% (72.0kg)** | **1.3% (2.8kg)** | **0.0% (0.0kg)** | **14.1% (30.8kg)** | **30.7%** |

Increasing this to 80kg/capita, which is in the range of the Provincial average, could increase the Town's residential waste diversion rate by ±1.5 to 2%.

Notes:

(1) Organics are divided into two components: (i) on-property are considered to be the backyard composters and grass-cycling, and (ii) organics collected through curbside collection and/or depots, including leaf and yard waste, brush, clean wood, Christmas trees and source separated organics (SSO, commonly referred to as green bin collection).
(2) (2.2kg) represents kg per capita.
(3) Per capita estimates for the Municipality of Northern Bruce Peninsula are considered high due to the interpreted incorporation of IC&I sector contributions into the totals provided to the RPRA.

### 7.3.1 Blue Box Diversion

BASWR is the not-for-profit organization (i.e. municipal partnership) responsible for providing integrated blue box collection and processing services in the municipalities it services, including the Town of Saugeen Shores. BASWR is reportedly achieving an estimated 94 kg/capita of blue box diversion for the Municipalities it services. This is greater than the Provincial average of 85 kg/capita. Although it is recognized that a small proportion of the estimated per capita amount of blue box materials diverted could potentially be attributed the IC&I sector, the significant difference of greater than 25 kg/capita when compared to the Town's diversion rate suggests that the Town's blue box program could be more effectively managed.

Based on the comparisons provided in **Table 7-1**, it is estimated that a successful blue box program diverts in the range of 80 to 100 kilograms per capita. The 72 kg/capita estimated for the Town of Saugeen Shores suggests that increased blue box diversion could likely be achieved. Assuming that the increased diversion would remove blue box materials from the residual waste stream, a target of 80 kg/capita could result in a ±1.5 to 2% increase in the Town's residential diversion rate, or an increase from 46.6% to ±48.2%. Blue box diversion strategies that could be implemented by the Town to improve the diversion of blue box recyclables from the residual waste stream are discussed in **Section 9.2** of this Report. However, it is noted that more effective

management of blue box materials would require additional collaboration and/or cooperation between the Town and BASWR and could include consideration for an increased level of service during the peak tourist season, the provision for large collection bins, etc.

### 7.3.2 Organics

It is noted that in rural areas where agricultural activities are considered to be an important land use, the diversion rate of organics from the landfill, on a per capita basis, is typically lower because these organics can remain close to their source (i.e. on-property). Furthermore, the provincial organic diversion rates are generally expected to be higher due to the curbside organics collection programs, including source separated organics (SSO) and more extensive leaf and yard waste curbside pick-up programs, that are in place in densely populated areas where curbside organics collection is more feasible. However, although the Town of Saugeen Shores is considered to be rural/agricultural, the segregated organic waste disposal area at the landfill appears to contribute significantly to the Town's waste diversion efforts, with per capita diversion rates estimated to be ±108 kg/capita. It is noted that once composted, organics may be used for landfill operations, such as landfill cover.

Organics waste diversion programs offered by municipalities may include depots for wood, stumps, brush, and leaf and yard waste, similar to that currently provided by the Town, and an organics curb-side pick-up service, Christmas tree programs, and/or Green Bins. Factors that have been identified to contribute to a successful and effective organics diversion program include, but are not limited to, the following:

i. Subsidized Composters: Backyard composter subsidy programs are used to promote the use of home composters and/or food waste digesters (i.e. the Green Cone), ultimately encouraging on-property organics diversion.

ii. Accessibility (Number of Depots): An increased number of organics depots within a Municipality, minimizes the time and effort required by the residents, thereby promoting the use of this program.

iii. Accepted Materials: Organics are divided into several different streams including (a) leaf and yard waste; (b) brush; (c) clean wood; and (d) Green Bin. As would be expected, the number of organic waste streams accepted generally directly affects the efficacy of the organics waste diversion program.

iv. Pick-Up Services: Curb-side pick-up is typically offered in more densely populated areas. However, in some Municipalities where, similar to the Town, there is a mixture of more urban areas interspersed within a rural community, the pick-up of leaf and yard waste may be offered to those in the more densely populated communities.

v. Tipping Fees: In areas where tipping fees apply to all or part of the organics waste stream, the reported diversion rate is typically reduced.

vi. Christmas Tree Programs: The curb-side pick-up of organics is typically provided on a seasonal basis (April to November), and some depot locations are only open in the Spring through to the Fall. While some Municipalities have opted to provide a specific Christmas Tree pick-up date(s), others have opted to open their organics depot locations in late December and early January to encourage Christmas tree diversion.

# 8. RESIDUAL SOLID WASTE DISPOSAL

## 8.1 Municipal Disposal Sites: Capacity and Site Life

On January 1, 1999, the Town of Southampton, Town of Port Elgin and the Township of Saugeen amalgamated and formed the new municipality of the Town of Saugeen Shores. Within the Town there were two (2) landfill sites, the Southampton Landfill and the Port Elgin Landfill. In 2007 the Port Elgin Landfill reached its approved capacity and was closed. Since that time the Town's waste management and landfill operations have occurred at the Southampton Landfill.

### 8.1.1 Port Elgin Landfill Site

The Port Elgin Landfill Site is located at 821 Lehnen Street, directly east of the Town of Port Elgin. More specifically, the Site is situated within Part of Lots 11 and 12, Concession 9 in the former Township of Port Elgin, where shown on **Figure 1-1**.

Operations at the Site, which reportedly began in 1978, were governed by Environmental Compliance Approval No. A273102, which was issued on May 16, 1983 and approved the use and operation of a 2.35-hectare (5.8 acre) landfilling site within a total site area of 23.9 hectares (59 acres). Based on the information available, the landfill had a total capacity of 163,000 $m^3$, including approximately 150,000 $m^3$ for waste and interim cover within the 2.35-ha landfill area. A Site Plan of the Port Elgin Landfill Site is provided in **Figure 8-1**.

The Approval was updated on November 20, 2003 and was further amended on November 10, 2006 to reflect site closure, including the closure plan and post closure plan for the Port Elgin Landfill. The landfill was filled to capacity and was closed in the summer of 2007. Capping of the landfill footprint with final cover and topsoil seeded to grass was completed in September 2007. Currently, the former landfill site is used as a municipal dog park and walking trails as approved in the Site Closure Plan. A copy of the ECA for the Port Elgin Landfill Site is provided in **Appendix A**.

### 8.1.2 Southampton Landfill Site

The Southampton Landfill Site is located at 126 Concession 14, to the east of Southampton. The Site is generally situated within Lot 11 and Part of Lot 12, Concession 15 in the former Township of Saugeen, where shown on **Figure 1-1**. It is noted that part of the site area also includes contaminant attenuation zone lands to the east and southeast of the approved waste disposal/transfer area.

The ECA recognizes the use and operation of a 20.2-hectare (50 acre) waste disposal/transfer site within a total site area of 64.97 hectares (160 acres). As shown in **Figure 8-2**, the total site area includes 40.4 hectares (100 acres) of buffer lands to the north and 4.37 hectares (10.8 acres) of contaminant attenuation zone (CAZ) lands to the south and southeast of the area approved for waste disposal and transfer. Further, the Municipality has also acquired an additional 20.2 hectares (50 acres) to the north of the buffer lands as well as a 20.2-hectare (50 acre) lot to the east of the site.

Operations at the Site reportedly began in 1965. Earlier operations were governed by Environmental Compliance Approval No. A273101 (ECA: formerly a Certificate of Approval), as amended, which was issued on December 17, 1980. In July 2011, a Plan of Development and Operations (PDO) was completed by GMBP and was submitted to support landfill development within Phases II and III. The Environmental Compliance Approval No. A273101 was subsequently updated to recognize the PDO for the entire site. A copy of the existing ECA for the Southampton Landfill Site is provided in **Appendix B**.

Conditions 7(4) and 7(5) of the Approval further specify the landfill design constraints including the bottom elevation and final contour height for waste and cover and specify a maximum volumetric capacity of 493,000 $m^3$ for waste, interim and final cover. In consideration of the 66,000$m^3$ required for final cover, the Southampton landfill has a volumetric capacity of 427,000 $m^3$ for waste and interim cover. Based on a topographic survey of the entire landfill area completed on January 22, 2020 to support the Town's Waste Management Plan, as of the end of 2019 a total capacity of approximately 272,000 $m^3$ had been consumed and a capacity of 155,000 $m^3$ remained for waste and interim cover. The existing site conditions at the Southampton Landfill site are presented on **Figure 8-3**.

Based on an estimated average annual fill rate in the range of 9,000 $m^3$/year to 10,000 $m^3$/year recently experienced at the Southampton Landfill Site, it has previously been estimated that the Landfill has sufficient capacity to service the Town for an additional ±14 to 16 years (i.e. circa 2034 to 2036). However, this site life estimate assumes that the contributions will remain relatively consistent. Therefore, based on the anticipated population increase that will be experienced by the Town, the site life estimates presented in the annual report's likely over-estimate the remaining site life for the Southampton Landfill. This is discussed further in **Section 8.4** of the Waste Management Plan.

### 8.1.3 Potential for Additional Capacity at Existing Landfill Sites

Based on the Conditions outlined within the Approvals, should the Town require additional capacity, further development at the Southampton Landfill Site would be considered an 'expansion' to the Site. The need for an Environmental Assessment Act (EAA) approval would depend on the desired volume (i.e. landfill capacity) being requested. Landfill expansions requiring less than an additional 40,000 $m^3$ of capacity are not governed under the EAA. Expansions greater than 40,000 $m^3$ would require the EAA process to meet the requirements of Ontario Regulation 232/98 for New or Expanding Landfill Sites. These options are discussed in greater detail in **Section 10** of this Waste Management Plan.

# 219181
# Town of Saugeen Shores
# Waste Management Plan




## LEGEND

- EXISTING GRAVEL ROAD
- EXISTING CHAINLINK FENCE
- 225.0 EXISTING CONTOURS
- GP6 EXISTING GAS PROBE
- OW12-4 EXISTING LOWER AQUIFER MONITORING WELL
- OW26-4 EXISTING LOWER AQUIFER MONITORING WELL TO BE SAMPLED EVERY TWO YEARS
- OW10-18 EXISTING UPPER AQUIFER MONITORING WELL
- SW3 SURFACE WATER SAMPLING LOCATION

SCALE : 1:2,500
DECEMBER 2019

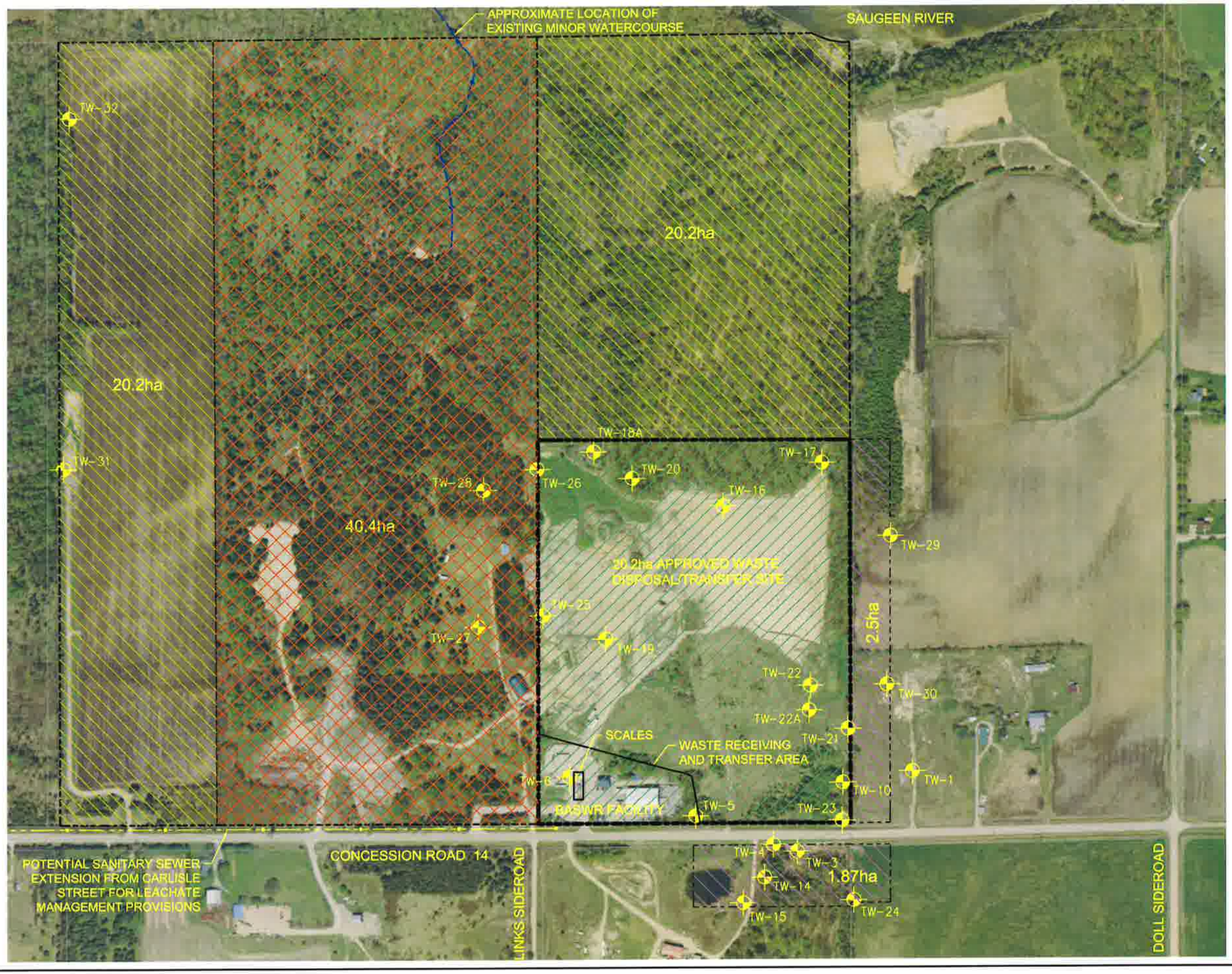
## PORT ELGIN LANDFILL SITE EXISTING CONDITIONS

Town of Saugeen Shores
County of Bruce

Figure No. 8-1

BluePlan ENGINEERING

FILE:C:\Civil 3D Projects\219181 Figures-K.dwg LAYOUT:Fig. 8-1 Port Elgin Landfill
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# 219181
# Town of Saugeen Shores Waste Management Plan

LEGEND

- TW-28 — MONITORING WELL LOCATION
- LANDS CURRENTLY ASSOCIATED WITH LANDFILL OPERATIONS
- CONTAMINATION ATTENUATION ZONE (CAZ) LANDS
- BUFFER LANDS
- ADDITIONAL LANDS OWNED BY THE TOWN
- POTENTIAL SANITARY SEWER EXTENSION

SCALE : 1:5,000
DECEMBER 2019

## SOUTHAMPTON LANDFILL OVERALL SITE PLAN

Town of Saugeen Shores
County of Bruce

Figure No. 8-2

BluePlan ENGINEERING

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# 219181
# Town of Saugeen Shores Waste Management Plan

## LEGEND

- PROPERTY LINE
- EX. POST AND WIRE FENCE
- STANDARD IRON BAR (SIB)
- EX. GROUND CONTOUR (masl) — 216.00
- GW1 — GAS MONITORING WELL
- GP1 — GAS MONITORING WELL
- TW-28 — TEST WELL
- SW1 — SURFACE WATER SAMPLING LOCATION
- EX. TREE LINE
- BUFFER LANDS
- AREA CLAY CAPPED AND CLOSED OUT
- PREVIOUSLY LANDFILLED REFUSE NO CLAY CAP
- APPROVED LANDFILL FOOTPRINT

SCALE : 1:2,000
DECEMBER 2019

## SOUTHAMPTON LANDFILL SITE EXISTING CONDITIONS

Town of Saugeen Shores
County of Bruce

Figure No. 8-3

BluePlan ENGINEERING

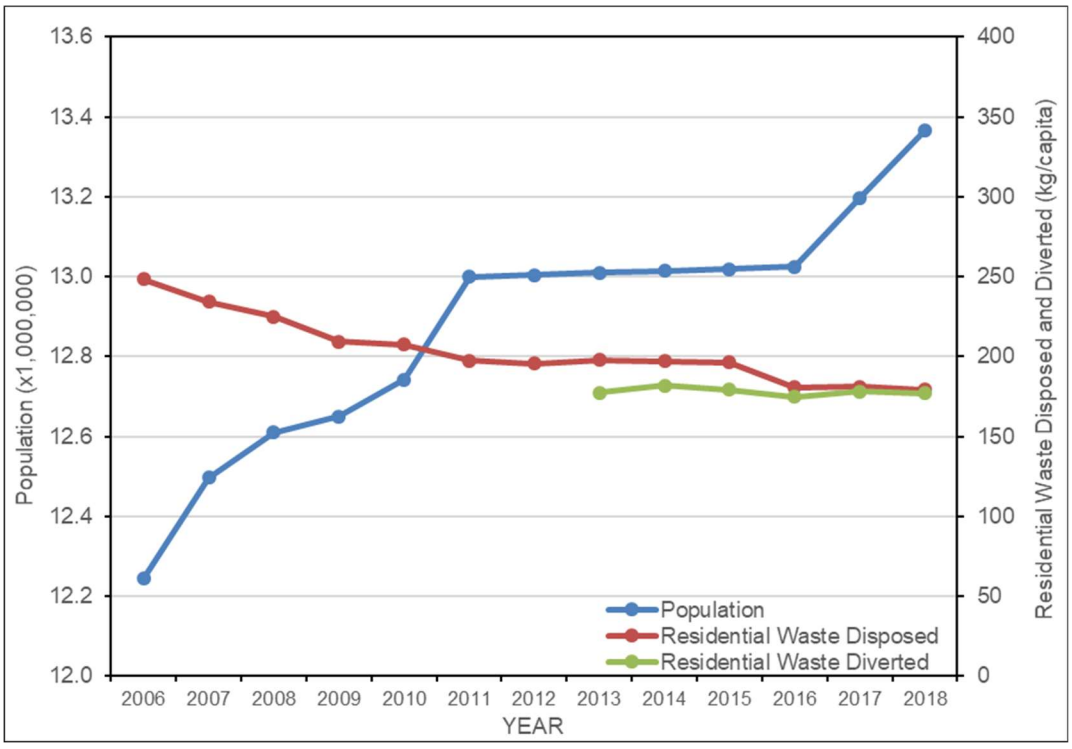
FILE:C:\Civil 3D Projects\219181 Figures-K.dwg LAYOUT:Fig. 8-3 Southampton Landfill
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## 8.2 Projected Waste Generation

Future generation of waste is difficult to predict with precision due to the uncertainty of many variables that can alter waste generation within a municipality including, but not limited to, the introduction of new regulations (i.e. the recent Waste-Free Ontario Act), consumer habits, population changes, IC&I contributions, and market fluctuations. Presented on the following **Figure 8-4** are the population and the residential waste disposal and diversion trends for the province. It should be noted that this disposal data presented is intended to account for residential waste and not to account for IC&I waste. Further, during non-census years, the reported population is extrapolated. Based on the population data reported for the 2011 and 2016 census years, the population of Ontario remained relatively stable. Therefore, the populations reported by RPRA Datacall between 2012 and 2015 were adjusted to reflect the 2016 census population.

Based on the available population and residential residual waste disposal and diversion data collected by the RPRA for the province from 2006 through 2018, while the population has been increasing to more recently stable, the amount of residential waste disposed, which initially decreased by approximately 15% between 2006 and 2011, currently remains relatively stable, suggesting that provincially the waste diversion efforts have stagnated in recent years. The initial decrease in residential waste disposal rates is likely due to the widespread implementation of the various waste diversion programs during that timeframe. Given the more recent stable trend illustrated in **Figure 8-4**, it is reasonable to believe that future waste generation rates on a per capita basis for the residential sector within the Town would at minimum remain the same or, with further implementation of the Waste-Free-Ontario Act, decrease over the next 25-year planning period.

**FIGURE 8-4: Provincial Residential Waste Disposed vs. Population**




Conversely, IC&I residual waste generation is more difficult to predict and is highly dependent on economic circumstances. As previously discussed, the IC&I sector currently contributes approximately 60% of Ontario's total waste stream, and only diverts an estimated 17% of the waste generated [MECP Discussion Paper: *Reducing Litter and Waste in Our Communities:* April 2019]. However, based on the Town's community profile, it is estimated that the IC&I contributions to the Town's landfill are considerably lower. As discussed in **Section**

**4.4**, for the purposes of this Report the proportion of residual waste generated in the Town from the IC&I Sector is estimated to be in the range of 40%. Therefore, potential improvements related to the IC&I residual waste generation and diversion could have a significant influence on the residual waste generation rates both provincially and locally.

## 8.3 Projected Population

Based on the preliminary population projections that consider both the Town's planned development and a declining number of persons per household/unit, prepared by Hemson Consulting Limited (Hemson) as part of a *'Development Charges Background Study and By-Law'*, it is anticipated that the Town of Saugeen Shores will experience a continually increasing population, albeit at various rates. As previously discussed in **Section 4.3**, Census profiles indicate that the Town had a permanent population of 13,715 persons in 2016. However, in consideration of the census undercounts, and the Town's recent development, population projections for the Town over the ±20 year planning period are provided in the following **Table 8-1**. Population undercounts (i.e. undercoverage) refer to the census error of excluding someone who should have been enumerated.

**Table 8-1 Population Projection**

| YEAR | POPULATION | |
|---|---|---|
| | Excluding Undercount | Including Undercount |
| **2016** | 13,715 | 14,126 |
| **2017** | 14,176 | 14,601 |
| **2018** | 14,775 | 15,218 |
| **2019** | 15,150 | 15,604 |
| **2020** | 15,535 | 16,001 |
| **2021** | 15,921 | 16,399 |
| **2022** | 16,307 | 16,796 |
| **2023** | 16,692 | 17,193 |
| **2024** | 17,078 | 17,590 |
| **2025** | 17,464 | 17,988 |
| **2026** | 17,850 | 18,385 |
| **2027** | 18,235 | 18,782 |
| **2028** | 18,621 | 19,180 |
| **2029** | 19,007 | 19,577 |
| **2030** | 19,403 | 19,985 |
| **2031** | 19,800 | 20,394 |
| **2032** | 20,196 | 20,802 |
| **2033** | 20,593 | 21,211 |
| **2034** | 20,989 | 21,619 |
| **2035** | 21,386 | 22,028 |
| **2036** | 21,783 | 22,436 |
| **2037** | 22,179 | 22,844 |
| **2038** | 22,576 | 23,253 |
| **2039** | 22,972 | 23,661 |
| **2040** | 23,369 | 24,070 |
| **2041** | 23,765 | 24,478 |

Population presented is based on that provided in preliminary population projections completed by others as part of the 'Development Charges Background Study' (Hemson Consulting Limited, February 2020).

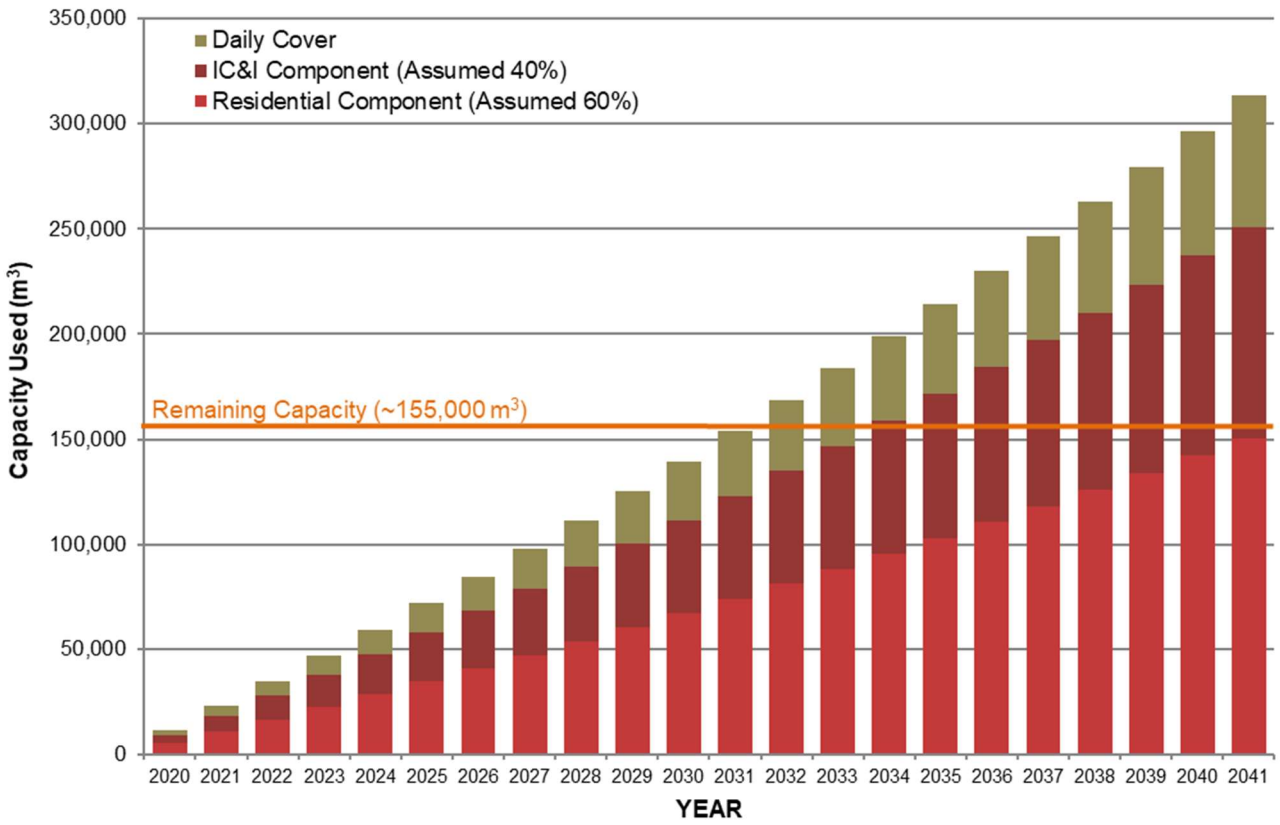
## 8.4 Projected Disposal Capacity Required

Provided in the following **Figure 8-5** are the projected waste disposal capacity requirements for the Town of Saugeen Shores. The projected waste disposal capacity requirements are based on the following assumptions:

- An increasing population trend, as outlined in **Table 8-1**;
- That the current residential residual waste generation rate of ±0.34 $m^3$/capita/year will be maintained until the landfill is filled to capacity (presented in **Table 5-1**);
- Assumes the continued contributions from the IC&I sector, including the tourism industry, of 40% residual waste;
- Assumes that a volume of 20% daily cover will continue to be required.

As shown in **Figure 8-5**, based on these assumptions, the existing approved landfill capacity will be exhausted in the by early 2032. However, with increased diversion of waste from the residual waste stream and optimization of the remaining landfill capacity, as discussed in the following sections, the site life could be extended.

**FIGURE 8-5 Estimated Required Disposal Capacity (Based on Projected Populations)**



## 8.5 Optimization of Landfill Operations

In consideration of the existing waste management practices, the Town of Saugeen Shores is considered to be in a fair to moderate position in terms of long-term residual waste disposal security. As presented in **Figure 8-5**, when the population projections are taken into account, the Town's Southampton Landfill site has an estimated 12 years (i.e. early 2032) of disposal capacity remaining based on the average waste disposal rates experienced between 2014 and 2019. Due to the costs associated with expanding or new landfills, or alternative disposal methods (e.g., exporting waste, incineration, etc.), it is important to manage the remaining capacity effectively and efficiently to maximize the Town's waste disposal security and capitalize on the relatively low waste management costs for as long as possible. The most effective methods to maximize and/or extend the life of a landfill are as follows:

i. To ensure full capacity is achieved, the landfill design and operations should be consistent with those outlined in the Design and Operations report;
ii. To continue to make accurate and detailed records of the material entering the landfill (i.e. use of a weigh scale);
iii. Ensure adequate oversight is provided in the waste receiving and transfer area to ensure wastes are adequately sorted and placed in the appropriate designated area(s); and
iv. Maximize the residual waste density (i.e. compaction) being achieved to allow for more waste to be deposited within a given volume.

### 8.5.1 Landfill Design and Operations

Continued development of the remaining landfill capacity in an effective and efficient manner is currently considered to be the Town's most viable waste disposal option. This requires that the Town and Site operators have a clear understanding of the landfill limits (i.e. approved fill area), including the top and bottom contours, to ensure that the maximum capacity of the landfill is achieved. The relative costs associated with these efforts is typically minimal and involves site supervisor training with respect to the landfill design and operations. Therefore, it is recommended that the Town consider completing a Landfill Development Plan to determine the existing conditions and to evaluate the most efficient use of the remaining landfill capacity. The Town initiated these training efforts in 2020.

The first phase of landfill development planning involves the completion of an elevation survey of the entire landfill footprint. Using the updated survey information, the existing top of waste contours can be compared to the final approved contours established within the Plan of Development and Operation to update (or confirm) the remaining capacity at the site (and the site life). This was completed in early 2020. In addition, the survey information can be used to plan an approach to efficiently use the remaining landfill capacity, by identifying the following:

i. Areas that have reached the top of waste elevation (i.e. final contours).
ii. Areas that are approaching final contours. These areas would likely become the focus of residual waste placement in the short-term to support progressive closure.
iii. Areas where significant capacity remains. Residual waste placement in these areas typically would occur once final contours and capping, as practicable, has been achieved in the areas requiring minimal additional waste placement.

Further, it is recommended that annual capacity estimates, which are completed by surveying the active area of the landfill, continue to be used as a general estimation tool for tracking purposes. However, considering the estimated remaining Site life of ±12 years (including 2020) and the degree of error associated with annual capacity estimates, as the site approaches its final capacity, the completion of a survey of the entire landfill area to confirm the remaining capacity is considered a critical component of the Town's waste management planning process. Site life confirmation is important as it has direct implications on the Town's overall planning period, particularly if a reduced site life is the outcome of the analysis.

### 8.5.2 Landfill Monitoring (Operations) and Records

In order to effectively evaluate the performance of the various waste diversion program initiative's, it is important that good baseline data be established. Data collection and screening of incoming waste helps to develop a better understanding of the waste flows. Currently waste entering the Site is documented on a source (i.e. residential, commercial or municipal), weight and type of material basis. In addition, the quantity (i.e. tonnage) of blue box materials, by waste type, is monitored and reported by BASWR.

However, as previously discussed, due to the inherent limitations of the Town's materials reports (i.e. weigh scale data) related to the origin of waste received at the landfill site, it is difficult to specifically evaluate the residential diversion rate separately from the IC&I sector. Consequently, monitoring the performance of new diversion initiatives requires that, until significant changes to the Town's IC&I sector and associated waste management practices are made, the assumptions outlined herein remain consistent. Therefore, for the purpose of the residential waste diversion estimates provided herein, it has been assumed that 40% of the incoming residual waste is from the IC&I sector and an additional 17% (i.e., 2% construction materials, 6% organic waste and 9% other diversion materials) can be estimated to represent IC&I waste diverted from the residual waste stream.

For comparative purposes this assumption should continue to be used for future assessments and evaluations until such a time that a better understanding of the relative proportion of residential and IC&I waste can be accomplished. Therefore, it is thought that with the continued application of the assumptions outlined herein, the waste diversion averages presented in this Waste Management Plan can be considered as the baseline for the Town from which to evaluate the Town's progress towards the waste diversion targets set out in the Waste-Free Ontario legislation. Further, this information may be used to provide more insight into potential diversion initiatives to pursue in the future.

In addition to monitoring the tonnage of waste received, it is recommended that the volume of residual waste and interim cover placed within the approved fill area continue to be monitored through annual topographic surveys. Surveys are practical for monitoring the fill rate of the landfill and determining the remaining site life. The combined knowledge of the annual tonnage of residual waste received and the annual volume of landfill capacity utilized provides necessary baseline data related to monitoring the implementation of operational initiatives, including the efficacy of waste compaction efforts.

### 8.5.3 Weigh Scale and Enhanced Waste Transfer Area

Weigh scales are used to accurately monitor the tonnage of residual waste being landfilled and the types and quantities of waste being diverted. This type of information allows for a more accurate assessment of the Town's overall diversion rate, which can be used to estimate the Town's residential diversion rate, ultimately providing a better understanding of the operational efficiencies. In addition to the operational advantages associated with a weigh scale, the Town has established tipping fees that reflect the incoming waste quantities, encouraging waste diversion by accepting divertible materials free or charge, or for a nominal fee; further, tipping fees are more than tripled for unsorted waste.

At this time, the Town has developed a system to effectively track the quantity and types of materials accepted at the Southampton Landfill Site. However, it is noted that while the existing waste receiving and transfer area is currently situated at the 'front end' of the landfill site, which is typically encouraged as it limits public access to the landfill, the area is relatively small which results in congestion and significant access limitations (i.e. back-up of incoming vehicles), particularly during peak periods. Therefore, it is thought that the enhancement of the consolidated waste receiving and transfer area at the Town's Landfill site could be completed to further aid in the oversight, promotion and encouragement of waste segregation. A clearly marked and well-established waste receiving area typically results in increased waste segregation and diversion which can be further enhanced by

providing staff oversight and support to ensure waste is properly segregated and placed in the appropriate containers/areas.

In essence, it is recommended that the 'front end' of the landfill site be updated to include an improved waste receiving and transfer area. Currently the weigh scale is situated at the entrance to the Site and the Site attendant directs incoming vehicles to the specified area(s) (i.e. residual waste, organic, tires, etc.). However, while the waste receiving and transfer area includes several well marked (i.e. signed) waste disposal bins, designated areas for specified waste, and sheds/buildings, the overall area is not very well defined and is not arranged in such a way as to facilitate the 'parking' required to segregate wastes with relative ease.

The updated design of the waste transfer area should ensure that the requirements of the Approval (i.e. propane tank stored in an upright position and in a single layer) and/or the waste processor (i.e. mattresses must be stored in a dry area) are met. Examples of waste receiving and transfer areas, at other municipal landfill sites, are provided in the pictures below.

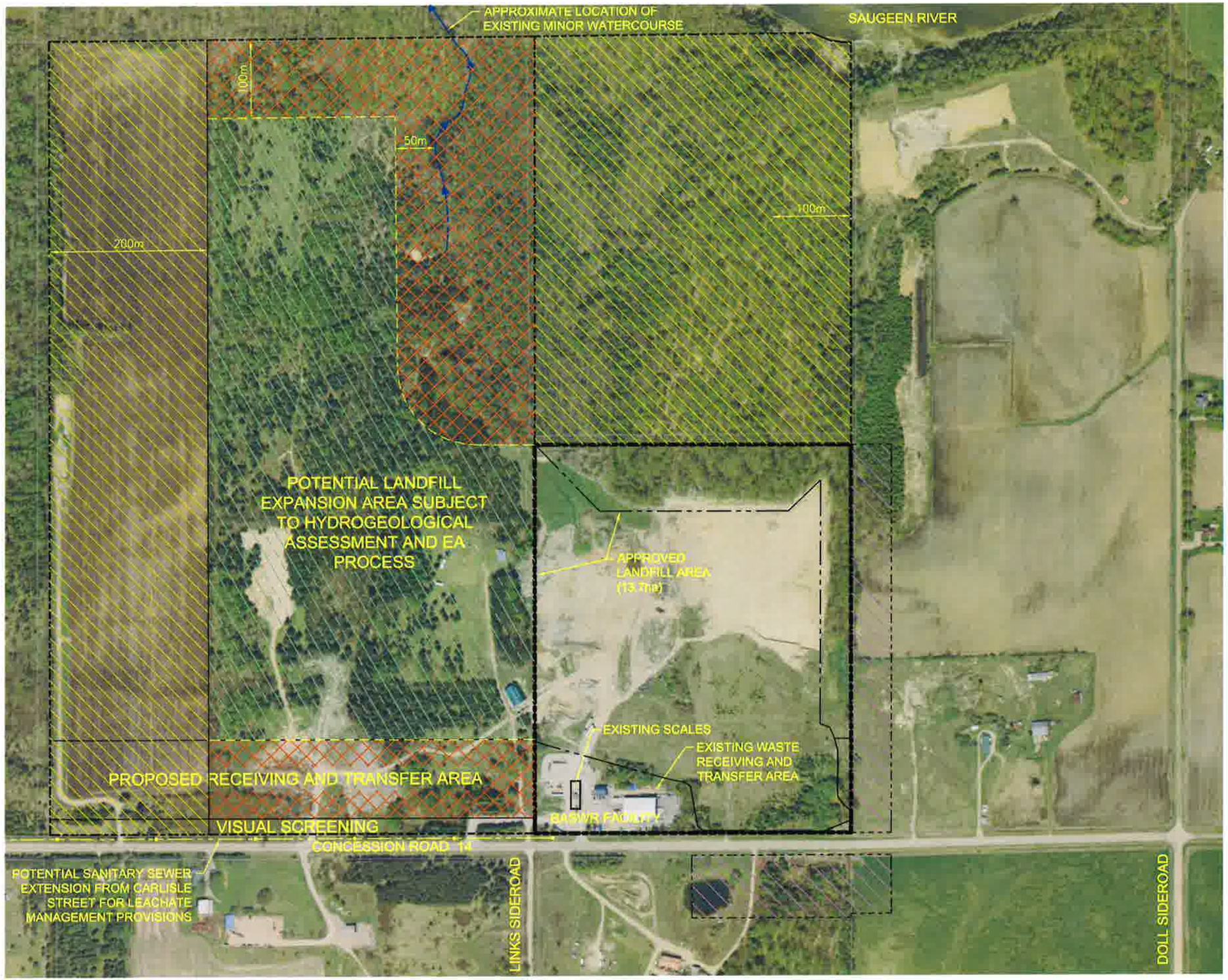
**Photos: Examples of waste receiving and transfer areas at Municipal landfill sites**



The development of a transfer area at the Town's landfill site would require a review of the site layout, selection of an area (or areas) that could accommodate the required infrastructure while providing functional, convenient and safe management of the public (i.e. vehicles and persons), including during the peak tourist season when traffic volumes are greater. Based on a preliminary assessment of the site layout, an area to the west of the approved waste disposal and transfer area, along Concession Road 14, could be considered, where shown on **Figure 8-6**.

Due to the volume of traffic experienced during the peak tourist season, the provision for an additional weigh scale for outgoing traffic should be maintained to avoid congestion. The design would typically include a one-way direction for traffic, with well-marked areas for pulling over, to avoid congestion, within the framework of designated and clearly-marked areas for waste drop-off. This recommended initiative would require the preparation of detailed design drawings, developed in consultation with Town staff, and an application to amend the existing Environmental Compliance Approval. A preliminary design for the waste receiving and transfer area, prepared to demonstrate the potential layout of such an area, is provided in **Figure 8-7**.

# 219181
# Town of Saugeen Shores
# Waste Management Plan




## LEGEND

- CONTAMINATION ATTENUATION ZONE (CAZ) LANDS
- BUFFER LANDS
- ADDITIONAL LANDS OWNED BY THE TOWN
- POTENTIAL LANDFILL EXPANSION AREA
- POTENTIAL SANITARY SEWER EXTENSION

NOTE:
AIR PHOTO BACKGROUND WAS TAKEN IN 2015.

SCALE : 1:5,000
DECEMBER 2019

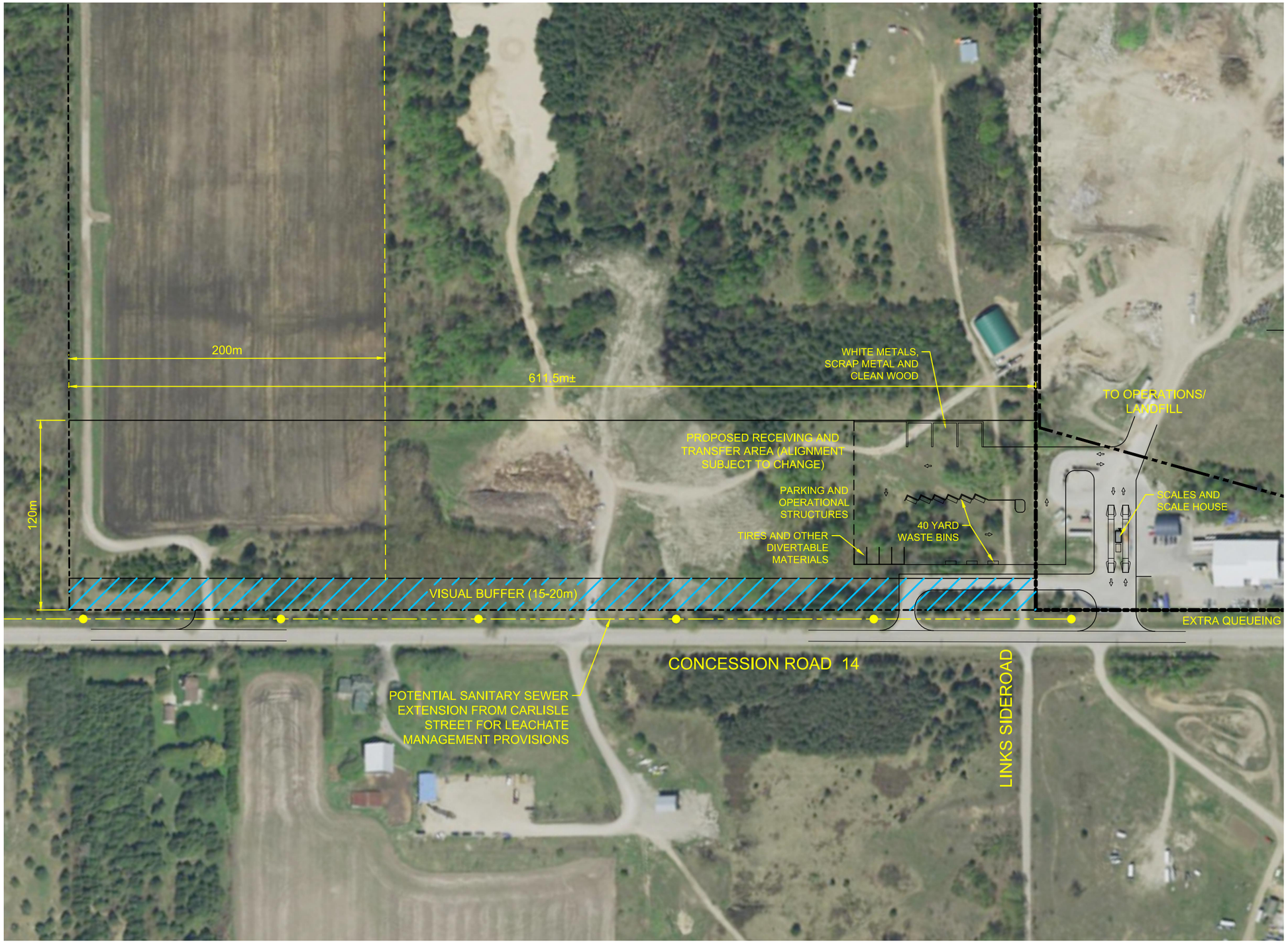
## SOUTHAMPTON LANDFILL EXPANSION SITE PLAN

Town of Saugeen Shores
County of Bruce

Figure No. 8-6

BluePlan ENGINEERING

FILE:C:\Civil 3D Projects\219181 Figures-K.dwg LAYOUT:Fig. 8-6-Overall Site Plan
LAST SAVED BY:Kboers, 12/10/2019 4:15:48 PM PLOTTED BY:Ken Boers - GM BluePlan 12/11/2019 3:55:00 PM




219181
Town of Saugeen Shores
Waste Management Plan

LEGEND

POTENTIAL SANITARY SEWER EXTENSION

NOTE:
AIR PHOTO BACKGROUND WAS TAKEN IN 2015.

SCALE : 1:2,500
JUNE 2020

# SOUTHAMPTON LANDFILL EXPANSION NEW WASTE RECEIVING AND TRANSFER AREA

Town of Saugeen Shores
County of Bruce

Figure No. 8-7

BluePlan ENGINEERING

FILE:C:\Civil 3D Projects\219181 Figures-K.dwg LAYOUT:Fig. 8-7 New Receiving Area
LAST SAVED BY:Kboers, 6/19/2020 11:25:14 AM PLOTTED BY:Ken Boers - GM BluePlan 6/19/2020 11:28:48 AM

### 8.5.4 Landfill Compaction

The current compaction method in practice at the Southampton Landfill site involves placing the refuse and cover material in lifts and compacting the lifts with the use of a compactor. While several topographic surveys of the active area have been periodically completed at the Southampton Landfill Site, the outcome of the assessments have shown considerable variability. Consequently, it is difficult to confidently determine the compaction density being achieved via the current operational practices. However, it is noted that the recently completed survey of the entire landfill area completed to verify the remaining site life will also provide a 'surface' from which the efficacy of the compaction efforts associated with continued landfill operations can be better evaluated.

Provided in **Table 8-2** are estimated compaction densities based on the compaction method employed. In consideration of the Town's current use of a compactor, it is estimated that a good to excellent compaction density, depending on the number of passes, may be achieved. With optimal compaction techniques, it is documented that compaction densities upwards of 1,000 to 1,200 kg/m$^3$ can be attained. To achieve these compaction densities, a large steel wheeled compactor and a waste shredder, combined with proper filling techniques, are required. To achieve a compaction density of up to 800 kg/m$^3$, only a steel wheeled compactor may be needed.

**TABLE 8-2: Compaction Density vs. Method**

| Compaction | Equipment | Method | Density |
|---|---|---|---|
| Poor | None | Wastes dumped into trench | 60 to 120 kg/m$^3$ |
| Minimal | Tracked Machine | Wastes dumped into trench. Equipment compacts the surface of the waste. | 120 to 300 kg/m$^3$ |
| Moderate | Tracked Machine | Wastes spread in layers. Each layer is compacted with one pass of the machine. | 300 to 475 kg/m$^3$ |
| Good | Tracked Machine | Waste spread in thin layers. Each layer compacted with three to five passes of the machine. | 475 to 600 kg/m$^3$ |
| Excellent | Steel Wheeled Compactor | Waste spread in thin layers. Each layer compacted with the machine with up to five passes. | over 600 kg/m$^3$ |

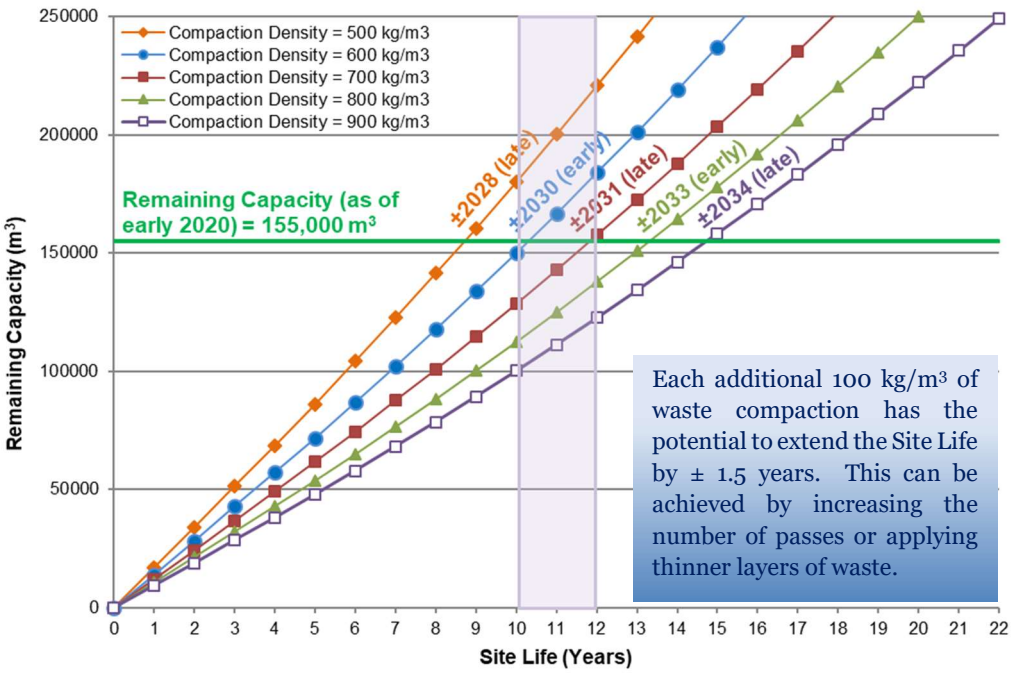
Note: The densities indicated are from "Guidelines for the Establishment, Operation, Management, Maintenance, and Closure of Landfilling Sites in Ontario", MECP.

**Figure 8-8** demonstrates the effect compaction can have on the overall site life of the landfill. The projected remaining site life estimates, based on various compaction densities, are based on the following assumptions:

- An increasing population trend, as outlined in **Table 8-1**;
- That the current residential residual waste generation rate, which is based on the weigh scale records, of 251 kg/capita/year will be maintained until the landfill is filled to capacity (presented in **Table 5-1**);
- Assumes the continued contributions from the IC&I sector, including the tourism industry, of 40% residual waste;
- Assumes that a volume of 20% daily cover will continue to be required.

As shown in **Figure 8-8**, the efficient and effective use of compaction equipment (i.e. a sheepsfoot compactor) and grinding equipment has the potential to extend the life of the Southampton landfill. Increased compaction, allowing for more waste to be deposited within a given volume, could be achieved using the existing equipment. This can be achieved by increasing the number of passes over the waste or applying thinner layers of waste and cover being compacted. As shown in **Figure 8-8**, each additional 100 kg of residual waste per cubic meter has the potential to extend the Site Life of the landfill by ±1.5years. It is noted that the Site Life projections do not account for additional waste diversion initiatives.

**FIGURE 8-8: Compaction Density versus Site Life**




Note: Increased Site Life accounted for by increased compaction does not include additional waste diversion initiatives.

It is our understanding that the existing grinder available for landfill operations is useful for a specific range of materials, however cannot be used for all residual waste received. Provided in **Table 8-3** are the costs associated with the purchase and operation of a new waste shredder (to replace the existing shredder) in comparison with current operations which, for the purpose of this assessment, are assumed to be achieving a compaction density of 650 kg/m³, and the optimization of compaction techniques using the existing equipment.

**TABLE 8-3: Equipment vs. Long Term Costs and Site Life**

| Equipment | Capital Cost | Maintenance Costs Per Year | Total Annual Equipment Costs | Compaction Density (Kg/m³) | Total Site Life (Years) | Annual Reserves for New Landfill | Total Annual Cost | Annual Cost Savings |
|---|---|---|---|---|---|---|---|---|
| Assumed Status Quo | $250,000 | $10,000 | $28,625 | 650 | 0 | $555,556 | $584,180 | $0 |
| Landfill Compactor | $250,000 | $10,000 | $28,625 | 700 | 1.0 | $500,000 | $528,625 | **$55,556** |
| Landfill Compactor | $250,000 | $10,000 | $28,625 | 800 | 2.5 | $434,783 | $463,407 | **$120,773** |
| Shredder & Compactor | $550,000 | $20,000 | $61,725 | 900 | 4.0 | $384,615 | $446,340 | **$137,840** |
| Shredder & Compactor | $550,000 | $20,000 | $61,725 | 1000 | 5.5 | $344,828 | $406,552 | **$177,628** |

Notes:
1) Annual reserves are based on what would be required to raise $5,000,000 for a new landfill over the life of the existing landfill.
2) Figures are based on purchases of lightly used equipment.

Significant cost savings could be realized by the Town via operational improvements aimed at increasing the compaction density being achieved using the existing approach and equipment. In consideration of the economic benefits versus potential complications (i.e. technical difficulties) associated with a shredder, the continued use of the existing landfill compactor and grinder is recommended at this time.

Although annual equipment costs generally remain the same, with increased compaction the overall annual costs are decreased by the annual contributions to the reserve's funds required for a new or expanded landfill site due to the extended site life of the existing landfill. As shown in **Table 8-3**, based on a new or expanded landfill cost of $5,000,000 (which is considered low), in addition to extending the site life, based on the assumption that a compaction density of 650 kg/m$^3$ is currently being achieved, the efficient and effective use of the existing equipment (i.e. landfill compactor and grinder, when applicable) could save the Town greater than an estimated $100,000 per year. In addition, when compared to improved site operations using the existing compaction equipment and shredder, it is thought that the use of a new shredder in addition to the compactor would provide limited long-term financial benefit at this time.

In addition to the above analysis, a simplified and direct cost benefit analysis can be calculated based on the remaining capacity of ±155,000 m$^3$ for residual waste (as of the end of 2019) using the assumption that each tonne of residual waste accepted at the landfill is valued at $125 per tonne. A comparison is provided in **Table 8-4**:

**TABLE 8-4: Cost-Benefit Analysis (Disposal Revenues)**

| Compaction Density Achieved | Capacity (Tonnes) | Difference Compared to Status Quo | Total Revenue (at $125 per Tonne) | Difference Revenue Compared to Status Quo |
|---|---|---|---|---|
| **Assumed Status Quo (650 kg/m$^3$)** | 100,750 | N/A | $12,593,750 | N/A |
| **700 kg/m$^3$** | 108,500 | 7,750 tonnes | $13,562,500 | $968,750 |
| **800 kg/m$^3$** | 124,000 | 23,250 tonnes | $15,500,000 | $2,906,250 |
| **900 kg/m$^3$** | 139,500 | 38,750 tonnes | $17,437,500 | $4,843,750 |
| **1000 kg/m$^3$** | 155,000 | 54,250 tonnes | $19,375,000 | $6,781,250 |

Note: Capacity in tonnes is based on a remaining landfill capacity of 155,000 m$^3$ for residual waste

It is noted that these scenarios do not include the administration costs saved by the Town that would otherwise be incurred to pursue a new or expanded landfill. In addition, there are political, environmental and social benefits to extending the life of an existing landfill that are not factored into the above tables, which makes such an approach even more favourable.

# 9. EVALUATION OF ALTERNATIVE PREVENTION AND DIVERSION METHODS

Through the background information presented above, it was concluded that, with the exception of organic wastes, not including green bin waste (i.e. food waste), the Town's waste diversion programs are performing at or below average. The residential diversion rate currently being achieved by the Town is estimated to be in the range of 46.6%, of which organics diversion, which represents about half of the diversion achieved by the Town, is significant.

With respect to the Province's diversion targets, the Town is considered to have achieved the interim target of 30% diversion by 2020. However, the Town should continue to pursue methods to increase its diversion rate, not only to meet the provincial targets of 50% by 2030 and 80% diversion by 2050, but also to extend its environmental security by managing its waste in an efficient and effective manner. To facilitate this goal, alternative prevention (reduction) and diversion (reuse and recycling) methods and improvements to the existing waste collection and diversion methods are evaluated by considering what is feasible and economically viable for the Town.

According to the most recent RPRA data, the current Provincial diversion rate is approaching 50%. However, it is noted that the majority of the municipalities with diversion rates above 40% have household organics diversion programs in place, in addition to leaf and yard waste collection and diversion programs. Therefore, under the present circumstances, municipalities with goals of reaching the 50% residential diversion target by 2030 would, on a practicality basis, need to initiate a kitchen organics curbside collection program. However, for many rural municipalities a kitchen organics program is not considered to be feasible under the current regulatory framework. This initiative is typically limited to larger centres where on-property organics diversion is more difficult to achieve or, in certain cases, to municipalities that have limited disposal capacity or higher disposal costs related to exportation of waste.

Comparison of the Town's waste diversion performance to other similar Municipalities, particularly with respect to recyclable materials, suggests that additional diversion could be achieved. Therefore, the Town may consider additional prevention (reduction) and diversion (reuse and recycling) methods and improvements to the existing waste diversion programs, as discussed in the following sections.

## 9.1 Operational Improvements at Landfill: Enhance Transfer Area

As previously discussed in **Section 8.5.3**, the use of an efficient and effective waste receiving and transfer area for residual waste disposal in select bins, particularly when directly overseen by a site attendant, typically results in increased waste segregation and diversion, ultimately reducing the quantity of residual waste landfilled. The transfer area typically includes several well marked (i.e. signed) waste disposal bins, or areas, arranged in such a way as to facilitate and encourage the segregation of waste.

## 9.2 Recycling and Waste Diversion Initiatives and Opportunities

### 9.2.1 Existing and Potential Blue Box Recycling Initiatives

Currently, BASWR offers an extensive range of recyclables under the blue box program including printed paper and paper packaging, boxboard, corrugated cardboard, plastic bottles and containers, metal cans, and glass bottles and jars. Ultimately, the types of materials available for recycling are dependent on a market for the materials.

Based on the Town specific tonnages of blue box materials provided by BASWR, the Town of Saugeen Shores achieved the diversion of an estimated 72 kg/capita of blue box recyclables. This quantity is below the Provincial average, and below the estimated 94.0 kg/capita being achieved by BASWR, indicating that the Town is not achieving the blue box diversion rates that could potentially be attained. Blue box materials are of particular importance in terms of recyclable materials and mass of diversion. Strategies to improve the Town's blue box diversion rates should be considered and may include the following:

- **Frequency of Collection:**

  Curb-side pick of blue box materials is currently provided on a bi-weekly basis and curb-side collection of household waste is provided on a weekly basis. The more frequent collection of residual waste likely has a negative impact on the overall success of the Town's blue box program. To promote blue box diversion efforts, the curb-side collection service should, at minimum, be as frequent as the residual waste collection service.

  To move toward a comparable service level for the curb-side collection of residual waste and blue box materials, the Town could either,

  i. Consider more frequent collection of blue box materials, to match the weekly household waste pick-up schedule; or,
  ii. Consistent with recent changes realized in several municipalities, the Town could consider bi-weekly collection services for both waste streams.

  Therefore, the Town may consider reducing the curbside collection service provided for residual waste to bi-weekly or pursuing weekly curbside collection of blue box materials. Providing the same level of service for both waste streams would likely increase the overall success of the blue box program. Ultimately, it is recommended that a similar collection frequency for blue box materials and residual waste be provided, as determined by the Town. It is noted that a bi-weekly collection frequency for residual and blue box materials would be more economical than a weekly collection service, reducing waste collection costs by an estimated 30-40%.

- **Pay per Use Cost Structure and Bag Limits:**

  Numerous studies have shown that a pay per use system increases blue box diversion. The Town has previously adopted the use of bag tags, also referred to as the *'pay as you throw'* program. Bag tags can be purchased for $2.00 per tag, which must be affixed to each bag of residual waste placed at the curbside. Bags are not to exceed 25 pounds. At this time, the Town does not enforce a bag limit on their weekly curbside residual waste pickup service. Therefore, it is recommended that the Town establish a bag limit as a measure to further encourage waste reduction. Two bags per week is typically considered reasonable.

- **Public Education and Promotion Programs:**

  Public education and promotion programs are crucial for ensuring the success of local recycling programs. The benefits of public education and promotion programs include:

  - Greater participation levels and community involvement;
  - Higher diversion rates;
  - Less contamination in recovered materials, potentially leading to higher revenues; and
  - Lower residue rates at recycling facilities.

- **Implementation/Enhancement of Recycling Depots:**

  Recycling depots provide an inexpensive means for municipalities to divert recyclable materials from disposal. To improve public access and convenience the Town could consider providing recycling depots at various locations throughout the community (i.e. recreational facilities, the Works Yard, etc.) or expanding the types of recyclable materials accepted at the existing depots. This would also provide an additional waste diversion option to the IC&I Sector. The collection bins and collection requirements

could be arranged with BASWR or arranged under separate contract with an alternate waste management provider.

It is noted that BASWR has made available specialized higher volume containers, limited to 65- and 95-gallon capacity, retrofitted for their collection vehicles for use by the IC&I sector and apartment buildings. These are also used at the Southampton Landfill site for glass, paper and boxboard. It is reported that the limited capacity of these containers commonly results in overflow, leading to litter issues, ultimately making it difficult for local businesses to pursue this diversion option. Disposal bins are provided at the cardboard collection depots and at the landfill site for the collection of cardboard, aluminum and plastic.

Due to the limitations on bin capacity, it is recommended that the Town investigate options to encourage its businesses and service industries to pursue opportunities to make larger disposal bins more accessible (i.e. campgrounds, cottage resorts), as appropriate. This would require collaboration between the business community and the Town. It is noted that the majority of campgrounds currently have recycling picked up by private contractors.

- **Provision of Free Blue Boxes:**

  Blue boxes ensure that residents have a separate location for the storage and transfer of recyclables. Blue boxes could be provided at no charge to Town residents.

- **Expansion of Recyclable Blue Box 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 depends on the availability, collection costs, and market viability for the respective material. As markets are constantly changing, it is important for municipalities, or associations thereof, to continue to stay abreast of material markets (i.e. polystyrene, bale wrap).

- **Corrugated Cardboard:**

  At this time, the Town offers limited opportunities for the diversion of cardboard. It is our understanding that BASWR does not provide the option for the Town to offer curb-side pick-up of corrugated cardboard. Alternatively, cardboard drop-off stations are provided at three locations throughout the Town, including the Southampton Landfill Site.

  The Town could consider augmenting their existing service by providing cardboard collection on a monthly basis as part of their existing contract with BASWR. Alternately, the Town could explore options that would include a greater range of acceptable blue box materials, such as contract options with other service providers to augment, or replace, the existing level of service. For example, several municipalities are permitted to include cardboard in their blue box collection bins.

- **Polystyrene Foam Recycling (Packing Material):**

  While the recycling of polystyrene foam is considered an option to help improve the Town's diversion rates, the success of polystyrene recycling programs in recent years has been mixed. Collection options have included the addition of this material to the blue-box program or the provision for a separate bin for the disposal of polystyrene foam at the waste receiving and transfer area. Addition of this material to the blue-box program would require changes to the existing municipally run program offered by BASWR. Both of these options would require a reliable recycling facility able to accept the material. It is noted that in May 2019 Brockton and Hanover acquired a polystyrene densifier, which compacts collected materials into condensed polystyrene bricks. These can then be recycled into new products. However, at this time access to this foam diversion opportunity is limited. Further, the success of this program relies on local volunteers. Therefore, although the recycling of polystyrene material may be particularly advantageous to the Town due to the low density and bulkiness, which results in poor landfill compaction, the applicability of this option is currently limited by the efficiency of the existing programs and the lack of available markets. It is recommended that the Town stay abreast of potential opportunities.

### 9.2.2 IC&I Recycling and Waste Diversion Initiatives

Reportedly, on a Provincial level the IC&I sector diverts only approximately 17% of its waste from the residual waste stream. As a result, it is recognized that increasing the IC&I sectors success of its waste diversion program(s) is integral to the Province's success in achieving the waste diversion targets outlined in the Waste-Free Ontario Act.

Ontario Regulation 103/94 Source Separation Programs apply to the IC&I sector, including construction and demolition projects, as well as multi-unit residential buildings. O.Reg.103/94 also stipulates specific IC&I sector source separation programs for facilities that exceed the following thresholds:

- Retail shopping establishments and complexes: Total floor space of greater than 10,000 $m^3$
- Large construction and demolition projects: Total floor space greater than 2,000 $m^3$
- Office Buildings: Total floor space greater than 10,000 $m^3$
- Restaurants: Gross sales greater than $3,000,000
- Hotels and motels: Greater than 75 units
- Hospitals: Class A, B or F
- Educational Institutions: Enrolment greater than 350 students
- Large manufacturing establishments: Greater than 16,000 hours of employment per month

In general, multi-residential buildings are required to have a blue box program. Commercial and multi-use facilities in the Town have the option to recycle using blue boxes and either placing them at the curb for pick-up, transporting them to the transfer station at the Southampton Landfill site, or arranging for pick-up by BASWR or an alternate provider. Although not quantified, many businesses and institutions are not likely in compliance with these requirements. Therefore, education and enforcement would be a key component to the success of waste diversion programs associated with the IC&I sector.

Further, in principle, BASWR delivers containers and has agreed to schedule collections *'suitable to specific requirements'*. However, based on feedback provided by other communities, at times it is difficult for BASWR to meet the demands of its member municipalities, particularly during the peak tourist season. Consequently, some businesses are required to arrange for the pick-up of recyclable materials with alternative waste management contractors. Further, as previously discussed, the recycling totes provided and typically considered acceptable for use by BASWR have limited capacity. Higher capacity containers are not accepted. These factors affect the overall success of the waste diversion program(s) offered by the Town.

Although the Town is not responsible for the management of IC&I waste, it is likely that for various reasons the majority of IC&I waste generated within the Town is disposed of in the municipal landfill. It is recognized that certain businesses can generate a relatively high volume of recyclables, and by providing added convenience (such as larger collection bins for recycling, curb-side pick-up, or local depots), there is the potential to increase capture rates and diversion.

Collaboration between the Town and local businesses creates the opportunity to divert more waste from the landfill through recycling while still meeting the needs of the business community. Therefore, the Town could consider pursuing the establishment of a community group, or group of business representatives (i.e. restaurant, retail, etc.), to spearhead a program aimed at implementing waste diversion initiatives with the goal of increasing the diversion rates achieved by the IC&I sector.

### 9.2.3 Existing Recycling and Waste Diversion Programs and Initiatives

The following summarizes the additional recycling programs that have been implemented by the Town:

- Used tires and electronics can be dropped-off at the Southampton Landfill Site free of charge. With respect to WEEE, several other drop-off locations are available through local retailers.
- Scrap metal and empty propane tanks are collected by the Town for salvage. CFC-containing appliances must be tagged.
- The County provides a total of three MHSW drop-off events per year in Southampton.
- Mattresses can be dropped of at the Southampton Landfill Site for a 'nominal' fee (i.e. less than the tipping fee that would be applied if paying per tonne).
- The Town accepts leaf and yard waste free of charge at the Yard Waste Site located adjacent to the Southampton landfill.
- Clean wood, brush and stumps are stockpiled separately and periodically ground into woodchips.
- The Town has a separate area for blue box recyclables at the Southampton landfill.
- In addition to the Southampton Landfill, cardboard depots are provided at two separate different locations within the Town.
- Two depots for the collection of film plastics have been established within the Town.

### 9.2.4 Additional Recycling and Waste Diversion Opportunities

As discussed below, several additional recycling and waste diversion opportunities could be implemented by the Town.

**Construction and Demolition Debris (C&D):**

It is estimated that C&D waste accounts for a significant proportion of commercial waste received at the landfill and a limited portion of residential waste delivered to the Site by residents. Overall, C&D waste is composed mainly of wood products, asphalt shingles, drywall, and masonry materials. Based on the Town's waste summaries, it is estimated that shingles alone account for approximately 8% (or 500 tonnes annually) of the total residual waste received at the Southampton Landfill Site. It is recognized that C&D debris is often commingled when dropped-off at the landfill, which makes it difficult to sort for diversion. To encourage sorting prior to disposal, the Town has imposed higher fees for unsorted C&D waste.

A number of diversion options are available for C&D materials. For example, asphalt shingles and tar and gravel roofing can be used for asphalt mixes used in road construction and clean drywall can be reprocessed into new products (e.g. soil stabilizer or pet litter). Masonry material such as concrete (without steel reinforcement) can be recycled into aggregates for fill material. Concrete is typically processed by construction contractors and pit operators as part of operations. Masonry material containing steel reinforcement would require additional processing before final use.

Based on our review, the diversion of such materials has been relatively limited in more rural settings, where volumes received limit accumulation timeframes and transportation costs limit economic viability. Additionally, the recycling of C&D waste typically requires sorting and separation of specific components, not regularly achieved during building demolition activities. For example, only 'clean', unpainted drywall is typically considered acceptable for recycling.

More commonly recycled are asphalt shingles, since these are typically produced as a separate source. With respect to diversion, the cost-benefit for recycling of shingles can be limited since shingles are very dense (have a low volume per unit mass), which results in relatively low landfill capacity reductions at a relatively higher cost.

Should a C&D recycling program be considered an option, it is recommended that collection requirements, shipping, and tipping fees be confirmed with actual contractors. Furthermore, as with many other diversion streams, options associated with C&D waste diversion are regularly developing. Therefore, it is recommended that the Town continue to stay abreast of such opportunities.

**Additional Scrap Metal Diversion Initiatives:**

Although the Town encourages the diversion of scrap metal from the landfill site by permitting the drop-off of scrap metals and white goods in separate disposal areas, a tipping fee equivalent to $108.77/tonne is currently charged. In addition, as per Ontario Regulation 463/10, CFC-containing white goods are to be properly drained by a certified technician and then tagged to indicate that the CFC's have been removed, prior to the acceptance of the white goods at the Southampton Landfill. In order to encourage the diversion of scrap metal, a lower tipping fee relative to residual waste could be considered. Further, the Town could consider accepting CFC-containing white goods and subsidizing part of the cost associated with tagging these items.

## 9.3 Waste Reduction and Reuse Opportunities

Ultimately reducing the amount of waste generated through reduction and reuse initiatives is most ideal as it reduces the amount of energy and resources that are required to transport, process or dispose of the wastes (refer to Figure 3-1: Waste Value Chain).

### 9.3.1 Residual Waste Reduction Initiatives

Waste management levies (i.e. landfill/disposal) when applied directly to the user (i.e. the source of waste), such as bag tags and tipping fees, are intended to increase the cost of disposal to a point where diversion becomes more economically attractive. As such, disposal fees can be used as a means of changing behavior, reducing waste generation, promoting reuse and increasing waste diversion. Therefore, the use of bag tags can be used to help reduce residual waste generation on a continued basis at the source. Waste levies can also be applied to property taxes, via an allocation of a given amount to waste disposal services and landfill management, however this method of covering the costs for waste management is typically 'hidden' within the property taxes and does not encourage waste reduction.

The primary channel where the Town can influence additional waste reduction in residents is by implementing (or maintaining) a pay-per-use system, reduced 'bag' limits, reduced pick-up frequency and tipping fee adjustments. A review of the existing service level and fee system in other municipalities within Bruce County was completed to inform this assessment and is summarized in **Table 9-1**.

**TABLE 9-1: Residual Waste Management – Service Level and Tipping Fee Comparison (2020)**

| Municipality | Year | Service Level | | Bag Tag Fee | Landfill Tipping Fees | | |
|---|---|---|---|---|---|---|---|
| | | Pick-up | Bag Limit | | Minimum | Sorted (per tonne) | Unsorted (per tonne) |
| Town of Saugeen Shores | 2020 | Weekly | No Limit | $2.00 | $10.00 | $108.77 | $348.08 |
| Municipality of Kincardine | 2020 | Weekly | No Limit | $2.50 | $25.00 | $110 | $215 |
| Municipality of Brockton | 2020 | Weekly | No Limit | $2.00 | $10.00 | $125 | $250 |
| Town of South Bruce Peninsula | 2020 | Weekly | 3 (1st free) | $3.00 (1 free) | $9.00 | $125 | $250 |
| Township of Huron-Kinloss | 2020 | Weekly | No Limit | $2.00 | $20.00 | $100 | $200 |
| Municipality of Arran-Elderslie | 2020 | Weekly | No Limit (2 free) | $3.00 (2 free) | $5.00 | $105 | $214 |
| Municipality of South Bruce | 2020 | Weekly* | No Limit | $2.50 | $10.00 | $100 | $200 |
| Municipality of Northern Bruce Peninsula | 2020 | Weekly | 2 | Free | $5.00 | $100 | $200 |

*Urban Areas Only

The following residual waste management strategies are recommended for consideration by the Town:

**Reduced 'Bag' Limit:**

In terms of waste reduction, the user pay system already 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. At this time, residents are permitted to place an unlimited number of bags of residual waste at the curb at a cost of $2.00 per bag of household waste. In consideration of the weekly curb-side pick-up service currently provided, it is recommended that a bag limit of two bags per week be imposed.

**Reduced Pick-up Frequency:**

A reduced pick-up frequency for residual waste from weekly to bi-weekly has the potential to increase waste diversion. However, in consideration of the Town's transient population and tourism industry, this strategy may have some additional challenges, particularly during the summer months. Therefore, it is recommended that the Town, at minimum, consider implementing a waste management system in which the curb-side pick-up frequency for blue box materials and residual waste is the same, either weekly or bi-weekly.

**Increased Minimum Tipping Fee at Landfill:**

As of 2020, a minimum tipping fee of $10.00 or a fee of $108.77/$348.08 per tonne (sorted/unsorted) is applied to loads entering the landfill. In general, it is recommended that the tipping fees, at minimum, be comparable to other local municipalities. Tipping fees are determined by the Town and are reviewed on an annual basis.

### 9.3.2 Additional Options and Opportunities

Currently, the primary channel where the Town can influence additional waste reduction in residents, aside from the pay-per-use system (partial), reduced 'bag' limits and reduced pick-up frequency is through education and or behavioural encouragement. Options for improvement include investigating additional educational or encouragement programs (such as those that focus on community challenges and public notices of residual waste rates). This is discussed further in **Section 9.6**. Furthermore, the Town could consider the implementation of several other waste reduction/reuse options that could be achieved at a fairly low cost relative to the waste reduction achieved. Other waste reduction and reuse opportunities include the following:

- **Establish a Reuse Building and Opportunities:** The Town already provides a structure for the placement and storage of reusable items at the Southampton Landfill Site. In concept, the reuse building/enclosure is open to the public for drop-off or pick-up of reusable items that would otherwise be landfilled. Re-use could also be encouraged through a partnership with other re-use organizations and/or businesses (i.e. Habitat for Humanity, Timeless Materials) by promoting the drop-off of reuse materials at their locations on the Town's website.
- **Clothing Donations:** The Town could encourage reuse through a partnership with the local thrift shops or other re-use organizations/charities (e.g. Ontario Federation of Cerebral Palsy, Salvation Army, etc.). A clothing donation bin could be set-up at a convenient location(s), such as the landfill site or public parking lot(s) (i.e. arenas, grocery stores, works yard, etc.). At this time, it is our understanding that the promotion of existing donation options, through the Town's annual calendar, and the placement of clothing bins is being further investigated by the Town.
- **Implementation of Mandatory Recycling and Leaf and Yard Waste Diversion:** Some Municipalities have established By-Laws that discourage the disposal of select waste diversion streams (i.e. Materials Disposal Ban at the Landfill). In order to effectively implement such a ban, enforcement is required. In order to adequately enforce by-laws, a '*Clear Bag Policy'* is typically required.

- **Clear Bag Policy:** The clear bag policy is typically thought to encourage recycling and waste diversion, as well as to educate residents, on what items can be recycled so less potentially divertible or toxic materials enter the landfill. In addition, clear bags aid the collectors in identifying materials that are banned from disposal. To conceal private material, some Municipalities allow for one small opaque bag, such as a grocery bag, to be used and placed inside the clear bag. The privacy bag is meant to conceal items from public view. Concealment can also be achieved by placing clear bags inside a garbage can.

## 9.4 Organics Diversion Initiatives

### 9.4.1 Backyard Composting

The Town encourages residents to manage suitable organic materials through backyard composting. Backyard composting is ideal for a municipality such as the Town of Saugeen Shores due to the high percentage of rural properties and single detached homes which have the capacity and increased convenience for composting.

The Green Cone Digester is being increasingly promoted by Municipalities, including the Town of Saugeen Shores, as an alternative way to promote backyard composting that avoids animals. According to the designers *'the goal was to sustainably and efficiently get rid of kitchen waste without interference from animals'* (compostec.ca). It is designed as a completely enclosed system capable of handling the full spectrum of kitchen waste, such as fruit and vegetable waste, meat scraps, dairy, oil, seafood scraps, and pet waste. According to the information available, it can manage up to an estimated 10 pounds of kitchen waste per week. Therefore, the onsite use by households of a Green Cone digester for kitchen waste in combination with traditional composters for yard waste (and fruit/vegetable waste as needed) is considered to be a viable alternative to a centralized green bin system.

Consistent with O.Reg 101/94, the Town has implemented a program for home composters. It has made both the traditional composter and Green Cone digester available at cost. The Town could consider subsidizing both traditional and/or Green Cone composting units as a way to further encourage and promote home composting. Continued public education through local media and newsletters could be considered to educate residents on the benefits of backyard composting.

### 9.4.2 Leaf and Yard Waste Diversion

Although difficult to quantify, it is anticipated that a significant volume of leaf and yard waste is diverted from the landfill through on-property management (i.e. grass-cycling, backyard composting, burning of brush at rural properties). For residents who choose to dispose of brush and leaf and yard waste, the Town offers the option to drop-off brush at its landfill site or leaf and yard waste at the Southampton Yard Waste site. As such, the brush and leaf and yard waste (including clean wood) is segregated from the residual waste and can eventually be used as interim cover, as practicable.

### 9.4.3 Source Separated Organics Collection and Processing

Increased diversion of organics can be achieved under an extended 'Source Separated Organics Collection' scenario. Depending on the processing method, SSO waste can include dairy products, plants and flowers, food scraps, vegetables, fruits, grain products, meat, and paper that is not recyclable. Hygiene products (e.g. diapers) and pet waste can also be considered SSO, however are only accepted at a limited number of facilities. Generally, these wastes are processed at a central processing facility via windrows, aerated static piles and in-vessel composting, or anaerobic digestion. These processing facilities generally require a large and somewhat consistent volume of organic material to be economically feasible and are more common to jurisdictions with greater population bases.

An effective and extended source separated organics program has the potential to significantly reduce waste disposal in landfills. Based on information from other municipalities who have implemented such programs, an additional waste diversion of 10% to 20% has been achieved with this option. Further, it is thought that the eventual implementation of SSO programs will be required for municipalities to meet the waste diversion targets set out in the Waste-Free Ontario legislation. However, as noted above, this system is dependent on economies of scale. Provided in the **Table 9-2** are the cost estimates associated with an SSO program.

**TABLE 9-2: SSO Program Cost Estimates**

| Process | Set-up Requirement | Planning Period | Budgetary Cost Estimates | Total Cost |
|---|---|---|---|---|
| **Municipal Processing Facility** | | | | |
| Approvals | - Design and Operations Plan<br>- Hydrogeological Assessment<br>- Drainage Study<br>- Odour Impact Assessment and Management and Control Plan | > 5 years | $150,000 - $200,000 | **Per Household:** $50 - $85(1) /yr<br>**Town (Annually):** $400,000 to $650,000<br>**Cost per Tonne:** $550 to $1,600 |
| Development | - Construction and engineering of processing facility | | $600,000 - $900,000 | |
| Equipment | - Purchase of processing equipment | | $200,000 - $400,000 | |
| Operation of Facility | - Salaries, compost quality monitoring, utilities, equipment maintenance, etc.<br>- Environmental monitoring and reporting | | $150,000 - $300,000/year | |
| Curbside collection | - Agreement with waste collection contractor | | $25 - $30 per household (2) | |
| **External Processing Facility** | | | | |
| Curbside Collection | - Agreement with waste collection contractor | ±6 months | $30 - $45 per household (2) | **Per Household:** $35 - $60(3) /yr<br>**Town (Annually):** $280,000 to $460,000<br>**Cost per Tonne:** $400 to $1,100 |
| Processing (Tipping Fees) | - Agreement with external processing facility (i.e. GFL, Guelph Organic Waste Processing Facility, All Treat Farms in Arthur) | ±6 months | $110 to $140 per Tonne | |

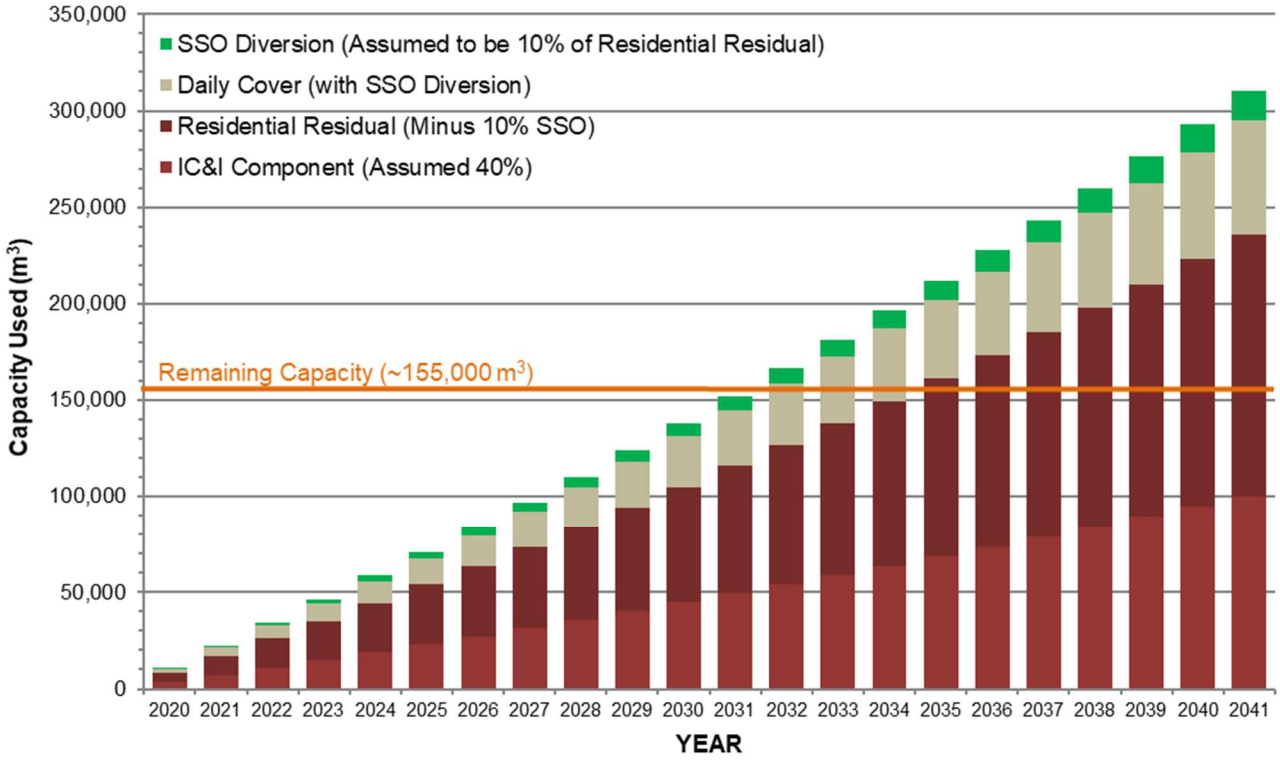
Notes:
(1) Applies capital costs amortized over 25 years at 5% interest per year.
(2) Assumes a single stream collection method for the Towns 7,655 households. Costs can vary significantly based on the Town's proximity to the SSO Facility and contract terms (i.e. weekly or bi-weekly pick-up).
(3) Assumes an organics collection rate of 400 to 700 tonnes per year with full curbside garbage collection.

As shown in **Table 9-2**, the development of a municipally owned organics processing facility is estimated to cost between $950,000 and $1,500,000 with annual operating costs estimated to be between $150,000 and $300,000. Including collection costs and amortizing the capital costs over 25 years, the estimated cost to the Town for a municipal processing facility would be in the range of $50 and $85 per household, annually. Assuming an organic collection rate of 400 to 700 tonnes annually, this would be equivalent to greater than $550 per tonne. Based on the limited population of the Town and the scale requirements for the effectiveness of such a facility, a Town-owned organics processing facility is not considered to be a viable option. However, a partnership with other Municipalities or the formation of a cooperative similar to BASWR but aimed at SSO diversion, would serve to increase the economy of scale thereby improving the economic viability of an SSO Program.

An agreement with an external processing facility may be a more economical option for the Town considering the potential access to, and use of, the waste processing facilities in the City of Guelph, the Orgaworld London composting facility, and the All Treat Farms composting facility in Arthur. Costs associated with using an external organic waste processing facility would include the collection and transportation of the SSO and disposal fees (tipping fees). Based on cost estimates obtained (per tonne), the total cost associated with this alternative is estimated to be between $35 and $60 per household annually, or greater than $400 per tonne. However, costs associated with collection and transportation are highly variable and would be dependent on the proximity to the facility and the level of service desired (i.e. weekly versus bi-weekly). Further, it is assumed that the collection and transportation of this material to an approved facility would be completed in a single stream truck contracted out to another provider (i.e. GFL, Miller Waste, Waste Management etc.).

With respect to the implementation of an SSO program in the Town of Saugeen Shores, it is noted that a significant proportion of the costs are associated with the collection and transportation expenses which are typically higher in rural communities characterized by lower density populations. Furthermore, the diversion rates accomplished with the SSO program are typically lower in rural areas, particularly in agricultural areas, where on-property organics diversion can be easily achieved with the use of backyard composting or via the use of this material as feed for the animals. In terms of Site Life gains, **Figure 9-1** shows the estimated diversion that may potentially be achieved by the Town by implementing an SSO program at this time. Estimates assume the diversion of 10% of the residential residual waste component can be achieved and take into consideration the Town's population projections.

**FIGURE 9-1 Estimated Required Disposal Capacity Reduction**
**Assuming 10% SSO Diversion of Residential Residual Waste Component**



As previously discussed, a key proposed action towards a Waste-Free Ontario is the development of the Food and Organic Waste Action Plan to reduce the volume of food and organic waste going to the landfill. As part of the action plan the province has reportedly committed to eventually banning food waste from disposal to increase diversion of these organic wastes and reduce greenhouse gas emissions. Therefore, although it is likely that consideration for a Green Bin program will eventually be necessary for the Town to meet the Provinces waste diversion targets, the Town could consider further promoting backyard composting until such a time that the Green Bin Program becomes a more viable option.

## 9.5 Education, Oversight, and Enforcement

It should be recognized that waste reduction, re-use, and recycling relies largely on behavioural changes. Behavioural changes are typically established through educational programs, policy changes, and/or enforcement. Several provincial organizations have completed studies on best practices in municipal recycling programs. One of the key findings is that a sustained promotion and education program is essential to inform residents of program changes and to remind them continuously of what's recyclable and how to prepare materials. The investment in promotion and education generally results in increased diversion of re-usable and recyclable items from the residual waste stream.

### 9.5.1 Educational Initiatives

Educational materials can be supplied to Town residents to strengthen commitment from the community with respect to waste diversion. As noted in the previous section, the Town currently provides residents with waste management program information and diversion initiatives through mail and through the Town website. As well, the Town website provides a direct link to the BASWR website. These methods of informing residents of the waste diversion programs available and any changes to the waste management practices in the community are considered to be relatively cost effective and to reach a broad audience.

However, it is thought that additional informative materials (or links) could be provided on the Town's website to further educate the public and promote other waste diversion efforts (i.e. re-use depots, backyard composting, etc.). Further, some municipalities have partnered with bale wrap processing companies which collect agricultural film, including bale wrap, silage bags, net wrap and silage tarp, directly from the farmer. These municipalities ensure the contact information and requirements are easily available to their agricultural community via a direct link to the providers included on their website. The Town may consider adopting a similar approach.

It is recommended that any new and existing waste reduction, reuse, recycling and/or composting initiatives undertaken by the Town be relayed to the local residents in a similar manner. As the use of web-based media and communication (such as email, twitter, facebook, etc.) continues to become more popular, it is recommended that the Town continually investigate such alternative options for communication and notification. Some municipalities have initiated a notification system for residents that actively register. We recommend that such programs be considered supplementary until it can be confirmed that a sufficient audience is included through such programs.

Increased education and promotion of new and existing programs would help to increase the community's commitment to the waste diversion programs made available to the residents and help ensure that the programs are used effectively. Therefore, increased encouragement of diversion is recommended in future communications. In addition, provided the limited capacity of the landfill, in terms of site life, educating the broader public about the landfill and the cost implications for alternative disposal may help to encourage the waste diversion and reuse initiatives.

### 9.5.2 Information Distribution

Information regarding the Town's waste management practices and educational materials pertaining to the Town's waste diversion initiatives has involved the distribution of calendars to all its residents via mail, and the placement of information on the Town's website. The combination of these two methods is considered to be an adequate means to ensure information and educational materials are reaching the Town's population base, providing that the information is presented in a clear and concise manner.

It is recommended that the Town continue to provide diversion and general waste management program information within the annual waste collection calendars and through the Town website. The Town is encouraged to continue distribute the annual calendars which may include the following:

- Recyclable blue box materials list and sorting guide (BASWR Handout)
- Promotion of other Waste Diversion Options (i.e. appliances, scrap metal, tires)
- Household hazardous waste collection events and acceptable wastes
- A map of the landfill location and hours of operation and name, address and materials accepted at recycling depots
- Promotion of reuse options and locations (i.e. clothing donations, Habitat for Humanity etc.)
- Composting options including home composting tips and leaf and yard waste diversion options

The information should continue to be presented in a way that is easy to read and follow, including pictures. This will help to achieve a higher level of public education related to the diversion options currently provided to municipal residents and should be used to inform (i.e. highlight) the residents of any changes.

### 9.5.3 Oversight and Enforcement

The success of a waste diversion program relies on compliance and commitment from the community. To ensure more widespread participation and compliance in waste diversion programs, the implementation of policies and/or By-laws requiring that residual, recyclable and reusable waste be properly sorted by residents for diversion and disposal can be effective provided they can be properly enforced (i.e. clear bags). Some municipalities impose a fine for multiple offences.

While the implementation of By-laws does not require many operational/service adjustments, in order to assist with the monitoring and enforcement programs the contracted curbside collector would be required to keep a record of infractions of the policy at the curb and the landfill attendants would be required to keep a record of the occurrences where banned materials are brought to the landfill site for disposal. This is not always practicable.

### 9.5.4 Measurement of Program Success (Audits)

Promotion may also take the form of waste diversion status and/or challenges for achieving waste diversion/disposal goals. The success of a municipalities waste reduction/diversion programs and strategies can be measured on a regular basis (i.e. every year or two) and used to further encourage and promote waste diversion within the community. Many municipalities have conducted audits to determine what is in household garbage bags/bins in order to assess the success of the established waste diversion programs and evaluate how to best improve the waste management practices (i.e. establish short-term and long-term goals). Additional educational programs and further enforcement (i.e. bylaws) could be used to help remove these wastes from the residual waste stream. In addition, results of the regular audits could be used to inform the residents of their waste diversion status and promote further diversion through challenges for achieving set waste diversion/disposal goals.

## 9.6 Summary of Alternative Waste Prevention and Diversion Options

Summarized in **Table 9-3** are the prevention and diversion options available to the Town with the associated estimated costs and gain in diversion rates. It should be noted that the SSO options are considered to be medium-term initiatives and may be considered cost-prohibitive at this time. It is recommended that the Town continue to stay informed of new RPRA program plan initiatives, provincial policy, and funding opportunities that may become available.

**TABLE 9-3: Options for Improved Waste Reduction and Waste Diversion**

| Option and Description | Set-Up Requirements | Requires Promotion [1] | Estimated Bugetary Cost | Potential Additional Diversion Estimates |
|---|---|---|---|---|
| **Recycling Initiatives** | | | | |
| *Blue Box Collection Service:* | | | | 2% to 10% (May encourage additional diversion from the IC&I sector) |
| Provision of Free Blue Boxes/Bins | Included in Service | X | Nominal | |
| Addition of Recycling Depots | Included in Service | X | | |
| Investigate opportunity to provide and use larger disposal bins | Included in Service | X | | |
| Offer an increased level of service, aimed at the tourism industry, during the peak tourist season | Would require consultation and cooperation with BASWR | X | $15,000 - $25,000 | |
| Augment existing service by including a broader range of acceptable materials | Would require consultation and cooperation with BASWR | X | Nominal | |
| Frequency of curbside pickup: Should be at the same frequency as the residual waste pick-up service | Would require an update to the contract(s) for waste collection, cost would be dependent on service provider. | | Weekly: $20,000 - $100,000 | |
| | | | Biweekly: Savings wold be achieved | |
| Consolidated and Enhanced Waste Receiving and Transfer Area | ECA Approval for amendment (MECP), Planning, Design Drawings and Construction | X | $50,000 to $150,000 depending on Design | 5% to 10% |
| *Additional Waste Diversion Opportunities:* | | | | |
| * Additional Scrap Metal Diversion Initiatives | Staff Training and Oversight<br>Agreements with external Processing Facilities<br>Preparation and distribution of promotional materials | X | $25 to $50 per tonne (per Town Discretion) | Less than 1% |
| * Creation of a separate waste diversion stream for C&D waste | | X | $50 to $100 per tonne | 5 to 10% |
| * Expansion of a separate waste stream for polystyrene, as practicable | | X | $50 to $100 per tonne | Less than 1% |
| * Promotion of bale wrap diversion alternatives on Town's website | | X | Less than $1,000 | Less than 1% |
| IC&I Outreach and Collaboration | Promotion & Agreements with local businesses/waste collection providers | X | ≥ $5,000 | 5% to 10% |
| **Waste Reduction Initiatives and Reuse Opportunities** | | | | |
| Clothing donation bin | Bin placement/partnership | X | $2,000 (Administrative) | 1 to 2% |
| Ensure tipping fees at landfill are similar to (or greater than) surrounding Municipalities | Education | X | Increased Revenue | 2 to 5% |
| Maintain the partial pay-per-use fee system | Promotion and education | X | Increased Revenue | |
| Impose a Bag Limit for curb-side waste | Promotion and Education | X | N/A | |
| Implement Clear Bag Policy (with or withour provision for a 'privacy' bag) | Promotion and education | X | N/A | |
| **Organics Diversion Initiatives** | | | | |
| Further encourage the use of backyard composters and/or digesters | Promotion and education (Cost would be dependent on subsidy level) | X | $2,000 to $10,000 | 2-5% |
| Leaf and Yard Waste Diversion | Promotion and education | X | Less than $1,000 | |
| Leaf and Yard Waste Curbside Collection Service (once or twice annually) | Agreement with waste collection provider | X | $5,000 to $15,000 | |
| Source Separated Organics (SSO) with external processing facility (medium to long term) | Agreement with external processing facility, collection contract | | $35 to $85 per household annually<br>Greater than $400 per tonne | 10% to 20% |
| **Education, Oversight and Enforcement** | | | | |
| Information distribution including collection schedules and detailed information on new and existing waste diversion programs | Promotion and education: Preparation and distribution of relevant materials. | X | $10,000 to $20,000 | Success of programs is dependent on participation. Education increases participation. |
| Educational initiatives that provide information to residents regarding waste diversion initiatives and details, such as acceptable and unacceptable materials, depot locations and website links. | Promotion and education: Preparation and distribution of relevant materials. | X | | |
| Update website to include information on additional waste diversion opportunities, including links to pertinent websites and life of landfill | Set-up by Town Staff or contracted out.<br>Promotion of website. | X | $5,000 to $10,000 | |
| Establish By-Laws (i.e. mandatory diversion of leaf and yard waste, MHSW etc.) | Policy, oversight, and enforcement (i.e. Clear Bags and/or random waste inspections) | | $2,000 to $5,000 | 2-4% |
| Impose a mandatory recycling By-law for residents and businesses | | | | |
| Additional policies and or by-laws may need to be considered as additional waste diversion initiatives are implemented | As required | | N/A | N/A |

Note:
(1) Several initiatives require that information be posted on the Town's website as well as the preparation and distribution of promotional materials. The estimated cost for these efforts is provided in the educational heading.

# 10. EVALUATION OF RESIDUAL WASTE MANAGEMENT OPTIONS

Under current operational practices and in consideration of the rates of residual waste disposal, it is estimated that the Southampton landfill will reach capacity in approximately 10 to 12 years (i.e. by early 2032), possibly sooner. Provided that one of the goals of Waste Management planning is to ensure the efficient use of the resources available and to continually strive towards an economically and environmentally sustainable community, consideration should be given to optimizing the existing disposal capacity available. Adjustments to the current landfill operations could result in an additional site life.

Due to the costs associated with new or expanding landfills, or alternative disposal methods (e.g., exporting waste, incineration, etc.), it is important to manage the remaining capacity efficiently to ensure the Town's waste disposal security and relatively low waste management costs in the near future. As previously discussed, the most effective operational methods to extend the life of a landfill are as follows:

- To improve site operations, such as the efficient use of interim cover (i.e. no greater than 20%) and the efficient use of the existing compactor and grinder, when appropriate, in order to more effectively compact the waste. Increased compaction allows for more waste to be deposited within a given volume. This can be achieved by increasing the number of passes over the waste and spreading waste and cover in thinner layers;
- Enhance the waste receiving and transfer area or relocate the area to an on-site location where more space is available; and
- Ensure proper oversight of the waste receiving area, including adequate and trained staff.

It is recommended that these measures be implemented in the short-term in order to maximize on the benefits that can be achieved. Once the Town's current approved capacity is exhausted, the Town will require further waste disposal capacity or alternative disposal options to meet their needs. The following section of the report evaluates potential residual waste disposal options available to the Town for future consideration.

Currently, there are two general approaches to residual waste disposal: incineration/thermal or landfilling. This Study separates the discussion based on these two general approaches. Within each approach, municipally owned and out-sourced facilities (i.e., third party) have been reviewed at a conceptual level. A summary of the evaluations discussed herein is presented in **Table 10-1**.

## 10.1 Evaluation Criteria

As part of this Study, residual waste disposal options are reviewed at a conceptual level since there are many unknowns that cannot be accounted for. Several of the waste disposal options include the involvement of third parties, and require political and regulatory support, which cannot be estimated with certainty. Additionally, the estimated costs for many of the approaches cannot be known until such a project is complete. Therefore, each approach provides for an evaluation of the advantages and disadvantages based on the following issues:

1. **Security of Disposal Option**
   - Municipal control of management and operations;
   - Control of costs; and
   - Long-term availability of disposal option.
2. **Certainty of Approval**
   - Environmental Assessment requirements;
   - Use of existing approvals; and/or
   - Infrastructure, proven technology in Ontario.

3. **Applicability**
   - Requirement of third-party partnership(s);
   - Waste generation requirements; and
   - Operational scale requirements.

4. **Environmental Security**
   - Waste transport requirements;
   - Potential environmental impact;
   - Engineered versus natural attenuation landfill; and
   - Amount of residual waste at end of process.

Each of these factors has been assigned a low, medium or high designation based on a qualitative evaluation of factors, which are generally discussed for each option specified. A low designation is considered to be a negative weighting and high designation is considered to be favourable.

### 10.1.1 Cost Evaluation

Since there are many variables with respect to cost, a range of budgetary costs are provided for each approach. Additionally, these costs are provided for comparative purposes only. More detailed costs would require conceptual design and initial site selection considerations. The costs include capital requirements and estimated long-term requirements in 2020 values. The long-term cost estimates include annual operational costs and capital costs amortized over 25 years. Since this is a comparative exercise, valuation of costs is not conducted as part of this Study.

It should be noted that the estimate of long-term costs is considered conservative. For example, it is considered possible to obtain approval for the development of a considerably larger volume of waste (i.e., greater than 500,000 $m^3$) at a similar cost range depending on the site conditions. Likewise, the lifespan of a thermal facility may be greater than 25-years with potential refurbishment costs.

### 10.1.2 Planning Period

An estimate of the planning period for each approach is provided for within **Table 10-1**. The planning period is based on the establishment of the infrastructure and the potential approval process. Where an EA is required, a planning period of a minimum of 5 years has been selected based on the approval period for waste disposal systems in Ontario.

## 10.2 Landfilling

Landfilling provides the most traditional and established method of residual waste disposal in Ontario and continues to be the most widely used residual waste disposal option. Historically, it has been shown to be the most cost-effective manner to dispose of residual waste. However, based on the Waste Value Chain (**Figure 3-1**), landfilling without energy capture is considered to be the least preferred alternative.

### 10.2.1 Development of Additional Capacity at Existing Landfill Site (Less than 40,000 $m^3$)

The Town has historically been serviced by the Port Elgin and Southampton Landfill Sites. There is no additional development potential under historic approvals at either of these Sites. However, landfill expansions limited to 40,000 $m^3$ are not subject to the requirements of the Environmental Assessment Act (EAA), therefore landfill expansion at the Southampton Landfill site is considered to be a viable short-term option for the Town, should it be considered advantageous as this landfill site approaches its maximum capacity (i.e. to provide additional time for the implementation of the desired future waste disposal option). Based on our experience, this approach would only be applicable as the landfill approaches full capacity and would be subject to the results of the on-going monitoring programs/impact assessment.

It is estimated that an additional capacity of up to 40,000 $m^3$ would provide for an additional ±4 years of landfill capacity for the Town. Provided that the footprint of the Southampton Landfill site, based on the existing design, encompasses the entire approved 8.8 hectares, this additional capacity could likely be achieved by raising the approved top contours. Preliminary estimates suggest that the previously approved top contour elevation of 228 meters above the assumed elevation datum would need to be adjusted to ±229 meters to accommodate 40,000 $m^3$, an increase of as estimated ±1.0 meter. It is reasonable to expect that the request for additional capacity at the Southampton Landfill, to be placed on top of the existing landfilled area within the previously approved area, would be cost effective, would have a high probability of approval, and is considered to have a high level of security – albeit in the short-term.

The development of the additional landfill capacity requires approval from the MECP, which is dependent on the successful completion of the application process. To support the application process, it is anticipated that a Plan of Development and Operations (PDO) would be required. Since the additional capacity could be placed within the previously approved 8.8-hectare footprint, it is our understanding that an updated Hydrogeological Assessment would not be required, however, this would be subject to MECP clarification and approval. Further regulatory consultation and/or investigation would provide more certainty regarding these options. It should be noted that there is the possibility of not succeeding with the application or the conditions imposed by the MECP may not be economically feasible to proceed with the expansion. The success of the application or economic feasibility of developing the short-term additional capacity is dependent on a number of variables, including the proposed type and amount of waste to be landfilled, the geologic conditions of the site, environmental sensitivity, etc.

Together with the minor increase in capacity of the Southampton Landfill site for municipal waste, for less than 40,000 $m^3$, the Town would still be required to consider alternative waste disposal options, as outlined further below. The landfill expansion process for the Southampton Landfill, limited to municipal non-hazardous waste, is estimated take 2 to 4 years to complete.

| | |
|---|---|
| Security of Option: | High (albeit, not a long-term solution) |
| Certainty of Approval: | Medium |
| Applicability: | Dependent of other options |
| Environmental Security: | Medium |
| <u>Comparative Cost Range:</u> | |
| Capital Costs: | $150 to $250 K |
| Long-term Costs: | $70 to $100/tonne (limited to additional 4-year site life extension) |
| Lifespan: | Up to 4 years |

### 10.2.2 Landfill Expansion (Greater than 40,000 m$^3$) or Development of New Municipal Landfill

The expansion of the existing Southampton Landfill Site or the development of a new landfill, should an appropriate location be established, requires the completion of several studies to support development, including a detailed hydrogeological assessment, completing the Environmental Assessment (EA) process, and completing the landfill design, which may be required to be an engineered site (i.e., require leachate collection, etc.). Based on the requirement for the EA process, which includes extensive public and agency consultation, ultimate approval of the site cannot be guaranteed. In consideration of the EA process, the processing time for the expansion of the Southampton Landfill site or development of a new landfill is estimated to be in the range of 5 to 10 years. Landfill expansion options and costs are discussed below.

**Southampton Landfill Site Expansion:**

The Southampton Landfill site includes a 40.4-hectare area to the north of the exiting waste disposal and transfer area, where shown on **Figure 8-2**. Based on a preliminary assessment, and in consideration of the additional lands owned by the Town to the north as well as 100 meters buffer zones along the property boundaries to the northeast and southwest, the site has an area of ±25-hectares that may potentially support a landfill expansion. This area has been determined to represent the most feasible location that would provide the greatest area for potential landfill expansion based on the interpreted overburden geology, the location of the existing surface water features within and surrounding the site, the groundwater flow direction and proximity to the property limits/compliance boundaries (i.e. buffer areas). Further, in consideration of the Water and Sewage Master Plan currently being completed by BM Ross, the provision for a potential extension to the landfill for leachate diversion and treatment purposes has been considered, where shown on **Figure 8-2**.

Assuming the same landfilling limits in terms of height and depth are in effect for this expansion zone, the air space available for expansion is estimated to be greater than 2,000,000 m$^3$. Further, it is noted that the additional capacity could be greater if adjustments to the final contour height were also considered as part of the design for the entire area, including potential connection with the existed approved fill area.

Capital costs, including the EA Process requirements, are estimated to be approximately $4 to $10 million for landfill expansion. Annual operating costs, such as the operation of a leachate capture and treatment system, general operations and oversight, monitoring, reporting, and contingency costs, are estimated to be approximately $70 to $110/tonne. The resultant long-term costs are estimated to be in the range of $95 to $175/tonne, possibly higher based on changing Provincial regulations.

| | |
|---|---|
| Security of Option: | High |
| Certainty of Approval: | Medium |
| Applicability: | Medium to High |
| Environmental Security: | Medium |
| Comparative Cost Range: | |
| Capital Costs (Expansion): | $4 to $10 Million |
| Long-term Costs: | $95 to $175/tonne |
| Lifespan: | Greater than 25 years, likely greater (subject to site constraints and design) |

**Southampton Landfill Site Expansion (Optimize Capacity - Raise Top Contours):**

Additional landfill capacity could also be acquired by increasing the approved top contours, rather than increasing the approved area. From an impact assessment perspective, increasing the waste thickness would have less of an impact on the surrounding environment when compared to increasing the fill area. Preliminary estimates suggest that an additional capacity in the range of 150,000 $m^3$ to 200,000 $m^3$ could be achieved by increasing the top contours by ±4 meters height.

Capital costs are estimated to be approximately $1.5 to $5 million. Costs associated with raising the top contours of the landfill would be less due to the elimination of costs associated with site preparation and construction (i.e. placement of a liner). Although, most of the landfill infrastructure, such as the stormwater management system, may already be developed, the development of a leachate treatment system may still be required. Similar to other landfill expansion options, annual operating costs are estimated to be approximately $70 to $110/tonne, possibly higher based on changing Provincial regulations. However, due to the lower capital costs, the long-term costs are estimated to be lower than expanding the landfill footprint or the development of a new landfill site.

| | |
|---|---|
| Security of Option: | High |
| Certainty of Approval: | Low to Medium |
| Applicability: | Medium |
| Environmental Security: | Medium |

Comparative Cost Range:

| | |
|---|---|
| Capital Costs (Expansion): | $1.5 to $5 Million |
| Long-term Costs: | $80 to $150/tonne |
| Site Life: | 10 to 15 years of capacity (depending on site constraints and landfill design) |

**New Landfill Site:**

A new landfill site could be considered in a location thought to provide convenient access to the majority of residents in the Town of Saugeen Shores provided that the site characteristics, such as the overburden and bedrock geology and hydrogeology could support it. In general, the cost for a new landfill would be expected to be greater than expanding the existing approved waste disposal site, with capital costs estimated to be in the range of $6 to $12 million. However, annual operating costs would be expected to be similar to that of an expanded site and would ultimately be dependent on Provincial regulations.

| | |
|---|---|
| Security of Option: | High |
| Certainty of Approval: | Low to Medium |
| Applicability: | Low |
| Environmental Security: | Medium |

Comparative Cost Range:

| | |
|---|---|
| Capital Costs (New Landfill): | $6 to $12 Million |
| Long-term Costs: | $110 to $190/tonne |
| Site Life: | Greater than 25 years (depending on site constraints and landfill design) |

It is noted that landfill costs are greatly affected by the daily volume of material received, in other words *'volume significantly impacts feasibility'* (Eilrich, Doeksen and Van Fleet, 2002). Therefore, in sparsely populated rural areas where small daily generation rates are expected, regional landfills may be a more economical option, such as a County-wide approach to landfilling. Increased rates of disposal generally decrease the average cost per tonne due the numerous fixed costs, including site selection, supporting documentation, approvals, equipment, labour and required post-closure monitoring and oversight.

### 10.2.3 Landfill Mining

Landfill mining and reclamation is a process in which solid wastes that have been previously landfilled are excavated, sieved and sorted. Using an excavator or front-end loader, materials are placed or conveyed to a series of trommels (i.e. sieves/sorting machinery) which separate materials by size. Landfill mining and processing has the potential to recover materials such as appliances, wood, tires, metals, plastics and fabrics, ultimately in an effort to reduce the landfill mass and recover landfill capacity. Following processing, the waste streams that can be diverted and/or sold are loaded onto trucks and hauled off-site. In general, with the exception of aluminum and steel, the quality of the materials reclaimed for recycling and reprocessing purposes is not as high as initially recycled materials. Once the landfill mining process is completed the remaining materials must be landfilled and the landfill area re-graded, re-shaped and closed.

Several factors can affect the cost of landfill mining including the volume, soil conditions, climate, regulatory approval process, equipment requirements, excavation and screening costs, labor rates and contracting fees, and the revenue from the sale of the processed materials (i.e. tires, WEEE, and scrap metal). As part of the approval process, odour controls and leachate management would need to be addressed. It is thought that the operational costs associated with landfill mining and reclamation would likely far outweigh the benefits related to the capacity gained and the sale of the reclaimed commodities. As with many technologies, the limited scale of the Landfill Mining for the Town would limit applicability. Further, since a large portion of waste has been buried for over 20 years, it is likely that portions of the landfill will include wastes that have been burned prior to burial as well has highly variable degrees of degradation and amounts of cover material.

The costs provided indicate the cost per tonne of volume created through the process. Since the recovery rate can vary significantly, the cost also varies significantly.

| | |
|---|---|
| Security of Option: | High |
| Certainty of Approval: | Medium |
| Applicability: | Low |
| Environmental Security: | Low |

| Comparative Cost Range: | |
|---|---|
| Capital Costs: | 1.5M to 3M |
| Long-term (Overall) Costs: | $65 to $125/tonne, or greater (ultimately dependent upon capacity gain achieved) |
| Lifespan: | Unknown, dependent on airspace capacity gain achieved |

### 10.2.4 Municipal Partnership at Existing Landfill (or Agreement)

This option involves either developing a partnership with another Municipality in order to consolidate landfill services or the development of an agreement with a nearby Municipality to accept the Town's waste at an existing approved landfill identified to have significant capacity.

For example, the Municipality of Northern Bruce Peninsula was noted to have significant capacity available. When comparing the relative contributing populations, should the Municipality of Northern Bruce Peninsula permit additional residual waste disposal from the Town, the site life for their primary landfill site (i.e. Eastnor) would likely decrease by 60% to 75%. Although there are operational and financial benefits that can be achieved by another nearby municipality accepting the Town’s residual waste, the receiving Municipality will need to consider the resulting decreased site life and the higher disposal costs typically associated with the alternative waste disposal methods.

Without a service/benefit to offer a neighbouring municipality, there would be little to no incentive for an outside municipality to accept the Town's waste. Therefore, the applicability of this option is considered to be low.

| | |
|---|---|
| Security of Option: | Low to Medium |
| Certainty of Approval: | Medium to High (receiving Municipality may need to amend their Approval) |
| Applicability: | Low |
| Environmental Security: | Medium |
| Comparative Cost Range: | |
| Capital Costs: | Less than $500,000 |
| Long-term Costs: | $100 to $150/tonne depending on type of agreement (i.e. partnership or contract) |
| Lifespan: | Dependent on terms of agreement (i.e. contract) |

### 10.2.5 County-Wide Approach to Landfilling

Several jurisdictions have identified opportunities for shared service arrangements as a means to achieve potential cost reductions, such as implementing a County-wide approach to waste management services, including collection, transfer and disposal (i.e. Oxford, Wellington and Waterloo). Focusing disposal to one landfill at a time has additional environmental and long-term regulatory advantages in that impacts are typically greatest during a landfill sites' operational years, and the contaminating life-span is typically limited to a site-specific timeframe (e.g. 25-years post closure). Therefore, achieving site closure at the smaller capacity landfills within a shorter timeframe would likely reduce the long-term regulatory oversight requirements and associated costs (i.e. monitoring and reporting) at some landfill sites.

Although the relative availability of approved landfill capacity for each municipality within the County of Bruce is highly variable, the benefits associated with consolidating the landfill operations and services may take advantage of economy of scale and result in cost savings for the municipalities involved. However, it is recognized that additional complexities may arise due to the involvement of multiple parties/stakeholders. In particular, interest from member municipalities with significant capacity may not wish to "share", or forfeit, approved volume.

Given that there is a significant amount of landfill capacity within the County, it is recommended that the County of Bruce, and its Municipalities, continue to investigate the potential for a County Managed Waste Management System.

| | |
|---|---|
| Security of Option: | Low to Medium |
| Certainty of Approval: | Medium to High (receiving Municipality may need to amend their Approval(s)) |
| Applicability: | Low: Requires Political Co-operation |
| Environmental Security: | Low to Medium |
| Comparative Cost Range: | |
| Capital Costs: | $500,000 to $1.5 Million (Primarily administrative and legal) |
| Long-term Costs: | $100 to $150/tonne depending on how compensation is provided to Municipalities with significantly greater approved capacities. |
| Lifespan: | Greater than 25 years (depending on site constraints and landfill design) |

### 10.2.6 Municipal Partnership for Development of New Landfill

Based on the information available, the Town of Saugeen Shores has capacity for an additional ±10 to 12 years, which, assuming the Town implements the operational improvements outlined herein, is estimated to be similar to the remaining site life of other local municipal landfill(s). Based on the similar long-term waste management needs, the Town could explore the possibility of a partnership for the development of a new landfill. In order to more efficiently align the landfill closures, the Town may need to consider applying for the landfill expansion (i.e. for less than 40,000 $m^3$), previously discussed.

Once a suitable site has been selected, the process and site development would be the same as for the Town with the same estimated planning period of 5 to 10 years. It is recognized that additional complexities, particularly with site selection, may arise due to the involvement of multiple parties/stakeholders. However, the development of a new landfill with municipal partners can take advantage of economy of scale and result in cost savings for the municipalities involved.

| | |
|---|---|
| Security of Option: | High |
| Certainty of Approval: | Low to Medium |
| Applicability: | Low |
| Environmental Security: | Medium |
| <u>Comparative Cost Range:</u> | |
| Capital Costs: | $6 to $12 Million, split between partners |
| Long-term Costs: | $70 to $140 /tonne estimated: would depend on partnership details |
| Lifespan: | Greater than 25 years (depending on site constraints and landfill design) |

## 10.3 Thermal and Incineration Waste Disposal Options

Thermal and incineration technologies involve the breakdown of waste and production of energy through gasification or combustion. These technologies typically provide a reduction of residual waste in the range of 60% to 95%, depending on the technology. Thermal and incineration technologies are typically effective only at large-scale operations where sufficient feed-stock material (i.e., waste) is available and the feed-stock quality is relatively consistent. This approach is capital intensive since it requires relatively complex infrastructure to conduct operations. Additionally, operation typically requires a greater level of operational expertise and maintenance (relative to landfilling).

This approach is generally considered more environmentally sustainable because of the capture of energy from the waste and the potential reduction of impacts to the environment compared to landfilling. Depending on the specific technology selected, the remaining residual waste may contain high concentrations of metals and require disposal as a designated or hazardous substance. It is important to note that this technology is relatively unproven in Ontario at the full-scale and public debate continues regarding air quality issues from several of the technologies. However, it is noted that the Durham York Energy Centre, which began operations in February 2015, can provide a provincial example of this technology implemented a ‘local’ level. It is noted that this facility cannot accept waste from other municipalities or haulers.

The technologies that that were identified as part of this Study include:

- Incineration (starved air, rotary kiln),
- Fluidized bed/gasification,
- Pyrolysis,
- Plasma gasification,
- Thermo-chemical reduction, and
- Gasification/composting.

Typically, these technologies require a consistent and large amount of waste of (>100,000 tonnes/year) in order to be economically feasible. Based on the waste production of the Town (i.e., less than 10,000 tonnes/year), only the use of an established third-party facility or a partnership with other parties would be a viable option to the Town. It is difficult to assess either of these options since there are limited 'local' operations that could potentially accept the Town's waste and political commitment from potential partners would be required. This area of waste management in Ontario is dynamic with multiple parties involved and concept plans for incineration/thermal facilities on-going.

The planning period for a thermal/incineration system is estimated to be greater than 5 to 10 years.

| | |
|---|---|
| Security of Option: | High |
| Certainty of Approval: | Medium |
| Applicability: | Low |
| Environmental Security: | High |
| Comparative Cost Range: | |
| Capital Costs: | $200 to $400 Million<br>Note: Capital costs for the Durham York Energy Centre (DYEC) were reportedly $284.2 Million ($255 Million for construction and $29 Million for the EA). Construction was completed in 2014. This facility can process up to 140,000 tonnes of residual waste per year. |
| Long-term Costs: | Operational costs are estimated to be in the range of $130/tonne to $150/tonne for a Municipal System, applicable to large-scale operations only. However, operational costs could be offset by the price of third-party wastes accepted and revenues from the sale of electricity and covered metals. The DYEC reportedly recovers an estimated 60% of its annual operating costs from the sale of electricity and metals alone. |
| Lifespan: | Greater than 25 years |

As discussed, this technology is not considered to be a viable option for the Town alone or in partnership with multiple parties. However, opportunities may exist for the Town to contract its residual waste disposal to a 3rd party system. The development of these waste management technologies are ever evolving and should continue to be reviewed as information becomes available. Should a third-party option become available in the future, the feasibility of the option could be evaluated at that time.

## 10.4 Third Party Disposal of Residual Waste

Third party disposal typically involves exporting waste out of the Town through a contractor. Under this system, the waste that a municipality produces is shipped to a transfer facility located within the municipality, waste is then transported and disposed at a third-party facility. As an alternative, waste that a municipality produces can be collected and shipped directly to a third-party facility.

Since this is a third-party system, there is low security with respect to long-term costs and operational controls. However, limited to nil capital costs would be required under this scenario. Costs incurred by the Town would only be for those wastes requiring disposal (i.e. would not have base overhead costs). Based on current rates, it is estimated that this type of system would cost the Township $110 to $160 per tonne at this time. However, as the long-term waste disposal capacity in Ontario continues to decrease, providing fewer residual waste disposal options and increasing the demand, the cost of third-party systems is expected to increase.

The Environmental Security rating to the Town, specifically, would be considered low since there is no waste being placed on municipal lands. However, based on the environmental "footprint" of the waste trucking and general landfill disposal, the Environmental Security rating is considered Low to Medium.

| | |
|---|---|
| Security of Option: | Low |
| Certainty of Approval: | High |
| Applicability: | High |
| Environmental Security: | Low to Medium |
| <u>Comparative Cost Range:</u> | |
| Capital Costs: | Minor |
| Long-term Costs: | $110 to $160/tonne |
| Lifespan: | Dependent on terms of agreement (i.e. contract) |

Within the Southern Ontario region, KMS Peel EFW Facility and the Emerald EFW facility are both operational and are located in Brampton, Ontario, a distance of approximately 200 km from the Town.

## 10.5 Residual Waste Disposal Options Summary

Summarized in **Table 10-1** are the disposal options available to the Town with the estimated costs, and advantages and disadvantages of each option.

**TABLE 10-1: Residual Waste Disposal Options**

| Option | | Description | | Pros | Cons | Planning Period | Budgetary Cost Estimates (2019 Funds) | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Capital | Annual Operating[3] (per tonne) | "Long-Term"[1] (per tonne) |
| Landfill | Town Managed and Operated | Development of Additional Capacity at Existing Landfill Sites (<40,000 $m^3$) | Landfill expansions limited to 40,000 $m^3$ are not subject to the requirements of the Environmental Assessment Act (EAA), therefore landfill expansion at the Southampton Landfill is considered to be a viable short term option for the Town. | - Control of Operation and Management<br>- Low Transport Requirements for Waste<br>- Existing Property with Existing Background Studies<br>- No Municipal Environmental Assessment Required<br>- Relatively Good Environmental Security | - At minimum, requires an updated Plan of Development and Operations<br>- Requires completion of ECA Application and processing fees<br>- Application not guaranteed to succeed<br>- Provides only limited additional capacity. Site life extension dependent on operational efficiencies. | 2 - 4 years | $150,000 to $250,000 | $65 - $90 | $70 - $100 (for the ±4 years of additional capacity achieved) |
| | | Landfill Mining | Landfill mining and processing has the potential to recover materials such as appliances, wood, tires, metals, plastics and fabrics, ultimately in an effort to recover landfill capacity. | - Recovers landfill capacity and reduces landfill mass<br>- Low Transport Requirements for Waste | - Requires ECA approval: odour and leachate management would need to be addressed.<br>- Once the landfill mining process is completed the remaining materials must be landfilled and the landfill area re-graded, re-shaped and closed. | 2 - 4 years | 1.5M to 3.0M | $40 to $70 | $65 to $125 per tonne of additional capacity achieved[5] |
| | | Landfill Expansion (> 40,000 $m^3$) or Development of New Municipal Landfill | The expansion of the existing Southampton Landfill Site or the development of a new landfill, should an appropriate location be established. | - Control of Operation and Management<br>- Low Transport Requirements for Waste<br>- Existing Property with Existing Studies<br>- Existing Property with Existing Studies | - Requires Numerous Studies to Support Development<br>* Would Require Engineered Design and Leachate Treatment Facility<br>**Would likely still require leachate treatment depending on Approval requirements. Provisions for leachate treatment would increase the capital cost.<br>- Possibility of Not "Succeeding" with Application Process<br>- Subject to the Municipal EA Process | 5 - 10 years | **Expansion (top) $1.5M to $5M<br>*Expansion (area) $4M to $10M<br>*New Landfill $6M to $12 M | $70 to $110 | $80 to $150<br>$95 to $175<br>$110 to $190 |
| | Partnerships | Municipal Partnership at Existing Landfill (or Agreement) | Develop a partnership with another Municipality in order to consolidate landfill services or develop an agreement with a nearby Municipality to accept the Town's waste at an existing approved landfill. | - Potential for Low Transport Requirements for Waste<br>- Existing Property with Existing Studies<br>- Consolidation of Operational Costs<br>- No Municipal EA Required<br>- Relatively Good Environmental Security | - Receiving landfill may require ECA Amendment<br>- Potential Loss of Control for Acceptance of Waste<br>- Receiving Municipality may significantly decrease their landfills Site Life | 2 - 5 years | Less than $500,000 | $100 to $150 depending on whether services are consolidated or provided under agreement (i.e. cost per tonne) | |
| | | County Wide Approach to Landfilling at Existing Sites | Explore a 'County-wide' approach to landfill operations in order to achieve potential cost reductions (i.e. landfill operational costs). | - Potential for Low Transport Requirements for Waste<br>- Existing Property with Existing Studies<br>- Consolidation of Operational Costs<br>- No Municipal EA Required<br>- Relatively Good Environmental Security | - Receiving landfills may require ECA Amendments<br>- Loss of Control for Acceptance of Waste<br>- Receiving Municipalities would significantly decrease their landfills Site Life<br>- Possibility of Not "Succeeding" with Agreement Process | 4 - 7 years | $500K to $1.5 M | $100 to $150 depending on how compensation is provided to Municipalities with significantly greater approved capacities. | |
| | | Municipal Partnership or County Wide Approach for the Development of a New Landfill | Planning, Design and Construction of a Landfill Site at a New Location within the County. | - Control of Operation and Management<br>- Potential for Low Transport Requirements for Waste | - Need to locate appropriate site<br>- Requires Numerous Studies to Support Development<br>- Would Likely Require Engineered Design<br>- Requires Commitment From Potential Partners<br>- Requires EA process<br>- Possibility of Not "Succeeding" with Agreement or Application Process | 5 - 10 years | $6M to $12M Split between Partners | $70 to $140 depending on partnership details. | |
| | **Third-Party - Export Residual Waste** | | Delivery waste to a 3rd Party Landfill in Ontario | - Existing Approvals<br>- Existing "Infrastructure" | - Low Security for Long-Term Disposal due to dependence on third-party provider<br>- Low security for long term cost of residual waste disposal (per tonne) | ± 6 months | Minimal | $110 - $160 | |
| Thermal/Incineration Energy from Waste | Municipal System | | Selection, Construction, and Operation of Thermal/Incineration Technology by the Town | - Low Residual Waste Production<br>- Energy Capture<br>- Control of Operation and Management<br>- Low Transport Costs | - Only Applicable to Larger Scale Operations<br>- Approvals Potentially Difficult | > 5 years | $200M to $400M | $40 - $80[2] | Greater than $150[2] |
| | Municipal Partnership | | Partner with other Municipalities to Select, Construct and Operate a Thermal/Incineration Plant | - Low Residual Waste Production<br>- Energy Capture<br>- Control of Operation and Management<br>- Low Transport Costs<br>- Reduced Capital and Operating Due to Partnership | - Requires Large Volumes of Waste to be Cost-Effective<br>Therefore, may require acceptance of waste from other municipalities<br>- Approvals Potentially Difficult<br>- Requires Commitment From Potential Partners | > 5 years | $200M to $400M Split between Partners | $40 - $80 [2] | Greater than $150 [2] |
| | Third Party System | | 1) Existing EFW Facilities in Brampton<br>2) Proposed Thermal Technology Option - Region of Waterloo | - Low Residual Waste Production<br>- Energy Capture<br>- Potential low transportation costs (i.e. Waterloo) | - Loss of Control for Acceptance of Waste<br>- Low Security for Long-Term Disposal<br>- Proposed Local Facility Only at This Time<br>- Existing Facilities in Brampton (200 kilometer transportation) | > 5 Years | Minimal | $110 - $160* | $110 - $160* |

Notes:
1. Long-term costs apply capital to 25 years or total volume of approved landfill at fill rate of 6,075 tonnes per year.
2. Applicable to large-scale operations only. Cost would be dependent on price of third party wastes accepted and revenues from the sale of electricity.
3. Annual tipping fees are not included where Municipality owns the facility. Therefore, tipping fees could help recover the costs.
4. * Costs include collection and transportation and are variable depending on the Town's proximity to the receiving waste facility.
5. Additional capacity assumes waste compaction would be improved.
6. The gross capital costs for the Durham York Energy Centre project amounted to $284.2 million,this included $255 million for construction of the facility and approximately $29 million for the Environmental Assessment, permitting and approvals, site servicing, consulting fees and economic development activities in the host community of Clarington (Ref: https://www.durhamyorkwaste.ca/FAQ/FAQ.aspx#cost).

## 10.6 Residual Waste Disposal Recommendations

In the short-term the Town is considered to be in a fair to good position in terms of landfill capacity and residual waste disposal options at the Southampton Landfill. Based on the current operational practices, the Town has sufficient capacity to provide landfill services for an additional ±10 to 12 years (i.e. until early 2032) at the Southampton Landfill site. However, with the continuation of the previously implemented site controls and in consideration of added operational efficiencies, the Southampton landfill may have sufficient capacity to service the Town beyond 2032. This does not include the potential to expand the capacity by a volume of 40,000 $m^3$, or an additional ±4 years, pending approval. Therefore, at this time it is recommended that to maximize the remaining site life of the landfill, the Town focus efforts on waste diversion and improved operational practices aimed at developing the remainder of the landfill in an effective and efficient manner.

The Town recently confirmed the remaining site life of the landfill via a survey of the entire landfill area. Therefore, a landfill development review and planning process may be considered at this time. Further, depending on both the efficacy of the on-going operations at the Southampton Landfill and the Town's preferred residual waste disposal option(s), the Town may need to initiate the negotiation, application and/or site selection process within the next couple years. In addition, it is recommended that the Town complete an additional comprehensive survey in 5 years in order to confirm the remaining site life of the landfill as it approaches its maximum approved capacity, ensuring that a sufficient planning period is maintained.

Once capacity at the Southampton Landfill is reached, the continued use of this landfill site would provide the Town with the most 'secure' waste management option, as no partnership's or reliance on a third-party would be involved. Additional capacity at the Southampton Landfill Site may be achieved via expansion of the fill area to the north and/or increasing the height of the landfill. However, this would be considered a landfill 'expansion' and would be subject to the EA process, which includes extensive public and agency consultation, therefore ultimate approval of the site cannot be guaranteed. In addition, as part of the approval process further assessment of the geological and hydrogeological conditions would be required and would need to support the development. The hydrogeological assessment(s) would need to be submitted to the Director for review and a decision to grant the amendment would be determined based upon the merits of the submission. Therefore, there is a level of uncertainty associated with the ultimate approval of this option for landfill expansion.

Due to the relatively low population base, the Town is limited by its incoming revenues. Therefore, based on the limited scale of waste production, the development of a new landfill or an Energy for Waste (i.e. incineration and thermal technologies) are not considered to be economically feasible for the Town unless completed in partnership with another Municipality, or group of Municipalities. Negotiations associated with such a partnership are typically time consuming and difficult and are not guaranteed to be successful. However, other municipalities in the area may be in the same position in terms of landfill capacity and residual waste disposal options. As a result, opportunities for the successful development of a new landfill in partnership with one or more local municipalities may exist.

Should the continued use of the Southampton Landfill be determined to be an undesirable or infeasible long-term solution, the Town could investigate opportunities for the development of a new landfill (or the expansion of an existing municipal landfill) in partnership with one or more local municipalities. While we have included the Municipal and County partnership options in this plan, it is recognized that the development of an agreement could be difficult. However, based on the long-term security and potential costs associated with these programs, we recommend that such options be considered at least in a preliminary manner, and be revisited when opportunity arises, such as other area municipalities require waste disposal capacity.

Alternatively, it appears that a 3rd party residual waste disposal option may be the most certain and feasible and would require the least effort. However, as the long-term waste disposal capacity in Ontario continues to decline, providing fewer residual waste disposal options and increasing the demand, the cost of third-party systems is expected to increase. Third-party residual waste disposal options could also be used as a short-term solution

should the planning period for a given waste disposal option extend beyond the site life of the Southampton Landfill site. It is understood that the Region of Waterloo is currently investigating the potential to construct its own Thermal Treatment facility. Based on the Waste Management Report for Waterloo, if the Thermal Treatment facility is built the Region would be open to importing waste from other communities. It is recommended that the Township stay abreast of developments within the waste management sector and the applicability of a third-party system, should one become available.

A summary of the Town's residual waste disposal options and the associated planning process(es) is outlined in **Figure 10-1**.

## New or Expanding Landfill

Initiate Hydrogeological Investigations (Preliminary), Environmental Impact Study (EIS) and Pre-Consultation with the MECP (as applicable) to evaluate the suitability of the Southampton Landfill (or alternate location) to accommodate additional capacity.

Investigations suggest site can support additional capacity.

Update Screening Assessment of 'Alternatives to Waste Disposal Options'

Updated screening assessment indicates that Expansion of the Southampton Landfill, or development of a New Landfill, is Preferred

**Initiate the Environmental Assessment Process, including associated consultations (up to ±5-Years)**

Prepare Terms of Reference for Ministry Review and Approval

**ToR Resubmit**

Minister's Decision: ToR Rejected

Minister's Decision: ToR Accepted
Initiate the Environmental Assessment: Prepare and submit EA Report

Minister's Decision: Approve (with or without conditions)

Environmental Compliance Approval (ECA) Application to MECP, including submission of supporting documents and design drawings

ECA Approval Denied (MECP)

**ECA Approval Issued: PROCEED TO LANDFILL CONSTRUCTION AND USE**

**Purchase Property for New Landfill**

Investigations suggest site cannot support additional capacity.

**2020**

**2 to 3 years**

Updated screening assessment indicates that Expansion of the Southampton Landfill, or development of a New Landfill, is not Preferred.

**Abandon**

## Landfill Partnership or 3rd-Party

Investigate opportunities for a Municipal partnership(s) (i.e. expansion of existing landfill or development of new landfill).

Partnership opportunities are not identified.

Investigate Third-Party disposal options (private and/or municipal).
1. Other approved landfill site; or
2. Thermal/Incineration Facility

Partnership opportunities can be successfully negotiated and alternate site location secured.

Initiate process for new or expanding landfill.

Partnership opportunity reaches an impasse or costs to high to support further work

**Planning Period (up to 10 yrs)**

**FIGURE 10-1**
Long-Term Residual Waste Management Schematic

# 11. PRESENTATION TO COUNCIL

The findings of the Long-Term Waste Management Plan and the proposed recommendations outlined in the Report were presented to Town Staff and Council on August 24th, 2020. Following the discussion of the findings and comments from Council (and Town Staff), the Waste Management Report was finalized. A copy of the presentation is provided in **Appendix D**.

# 12. STUDY SUMMARY AND RECOMMENDATIONS

## 12.1 Study Purpose

The purpose of this Waste Management Plan (WMP) is to provide a "holistic" approach to the Town's waste management program that will provide the support for both short-term and long-term waste management planning purposes. As of the end of 2019, the Town has an estimated ±10 to 12 years of service life for residual waste disposal at the Southampton Landfill Site based on the current waste generation rates for the entire Town (i.e. until ±2032). Considering the available disposal capacity, the Town is considered to be in a fair to moderate position in terms of residual waste disposal security for the planning period of this WMP. Therefore, the main focus of this WMP is on maximizing the site life of the existing landfill through waste diversion and operational improvement opportunities and to evaluate residual waste disposal options with respect to the long-term waste management plan that is most suitable to the Town.

As part of this Study, a review of the performance of the Town's current waste management system, operational practices, and waste diversion initiatives was completed. This information was used to establish baseline waste generation and diversion rates for future assessment of the Town's progress towards meeting the Waste Diversion targets set out in the Waste-Free Ontario Act (i.e. Bill 151). The performance review was also used to develop projections regarding future waste management practices including waste volumes, types, and sources and to identify and assess the technical and financial merits of alternative diversion approaches.

The options investigated as part of this study are presented to the Town to assist in developing a long-term waste management program in consideration of existing policy, legislation, status of waste management practice in Ontario, and the Town-specific waste management practices and production characteristics. Ultimate selection of the options is to be made by the Town with consideration of social, environmental, technical and economic applicability of the options. Presented in the following sections is a summary of the findings, which have been described in more detail within the report.

Where the potential applicability of specific options are considered uncertain, further study may be warranted. Additionally, where waste management options rely on third-parties, further agreements and commitments may be sought to establish applicability. Prior to the selection of any one option, we recommend that continued study and review of the applicability of the option be completed as further information becomes available.

## 12.2 Summary and Recommendations

### 12.2.1 Performance Summary: Waste Generation and Diversion Rates

Based on a detailed breakdown of the waste received and diverted by the Town over a 6-year period (i.e. 2014-2019), the average overall diversion rate currently being achieved is estimated to be about 37.7%. Based on estimates provided herein, it is evident that the tourist industry is having, and will continue to have, a direct effect on the overall waste generation rate for the Town, putting additional strain on its waste management systems particularly during the summer months. Collectively, when the IC&I sector is considered, including tourism, the overall residential diversion is estimated to be approximately 46.6%, of which greater than half can be attributed to the diversion of organics, and with greater than 50% of the total residential waste being landfilled. To achieve the waste diversion targets set out in the Waste-Free Ontario legislation (i.e. 50% by 2030 and 80% by 2050) the Town will be required to make changes to its current waste management systems.

### 12.2.2 Recycling and Waste Diversion Opportunities

To increase the overall success of its existing waste diversion programs, changes to the existing systems and/or greater efforts to encourage, promote and enforce waste diversion could be implemented by the Town. For example, greater diversion from the existing blue box program could be realized in several ways, including accepting a greater range of materials (i.e. cardboard), removing the requirement for the separation of materials (i.e. paper, plastic, glass, etc.) and/or ensuring that the curbside pick up frequency is equivalent to that offered by the Town for residual waste. Further, additional waste diversion opportunities could be explored, ultimately diverting a broader range of materials, such as textiles, bale wrap, and household items by using the existing and/or Town-organized recycling and reuse initiatives.

The distribution of informative materials (i.e. calendars) aimed at promoting existing programs and educating the public should continue to be completed to increase the success of the existing diversion programs and/or ensure the success of new diversion strategies and programs, as they become available. Additional promotional and educational programs could be implemented through various public relations strategies including, but not limited to, kiosks in high traffic areas, pamphlets, mail-outs, website updates and various web-based applications.

The Town would benefit from making changes to the existing waste management and collection systems. Key recommendations include the implementation of a reduced bag limit (from unlimited to 2 bags weekly) and consideration for the use of a clear bag system (with or without a 'privacy' bag). Further, should a bag limit be considered, it is recommended that a bag limit at the landfill be established to be equivalent to that applied to curb-side pick-up. Further, to maintain a larger cost 'gap' between the weekly bag limit and the minimum tipping fee, it is also recommended that the minimum tipping fee be maintained at $10, and possibly increased to $15 (or otherwise, as determined by the Town).

In addition, curb-side pick of blue box materials is currently provided on a bi-weekly basis and curb-side collection of household waste is provided on a weekly basis. To increase the effectiveness of the blue box program, the curb-side collection service for blue box materials should, at minimum, be provided as frequently as the residual waste collection service. Therefore, it is recommended that the Town explore opportunities to offer a curbside pickup service that can be provided at the same frequency for both waste streams. In other words, either offer weekly or bi-weekly collection for both the residual waste and blue box materials.

Comparisons of the estimated diversion of blue box materials being achieved by the Town to other similar municipalities suggests that the Town's blue box program could be more effectively managed. This was identified as having the potential to affect a significant increase in the Town's residential waste diversion rate, estimated to be ±1.5% to 2%. While it is recognized that changing the established blue box program would require collaboration and cooperation between the Town and BASWR, several changes to the service level and collection system could be considered to improve the overall success of this waste diversion initiative. In addition

to the aforementioned curbside pick up services provided, service level and collection system changes could also include one, or several, of the following strategies:

i. During the peak tourist season (i.e. during the summer months), an increased service level particularly for waste from the IC&I sector (i.e. cottages, restaurants etc.) would provide a significant opportunity for achieving increased waste diversion. This could be recognized within the agreement between the Town and the waste collection service provider(s), currently BASWR and Waste Management.

ii. In municipalities where the tourism industry contributes significantly to the economy, additional strain on the waste management systems is experienced. Since blue box programs offered can vary significantly, in terms of the range of materials accepted (i.e. cardboard) and the collection requirements (i.e. mixed versus separated), the blue box program offered by the Town may benefit from a simplified approach. For example, the inclusion of a greater range of blue box materials (i.e. cardboard) and allowance for the materials to be mixed rather than separated.

iii. The recycling totes provided to businesses and the Town's service industry, currently provided by BASWR, are reportedly limited in capacity. It is recommended that the collection vessels provided by the service provider (i.e. BASWR or other) reflect the anticipated volumes. In other words, large campgrounds should ensure that they have the option to collect recyclables in disposal bins rather than 95-gallon containers.

### 12.2.3 Organics Diversion

In general, an effective and extended 'Source Separated Organics Collection' program (aka. Green Bin) has the potential to significantly reduce waste disposal in landfills. Based on the information available, it is estimated that an additional 10% to 20% waste diversion can be achieved with this option. Therefore, it is thought that the eventual implementation of SSO programs will be required for Municipalities to meet the waste diversion targets set out in the Waste-Free Ontario legislation. Accordingly, the province has reportedly committed to eventually banning food waste from disposal to increase diversion of organic waste and decrease greenhouse gas emissions. Based on the cost estimates completed as part of the Study, the collection, transportation and disposal fees for SSO would be in the range of $35 to $85 annually per household or the equivalent of greater than $400 per tonne. Ultimately, the actual cost would be dependent on the desired level of service, the type of facility and the potential for cooperation with other municipalities. Therefore, although it is likely that consideration for a Green Bin program will eventually be necessary for the Town to meet the Provinces waste diversion targets, the Town may consider further promoting backyard composting until such a time that the Green Bin Program becomes a more viable and/or necessary option. At this time, the pursuit of this collection service by the Town would require an increased level of investment and community support.

### 12.2.4 Operational Practices

Due to the costs associated with expanding or new landfills, or alternative disposal methods (e.g., exporting waste, incineration, etc.), it is important to manage the remaining capacity at the Southampton Landfill effectively and efficiently to maximize the Town's waste disposal security and capitalize on the relatively low waste management costs for as long as possible. The most effective methods to maximize and/or extend the life of a landfill and associated recommendations for the Town include the following:

1. Landfill Development Planning:
   To ensure full capacity is achieved, landfill design and operations should be consistent with that outlined in the Design and Operations report. As a site approaches capacity, it is typically recommended that an interim review of the landfill development plan be completed to update (or confirm) the remaining capacity at the Site and to plan an approach to efficiently use the remaining landfill capacity. Therefore, it is recommended that the Town complete a development plan for the remaining capacity in the near future.

2. Landfill Records and Oversight:
   In order to effectively evaluate the performance of the Town's waste management system and waste diversion initiative's, it is important that good records be collected documenting incoming and outgoing waste volumes and materials. At this time, the Town has successfully developed a system to effectively track the quantity and types of materials accepted at the Southampton Landfill Site.

   However, it is recommended that the development of a larger consolidated and enhanced waste receiving and transfer area that can effectively manage the incoming traffic volumes, all year round, be considered to further aid in the oversight, promotion and encouragement of waste disposal and segregation. Due to the volume of traffic experienced during the peak tourist season, the maintenance of an additional weigh scale for outgoing traffic to avoid congestion should be part of this plan. The development of a waste receiving and transfer area would require the preparation of design drawings and an application to Amend the existing Approval for the site.

3. Staffing:
   The success of the waste diversion opportunities offered by the Town, and overall landfill operations, is dependent on adequate and trained staff. The proposed waste receiving and transfer area would benefit from having a trained attendant, particularly at peak times, assigned to the oversight of the area, providing clear direction to the public and ensuring waste is properly segregated.

4. Landfill Compaction:
   Continued, and/or improved, effective use of compaction and grinding equipment could extend the life of the Southampton Landfill site. Increased compaction, allowing for more waste to be deposited in a given volume, can potentially be realized using the existing equipment. This can be achieved by increasing the number of passes over the waste or applying thinner layers of waste and cover material being compacted.

### 12.2.5 Residual Waste Management Options

In terms of the management of the Town's residual waste, in consideration of the landfill capacity and residual waste disposal options at the Southampton Landfill, the Town is considered to be in a relatively good position in the short-term. Based on the current operational practices, the Town has sufficient capacity to provide landfill services for an additional ±10 to 12 years (i.e. until ±2032). However, with the implementation of improved site controls, such as the development of an improved waste receiving and transfer area, further improved landfill operations and increased waste diversion, the site life of the landfill may be extended. The maximization of the existing capacity will defer the requirement to assess alternative waste disposal options (i.e. the planning period is typically 5 to 10 years prior to Site closure for most options).

Once capacity at the Southampton Landfill is reached, the continued use of the landfill could provide the Town with the most 'secure' waste management option, as no partnership's or reliance on a third-party would be involved. Additional capacity at the Southampton Landfill Site may be achieved via expansion of the fill area in a general northerly direction and/or increasing the height of the landfill. As part of the approval process, the continued use of the existing landfill would require further assessment of the geological and hydrogeological conditions. The hydrogeological assessment(s) would need to support further development and would be submitted to the MECP for review and approval. Based on the potential outcome of EA process, there is a level of uncertainty associated with the ultimate approval of this residual waste disposal option, more specifically the expansion of the existing landfill sites.

Should the continued use of the Southampton Landfill be determined to be undesirable or infeasible, the Town could investigate opportunities for the development of a new landfill (or the expansion of an existing municipal landfill) in partnership with one or more local municipalities. While we have included the Municipal and County partnership options in this plan, it is recognized that the development of an agreement could be difficult. However, based on the long-term security and potential costs associated with these programs, we recommend that such options be considered at least in a preliminary manner, and be revisited when opportunity arises, such as other area municipalities require waste disposal capacity.

Alternatively, it appears that a 3rd party residual waste disposal option may be the most certain and feasible and would require the least effort. However, as the long-term waste disposal capacity in Ontario continues to decline, providing fewer residual waste disposal options and increasing the demand, the cost of third-party systems is expected to increase. Third-party residual waste disposal options could also be used as a short-term solution should the planning period for a given waste disposal option extend beyond the site life of the Southampton Landfill site. It is recommended that the Town stay abreast of developments within the waste management sector and the applicability of a third-party system, should one become available.

### 12.2.6 Summary of Recommendations

In light of the information provided in this study, we recommend that the Town review their diversion targets, implementation timeframe, and budget to select the options they wish to pursue. Although recommendations have been provided herein, only the Town can decide what programs they wish to implement and what level of resources are available to implement the programs. Based on the review of the information collected as part of this study, the recommendations that are considered to be most applicable to the Town at this time have been summarized in **Table 12-1**. Specific information regarding each recommendation and other options available are provided within the body of this report.

**TABLE 12-1: Summary of Recommendations**

| CATEGORY | Implementation Timeframe | RECOMMENDATION |
|---|---|---|
| Waste Collection / Reduction / Diversion and Waste Reduction Strategy | Annually | Evaluate Residual Waste Collection Options and Incentive Programs, Identify Potential Areas for Improvement and Develop a Plan for Implementation |
| | | Update Promotion and Public Education Programs based on Implemented and/or Approved Changes (i.e. maintain distribution of Environmental Calendar) |
| | | Training of Key Program Staff |
| | | Explore Additional Waste Diversion Streams |
| | Short-term | ☆ Implement a curbside pickup service that is offered at the same frequency for both waste streams. In other words, either weekly or bi-weekly collection of residual waste and blue box recyclables.<br>☆ Maintain the partial pay-per-use system for curb-side waste (i.e. bag tags).<br>☆ Consider imposing a bag limit (i.e. 2 bags per week).<br>☆ Consider the implementation of a Clear Bag policy (with or without a 'privacy' bag).<br>☆ Explore opportunities to expand the blue box materials accepted.<br>☆ Complete a waste diversion audit to help further reduce the volume of waste by strengthening the existing programs and identifying new waste diversion programs and/or opportunities. This is consistent with the Towns Strategic Plan, 2017.<br>☆ Maintain the program for home composters and/or digesters (at cost, or less).<br>☆ The Town may consider providing a direct link on their website to a bale wrap pick-up service directly from the source, when available.<br>☆ Tires have transitioned to the IPR framework. The Town has registered with a PRO for tires. However, the Town will need to register for other diversion items as they are transitioned.<br>☆ As the tourism industry is estimated to account for a significant portion of the waste currently processed by the Town, opportunities to improve diversion from this industry should be explored (i.e. blue box initiatives).<br>☆ Consider additional waste diversion opportunities, as they become available. |
| | Long-term | Evaluate SSO Collection System |
| Residual Waste | Short-term | ☆ Operational Practices at Southampton Landfill<br>☆ Increase Compaction, as practicable<br>☆ Review and Understand the Landfill Design<br>☆ Development of 'Future Development Plan' to most efficiently use the remaining capacity at the Southampton Landfill and confirm the Site Life.<br>☆ Evaluate Staffing Needs and Complete Staff Training |
| | | ☆ Maintain or Update Tipping Fee Schedule at the Southampton Landfill: Bag limit of 2 bags and minimum tipping fee of $10 to $15 (or otherwise, as determined by the Town). |
| | | ☆ **Initiate planning of an improved consolidated and enhanced Waste Receiving and Transfer Area at the Southampton Landfill (i.e. Design and Drawings).** |
| | | ☆ Confirmation of the Planning Period: Completion of a survey of the entire landfill area to confirm the remaining capacity and site life. This was completed in January 2020; another comprehensive survey is recommended for 2025. |
| | | ☆ Confirm Town's preferred long-term residual waste disposal option for post landfill closure and initiate studies and/or negotiations. |
| | Within 2 Years | ☆ Complete Construction of the Waste Receiving and Transfer Area at Southampton Landfill.<br>☆ Continue to review and update the tipping fee schedule.<br>☆ Continue to re-evaluate post-closure residual waste disposal options (Figure 12-1). |

| CATEGORY | Implementation Timeframe | RECOMMENDATION |
|---|---|---|
| Residual Waste | Every 5 to 7 Years | Complete a detailed topographic survey of the entire landfill area to help evaluate the effectiveness of the changes to operational practices (i.e. compaction) and waste diversion efforts. Detailed survey data can also be used to update the Site Life estimate and provide the needed accuracy to ensure that the evaluation of the post-closure residual waste management options is completed within the applicable time-frame. |
| Monitoring and Continual Improvement | On-going | Monitor Programs to Compare Benchmarks to Targets/Goals |
| | | Review Program Initiatives and Update Based on Results of Monitoring |
| | | Stay Abreast of Diversion and Waste Disposal Options, including those with Neighbouring Communities |
| Fiscal Responsibility | On-going | In 2015, a 'Waste Management User Fee' levy was imposed. This levy is currently being transferred into an 'expansion reserve'. In consideration of the costs associated with future residual waste management planning, this levy should be maintained. |

## 13. IMPLEMENTATION, MONITORING AND CONTINUAL IMPROVEMENT

Once program initiatives have been implemented and established, it is important to monitor the performance of the initiatives against the established base line performance of the current system provided herein. This information is gathered through the weigh scale data collected by the Town, recycling tonnages reported by BASWR, tonnages reported by various contractors (i.e. scrap metal, WEEE, Tires, etc.) and waste manifests. In order to effectively review and evaluate the Town's landfilling rate, waste diversion rates and the Town's progress towards meeting the Waste Diversion targets set out in the Waste-Free Ontario Act, weigh scale data should continue to be accurately recorded and other diversion quantities should also be monitored and recorded. In addition, it is recommended that the residual waste generation rate and landfill capacity continue to be measured annually through the comparative topographic surveys. Additional diversion initiatives would also need to be monitored and incorporated into the performance evaluations, as they become available.

As indicated by the acceptance of the Waste-Free Ontario Act (2016), which includes a plan to implement legislation that will work towards systematically reducing the volume of waste with the intention to achieve short-term and long-term diversion goals, the Provincial waste management strategies are currently in a dynamic state, continually changing and evolving. Consequently, it is important for the Town to stay abreast of the new regulations and guidelines related to waste diversion and waste disposal, as they are implemented. Several factors including, but not limited to, the transitioning of existing waste diversion programs and the availability of third-party systems may influence some of the longer-term residual waste management recommendations provided herein. Therefore, it is recommended that a review of the findings of this Waste Management Plan be completed at least every 5-years.

Respectfully submitted,

GM BLUEPLAN ENGINEERING LIMITED

Per:



Matthew Nelson, P.Eng., P.Geo.
Project Manager, Partner

# 14. REFERENCES


### Government of Canada

- Environment Canada
- Statistics Canada EnviroStats Article: Composting by Households in Canada (by Iman Mustapha, July 2013)
- Statistics Canada Census Profiles (1996, 2001, 2006, 2011 and 2016)

### Province of Ontario

- Ministry of the Environment, Conservation and Parks (MECP)
  - Environmental Protection Act (EPA)
  - Environmental Assessment Act (EAA)
  - Waste Diversion Act (WDA)
  - Waste-Free Ontario Act (WFO): Proclaimed on November 30, 2016 and consisting of two key pieces of legislation:
    - Resource Recovery and Circular Economy Act (RRCEA)
    - Waste Diversion and Transition Act (WDTA)
  - Policy Statement on Waste Management Planning: Best Practices for Waste Managers (June 12, 2007)
  - A Guide to Source Separation of Recyclable Materials for Industrial, Commercial and Institutional Sectors and Multi-Unit Residential Buildings (November 8, 2007)
  - Made in Ontario Environment Plan: Reducing Litter and Waste in Our Communities: Discussion Paper (April 2019)
- Office of the Auditor General of Ontario: 2010 Annual Report
- Other
  - Residential 'Generally Accepted Principles' (GAP)
  - Blue Box Program Enhancement and Best Practices Assessment Project Vol. 1 and Vol. 2 (July 2007)
  - Waste Electrical & Electronic Equipment Program Plan (July 10, 2009)
  - Municipal Hazardous or Special Waste Program Plan (November 26, 2007)
- Resource Productivity and Recovery Authority (RPRA)
  - Information on Website, including Municipal Datacall
  - https://www.ontario.ca/page/strategy-waste-free-ontario-building-circular-economy

### County of Bruce

- Official Plan
- Website
- Bruce County Committee Report (March 21, 2019)
- Bruce County Status of Waste Management Reports (2016 and 2017)
- Explore the Bruce: Economic Impact of Tourism 2018

### Township of Saugeen Shores

- Town of Saugeen Shores: Official Plan (Consolidated March 2014)
- Town of Saugeen Shores: Waste Disposal Site – Yearly Disposal Records (2014 to 2019)
- Landfill Reports for the Southampton Landfill Site and the Port Elgin Landfill Site, including Development and Operations Plans and Annual Reports
- Town of Saugeen Shores: Corporate Strategic Plan (MDB Insight, 2007)
- 2019 Development Charges Background Study & By-Law – Draft Growth Projections. DFA Infrastructure International Inc. (June 6,2019, revised February 2020)
- Town Website and Staff Input

### Surrounding Municipalities

- Municipal Websites
- Information Available on Various Websites
- Region of Waterloo Waste Management Master Plan: Final Master Plan Report (Golder Associates: November 2013)

### Bruce Area Solid Waste Recycling

- Town specific blue box diversion tonnages
- Various handouts provided on the website

### Other

- Eilrich, Doeksen and VanFleet, 2002. An Economic Analysis of Landfill Costs to Demonstrate the Economies of Size and Determine the Feasibility of a Community Owned Landfill in Rural Oklahoma.
- Long Term Waste Management Strategy and Executive Summary for Dufferin County (March 2018): https://www.dufferincounty.ca/sites/default/files/waste/LTWMS-Executive-Summary-final.pdf
- Durham York Region Energy Centre Website: https://www.durhamyorkwaste.ca/

# APPENDIX A:
# ENVIRONMENTAL COMPLIANCE APPROVALS
# (PORT ELGIN WASTE DISPOSAL SITE)

**CONTENT COPY OF ORIGINAL**

Ontario

**Ministry of the Environment** **Ministère de l'Environnement**

*AMENDED PROVISIONAL CERTIFICATE OF APPROVAL*
*WASTE DISPOSAL SITE*
*NUMBER A273102*

The Corporation of the Town of Saugeen Shores
PO Box 820
Port Elgin, Ontario
N0H 2C0

Site Location: Port Elgin Landfill
Lehnen Street
Saugeen Shores Town, County of Bruce

*You have applied in accordance with Section 27 of the Environmental Protection Act for approval of:*

*use and operation of a 2.35 hectares landfilling site within a total area of 23.9 hectares located at:*

1. In the former Town of Port Elgin, County of Bruce, being part of Block A Plan 47 and part of Lot 12, Concession 9 and designated as Parts 1, 2, 3, 4, 5, 6, and 7 on Plan 3R-3243; and

2. those parts of Block A Plan 47 and that part of Lot 10, Concession 9, all in the former Town of Port Elgin which lie outside the "outline of actual landfilling area" shown on drawing No. 7733-503 prepared by Henderson Paddon & Associates Ltd. dated December 22, 1982, but inside the "outer limit of 500 ft. buffer for methane venting" shown on the said drawing, except those parts already hereinbefore mentioned which are designated as Parts 1 to 7 inclusive on Plan 3R-3243.

*all in accordance with the plans and specifications listed in Schedule "A" of this Certificate which includes the use of site for the disposal of the following type of waste (NOTE: Use of the site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval):* **domestic, commercial, and solid non-hazardous industrial wastes;**

*and subject to the following conditions:*

*For the purpose of this Certificate of Approval and the terms and conditions specified below, the following definitions apply:*

"*Certificate*" means this entire provisional Certificate of Approval document, issued in accordance with section 39 of the *EPA*, and includes any schedules to it, the application and the supporting documentation listed in schedule "A;

"*Director*" means any *Ministry* employee appointed in writing by the Minister pursuant to section 5 of the EPA as a Director for the purposes of Part V of the EPA;

"*District Manager*" means the District Manager of the local district office of the Ministry in which the Site is geographically located;

"*EPA*" means *Environmental Protection Act*, R.S.O. 1990, c. E. 19, as amended;

"*Ministry*" means the Ontario Ministry of the Environment;

"*Operator*" has the same meaning as "operator" as defined in s.25 of the *EPA*;

"*Owner*" means The Corporation of the Town of Saugeen Shores and its successors and assigns;

"*PA*" means the *Pesticides Act*, R.S.O. 1990, c. P-11, as amended from time to time;

"*Provincial Officer*" means any person designated in writing by the Minister as a provincial officer pursuant to section 5 of the *OWRA* or section 5 of the *EPA* or section 17 of *PA*.

"*Regional Director*" means the Regional Director of the local Regional Office of the Ministry in which the Site is located.

"*Regulation 232*" or "*Reg. 232*" means Ontario Regulation 232/98 (New Landfill Standards) made under the *EPA*, as amended from time to time;

"*Regulation 347*" or "*Reg. 347*" means Regulation 347, R.R.O. 1990, made under the *EPA*, as amended from time to time;

"*Site*" means the entire waste disposal site, including the buffer lands,[and contaminant attenuation zone] located at at Port Elgin Landfill Site, Lehnen Street, Saugeen Shores Town, County of Bruce, approved by this *Certificate*.

*You are hereby notified that this approval is issued to you subject to the terms and conditions outlined below:*

**TERMS AND CONDITIONS**

**General**

1. The *Site* shall be properly operated and maintained at all times all in accordance with Application for a Provisional Certificate of Approval for a Waste Disposal Site dated July 27, 1982, and the plans and specifications listed in Schedule "A". All waste shall be managed and disposed of in accordance with the *EPA*, *Regulation 347*, and the requirements of this *Certificate.* At no time shall the discharge of a contaminant that causes or is likely to cause an adverse effect be permitted.

2. The *Owner* shall ensure that any person authorized to carry out work on or operate any aspect of the *Site* is notified of the *Certificate* and the conditions herein and shall take all reasonable measures to ensure the person complies with the same.

3. Any person authorized to carry out work on or operate any aspect of the *Site* shall comply with the conditions of this *Certificate*.

4. The issuance of, and compliance with, this *Certificate* does not:

a. relieve any person of any obligation to comply with any provision of the *EPA* or any other applicable statute, regulation or other legal requirement; or

b. limit in any way the authority of the *Ministry* to require certain steps be taken or to request that any further information related to compliance with this *Certificate* be provided to the *Ministry*;

unless a provision of this *Certificate* specifically refers to the other requirement or authority and clearly states that the other requirement or authority is to be replaced or limited by the this *Certificate*.

5. The *Owner* and *Operator* shall take all reasonable steps to minimize and ameliorate any adverse effect or impairment of water quality resulting from the operation of the *Site*, including such accelerated or additional monitoring as may be necessary to determine the nature of the effect or impairment.

6. Despite fulfilling the obligation imposed by this Certificate, the *Owner* or *Operator* remain responsible for any contravention of any other condition of this *Certificate* or any applicable statute, regulation, or other legal requirement resulting from any act or omission that caused the adverse effect or impairment of water quality.

7. Any information requested by the *Director* or a *Provincial Officer* concerning the *Site* and its operation under this *Certificate*, including but not limited to any records required to be kept by this *Certificate* shall be provided in a timely manner.

8. The receipt of any information by the *Ministry* or the failure of the *Ministry* to prosecute any person or to require any

person to take any action, under this *Certificate* or under any statute, regulation or subordinate legal instrument, in relation to the information, shall not be construed as:

a. an approval, waiver, or justification by the *Ministry* of any act or omission of any person that contravenes any condition of this *Certificate* or any statute, regulation or other subordinate legal requirement; or
b. acceptance by the *Ministry* of the information's completeness or accuracy.

9. Where there is a conflict between a provision of any document, including the application, referred to in this *Certificate*, and the conditions of this *Certificate,* the conditions in this *Certificate* shall take precedence.

10. Where there is a conflict between the application and a provision in any documents listed in Schedule "A", the application shall take precedence, unless it is clear that the purpose of the document was to amend the application and that the *Ministry* approved the amendment.

11. Where there is a conflict between any two documents listed in Schedule "A", other than the application, the document bearing the most recent date shall take precedence.

12. The conditions of this *Certificate* are severable. If any condition of this *Certificate*, or the application of any condition of this *Certificate* to any circumstance, is held invalid or unenforceable, the application of such condition to other circumstances and the remainder of this *Certificate* shall not be affected thereby.

**No Transfer or Encumbrance**

13. No portion of this *Site* shall be transferred or encumbered prior to or after closing of the *Site* unless the *Director* is notified in advance and is satisfied with the arrangements made to ensure that all conditions of this *Certificate* will be carried out and that sufficient financial assurance is deposited with the *Ministry* to ensure that these conditions will be carried out.

**Change of Owner**

14. The *Owner* shall notify the *Director*, in writing, and forward a copy of the notification to the *District Manager*, within 30 days of the occurrence of any changes in the following information:
a. the ownership of the *Site*;
b. the Operator of the *Site*;
c. the address of the *Owner* or *Operator*;
d. the partners, where the *Owner* or *Operator* is or at any time becomes a partnership and a copy of the most recent declaration filed under the *Business Names Act*, R. S. O. 1990, c. B.17, shall be included in the notification;
e. the name of the corporation where the *Owner* or *Operator* is or at any time becomes a corporation, other than a municipal corporation, and a copy of the most current information filed under the *Corporations Information Act*, R. S. O. 1990, c. C.39, shall be included in the notification.

15. In the event of any change in the ownership of the works, other than a change to a successor municipality, the *Owner* shall notify in writing the succeeding owner of the existence of this *Certificate*, and a copy of such notice shall be forward to the *Director* and *District Manager*.

**Inspections**

16. No person shall hinder or obstruct a *Provincial Officer* from carrying out any and all inspections authorized by the *OWRA*, the *EPA*, or the *PA*, of any place to which this *Certificate* relates, and without limiting the foregoing:
a. to enter upon the premises where the approved works are located, or the location where the records required by the conditions of this *Certificate* are kept;
b. to have access to, inspect, and copy any records required to be kept by the conditions of this *Certificate*;
c. to inspect the *Site,* related equipment and appurtenances;
d. to inspect the practices, procedures, or operations required by the conditions of this *Certificate*; and
e. to sample and monitor for the purposes of assessing compliance with the terms and conditions of this *Certificate* or the *EPA*, the *OWRA* or the *PA*.

**Signage**

17. A sign shall be installed and maintained at the main entrance/exit to the *Site* on which is legibly displayed the following

information:
a. the name of the *Site* and *Owner*;
b. the number of the Certificate;
c. the name of the *Operator;*
d. the normal hours of operation;
e. the allowable and prohibited waste types;
f. the telephone number to which complaints may be directed;
g. a twenty-four (24) hour emergency telephone number (if different from above); and
h. a warning against dumping outside the *Site*.

## Operation

**Proper Operation**
18. a. The *Site* shall be operated and maintained such that the vermin, vectors, dust, litter, odour, noise and traffic do not create a nuisance.

b. The *Owner* shall establish a daily litter inspection program. Any litter discovered shall be collected on an as needed basis.

19. Burning of waste, clean wood and or brush at the *Site* is prohibited.

20. The highest point of landfill shall not exceed 750 feet elevation a.s.l.

21. The *Operator* shall develop and implement a program to inspect waste to ensure that the waste is of a type approved for acceptance under this *Certificate*.

22. Only waste that is generated in Town of Saugeen Shores (former Towns of Port Elgin and Southampton, and former Township of Saugeen) shall be accepted at the *Site***.**

23. In the area of the methane gas buffer lying west of Lehman Street, no construction of buildings and structures will be permitted unless they are (1) underground public utilities or (2) buildings or structures accessory to a park or playground and which are approved by the *Director*.

**Cover**
24. Cover material shall be applied as follows:

a. Daily Cover - At the end of each working day, on an as needed basis, the entire working face shall be covered with a minimum thickness of 150 mm of soil cover or an approved thickness of alternative cover material for which *Director's* approval has been obtained prior to it use;

b. Intermediate Cover - In areas where landfilling has been temporarily discontinued for six (6) months or more, a minimum thickness of 300 mm of soil cover or an approved thickness of alternative cover material, for which *Director's* approval has been obtained prior to its use, shall be placed; and

c. Final Cover - In areas where landfilling has been completed to final contours, a minimum 750 mm thick layer of final cover soil shall be placed. Fill areas shall be progressively completed and rehabilitated as landfill development reaches final contours.

**Site Security**
25. During nonoperating hours, the *Site* entrance and exit gates shall be locked and the *Site* shall be secured against access by unauthorized persons.

**Employees and Training**
26. A training plan for all employees that operate any aspect of the site shall be developed and implemented by the *Operator*. Only trained employees shall operate any aspect of the *Site* or carry out any activity required under this *Certificate*. For the purpose of this *Certificate* "trained" means knowledgeable either through instruction or practice in:

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a. the relevant waste management legislation, regulations and guidelines;
b. major environmental concerns pertaining to the waste to be handled;
c. the proper handling of wastes;
d. the management procedures including the use and operation of equipment for the processes and wastes to be handled;
e. the emergency response procedures;
f. the specific written procedures for the control of nuisance conditions; and
g. the requirements of this *Certificate*.

**Daily Inspections and Log Book**

27. An inspection of the entire *Site* and all equipment on the *Site* shall be conducted each day the *Site* is in operation to ensure that the site is being operated in compliance with this *Certificate*. Any deficiencies discovered as a result of the inspection shall be remedied immediately, including temporarily ceasing operations at the *Site* if needed.

28. A record of the inspections shall kept in a daily log book that includes:
a. the name and signature of person that conducted the inspection;
b. the date and time of the inspection;
c. the list of any deficiencies discovered;
d. The recommendations for remedial action; and
e. the date, time and description of actions taken.

29. A record shall be kept in the daily log book of all refusal of waste shipments, the reason(s) for refusal, and the origin of the waste, if known.

**Complaints Procedure**

30. If at any time, the *Owner* receives complaints regarding the operation of the *Site*, the *Owner* shall respond to these complaints according to the following procedure:

a) The *Owner* shall record and number each complaint, either electronically or in a log book, and shall include the following information: the nature of the complaint, the name, address and the telephone number of the complainant if the complainant will provide this information and the time and date of the complaint;

b) The *Owner*, upon notification of the complaint, shall initiate appropriate steps to determine all possible causes of the complaint, proceed to take the necessary actions to eliminate the cause of the complaint and forward a formal reply to the complainant; and

c) The *Owner* shall complete and retain on-site a report written within one (1) week of the complaint date, listing the actions taken to resolve the complaint and any recommendations for remedial measures, and managerial or operational changes to reasonably avoid the recurrence of similar incidents.

**Daily Records**

31. Waste and *Site* inspection records shall be prepared on a daily basis and shall include the following information:

a. the type, date and time of arrival, hauler, and quantity (tonnes) of all waste and cover material received at the *Site*;
b. the area of the *Site* in which waste disposal operations are taking place;
c. a calculation of the total quantity (tonnes) of waste received at the *Site* during each operating day and each operating week;
d. the amount of any leachate removed, or treated and discharged from the *Site*;
e. a record of litter collection activities and the application of any dust suppressants;
f. a record of the daily inspections; and
g. a description of any out-of-service period of any control, treatment, disposal or monitoring facilities, the reasons for the loss of service, and action taken to restore and maintain service.

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**Annual Monitoring and Reporting**

32. The *Owner* shall ensure that the established groundwater, surface water and landfill gas monitoring programs are continued at the Site. The monitoring programs may be amended from time to time to include any information that the *District Manager* or the *Regional Director* may request.

33. An annual monitoring report on the development, operation and monitoring of the *Site*, shall be completed by a qualified professional and submitted to the *District Manager* on April 30th of each year. The report shall include the following:
a. the results and an interpretive analysis of the results of all leachate, groundwater, surface water and landfill gas monitoring, including an assessment of the need to amend the monitoring programs;
b. a statement as to compliance with Ministry Reasonable Use Guideline B-7;
c. an assessment of the operation and performance of all engineered facilities, the need to amend the design or operation of the *Site*, and the adequacy of and need to implement any contingency plans;
d. *Site* plans showing the existing contours of the *Site;* areas of landfilling operation during the reporting period; areas of intended operation during the next reporting period; areas of excavation during the reporting period; the progress of final cover, vegetative cover, and any intermediate cover application; previously existing site facilities installed during the reporting period; and *Site* preparations and facilities planned for installation during the next reporting period;
e. calculations of the volume of waste, daily and intermediate cover, and final cover deposited or placed at the *Site* during the reporting period and a calculation of the total volume of *Site* capacity used during the reporting period;
f. a calculation of the remaining capacity of the *Site* and an estimate of the remaining *Site* life;
g. a summary of the weekly, maximum daily and total annual quantity (tonnes) of waste received at the *Site*;
h. a summary of any complaints received and the responses made;
i. a discussion of any operational problems encountered at the *Site* and corrective action taken;
j. a report on the status of all monitoring wells and a statement as to compliance with Ontario Regulation 903; and
k. any other information with respect to the *Site* which the *Regional Director* may require from time to time.

**Site Closure**

34. At least one (1) year prior to the anticipated date of closure of this *Site*, the *Owner* shall submit to the *Director* for approval, with copies to the *District Manager*, a detailed site closure plan pertaining to the termination of landfilling operations at this *Site*, post-closure inspection, maintenance and monitoring, and end use. The plan shall include the following:

a. a plan showing *Site* appearance after closure;
b. a description of the proposed end use of the *Site*;
c. a descriptions of the procedures for closure of the *Site,* including:

    i. advance notification of the public of the landfill closure;
    ii. posting of a sign at the *Site* entrance indicating the landfill is closed and identifying any alternative waste disposal arrangements;
    iii. completion, inspection and maintenance of the final cover and landscaping;
    iv. *Site* security;
    v. removal of unnecessary landfill-related structures, buildings and facilities; and
    vi. final construction of any control, treatment, disposal and monitoring facilities for leachate, groundwater, surface water and landfill gas;
    vii. a schedule indicating the time-period for implementing sub-conditions i) to vi) above.

d. descriptions of the procedures for post-closure care of the *Site*, including:

    i. operation, inspection and maintenance of the control, treatment, disposal and monitoring facilities for leachate, groundwater, surface water and landfill gas;
    ii. record keeping and reporting; and
    iii. complaint contact and response procedures;

e. an assessment of the adequacy of and need to implement the contingency plans for leachate and methane gas;
f. an updated estimate of the contaminating life span of the *Site*, based on the results of the monitoring programs to date.

**The following items form Schedule "A" of this Certificate:**

1. Application for Approval of a Waste Disposal Site dated July 27, 1982.

2. Report entitled "Hydrogeologic Impact Assessment- Proposed Landfill Extension Town of Port Elgin" dated April 1981- Final prepared by Morrison Beatty Ltd.

3. Report entitled "Town of Port Elgin Sanitary Landfill Site" Project 7733 dated June 1982 prepared by Henderson Paddon & Associates Ltd.

4. Report entitled "Town of Port Elgin Sanitary Landfill Site Extension Addendum Reply to Ministry of the Environment Comments" Project 7733 dated December 1982 prepared by Henderson Paddon & Associates Ltd.

5. Plans prepared by Henderson Paddon & Associates Ltd. as follows:

Title Drawing No. Date Revision Date
General Site Plan 7733-3 July 30/81 June 8/82

Proposed Final Grading of 7733-4 June 7/82
Existing Sanitary Landfill Site

Existing Contours Landfill Extension 7733-5 June 24/82

Landfill Extension Construction Details 7733-6 June 24/82 Jan 7/83

Landfill Extension Final Contours 7733-6 June 24/82 Dec 10/82, Jan 7/83

Phase I Through V Section A-A and B-B 7733-8 June 24/82 Jan 7/83

Miscellaneous Details 7733-9 June 24/82

Property Divisions within 500 foot buffer 7733-502 Dec.22/82
for methane venting

6. Application for a Provisional Certificate of Approval for a Waste Disposal Site dated September 18, 2002, for a change of name and service area, with supporting documentation entitled " Landfill Consolidation Study, Town of Saugeen Shores", prepared by Stantec Consulting Ltd., dated September 1999.

7. Letter and attachments from Mr. Gord Eagles, Township of Saugeen Shores, to Nafiseh Pourhassani, MOE, dated September 29, 2003, in response to MOE comments.

*The reasons for the imposition of these terms and conditions are as follows:*

1. The reason for Condition 1 is to ensure that the Site is designed, operated, monitored and maintained in accordance with the application and supporting documentation submitted by the Owner, and not in a manner which the Director has not been asked to consider.

2. The reason for Conditions 2 - 12 is to clarify the legal rights and responsibilities of the Owner under this Certificate of Approval.

3. The reasons for Condition 13 are to restrict potential transfer or encumbrance of the Site without the approval of the Director and to ensure that any transfer of encumbrance can be made only on the basis that it will not endanger compliance with this Certificate of Approval.

4. The reasons for Conditions 14 and 15 are to ensure that the Site is operated under the corporate name which appears on the application form submitted for this approval and to ensure that the Director is informed of any changes.

5. The reason for Condition 16 is to ensure that appropriate Ministry staff have ready access to the Site for inspection of facilities, equipment, practices and operations required by the conditions in this Certificate of Approval. This condition is supplementary to the powers of entry afforded a Provincial Officer pursuant to the EPA and OWRA.

6. The reason for Conditions 22 is to specify the approved areas from which waste may be accepted at the Site and the types and amounts of waste that may be accepted for disposal at the Site, based on the Owner's application and supporting documentation.

7. The reason for Conditions 20 and 23 is to specify restrictions on the extent of landfilling activities at this Site based on the Owner's application and supporting documentation.

8. The reason for Condition 17 is to ensure that users of the Site are fully aware of important information and restrictions related to Site operations under this Certificate of Approval.

9. The reason for Conditions 25 and 26 is to ensure that the Site is supervised and operated by properly trained staff in a manner which does not result in a hazard or nuisance to the natural environment or any person.

10. The reason for Condition 24 is to ensure that landfilling operations are conducted in an environmentally acceptable manner. Daily and intermediate cover is used to control potential nuisance effects, to facilitate vehicle access on the site, and to ensure an acceptable site appearance is maintained. The proper closure of a landfill site requires the application of a final cover which is aesthetically pleasing, controls infiltration, and is suitable for the end use planned for the site.

11. The reasons for Conditions 18, 21 and 27-29 are to ensure that the Site is operated, inspected and maintained in an environmentally acceptable manner and does not result in a hazard or nuisance to the natural environment or any person.

12. The reason for Condition 19 is that open burning of municipal waste and or clean wood and brush is unacceptable because of concerns with air emissions, smoke and other nuisance affects, and the potential fire hazard.

13. The reason for Condition 32 is to demonstrate that the landfill site is performing as designed and the impacts on the natural environment are acceptable. Regular monitoring allows for the analysis of trends over time and ensures that there is an early warning of potential problems so that any necessary remedial/contingency action can be taken.

14. The reasons for Conditions 30 and 31 are to provide for the proper assessment of effectiveness and efficiency of site design and operation, their effect or relationship to any nuisance or environmental impacts, and the occurrence of any public complaints or concerns. Record keeping is necessary to determine compliance with this Certificate of Approval, the EPA and its regulations.

15. The reasons for Condition 33 are to ensure that regular review of site development, operations and monitoring data is documented and any possible improvements to site design, operations or monitoring programs are identified. An annual report is an important tool used in reviewing site activities and for determining the effectiveness of site design.

16. The reasons for Condition 34 are to ensure that final closure of the Site is completed in an aesthetically pleasing manner and to ensure the long-term protection of the natural environment.

**This Provisional Certificate of Approval revokes and replaces Certificate(s) of Approval No. A273102 issued on May 30, 1983 and amended on April 2, 1991.**

*In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990, Chapter E-19, as amended, you may by written notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act, provides that the Notice requiring the hearing shall state:*

1. The portions of the approval or each term or condition in the approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

*The Notice should also include:*

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3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the waste disposal site is located;

*And the Notice should be signed and dated by the appellant.*

*This Notice must be served upon:*

The Secretary*
Environmental Review Tribunal
2300 Yonge St., 12th Floor
P.O. Box 2382
Toronto, Ontario
M4P 1E4

AND

The Director
Section 39, *Environmental Protection Act*
Ministry of Environment and Energy
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

*The above noted waste disposal site is approved under Section 39 of the Environmental Protection Act.*

DATED AT TORONTO this 20th day of November, 2003

Ian Parrott, P.Eng.
Director
Section 39, *Environmental Protection Act*

NP/
c: District Manager, MOE Owen Sound
Brad R. Pryde, P.Eng., P.S.O.I.

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Ontario

**Ministry of the Environment** **Ministère de l'Environnement**

*AMENDMENT TO PROVISIONAL CERTIFICATE OF APPROVAL*
*WASTE DISPOSAL SITE*
*NUMBER A273102*
*Notice No. 1*
*Issue Date: November 10, 2006*

The Corporation of the Town of Saugeen Shores
600 Tomlinson Drive, PO Box 820
Port Elgin, Ontario
N0H 2C0

Site Location: Port Elgin Landfill
Lehnen Street, Port Elgin
Town of Saugeen Shores, County of Bruce

*You are hereby notified that I have amended Provisional Certificate of Approval No. A273102 issued on November 20, 2003 for the use and operation of a 2.35 hectare landfill within a total area of 23.9 hectares for the disposal of domestic, commercial and solid non-hazardous industrial wastes, as follows:*

**The following Definitions are hereby added:**

"*PWQO*" means the Provincial Water Quality Objectives included in the July 1994 publication entitled *Water Management Policies, Guidelines, Provincial Water Quality Objectives*, as amended from time to time;

*"RUP"* means the Reasonable Use Policy (Guideline B-7) of the Ministry of the Environment;

**The following Terms and Conditions are hereby added:**

**Certificate of Prohibition**

35. (a) Pursuant to Section 197 of the EPA, no person having an interest in the Site shall deal in any way with the Site without first giving a copy of this Certificate to each person acquiring an interest in the Site as a result of the dealing.

(b) Two copies of a completed Certificate of Prohibition containing a registerable description of the Site, shall be submitted to the Director for the Director's signature within 60 calendar days of the date of issuance of this Notice; and

(c) The Certificate of Prohibition shall be registered in the appropriate land registry office on title to the Site by the Owner within ten (10) calendar days of receiving the Certificate of Prohibition signed by the Director, and a duplicate registered copy shall be submitted to the Director.

**Landfill Closure**

36. Except as otherwise provided by these Conditions, the Site shall be closed, maintained, monitored and reported in accordance with Items 8 through 16 of Schedule "A".

37. (a) The Owner shall cease receiving waste at this Site as of August 1, 2007; and

(b) The Owner shall close the Site no later than November 1, 2007; and

(c) The Owner shall notify the District Manager, in writing, as to the date when the Site has been closed.

38. No less than six (6) months prior to the date on which the Owner shall cease accepting waste at the Site, the Owner shall:

(a) provide notice to the Site users of the cessation of landfill activities; and
(b) post a notice at the Site entrance notifying users of the closure of the Site; and

(c) instruct users of the Site of alternative waste disposal options.

39. Prior to the application of final cover, the Owner shall:

(a) dismantle and remove all structures and facilities associated with waste management activities;
(b) remove all segregated waste and recycle bins; and
(c) remove all litter from the Site, and adjoining properties.

40. The Owner shall close the Site in accordance with Items 8 and 10 of Schedule "A".

**Surface Water Management**

41. The Owner shall maintain Site grading and final contours such that surface water runoff from the limit of fill is directed north and west to the perimeter ditching to minimize infiltration into the limit of fill.

42. The Owner shall incorporate sediment retention measures into the drainage ditch design. Sediment accumulated in the drainage ditches shall be removed as required.

**Final Cover Inspection**

43. (a) For the first two years following application of the final cover, the Owner shall:

(i) inspect the final cover integrity on a quarterly basis. If final cover integrity is damaged, then the necessary remedial measure shall be undertaken by the Owner within five (5) working days following the day of inspection (weather permitting);
(ii) inspect the vegetative cover in the fall and spring seasons. Any deficiencies in the vegetative cover shall be repaired as soon as weather and equipment availability permits;
(iii) inspect for leachate seeps on a quarterly basis. If a leachate seep is observed, then the necessary remedial measures shall be undertaken by the Owner within five (5) working days following the day of inspection (weather permitting);
(iv) inspect for slope erosion on a quarterly basis. If erosion is observed, then the necessary remediation measures shall be undertaken by the Owner within five (5) working days following the day of inspection (weather permitting);
(v) inspect for other nuisance factors (litter, rodents, bears) on a quarterly basis. If any problems are observed, then the necessary remedial measures shall be undertaken by the Owner within five (5) working days following the day of inspection (weather permitting);
(vi) inspect for signs of surface water quality degradation (sediment accumulation, staining of creek substrate, excessive algal or vegetation growth etc).

(b) After the initial two (2) year period, and based on the initial results, the frequency of the inspections shall be re-evaluated and may be reduced with the concurrence of the District Manager.

**Post-Closure Use**

44. If the post-closure use of the Site involves the construction of buildings or other activities which may impact the final cover, or if the Site is to be used for activities other than green space for recreational purposes, the Owner shall submit an application to the Director in accordance with Section 46 of the EPA.

45. The Owner shall restrict all land development within 150 metres of the limit of fill. Land development shall not be approved until the Owner has evaluated the presence and impact of any adverse effects from landfilling activities and has determined that there is no risk to health or safety or has implemented remedial measures to mitigate adverse effects to ensure that no health or safety risks occur.

**Post-Closure Monitoring**

46. (a) The Owner shall conduct groundwater, surface water and landfill gas monitoring in accordance with Item 8 of Schedule "A"; and

(b) All monitoring wells which form part of any monitoring program shall be protected from damage. Any groundwater monitoring wells that are damaged shall be repaired, replaced forthwith or properly abandoned in accordance with *Ontario Regulation 903 – R.R.O. 1990, Wells, amended to Ontario Regulation 128/03*, made under the *Ontario Water Resources Act*, R.S.O. 1990, c. O.40; and

(c) Any future changes to either the groundwater, surface water or gas monitoring program shall be approved, in writing, by the District Manager before the change is implemented.

47. If concentrations for any of the groundwater, surface water and/or methane trigger parameters at any of the trigger locations exceeds the corresponding trigger level, and these exceedances are due to landfilling operations, then the Owner shall implement one of, or a combination of, the contingency measures described in Item 14 of Schedule "A". Contingency measures to be implemented at the Site shall be approved by the Director.

**Post-Closure Reporting**

48. (a) By April 30th of each year, the Owner shall prepare and submit to the District Manager, an annual monitoring report covering the preceding year. The report shall includes as a minimum, the following:

(i) in the first report after installation of final cover, details of the final cover design and installation and a drawing showing the final Site contours;
(ii) drawing(s) of the Site indicating all groundwater, surface water and gas monitoring locations;
(iii) tables outlining monitoring locations, analytical parameters sampled and sampling results;
(iv) an analysis and interpretation of the groundwater and surface water monitoring data, a review of the adequacy of the monitoring programs, conclusions of the monitoring data, and the recommendations for any changes in monitoring programs that may be necessary;
(v) an assessment of surface water quality in respect to PWQO;
(vi) an assessment of groundwater quality in relation to the RUP;
(vii) a summary of inspections; and
(viii) a summary of complaints made regarding Site maintenance and the Owner's response and action taken.

(b) The frequency of reporting referred to in Condition 48 (a) may be amended, once sufficient monitoring data has been gathered to characterize the Site, subject to the District Manager's written approval.

**The following are hereby added to Schedule "A":**

8. Report entitled Port Elgin Waste Disposal Site, Town of Saugeen Shores, Site Closure Plan, prepared for Town of Saugeen Shores, prepared by Pride Schropp McComb Inc., dated July 2006.

9. Map 2, Town of Saugeen Shores, Port Elgin Waste Disposal Site, Existing Condition, Revision 2, prepared by Pride Schropp McComb Inc., revised February 3, 2006.

10. Map 3, Town of Saugeen Shores, Port Elgin Waste Disposal Site, Final Contours, Revision 3, prepared by Pride Schropp McComb Inc., revised February 3, 2006.

11. Map 4, Town of Saugeen Shores, Port Elgin Waste Disposal Site, Groundwater Configuration Upper Aquifer, Revision 2, prepared by Pride Schropp McComb Inc., revised February 3, 2006.

12. Map 5, Town of Saugeen Shores, Port Elgin Waste Disposal Site, Groundwater Configuration Lower Aquifer, Revision 2, prepared by Pride Schropp McComb Inc., revised February 3, 2006.

13. Map 6, Town of Saugeen Shores, Port Elgin Waste Disposal Site, Site Plan, prepared by Pride Schropp McComb Inc., dated January 31, 2006.

14. Report entitled Contingency Plan, Port Elgin Landfill Site, Town of Saugeen Shores, prepared by Gamsby and Mannerow Limited, dated October 2005, Revised August 2006.

15. Letter from Stephen Cobean, Pride Schropp McComb Inc., to Environmental Assessment and Approvals Branch, dated February 8, 2006, re: site closure date, intended post-closure use and schedule of post-closure tasks.

16. Letter from M.D. Nelson, Gamsby and Mannerow Limited, to Environmental Assessment and Approvals Branch, dated August 31, 2006, re: response to comments on Port Elgin Landfill Contingency Plan and Annual Monitoring Report.

**All other Terms and Conditions on Provisional Certificate of Approval No. A273102, which was issued to The Corporation of the Town of Saugeen Shores on November 20, 2003 not affected by this amendment continue to remain in effect.**

The reason(s) for this amendment to the Certificate of Approval is (are) as follows:

*Condition 35 is included, pursuant to subsection 197(1) of the EPA, to provide that any persons having an interest in the Site are aware that the land has been approved and used for the purposes of waste disposal.*

*The reason for Conditions 36, 37, 40, 44 and 48 is to ensure that the Site is closed, maintained, monitored and used in accordance with the application and supporting documentation submitted by the Owner, and not in a manner which the Director has not been asked to consider.*

*The reason for Conditions 38, 39 and 43 is to ensure that final closure of the Site is completed in an aesthetically pleasing manner, in accordance with Ministry standards , and in a manner which ensures the long-term protection of the health and safety of the public and the environment.*

*The reason for Conditions 41 and 42 is to minimize the generation of leachate that would be caused by the infiltration of precipitation into the limit of fill.*

*The reason for Condition 45 is to ensure that subsequent development of adjacent land does not create a situation whereby the health or safety of persons is at risk.*

*The reason for Condition 46 is to demonstrate that the Site is performing as designed and that the impacts on the natural environment are acceptable. Regular monitoring allows for the analysis of trends over time and ensures that there is an early warning of potential problems so that any necessary remedial/contingency action can be taken.*

*The reason for Condition 47 is to ensure that the Owner follows a plan with an organized set of procedures for identifying and responding to impacts on the natural environment identified by the monitoring program.*

**This Notice shall constitute part of the approval issued under Provisional Certificate of Approval No. A273102 dated November 20, 2003**

*In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990, Chapter E-19, as amended, you may by written notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act, provides that the Notice requiring the hearing shall state:*

1. The portions of the approval or each term or condition in the approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

*The Notice should also include:*

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the waste disposal site is located;

*And the Notice should be signed and dated by the appellant.*

**CONTENT COPY OF ORIGINAL**

*This Notice must be served upon:*

The Secretary*
Environmental Review Tribunal
2300 Yonge St., Suite 1700
P.O. Box 2382
Toronto, Ontario
M4P 1E4

AND

The Director
Section 39, *Environmental Protection Act*
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

*The above noted waste disposal site is approved under Section 39 of the Environmental Protection Act.*

DATED AT TORONTO this 10th day of November, 2006

Tesfaye Gebrezghi, P.Eng.
Director
Section 39, *Environmental Protection Act*

VP/
c: District Manager, MOE Owen Sound

# APPENDIX B:
# ENVIRONMENTAL COMPLIANCE APPROVAL
# (SOUTHAMPTON WASTE DISPOSAL SITE)

RECEIVED
AUG 1 4 2012

Ontario

Ministry of the Environment
Ministère de l'Environnement

**AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL**
NUMBER A273101
Issue Date: August 1, 2012

The Corporation of the Town of Saugeen Shores
600 Tomlinson Dr Port Elgin
Post Office Box, No. 820
Saugeen Shores, Ontario
N0H 2C0

Site Location: 126 Concession Road 14
Lot 12, Concession 15
Part 1, Plan 3R6098
Saugeen Shores Town, County of Bruce
N0H 2L0

*You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:*

the use and operation of 20.2 hectare waste disposal/transfer site within a total site area of 64.97 hectares.

*For the purpose of this environmental compliance approval, the following definitions apply:*

"*Approval* " means this Environmental Compliance Approval and any Schedules to it, including the application and supporting documentation listed in Schedule "A".

*"Contaminating Life Span"* means contaminating life span as defined in Ontario Regulation 232/98;

"*Director"* means any *Ministry* employee appointed in writing by the Minister pursuant to section 5 of the EPA as a Director for the purposes of Part V of the *EPA;*

"*District Manager"* means the District Manager of the local district office of the *Ministry* in which the *Site* is geographically located;

"*EPA* " means *Environmental Protection Act* , R.S.O. 1990, c. E. 19, as amended;

*"Ministry"* means the Ontario Ministry of the Environment;

"*NMA* " means *Nutrient Management Act* , 2002, S.O. 2002, c. 4, as amended from time to time;

"*Operator*" means any person, other than the Owner's employees, authorized by the *Owner* as having the charge, management or control of any aspect of the *Site* and includes its successors or assigns;

"*Owner*" means any person that is responsible for the establishment or operation of the *Site* being approved by this *Approval,* and includes The Corporation of the Town of Saugeen Shores, its successors and assigns;

"*OWRA* " means the *Ontario Water Resources Act* , R.S.O. 1990, c. O.40, as amended;

"*PA* " means the *Pesticides Act* , R.S.O. 1990, c. P-11, as amended from time to time;

"*Provincial Officer*" means any person designated in writing by the Minister as a provincial officer pursuant to Section 5 of the *OWRA* or Section 5 of the *EPA* or Section 17 of *PA* or Section 4 of *NMA* or Section 8 of *SDWA* .

"*Regional Director* " means the Regional Director of the local Regional Office of the *Ministry* in which the *Site* is located.

"*Regulation 347* " or "*Reg. 347* " means Regulation 347, R.R.O. 1990, made under the EPA, as amended;
"*SDWA*" means *Safe Drinking Water Act,* 2002, S.O. 2002, c. 32, as amended from time to time;

"*Site* " means the entire waste disposal site, including the buffer lands, and contaminant attenuation zone at 126 Concession Road 14, Lot 12, Concession 15, Part 1, Plan 3R6098, Town of Saugeen Shores, County of Bruce; and

"*Trained personnel*" means personnel who have received annual training as per the Owner's training program and have the general knowledge of the following:

a. relevant waste management legislation, regulations and guidelines;
b. major environmental concerns pertaining to the waste to be handled;
c. occupational health and safety concerns pertaining to the processes and wastes to be handled;
d. management procedures including the use and operation of equipment for the processes and wastes to be handled;
e. emergency response procedures;
f. specific procedures for the control of nuisance conditions;
g. specific procedures for refusal of unacceptable waste loads; and
h. the requirements of this *Approval.*

*You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:*

## TERMS AND CONDITIONS

### 1. GENERAL

**Compliance**

(1) The *Owner* and *Operator* shall ensure compliance with all the conditions of this *Approval* and shall ensure that any person authorized to carry out work on or operate any aspect of the *Site* is notified of this *Approval* and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.

(2) Any person authorized to carry out work on or operate any aspect of the *Site* shall comply with the conditions of this *Approval.*

**In Accordance**

(3) Except as otherwise provided by this *Approval,* the *Site* shall be designed, developed, built, operated and maintained in accordance with the documentation listed in the attached Schedule "A".

**Interpretation**

(4) Where there is a conflict between a provision of any document listed in Schedule "A" in this *Approval,* and the conditions of this *Approval,* the conditions in this *Approval* shall take precedence.

(5) Where there is a conflict between the application and a provision in any document listed in Schedule "A", the application shall take precedence, unless it is clear that the purpose of the document was to amend the application and that the *Ministry* approved the amendment.

(6) Where there is a conflict between any two documents listed in Schedule "A", the document bearing the most recent date shall take precedence.

(7) The conditions of this *Approval* are severable. If any condition of this *Approval,* or the application of any condition of this *Approval* to any circumstance, is held invalid or unenforceable, the application of such condition to other circumstances and the remainder of this *Approval* shall not be affected thereby.

**Other Legal Obligations**

(8) The issuance of, and compliance with, this *Approval* does not:

(a) relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement; or

(b) limit in any way the authority of the *Ministry* to require certain steps be taken or to require the *Owner* and *Operator* to furnish any further information related to compliance with this *Approval* .

**Adverse Effect**

(9) The *Owner* and *Operator* shall take steps to minimize and ameliorate any adverse effect on the natural environment or impairment of water quality resulting from the *Site,* including such accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment.

(10) Despite an *Owner, Operator* or any other person fulfilling any obligations imposed by this *Approval* the person remains responsible for any contravention of any other condition of this *Approval* or any applicable statute, regulation, or other legal requirement resulting from any act or omission that caused the adverse effect to the natural environment or impairment of water quality.

**Change of Ownership**

(11) The *Owner* shall notify the *Director,* in writing, and forward a copy of the notification to the *District Manager,* within 30 days of the occurrence of any changes in the following information:

(a) the ownership of the *Site;*

(b) the *Operator* of the *Site;*

(c) the address of the *Owner or Operator;* and

(d) the partners, where the *Owner or Operator* is or at any time becomes a partnership and a copy of the most recent declaration filed under the *Business Names Act* , R. S. O. 1990, c. B.17, shall be included in the notification.

(12) No portion of this *Site* shall be transferred or encumbered prior to or after closing of the *Site* unless the *Director* is notified in advance and sufficient financial assurance is deposited with the *Ministry* to ensure that these conditions will be carried out.

(13) In the event of any change in *Ownership* of the *Site,* other than change to a successor Owner, the *Owner* shall notify the successor of and provide the successor with a copy of this *Approval,* and the *Owner* shall provide a copy of the notification to the *District Manager* and the *Director.*

**Certificate of Requirement/Registration on Title**

(14) The Owner shall:

(a) Within sixty (60) days of the date of the issuance of this *Approval,* submit to the *Director* for review, two copies of a completed Certificate of Requirement with a registerable description of the *Site;* and

(b) Within 10 calendar days of receiving the Certificate of Requirement authorized by the *Director,* register the Certificate of Requirement in the appropriate Land Registry Office on title to the *Site* and submit to the *Director* and the *District Manager* the duplicate registered copy immediately following registration.

(15) Pursuant to Section 197 of the Environmental Protection Act, neither the *Owner* nor any person having an interest in the *Site* shall deal with the *Site* in any way without first giving a copy of this *Approval* to each person acquiring an interest in the *Site* as a result of the dealing.

**Inspections by the Ministry**

(16) No person shall hinder or obstruct a *Provincial Officer* from carrying out any and all inspections authorized by the *OWRA, the EPA,* the *PA,* the *SDWA* or the *NMA,* of any place to which this *Approval* relates, and without limiting the foregoing:

(a) to enter upon the premises where the approved works are located, or the location where the records required by the conditions of this *Approval* are kept;

(b) to have access to, inspect, and copy any records required to be kept by the conditions of this *Approval;*

(c) to inspect the *Site,* related equipment and appurtenances;

(d) to inspect the practices, procedures, or operations required by the conditions of this *Approval;* and

(e) to sample and monitor for the purposes of assessing compliance with the terms and conditions of this *Approval* or the *EPA,* the *OWRA,* the *PA,* the *SDWA* or the *NMA.*

**Information and Record Retention**

(17) (a) Except as authorized in writing by the *Director,* all records required by this *ECA* shall be retained at the *Site* for a minimum of two (2) years from their date of creation.

(b) The *Owner* shall retain all documentation listed in Schedule "A" for as long as this *ECA* is valid.

(c) All monthly summary reports are to be kept at the *Site* until they are included in the Annual Report.

(d) The *Owner* shall retain employee training records as long as the employee is working at the *Site* .

(e) The *Owner* shall make all of the above documents available for inspection upon request of *Ministry* staff.

(18) The receipt of any information by the *Ministry* or the failure of the *Ministry* to prosecute any person or to require any person to take any action, under this *Approval* or under any statute, regulation or other legal requirement, in relation to the information, shall not be construed as:

(a) an approval, waiver, or justification by the *Ministry* of any act or omission of any person that contravenes any term or condition of this *Approval* or any statute, regulation or other legal requirement; or

(b) acceptance by the *Ministry* of the information's completeness or accuracy.

(19) The *Owner* shall ensure that a copy of this *Approval,* in its entirety and including all its Notices of Amendment, and documentation listed in Schedule "A", are retained at the *Site* at all times.

## 2. SITE OPERATION

### Operation

(1) The *Site* shall be operated and maintained at all time including management and disposal of all waste in accordance with the *EPA, Regulation 347,* and the conditions of this *Approval.* At no time shall the discharge of a contaminant that causes or is likely to cause an adverse effect be permitted.

### Signs

(2) A sign shall be installed and maintained at the main entrance/exit to the *Site* on which is legibly displayed the following information:

(a) the name of the *Site* and *Owner;*
(b) the number of the *Approval;*
(c) the name of the *Operator;*
(d) the normal hours of operation;
(e) the allowable and prohibited waste types;
(f) the telephone number to which complaints may be directed;
(g) a warning against unauthorized access;
(h) a twenty-four (24) hour emergency telephone number (if different from above); and
(i) a warning against dumping outside the *Site.*

(3) The *Owner* shall install and maintain signs to direct vehicles to working face and

recycling areas.

(4) The *Owner* shall provide signs at recycling depot informing users what materials are acceptable and directing users to appropriate storage area.

**Vermin, Vectors, Dust, Litter, Odour, Noise and Traffic**

(5) The *Site* shall be operated and maintained such that the vermin, vectors, dust, litter, odour, noise and traffic do not create a nuisance.

**Burning Waste Prohibited**

(6) (a) Burning of waste at the *Site* is prohibited.

(b) Notwithstanding Condition 2. (6) (a) above, burning of segregated, clean wood and brush at the landfill may be carried out in strict compliance with the Ministry of the Environment Document titled "Guideline C-7, Burning at Landfill Sites" dated April 1994.

(c) Access to the burning area by the public is prohibited while burning occurs.

**Site Access**

(7) Waste shall only be accepted during the following time periods:
Monday, Wednesday and Friday: 9 a.m. to 5 p.m.
Saturday: 9 a.m. to 3 p.m.

(8) On-site equipment used for daily site preparation and closing activities may be operated from Monday to Saturday from 7:00 a.m. to 7:00 p.m.

(9) With the prior written approval from the *District Manager,* the time periods may be extended to accommodate seasonal or unusual quantities of waste.

**Site Security**

(10) No waste shall be received, landfilled or removed from the *Site* unless a site supervisor or an attendant is present and supervises the operations during operating hours. The *Site* shall be closed when a site attendant is not present to supervise landfilling operations.

(11) The *Site* shall be operated and maintained in a safe and secure manner. During non-operating hours, the *Site* entrance and exit gates shall be locked and the *Site* shall be secured against access by unauthorized persons.

## 3. EMPLOYEE TRAINING

(1) A training plan for all employees that operate any aspect of the *Site* shall be developed and implemented by the *Operator.* Only *Trained Personnel* shall operate any aspect of the *Site* or carry out any activity required under this *Approval* .

## 4. COMPLAINTS RESPONSE PROCEDURE

(1) If at any time the *Owner* receives complaints regarding the operation of the *Site,* the *Owner* shall respond to these complaints according to the following procedure:

(a) The *Owner* shall record and number each complaint, either electronically or in a log book, and shall include the following information: the nature of the complaint, the name, address and the telephone number of the complainant if the complainant will provide this information and the time and date of the complaint;

(b) The *Owner,* upon notification of the complaint, shall initiate appropriate steps to determine possible causes of the complaint, proceed to take the necessary actions to eliminate the cause of the complaint and forward a formal reply to the complainant; and

(c) Upon review. the *Owner* shall complete and retain a record of the complaint within municipal files, listing the actions taken to resolve the complaint and any recommendations for remedial measures, and managerial or operational changes to reasonably avoid the recurrence of similar incidents.

## 5. EMERGENCY RESPONSE

(1) Any spills, fires or other emergency situations shall be forthwith reported directly to the *Ministry's* Spills Action Centre (1-800-268-6060) and shall be cleaned up immediately.

(2) In addition, the *Owner* shall submit, to the *District Manager* a written report outlining the nature of the incident, and a summary of remedial actions taken and the measures taken to prevent future occurrences at the *Site.*

(3) All wastes resulting from an emergency situation shall be managed and disposed of in accordance with *O.Reg. 347.*

(4) All equipment and materials required to handle the emergency situations shall be:

(a) kept on hand at all times that waste landfilling and/or handling is undertaken at the *Site;* and

(b) adequately maintained and kept in good repair.

(5) The *Owner* shall ensure that the emergency response personnel are familiar with the use of such equipment and its location(s).

## 6. RECORD KEEPING AND REPORTING

### Daily Log Book

(1) A daily log shall be maintained in written format and shall include the following information:
   (a) the type, date and time of arrival, hauler, and quantity (tonnes) of all waste and cover material received at the *Site;*
   (b) the area of the *Site* in which waste disposal operations are taking place;
   (c) a record of litter collection activities and the application of any dust suppressants;
   (d) a record of the daily inspections; and
   (e) a description of any out-of-service period of any control, treatment, disposal or monitoring facilities, the reasons for the loss of service, and action taken to restore and maintain service.

(2) Any information requested, by the *Director* or a *Provincial Officer,* concerning the *Site* and its operation under this *Approval,* including but not limited to any records required to be kept by this *Approval* shall be provided to the *Ministry,* upon request.

### Daily Inspections and Log Book

(3) An inspection of the entire *Site* and all equipment on the *Site* shall be conducted each day the *Site* is in operation to ensure that: the *Site* is secure; that the operation of the *Site* is not causing any nuisances; that the operation of the *Site* is not causing any adverse effects on the environment and that the *Site* is being operated in compliance with this *Approval.* Any deficiencies discovered as a result of the inspection shall be remedied immediately, including temporarily ceasing operations at the *Site* if needed.

(4) A record of the inspections shall be kept in a daily log book that includes:
   (a) the name and signature of person that conducted the inspection;
   (b) the date and time of the inspection;
   (c) the list of any deficiencies discovered;
   (d) the recommendations for remedial action; and
   (e) the date, time and description of actions taken.

(5) A record shall be kept in the daily log book of all refusals of waste shipments, the reason(s) for refusal, and the origin of the waste, if known.

### Annual Report

(6) A written report on the development, operation and monitoring of the *Site,* shall be completed annually (the "Annual Report"). The Annual Report shall be submitted to the *District Manager,* by March 31st of the year following the period being reported upon.

(7) The Annual Report shall include the following:

(a) a survey of the waste disposal area conducted once every three years and a map illustrating all development and existing contours and between surveys the Town can provide an estimate of capacity left on the *Site;*

(b) a summary of the total annual quantities of waste received on monthly basis, volume of waste landfilled, volume of cover material and final cover used on an annual basis;

(c) a drawing(s) indicating all groundwater and surface water monitoring locations;

(d) tables outlining monitor locations, analytical parameters sampled, and the frequency of sampling;

(e) an interpretation of the surface water, groundwater and leachate monitoring data; a review of the adequacy of the monitoring programs; provide conclusions and recommendations for any changes made in monitoring programs;

(f) an assessment of groundwater quality as it relates to RUPO and ODWO;

(g) an assessment of surface water quality with respect to the PWQO/ Guidelines;

(h) an update of changes in operations, equipment, procedures made at the *Site,* and any operating difficulties encountered;

(i) drawings showing areas of fill, buffer areas, current landfill contours, percentage of available space utilized, and an estimate of the remaining disposal capacity and the landfill life span;

(j) a summary discussion for the landfill daily cover requirements and erosion protection;

(k) a statement of compliance with all Conditions with respect to the inspection and reporting requirements as indicated in the *Approval;*

(l) summary of any complaints made regarding the landfill operation and the response from the *Owner* and necessary action taken to address these complaints; and

(m) recommendations with respect to any proposed changes made in the operation and monitoring of the landfill.

## 7. LANDFILL DESIGN AND DEVELOPMENT

### Approved Waste Types

(1) Only solid non-hazardous municipal waste as defined under *Reg.* 347 shall be accepted at the *Site* for landfilling.

(2) The *Owner* shall develop and implement a program to inspect waste to ensure that the waste received at the *Site* is of a type approved for acceptance under this *Approval.*

(3) The *Owner* shall ensure that all loads of waste are properly inspected by *Trained personnel* prior to acceptance at the *Site* and that the waste vehicles are directed to the appropriate areas for disposal or transfer of the waste. The *Owner* shall notify the *District Manager,* in writing, of load rejections at the *Site* within one (1) business day from their occurrence.

**Capacity**

(4) The bottom contours of the Site floor shall be approximately 217.5 metres above the assumed elevation datum, or a minimum of one metre above the seasonable high water table in order to maintain at all time a sate vertical separation distance between the bottom of the *Site* floor and the groundwater as indicated on Map no.3 of Item no.2, Schedule "A".

(5) The maximum height of the refuse (including final cover) shall not exceed 228.0 metres above the assumed elevation, which gives the maximum approved capacity of 493,000 cubic meters.

(6) No waste shall be deposited at the Site after the final contours which shall include 0.75 m of final cover have been attained as shown on Map 5, of Item 2, Schedule "A".

**Service Area**

(7) Only waste that is generated within the boundaries of the Town of Saugeen Shores may be accepted at the *Site.*

**Cover**

(8) Alternative materials to soil may be used as weekly and interim cover material, based on an application with supporting information and applicable fee for a trial use or permanent use, submitted by the *Owner* to the *Director,* copied to the *District Manager* and as approved by the *Director* via an amendment to this *Approval.* The alternative material shall be non-hazardous according to *Reg. 347* and will be expected to perform at least as well as soil in relation to the following functions:

(a) Control of blowing litter, odours, dust, landfill gas, gulls, vectors, vermin and fires;
(b) Provision for an aesthetic condition of the landfill during the active life of the *Site;*
(c) Provision for vehicle access to the active tipping face; and
(d) Compatibility with the design of the *Site* for groundwater protection, leachate management and landfill gas management.

(9) Cover material shall be applied as follows:

(a) Daily Cover - Weather permitting, deposited waste shall be covered on each day the site in operation in a manner acceptable to the *District Manager* so that no waste is exposed to the atmosphere;
(b) Intermediate Cover - In areas where landfilling has been temporarily discontinued for six (6) months or more, a minimum thickness of 300 millimetre of soil cover or an approved thickness of alternative cover material shall be placed; and
(c) Final Cover - In areas where landfilling has been completed to final contours, a

minimum 600 millimetre thick layer of soil of medium permeability and 150 millimetres of top soil (vegetative cover) shall be placed. Fill areas shall be progressively completed and rehabilitated as landfill development reaches final contours.

## 8. LANDFILL MONITORING

### Landfill Gas

(1) The *Owner* shall ensure that any buildings or structures at the *Site* contain adequate ventilation systems to relieve any possible landfill gas accumulation to prevent methane concentration reaching the levels within its explosive range. Routine monitoring for explosive methane gas levels shall be conducted in all buildings or structures at the *Site,* especially enclosed structures which at times are occupied by people.

### Compliance

(2) The *Site* shall be operated in such a way as to ensure compliance with the following:

(a) Reasonable Use Guideline B-7 for the protection of the groundwater at the *Site;* and

(b) Provincial Water Quality Objectives included in the July 1994 publication entitled *Water Management Policies, Guidelines, Provincial Water Quality Objectives,* as amended from time to time or limits set by the *Regional Director,* for the protection of the surface water at and off the *Site.*

### Surface Water and Ground Water

(3) The *Owner* shall monitor surface water and ground water in accordance with the monitoring programs outlined in documents listed in the attached Schedule "A".

(4) A certified Professional Geoscientist or Engineer possessing appropriate hydrogeologic training and experience shall execute or directly supervise the execution of the groundwater monitoring and reporting program.

### Groundwater Wells and Monitors

(5) The *Owner* shall ensure that all groundwater monitoring wells which form part of the monitoring program are properly capped, locked and protected from damage.

(6) Where landfilling is to proceed around monitoring wells, suitable extensions shall be added to the wells and the wells shall be properly re-secured.

(7) Any groundwater monitoring well included in the on-going monitoring program that are

damaged shall be assessed, repaired, replaced or decommissioned by the *Owner,* as required.

(a) The *Owner* shall repair or replace any monitoring well which is destroyed or in any way made to be inoperable for sampling such that no more than one regular sampling event is missed.

(b) All monitoring wells which are no longer required as part of the groundwater monitoring program, and have been approved by the *Director* for abandonment, shall be decommissioned by the *Owner,* as required, in accordance with *O.Reg. 903,* that will prevent contamination through the abandoned well. A report on the decommissioning of the well shall be included in the Annual Report for the period during which the well was decommissioned.

**Trigger Mechanisms and Contingency Plans**

(8) (a) Trigger mechanisms shall be in accordance with the documents in the Schedule "A".

(b) Contingency plan in the event of a confirmed exceedence of a site-specific trigger level relating to leachate mounding or groundwater or surface water impacts due to leachate shall be in accordance with the documents in Schedule "A".

(9) In the event of a confirmed exceedence of a site-specific trigger level relating to leachate mounding or groundwater or surface water impacts due to leachate, the *Owner* shall notify the *District Manager,* and an investigation into the cause and the need for implementation of remedial or contingency actions shall be carried out by the *Owner* in accordance with the approved trigger mechanisms and associated contingency plans.

(10) If monitoring results, investigative activities and/or trigger mechanisms indicate the need to implement contingency measures, the *Owner* shall ensure that the following steps are taken:

(a) The *Owner* shall notify the *District Manager,* in writing of the need to implement contingency measures, no later than 30 days after confirmation of the exceedences;
(b) Detailed plans, specifications and descriptions for the design, operation and maintenance of the contingency measures shall be prepared and submitted by the *Owner* to the *District Manager* for approval; and
(c) The contingency measures shall be implemented by the *Owner* upon approval by the *District Manager* .

(11) The *Owner* shall ensure that any proposed changes to the site-specific trigger levels for leachate impacts to the surface water or groundwater, are approved in advance by the *Director* via an amendment to this *Approval.*

**Changes to the Monitoring Plan**

(12) The *Owner* may request to make changes to the monitoring program(s) to the *District Manager* in accordance with the recommendations of the annual report. The *Owner* shall make clear reference to the proposed changes in separate letter that shall accompany the annual report.

(13) Within fourteen (14) days of receiving the written correspondence from the *District Manager* confirming that the *District Manager* is in agreement with the proposed changes to the environmental monitoring program, the *Owner* shall forward a letter identifying the proposed changes and a copy of the correspondences from the *District Manager* and all other correspondences and responses related to the changes to the monitoring program, to the *Director* requesting the *Approval* be amended to approve the proposed changes to the environmental monitoring plan prior to implementation.

(14) In the event any other changes to the environmental monitoring program are proposed outside of the recommendation of the annual report, the *Owner* shall follow current ministry procedures for seeking approval for amending the *Approval.*

## 9. CLOSURE PLAN

(1) At least 3 years prior to the anticipated date of closure of this *Site,* the *Owner* shall submit to the *Director* for approval, with copies to the *District Manager,* a detailed *Site* closure plan pertaining to the termination of landfilling operations at this *Site,* post-closure inspection, maintenance and monitoring, and end use. The plan shall include the following:

- (a) a plan showing *Site* appearance after closure;
- (b) a description of the proposed end use of the *Site;*
- (c) a description of the procedures for closure of the *Site,* including:
  - (i) advance notification of the public of the landfill closure;
  - (ii) posting of a sign at the *Site* entrance indicating the landfill is closed and identifying any alternative waste disposal arrangements;
  - (iii) completion, inspection and maintenance of the final cover and landscaping;
  - (iv) *Site* security;
  - (v) removal of unnecessary landfill-related structures, buildings and facilities;
  - (vi) final construction of any control, treatment, disposal and monitoring facilities for leachate, groundwater, surface water and landfill gas; and
  - (vii) a schedule indicating the time-period for implementing sub-conditions (i) to (vi) above;
- (d) descriptions of the procedures for post-closure care of the *Site,* including:
  - (i) operation, inspection and maintenance of the control, treatment, disposal and monitoring facilities for leachate, groundwater, surface water and landfill gas;

(ii) record keeping and reporting; and
(iii) complaint contact and response procedures;

(e) an assessment of the adequacy of and need to implement the contingency plans for leachate and methane gas; and

(f) an updated estimate of the contaminating life span of the *Site,* based on the results of the monitoring programs to date.

(2) The *Site* shall be closed in accordance with the closure plan as approved by the *Director.*

## 10. WASTE DIVERSION

(1) The *Owner* shall ensure that:
(a) all bins and waste storage areas are clearly labelled;
(b) all lids or doors on bins shall be kept closed during non-operating hours and during high wind events; and
(c) if necessary to prevent litter, waste storage areas shall be covered during high winds events.

(2) The *Owner* shall provide a segregated area for the storage of *Refrigerant Appliances* so that the following are ensured:
(a) all *Refrigerant Appliances* have been tagged to indicate that the refrigerant has been removed by a licensed technician. The tag number shall be recorded in the log book and shall remain affixed to the appliance until transferred from the *Site;* **or**
(b) all *Refrigerant Appliances* accepted at the *Site,* which have not been tagged by a licensed technician to verify that the equipment no longer contains refrigerants, are stored segregated, in a clearly marked area, in an upright position and in a manner which allows for the safe handling and transfer from the *Site* for removal of refrigerants as required by O.Reg. 189; and
(c) all *Refrigerant Appliances* received on-site shall either have the refrigerant removed prior to being transferred from the *Site* or shall be shipped off-site only to facilities where the refrigerants can be removed by a licensed technician in accordance with O.Reg. 189.

(3) Propane cylinders shall be stored in a segregated area in a manner which prevents cylinders from being knocked over or cylinder valves from breaking.

(4) The *Owner* shall transfer waste and recyclable materials from the *Site* as follows:
(a) recyclable materials shall be transferred off-site once their storage bins are full;
(b) scrap metal shall be transferred off-site at least twice a year;
(c) tires shall be transferred off-site as soon as a load for the contractor hired by the *Owner* has accumulated or as soon as the accumulated volume exceeds the storage capacity of its bunker; and
(d) immediately, in the event that waste is creating an odour or vector problem.

(5) The *Owner* shall notify the appropriate contractors that waste and recyclable wastes that are to be transferred off-site are ready for removal. Appropriate notice time, as determined by the contract shall be accommodated in the notification procedure.

(6) Collection, storage and transfer of Waste Electrical and Electronic Equipment shall be in accordance with the documents in the Schedule "A". If there is any discrepancy between the guideline titled "Collection Site Organizing & Operating Waste Electrical and Electronic Equipment (WEEE) Guidebook" dated March 11, 2010 as amended prepared by Ontario Electronic Stewardship and the documents in Schedule "A", the guideline shall take precedence.

## 11. COMPOSTING

(1) Waste accepted for composting shall be limited to leaf and yard waste.
(2) Windrows/stockpiles shall be arranged in a manner which allows equipment access for management of the piles and to allow access for emergency vehicles.
(3) Windrows/stockpiles shall be constructed at bulk densities and heights which promote aerobic conditions.
(4) Use of the produced compost from leaf and yard waste shall be limited to daily cover material.
(5) For other uses of composted leaf and yard waste, the owner shall obtain approval from the *Director.*

## SCHEDULE "A"

1. Report titled "Town of Southampton Waste Disposal Site, Site Capacity Study, 1994," prepared by Paragon Engineering Ltd, dated February, 1995.

2. Report titled "Town of Southampton Waste Disposal Site, Plan of Development and Operation," prepared by Paragon Engineering Limited, dated March, 1997.

3. Application for a Provisional Certificate of Approval for a Waste Disposal Site, dated May 31, 2005, and the supporting documentation entitled *Southampton Waste Disposal Site Township of Saugeen Shores Landfill Service Area Report* , prepared by Pryde Schropp McComb Inc, dated June 2005.

4. Report titled "Plan of Development and Operation, Southhampton Landfill, Part Lot 12, Concession 15, Former Township of Saugeen, Town of Saugeen Shores, County of Bruce" dated February 2011 prepared by Gamsby and Mannerow Engineers.

*The reasons for the imposition of these terms and conditions are as follows:*

**GENERAL**

1. The reason for Conditions 1(1), (2), (4), (5), (6), (7), (8), (9), (10), (17), (18) and (19) is to clarify the legal rights and responsibilities of the *Owner* and *Operator* under this *Approval* .

2. The reasons for Condition 1(3) are to ensure that the *Site* is designed, operated, monitored and maintained in accordance with the application and supporting documentation submitted by the *Owner,* and not in a manner which the *Director* has not been asked to consider.

3. The reasons for Condition 1(11) are to ensure that the *Site* is operated under the corporate name which appears on the application form submitted for this *approval* and to ensure that the *Director* is informed of any changes.

4. The reasons for Condition 1(12) are to restrict potential transfer or encumbrance of the *Site* without the approval of the *Director* and to ensure that any transfer of encumbrance can be made only on the basis that it will not endanger compliance with this *Approval* .

5. The reason for Condition 1(13) is to ensure that the successor is aware of its legal responsibilities.

6. Conditions 1 (14) and (15) are included, pursuant to subsection 197(1) of the *EPA* , to provide that any persons having an interest in the *Site* are aware that the land has been approved and used for the purposes of waste disposal.

7. The reason for Condition 1(16) is to ensure that appropriate Ministry staff has ready access to the Site for inspection of facilities, equipment, practices and operations required by the conditions in this *Approval* . This Condition is supplementary to the powers of entry afforded a Provincial Officer pursuant to the *Act* , the *OWRA* , the *PA* , the *NMA* and the *SDWA* .

**SITE OPERATION**

8. The reasons for Conditions 2(1), 2(5) and 6(3) are to ensure that the *Site* is operated, inspected and maintained in an environmentally acceptable manner and does not result in a hazard or nuisance to the natural environment or any person.

9. The reason for Conditions 2 (2), 2(3) and 2(4) is to ensure that users of the *Site* are fully aware of important information and restrictions related to *Site* operations and access under this *Approval.*

10. The reasons for Condition 2(6) (a), (b) and (c) are open burning of municipal waste is unacceptable because of concerns with air emissions, smoke and other nuisance affects, and the potential fire hazard and to make sure burning of brush and wood are carried out in accordance

with Ministry guidelines.

11. The reasons for Condition 2(7), 2(8) and 2(9) are to specify the hours of operation for the landfill site and a mechanism for amendment of the hours of operation, as required.

12. The reasons for Condition 2(10) and 2(11) are to ensure that the *Site* is supervised by properly trained staff in a manner which does not result in a hazard or nuisance to the natural environment or any person and to ensure the controlled access and integrity of the *Site* by preventing unauthorized access when the Site is closed and no site attendant is on duty.

**EMPLOYEE TRAINING**

13. The reason for Condition 3(1) is to ensure that the *Site* is supervised and operated by properly trained staff in a manner which does not result in a hazard or nuisance to the natural environment or any person.

**COMPLAINTS RESPONSE PROCEDURE**

14. The reason for Condition 4(1) is to ensure that any complaints regarding landfill operations at this *Site* are responded to in a timely and efficient manner.

**EMERGENCY RESPONSE**

15. Conditions 5(1) and 5(2) are included to ensure that emergency situations are reported to the Ministry to ensure public health and safety and environmental protection.

16. Conditions 5(3), 5(4) and 5(5) are included to ensure that emergency situations are handled in a manner to minimize the likelihood of an adverse effect and to ensure public health and safety and environmental protection.

**RECORD KEEPING AND REPORTING**

17. The reason for Conditions 6(1) and 6(2) is to ensure that accurate waste records are maintained to ensure compliance with the conditions in this *Approval* (such as fill rate, site capacity, record keeping, annual reporting, and financial assurance requirements), the *EPA* and its regulations.

18. The reason for Conditions 6(4) and 6(5) is to ensure that detailed records of *Site* inspections are recorded and maintained for inspection and information purposes.

19. The reasons for Conditions 6(6) and 6(7) are to ensure that regular review of site development, operations and monitoring data is documented and any possible improvements to site design, operations or monitoring programs are identified. An annual report is an important tool used in reviewing site activities and for determining the effectiveness of site design.

## LANDFILL DESIGN AND DEVELOPMENT

20. The reason for Conditions 7(1) to 7(7) inclusive is to specify the approved areas from which waste may be accepted at the *Site* and the types and amounts of waste that may be accepted for disposal at the *Site,* based on the *Owner* 's application and supporting documentation.

21. Condition 7(8) is to provide the Owner the process for getting the approval for alternative daily and intermediate cover material.

22. The reasons for Condition 7(9) are to ensure that daily/weekly and intermediate cover are used to control potential nuisance effects, to facilitate vehicle access on the *Site,* and to ensure an acceptable site appearance is maintained. The proper closure of a landfill site requires the application of a final cover which is aesthetically pleasing, controls infiltration, and is suitable for the end use planned for the *Site.*

## LANDFILL MONITORING

23. Reasons for Condition 8(1) are to ensure that off-site migration of landfill gas is monitored and all buildings at the *Site* are free of any landfill gas accumulation, which due to a methane gas component may be explosive and thus create a danger to any persons at the *Site.*

24. Condition 8(2) is included to provide the groundwater and surface water limits to prevent water pollution at the *Site.*

25. Conditions 8(3) and 8(4) are included to require the Owner to demonstrate that the *Site* is performing as designed and the impacts on the natural environment are acceptable. Regular monitoring allows for the analysis of trends over time and ensures that there is an early warning of potential problems so that any necessary remedial/contingency action can be taken.

26. Conditions 8(5), 8(6) and 8(7) are included to ensure the integrity of the groundwater monitoring network so that accurate monitoring results are achieved and the natural environment is protected.

27. Conditions 8(8) to 8(11) inclusive are added to ensure the *Owner* has a plan with an organized set of procedures for identifying and responding to potential issues relating to groundwater and surface water contamination at the *Site's* compliance point.

28. Conditions 8(12), 8(13) and 8(14) are included to streamline the approval of the changes to the monitoring plan.

## CLOSURE PLAN

29. The reasons for Condition 9 are to ensure that final closure of the *Site* is completed in an aesthetically pleasing manner, in accordance with Ministry standards, and to ensure the long-term protection of the health and safety of the public and the environment.

## WASTE DIVERSION

30. Condition 10 is included to ensure that the recyclable materials are stored in their temporary storage location in a manner as to minimize a likelihood of an adverse effect or a hazard to the natural environment or any person.

## 11. COMPOSTING

31. Condition 11 was added to ensure that composting is undertaken in a manner which does not result in a nuisance or a hazard to the health and safety of the environment or people.

**Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). A273101 issued on December 17, 1980 and associated notices.**

*In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:*

1. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed

*Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.*

*The Notice should also include:*

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. The municipality or municipalities within which the project is to be engaged in

*And the Notice should be signed and dated by the appellant.*

*This Notice must be served upon:*

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

AND

The Director appointed for the purposes of
Part II.1 of the Environmental Protection Act
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 314-4506 or www.ert.gov.on.ca**

*The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.*

DATED AT TORONTO this 1st day of August, 2012

THIS APPROVAL WAS MAILED
ON August 2, 2012
(Signed)

Tesfaye Gebrezghi, P.Eng.
Director
appointed for the purposes of Part II.1 of the
*Environmental Protection Act*

RM/
c: District Manager, MOE Owen Sound
Alen Bringleson, Gamsby and Mannerow Ltd.

RECEIVED
SEP 26 2016
GM BluePlan Engineering

Ontario

Ministry of the Environment and Climate Change
Ministère de l'Environnement et de l'Action en matière de changement climatique

**AMENDMENT TO ENVIRONMENTAL COMPLIANCE APPROVAL**
NUMBER A273101
Notice No. 1
Issue Date: September 7, 2016

The Corporation of the Town of Saugeen Shores
600 Tomlinson Dr, No. P.O. Box 820
Saugeen Shores, Ontario
N0H 2C0

Site Location: Southampton Landfill Site
Part of Lot 12, Concession15 126 Concession 14
Part 1, Plan 3R6098
Saugeen Shores Town, County of Bruce
N0H 2L0

*You are hereby notified that I have amended Approval No. A273101 issued on August 1, 2012 for a Landfill and Transfer Site , as follows:*

**I. The following Condition is hereby added to this *Approval* :**

**12. PARKING LOT CONSTRUCTION**

(1) Approval is hereby granted for the construction and operation of a 55 metre by 58 metre parking lot in the clay capped region of Phase III of the Southampton Landfill *Site* , in accordance with Items 5 and 6 of Schedule "A" and subject to the terms and conditions of this *Approval* .

(2) Upon completion of the construction of the parking lot, the *Owner* shall submit to the *District Manager* a written notification and as-built drawings that construction has been completed.

**II. The following Items are hereby added to Schedule "A":**

5. Letter dated January 29, 2016 from BluePlan Engineering Limited and signed by Matthew Nelson to the Ministry of the Environment and Climate Change, including all attached information.

6. E-mail dated June 29, 2016 from Matthew Nelson, Senior Project Manager, BluePlan Engineering Limited to Maliha Tariq, Review Engineering Assistant, Ministry of the Environment and Climate Change, including all attached information.

**III. The reason for this amendment to the *Approval* is as follows:**

To permit the construction and operation of a parking lot used to alleviate traffic and parking constraints at the Southampton Landfill *Site* .

**This Notice shall constitute part of the approval issued under Approval No. A273101 dated August 1, 2012**

*In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:*

1. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

*Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.*

*The Notice should also include:*

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. The municipality or municipalities within which the project is to be engaged in.

*And the Notice should be signed and dated by the appellant.*

*This Notice must be served upon:*

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

AND

The Director appointed for the purposes of Part II.1 of the Environmental Protection Act
Ministry of the Environment and Climate Change
135 St. Clair Avenue West, 1st Floor
Toronto, Ontario
M4V 1P5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 326-5370 or www.ert.gov.on.ca**

*The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.*

DATED AT TORONTO this 7th day of September, 2016

THIS APPROVAL WAS MAILED
ON SEP 2 2 2016
(Signed)

Dale Gable, P.Eng.
Director
appointed for the purposes of Part II.1 of the
*Environmental Protection Act*

MT/

c: District Manager, MOECC Owen Sound
Matthew Nelson, GM Blue Plan Engineering Limited

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Ontario

Ministry of the Environment
Ministère de l'Environnement

**AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL**
NUMBER 0849-8L7JN9
Issue Date: November 25, 2011

The Corporation of the Town of Saugeen Shores
600 Tomlinson Dr Port Elgin
Post Office Box, No. 820
Saugeen Shores, Ontario
N0H 2C0

Site Location: Southampton Landfill Site - Stormwater Management Facility
Part of Lot 11 and Part of Lot 12S, Concession 15
Town of Saugeen Shores, County of Bruce
N0H 2L0

*You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:*

constructing a stormwater management facility at the Southampton Landfill Site to service a total drainage area of 20.2 ha designed to provide quality control for a 25 mm 4-hour durations storm event and quantity control for storm events up to 1:100 years return frequency, consisting of the following:

**INFILTRATION POND #1**

- One (1) infiltration pond located at the southwest corner of the landfill site, receiving stormwater runoff from a total drainage area of 2.5 ha including the solid waste recycling area, topsoil stockpiles, and a capped and closed portion of the landfill, designed with a basin bottom percolation area of 1400 $m^2$ providing a maximum storage capacity of 307 $m^3$ between the elevations of 217.0 m and 217.3 m, equipped with a 3.0 m wide overflow weir at an elevation of 217.2 m allowing overflows into adjacent low lying sandy lightly treed plain;

**INFILTRATION POND #2**

- One (1) infiltration pond located at the southeast corner of the landfill site, receiving stormwater runoff from a total drainage area of 2.0 ha of a capped and closed portion of the landfill, designed with a basin bottom percolation area of 700 $m^2$ providing a maximum storage capacity of 868 $m^3$ between the elevations of 220.0 m and 220.6 m, equipped with a 3.0 m wide overflow weir at an elevation of 220.6 m allowing overflows into adjacent low lying sandy plain;

**INFILTRATION POND #3**

- One (1) infiltration pond located at the northeast corner of the landfill site, to receive stormwater runoff from a total drainage area of 2.0 ha portion of the landfill which will be land-filled and capped in the future, designed with a basin bottom percolation area of 450 $m^2$ providing a maximum storage capacity of 447 $m^3$ between the elevations of 216.0 m and 216.6 m, equipped with a 3.0 m wide overflow weir at an elevation of 216.6 m allowing overflows into adjacent low lying sandy plain;

**STORMWATER MANAGEMENT WETLAND "A"**

- One (1) stormwater management wetland located at north corner of the landfill site, receiving stormwater runoff from a total drainage area of 7.5 ha consisting of the central and northeast portions of the landfill site, providing a permanent storage volume of 891 $m^3$ and an active storage capacity of 1,082 $m^3$, equipped with a 100 m long constructed conveyance ditch, a **relocated** outlet structure consisting of a 5 m long 150 mm diameter PVC pipe at

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2.0% horizontal slope equipped with a 50 mm diameter orifice plate and a 3.0 m wide emergency overflow weir at 215.73 m masl elevation, both located at the northwest corner of the stormwater management wetland, both discharging through an approximately 15.0 long swale with 3H:1V side slopes into a low lying swampy area owned by the Owner and eventually into the Saugeen River; and

- including all associated controls and appurtenances.

all in accordance with the Application for Approval of Municipal and Private Sewage Works submitted by the Town of Saugeen Shores dated March 7, 2003, and design specifications and drawings prepared by Stantec Consulting Ltd., Kitchener, Ontario, included in following document:

1. "Southampton Waste Disposal Site - Stormwater Management Plan -Draft" prepared by Stantec Consulting Ltd., July 2000.

AND

all in accordance with the Application for Approval of Sewage Works submitted by the Town of Saugeen Shores dated July 7, 2011, and design specifications and drawings prepared by Gamsby and Mannerow Limited, Owen Sound, Ontario.

*For the purpose of this environmental compliance approval, the following definitions apply:*

"*Act*" means the Ontario Water Resources Act, R.S.O. 1990, Chapter 0.40, as amended;

"*Approval*" means this Environmental Compliance Approval and any Schedules attached to it, including the application and supporting documentation listed in Schedule "A".

"*Daily Concentration*" means the concentration of a contaminant in the effluent discharged over any single day, as measured by a composite or grab sample, whichever is required;

"*Director*" means any *Ministry* employee appointed by the Minister pursuant to section 5 of the *Act*;

"*District Manager*" means the District Manager of the Barrie District Office of the Ministry;

"*Ministry*" means the Ontario Ministry of the Environment;

"*Owner*" means The Town of Saugeen Shores and includes its successors and assignees;

*"Previous Works*" means those portions of the sewage works previously constructed and approved under an *Approval*;

*"Proposed Works*" means the sewage works described in the *Owner*'s application, this *Approval* and in the supporting documentation referred to herein, to the extent approved by this *Approval*;

"*Regional Director*" means the Regional Director of the Southwestern Region of the Ministry;

"*Works*" means the sewage works described in the *Owner*'s application, this *Approval* and in the supporting documentation referred to herein, to the extent approved by this *Approval* and includes both *Previous Works* and *Proposed Works*.

*You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:*

**TERMS AND CONDITIONS**

1. GENERAL PROVISIONS

(1) The *Owner* shall ensure that any person authorized to carry out work on or operate any aspect of the *Works* is notified of this *Approval* and the conditions herein and shall take all reasonable measures to ensure any such person complies with

the same.

(2) Except as otherwise provided by these Conditions, the *Owner* shall design, build, install, operate and maintain the *Works* in accordance with the description given in this *Approval*, the application for approval of the works and the submitted supporting documents and plans and specifications as listed in this *Approval*.

(3) Where there is a conflict between a provision of any submitted document referred to in this *Approval* and the Conditions of this *Approval*, the Conditions in this *Approval* shall take precedence, and where there is a conflict between the listed submitted documents, the document bearing the most recent date shall prevail.

(4) Where there is a conflict between the listed submitted documents, and the application, the application shall take precedence unless it is clear that the purpose of the document was to amend the application.

(5) The requirements of this *Approval* are severable. If any requirement of this *Approval*, or the application of any requirement of this *Approval* to any circumstance, is held invalid or unenforceable, the application of such requirement to other circumstances and the remainder of this Approval shall not be affected thereby.

2. EXPIRY OF APPROVAL

The approval issued by this *Approval* will cease to apply to those parts of the *Works* which have not been constructed within five (5) years of the date of this *Approval*.

3. CHANGE OF OWNER

(1) The *Owner* shall notify the *District Manager* and the *Director*, in writing, of any of the following changes within 30 days of the change occurring:

(a) change of *Owner*;

(b) change of address of the *Owner*;

(c) change of partners where the *Owner* is or at any time becomes a partnership, and a copy of the most recent declaration filed under the Business Names Act, R.S.O. 1990, c.B17 shall be included in the notification to the *District Manager*;

(d) change of name of the corporation where the *Owner* is or at any time becomes a corporation, and a copy of the most current information filed under the Corporations Information Act, R.S.O. 1990, c. C39 shall be included in the notification to the *District Manager*;

(2) In the event of any change in ownership of the *Works*, other than a change to a successor municipality, the *Owner* shall notify in writing the succeeding owner of the existence of this *Approval*, and a copy of such notice shall be forwarded to the *District Manager* and the *Director*.

4. OPERATION AND MAINTENANCE

(1) The Owner shall make all necessary investigations, take all necessary steps and obtain all necessary approvals so as to ensure that the physical structure, siting and operations of the stormwater works do not constitute a safety or health hazard to the general public.

(2) The Owner shall ensure that sediment and excessive decaying vegetation are removed from the above noted stormwater management system **on as required basis** to prevent the excessive build-up of sediment and/or decaying vegetation in the works.

5. EFFLUENT MONITORING AND RECORDING

The *Owner* shall, upon commencement of operation of the *Works*, carry out the following monitoring program:

(1) All samples and measurements taken for the purposes of this *Approval* are to be taken at a time and in a location characteristic of the quality and quantity of the effluent stream over the time period being monitored.

(2) The Owner shall ensure that grab samples are collected from all stormwater management *Works* (**Infiltration Ponds #1, #2, and #3,** and **Stormwater Management Wetland "A") at a semi-annual frequency** ( spring and fall) and analyzed for the parameters listed in Table 1:

| **Table 1** | | |
|---|---|---|
| **Monitoring Parameter** | | **Field Monitoring Parameter** |
| Alkalinity | Total (Ammonium + Ammonia) N | Conductivity |
| Arsenic | Total Kjeldahl Nitrogen (TKN) | Dissolved Oxygen (DO) |
| Barium | Total Phosphorus | pH |
| Boron | Total Suspended Solids | Temperature |
| Biological Oxygen Demand (BOD5) | Total Dissolved Solids | |
| Cadmium | Total Phenols | |
| Chemical Oxygen Demand (COD) | Zinc | |
| Chloride | | |
| Chromium | | |
| Conductivity (Laboratory) | | |
| Copper | | |
| Iron | | |
| Lead | | |
| Mercury | | |
| Nitrate as Nitrogen | | |
| Nitrite as Nitrogen | | |
| pH (Laboratory) | | |
| Sulphate | | |

(3) The methods and protocols for sampling, analysis and recording shall conform, in order of precedence, to the methods and protocols specified in the following:

(a) the Ministry's Procedure F-10-1, “Procedures for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works (Liquid Waste Streams Only), as amended from time to time by more recently published editions;

(b) the Ministry's publication "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater" (January 1999), ISBN 0-7778-1880-9, as amended from time to time by more recently published editions;

(c) the publication "Standard Methods for the Examination of Water and Wastewater" (21st edition), as amended from time to time by more recently published editions;

(4) Following review of any of the analytical results required by Condition 5 or any of the reports required by Condition 6 of this *Approval*, the *District Manager* may alter the frequencies and locations of sampling and parameters for analysis required by Condition 5 (2) if he/she considers it necessary for proper assessment of the operation of the works and its impact on the environment of if he/she is requested to do so by the *Owner* and considers it acceptable by the evidence of information submitted is support of the request.

(5) The *Owner* shall retain for a minimum of three (3) years from the date of their creation, all records and information related to or resulting from the monitoring activities required by this *Approval*.

CONTENT COPY OF ORIGINAL

6. REPORTING

(1) The *Owner* shall, upon request, make all manuals, plans, records, data, procedures and supporting documentation available to *Ministry* staff.

(2) The *Owner* shall prepare, and upon request submit to the *District Manager,* a performance report, on an annual basis, within ninety (90) days following the end of the period being reported upon. The first such report shall cover the first annual period following the commencement of operation of the *Works* and subsequent reports shall be submitted to cover successive annual periods following thereafter. The reports shall contain, but shall not be limited to, the following information:

(a) a tabulation of all monitoring and analytical results obtained during the reporting period, including sampling/monitoring locations and dates;

(b) a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming a part of the works;

(c) an account of any environmental and operating problems encountered at the site of the sewage works and the mitigative measures taken during the reporting period;

*The reasons for the imposition of these terms and conditions are as follows:*

1. Condition 1 is imposed to ensure that the *Works* are built and operated in the manner in which they were described for review and upon which approval was granted. This condition is also included to emphasize the precedence of Conditions in the *Approval* and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review. The condition also advises the Owners their responsibility to notify any person they authorized to carry out work pursuant to this *Approval* the existence of this *Approval*.

2. Condition 2 is included to ensure that, when the *Works* are constructed, the *Works* will meet the standards that apply at the time of construction to ensure the ongoing protection of the environment.

3. Condition 3 is included to ensure that the *Ministry* records are kept accurate and current with respect to the approved works and to ensure that subsequent owners of the *Works* are made aware of the *Approval* and continue to operate the *Works* in compliance with it.

4. Condition 4 is included to require that the *Works* be properly operated, maintained, funded, staffed and equipped such that the environment is protected and deterioration, loss, injury or damage to any person or property is prevented. Regular removal of sediment and excessive decaying vegetation from this approved stormwater management system are required to mitigate the impact of sediment and/or decaying vegetation on the performance of the works. It is also required to ensure that adequate storage is maintained in the stormwater management facilities at all times as required by the design.

5. Condition 5 is included to enable the *Owner* to evaluate and demonstrate the performance of the *Works*, on a continual basis, so that the *Works* are properly operated and maintained at a level which is consistent with the terms and conditions specified in the *Approval* and that the *Works* does not cause any impairment to the receiving watercourse.

6. Condition 6 is included to provide a performance record for future references, to ensure that the *Ministry* is made aware of problems as they arise, and to provide a compliance record for all the terms and conditions outlined in this *Approval,* so that the *Ministry* can work with the *Owner* in resolving any problems in a timely manner.

**Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 7416-5LEHYJ issued on June 6, 2003**

*In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142*

**CONTENT COPY OF ORIGINAL**

*of the Environmental Protection Act provides that the Notice requiring the hearing shall state:*

1. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

*Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.*

*The Notice should also include:*

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. The municipality or municipalities within which the project is to be engaged in.

*And the Notice should be signed and dated by the appellant.*

*This Notice must be served upon:*

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

AND

The Director appointed for the purposes of Part II.1 of the Environmental Protection Act
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 314-4506 or www.ert.gov.on.ca**

*The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.*

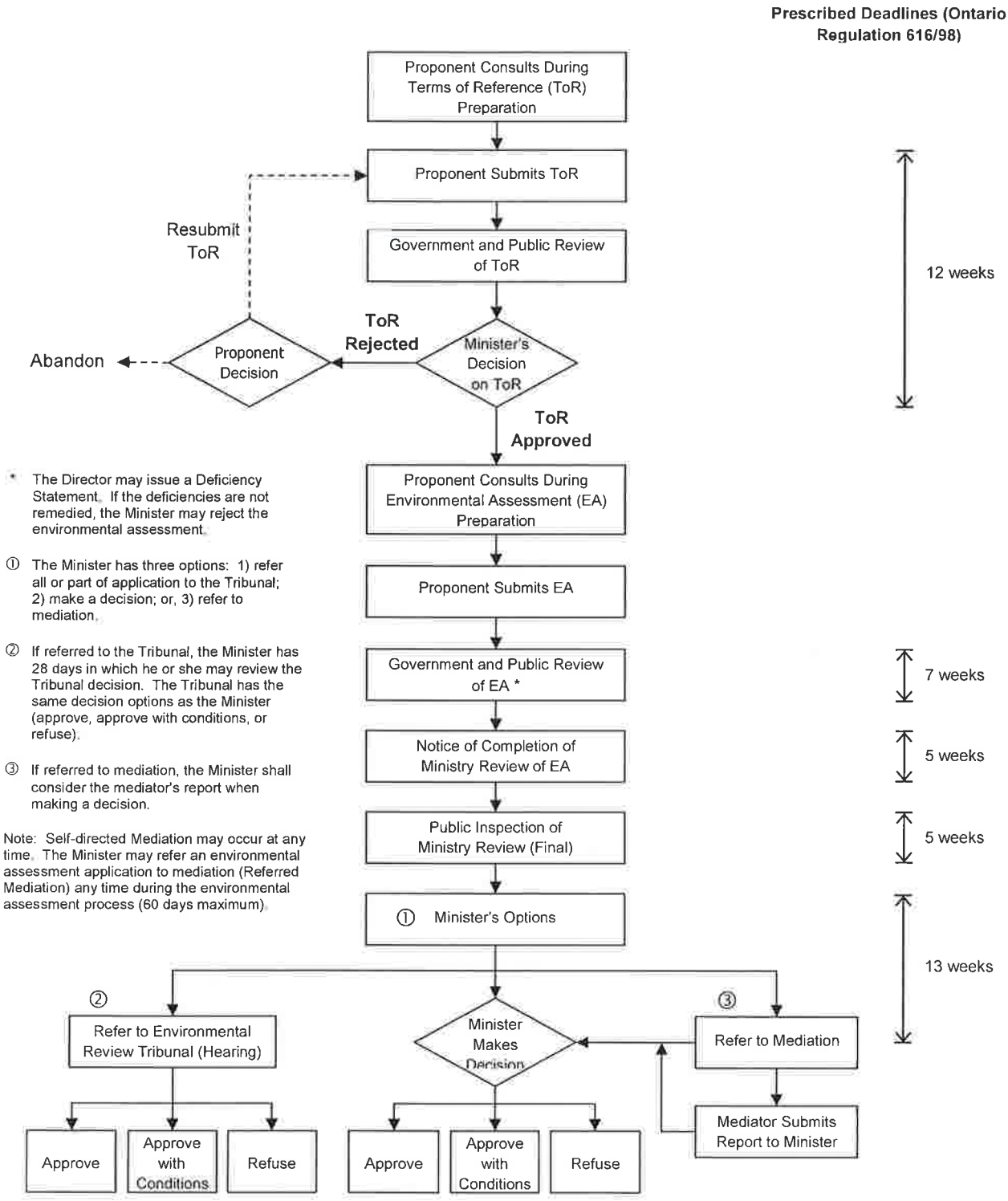
DATED AT TORONTO this 25th day of November, 2011

Ian Parrott, P.Eng.
Director
appointed for the purposes of Part II.1 of the
*Environmental Protection Act*

SH/
c: District Manager, MOE Owen Sound
Matthew Nelson, M.Sc. P.Geo., P.Eng., Gamsby and Mannerow Limited

# APPENDIX C:
# TERMS OF REFERENCE AND EA PROCESS SCHEMATICS

# Appendix A Environmental Assessment Process Timelines



# APPENDIX D:
# PRESENTATION TO COUNCIL

# LONG-TERM WASTE MANAGEMENT PLAN

## TOWN OF SAUGEEN SHORES

### Presentation to Council

August 2020



# OUTLINE

1. Purpose
2. Policy
3. Current System and Performance
4. Diversion Options
5. Landfill Sites: Capacity and Operations
6. Residual Waste Management
7. Summary of Recommendations

# PURPOSE

To provide a ‘holistic’ approach to the Town’s waste management program to support both short-term and long-term waste management planning.



Southampton Landfill: Entrance



Port Elgin Closed Landfill

# EVALUATION

1. Assess the Town's current system and performance.
2. Identify and assess alternative diversion approaches for consideration towards achieving Provincial targets.
3. Review the technical merits of each of the proposed alternative waste collection and diversion strategies, and recommend additional diversion opportunities.
4. Evaluate residual waste disposal options.
5. Provide a list of suitable diversion and disposal options for selection by the Town in consideration of their goals and financial commitments.

# POLICY

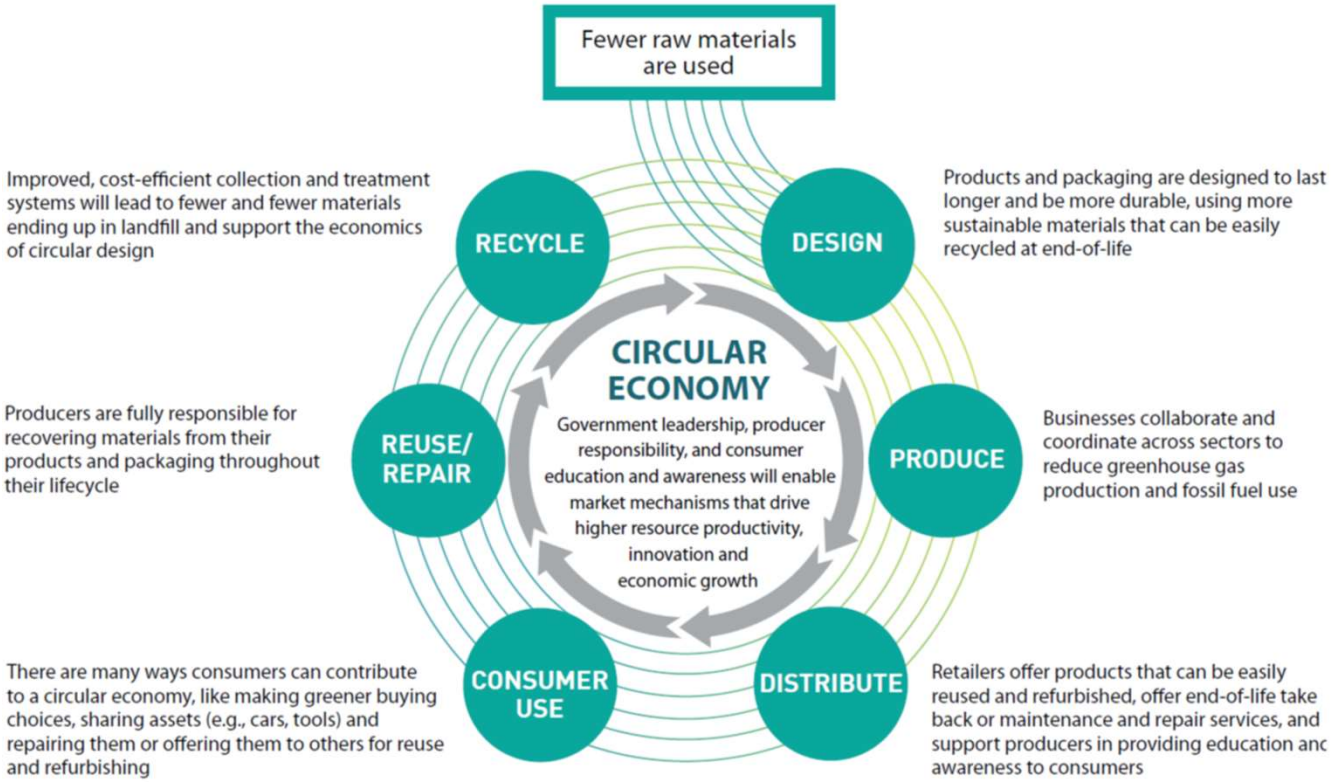
## Provincial Diversion Targets

30% by 2020
50% by 2030
80% by 2050

- Town Responsibility: Residential solid waste management, with little direction from the Province.
- Provincial Policies are in place for:
  - Blue Box Materials
  - Waste Electrical and Electronic Equipment (WEEE)
  - Composting (i.e. Organics)
  - Municipal Hazardous or Special Waste (MHSW)
  - Used Tires
- Town Initiatives: Scrap Metal, Mattresses, Fluorescent Bulbs and Film Plastics
- County: Orange Drop Program (MHSW)

# WASTE-FREE ONTARIO ACT (2016)

*'Ontario is shifting from a linear economy to a circular economy. In a linear economy, natural resources are extracted, manufactured into products, consumed and then thrown away. In a circular economy, products and packaging are designed to minimize waste and then be recovered, reused, recycled and reintegrated back into production'.*



# KEY COMPONENTS: WASTE-FREE ONT.

## 1. Individual Producer Responsibility (IPR):

- Producer responsibility to extend through the products life-cycle
- Transition of existing programs:
  - Used Tires: Occurred in January 2019
  - Waste Electrical and Electronic Equipment (WEEE): December 2020
  - Municipal Hazardous or Special Waste (MHSW): June 2021
  - Blue Box: 2023-2025 (Estimated)

## 2. Food and Organic Waste Action Plan:

- Organics reportedly comprise one-third of Ontario's waste
- Reduce the volume of organics going to the landfill
- Province has committed to eventually banning food waste from disposal. Details and timing are unknown.

Provincial waste management strategies are in a dynamic state

It is important that the Town stay abreast of new regulations and guidelines as they are implemented

# CURRENT SYSTEM AND PERFORMANCE

# COMMUNITY PROFILE

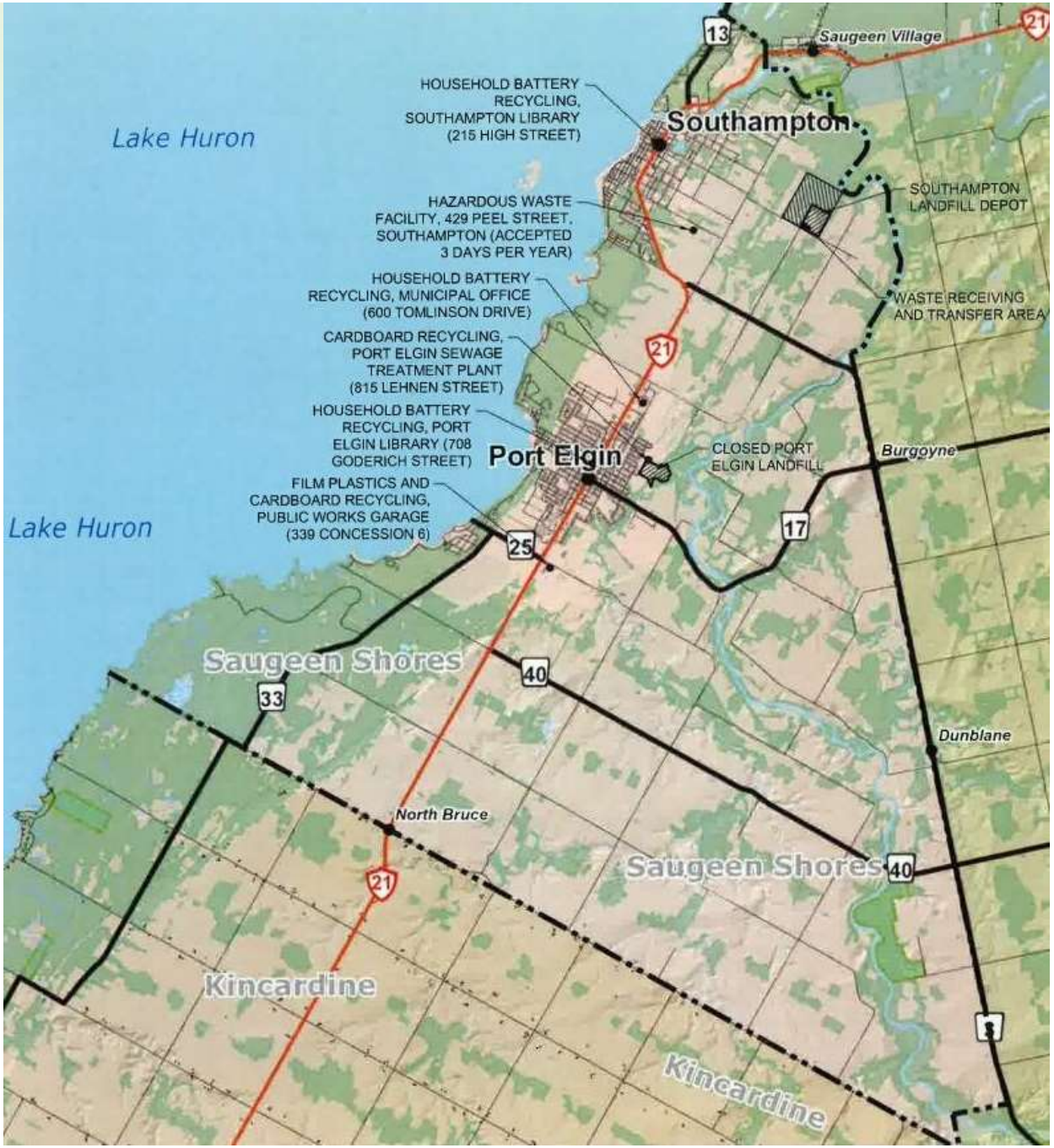
(Statistics Canada 2016 and DFA, 2020)

Area: 171 km$^2$

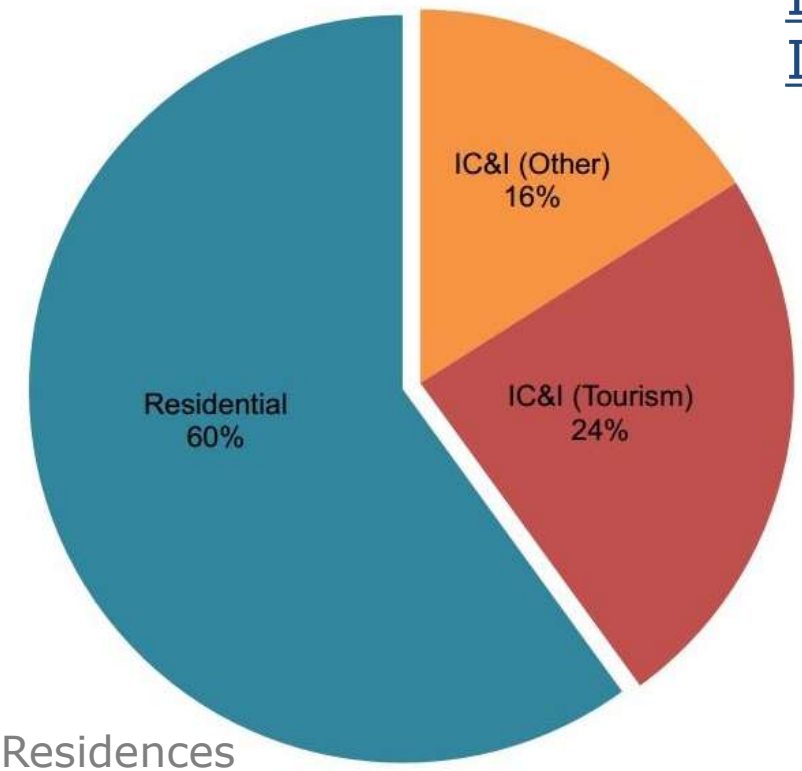
Population (DFA, 2020):

16,600 Persons

Households
Private: 7,655
Permanent: 6,025
Seasonal: 1,630



# WASTE GENERATION SOURCES




## Industrial, Commercial & Institutional (IC&I)

- Businesses
- Public Services (such as Schools, Hospitals etc.)
- Tourism Industry: Campgrounds, cottages, hotels, and associated services (i.e. restaurants)

## Residential

- Permanent Residences
- Agricultural Properties
- Transient: Seasonal Residences (Cottages)

# MAIN DATA SOURCES

## Resource Productivity and Recovery Authority (RPRA):

- Compilation of waste generation and diversion tonnages for each Municipality in Ontario
- Allowances for deposit containers and on-property organics
- Data from 2014-2017

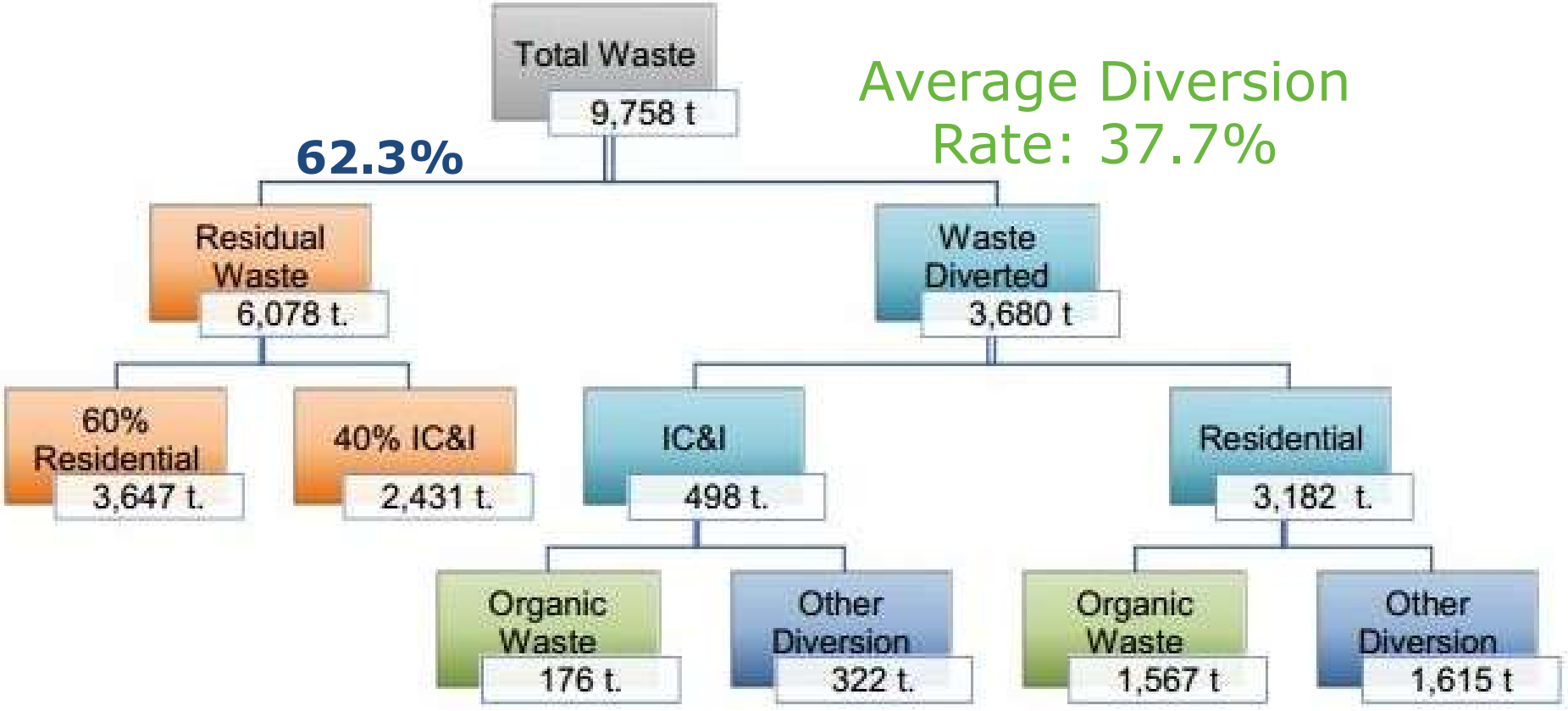
## Town's Yearly Disposal Records (2014-2019):

- Summary of waste received at the Southampton Landfill
- Organizes information by material type and quantity (tonnage and units, where applicable)

## Other (2014-2019):

- Bruce Area Solid Waste Recycling (Blue Box)
- County of Bruce (MHSW)

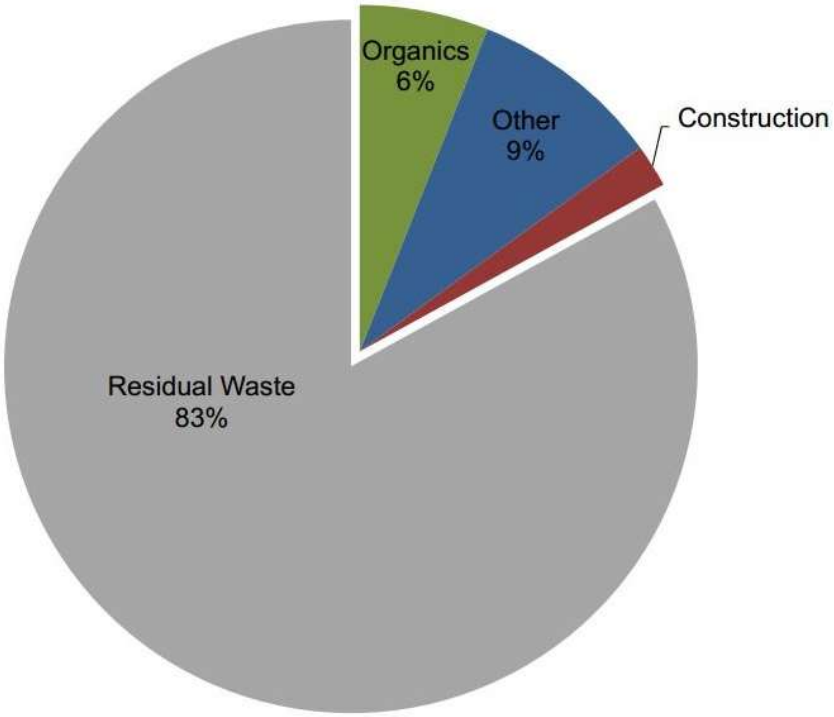
# RESIDUAL WASTE: GENERATION AND DIVERSION ESTIMATES



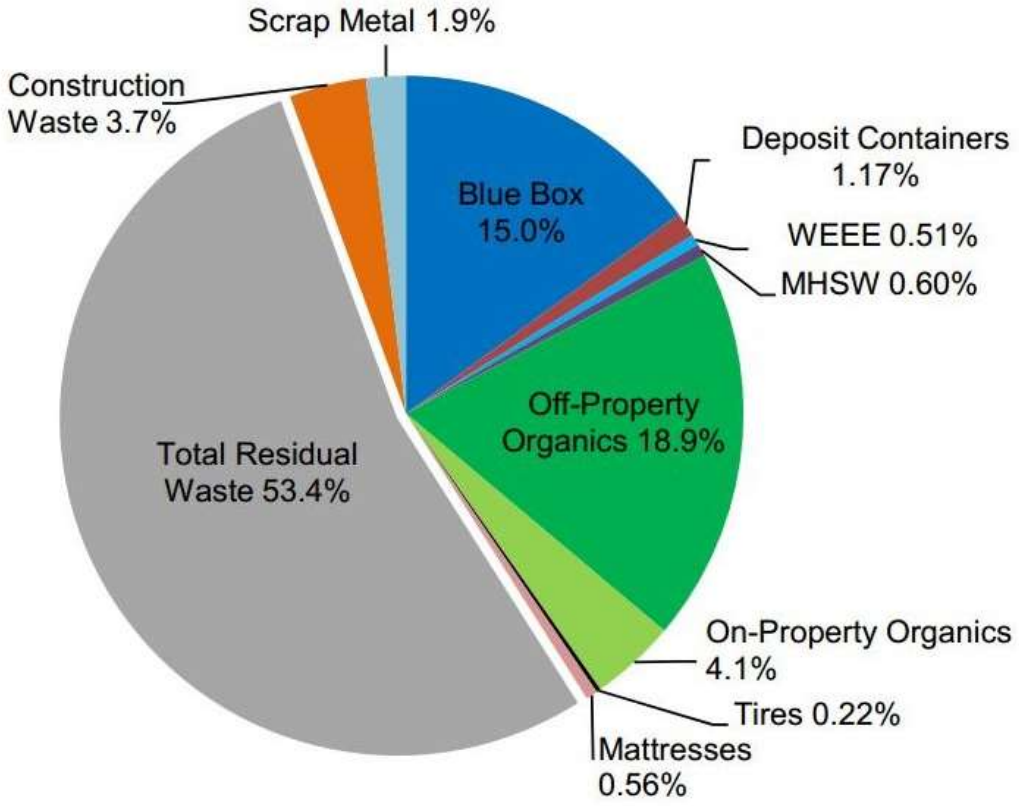
# AVERAGE WASTE COMPOSITION

## IC&I

(Based on Discussion Paper [2019]: MECP ERO#013-4689)

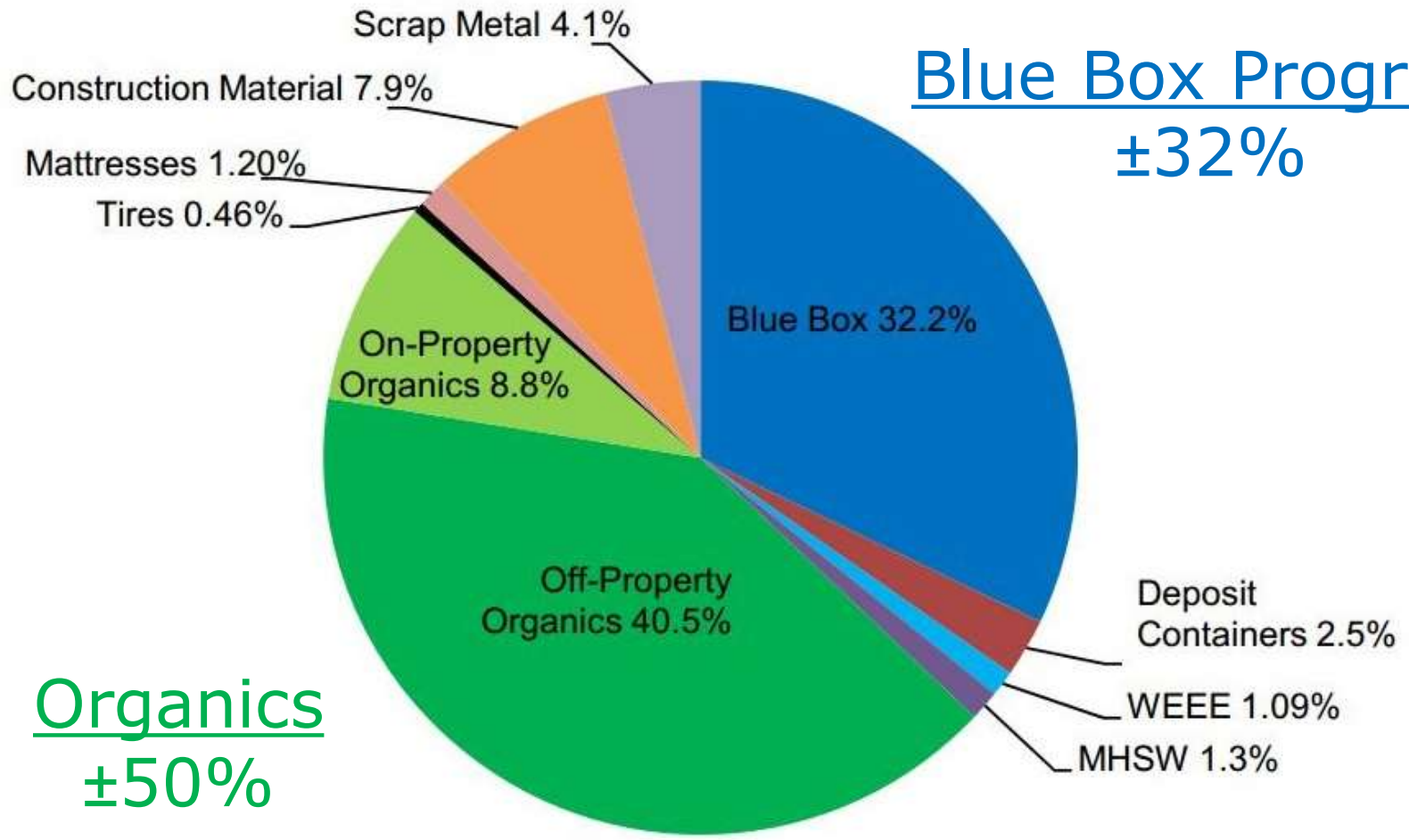



## Residential




Residential Diversion Rate (estimate) = 46.6%

# COMPOSITION OF MATERIALS DIVERTED

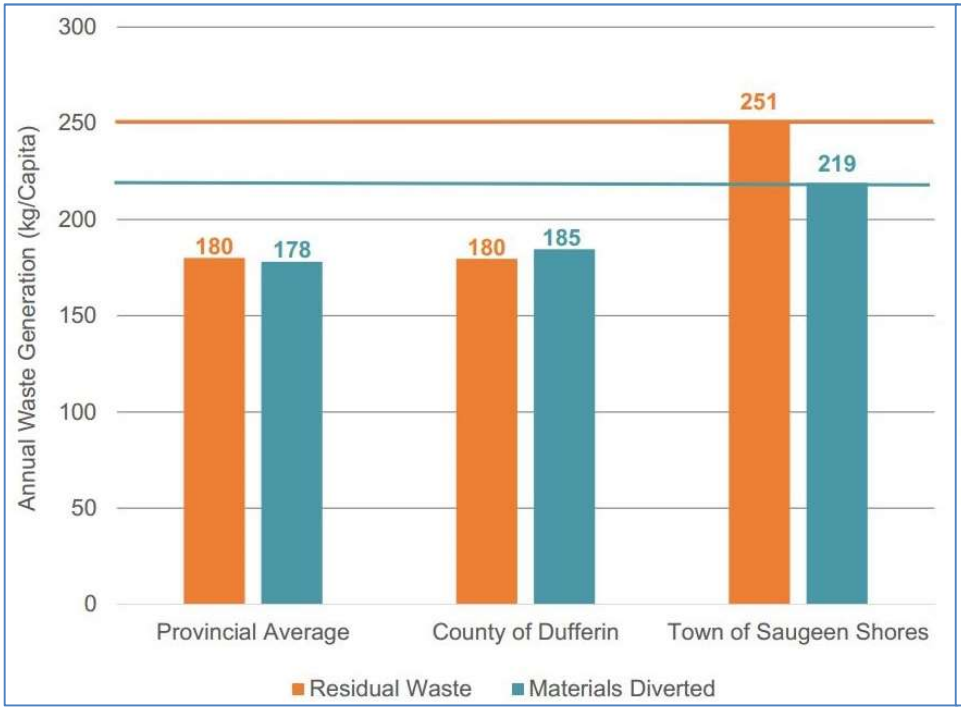



Blue Box Program
±32%

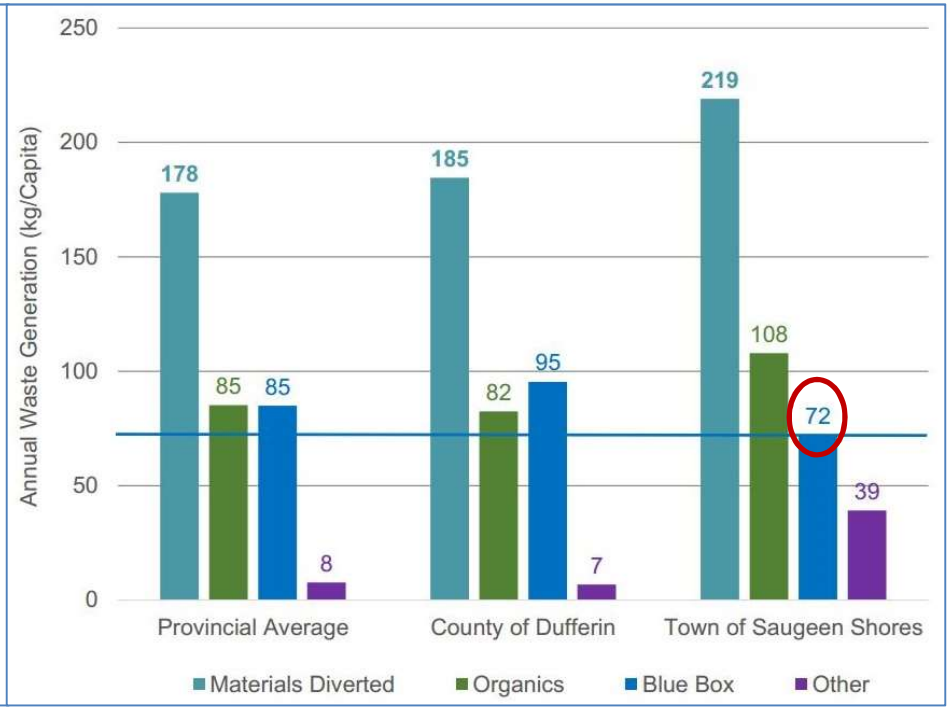
Organics
±50%

# DIVERSION PERFORMANCE COMPARISON

## Residential Waste Disposal (kg/capita): Residual Waste and Diverted Materials




## Municipal Diversion Performance Comparison




Organics diversion is Greater than in other Municipalities

A blue box target of 80 kg/capita, which is in the range of the provincial average, could increase the Town's residential diversion rate by ±1.5 to 2%

# DIVERSION OPTIONS

# RECYCLING OPPORTUNITIES

## RESIDENTIAL BLUE BOX

- Cardboard collection service: within blue bin or monthly
- Enhancement of recycling depots
- Provision for free blue boxes
- Adjust curbside waste collection schedule: Curbside collection of blue box materials and residual waste should occur at the same frequency

## IC&I BLUE BOX

- Offer large disposal bins to campgrounds and businesses, where appropriate
- Provide an increased level of service, aimed at the tourism industry, during the peak season

## OTHER:

Continue to implement additional diversion streams as they become available.

# ORGANICS DIVERSION

## BACKYARD COMPOSTERS/DIGESTERS

- Town currently provides Composters and Digester at Cost. Subsidizing these units could be considered.
- Recent promotion of Green Cone Digesters:
  - ✓ Alternative way to promote backyard composting that avoids animals
  - ✓ Capable of handling the full spectrum of kitchen waste
  - ✓ Can manage up to an estimated 10 pounds weekly

## ORGANICS DIVERSION ALTERNATIVE

Green Cone Digester
(kitchen waste)



+

Traditional Composter
(yard waste)



# ORGANICS DIVERSION (Cont.)

## DIVERSION OF OTHER ORGANICS

- Maintain the leaf and yard waste drop-off site
- Continue to stockpile brush and stumps separately
- Additional Opportunity: Leaf and yard waste pick-up service

## GREEN BIN PROGRAM: Source Separated Organics

- Has the potential to significantly reduce waste disposal in landfills
- Costs are estimated to be greater than $400 per tonne or greater than $35 per household.
- In rural municipalities, a significant proportion of the costs are associated with collection and transportation

Although a Green Bin program will eventually be necessary, at this time it is recommended that the Town continue or AUGMENT the existing organics diversion programs.

# WASTE REUSE/REDUCTION

## Residual Waste Reduction

- Maintain the pay-per-use fee system
- Implement a bag limit (i.e. 2 bags per week)
- Consider a clear bag policy (with 'privacy' bag)
- Review and update the tipping fee schedule:
  - Implement the 2 bag limit
  - Maintain the minimum tipping fee of $10
  - Increase the tipping fees, as needed

## Re-Use Opportunities

- Maintain and promote re-use opportunities
- Provide clothing bins at landfill and throughout community

# EDUCATION, PROMOTION and ENFORCEMENT

1. Use of Town website and other web-based media.
2. Maintain distribution of Environmental Calendar, which includes updates and information on existing and new programs.
3. IC&I Outreach and Collaboration: Development of partnerships with campgrounds, tourist offices and businesses to evaluate and implement strategies to improve IC&I waste diversion.
4. Success of waste diversion program relies on community compliance (and commitment). The use of Policies and By-Laws can be effective provided they can be enforced.

Sustained education and promotion is known to contribute to the success of waste diversion programs.

# LANDFILL SITES
# CAPACITY AND OPERATIONS

# EXISTING LANDFILL SITE

## SOUTHAMPTON LANDFILL

- Remaining Site Life:
  10 to 12 years (± early 2032)
- Additional Development = 'Expansion', subject to EAA Process (i.e. public and agency consultation)
- Hydrogeological Investigations would be required to assess the suitability of the area to support landfill development.



# OPTIMIZE LANDFILL OPERATIONS

## GOAL: TO CAPITALIZE ON THE TOWN'S RELATIVELY LOW WASTE MANAGEMENT COSTS



# OPTIMIZE LANDFILL OPERATIONS

## 1. FRONT-END IMPROVEMENTS

- Construct an improved 'Waste Receiving and Transfer Area' at the Southampton Landfill.
- This initiative would involve preparation of design drawings and an Amendment to the Approval.



## 2. UNDERSTANDING EXISTING OPERATIONS

- Confirm the Planning Period: Completion of routine surveys to confirm the remaining capacity and site life.
- Consider completing a waste diversion audit.

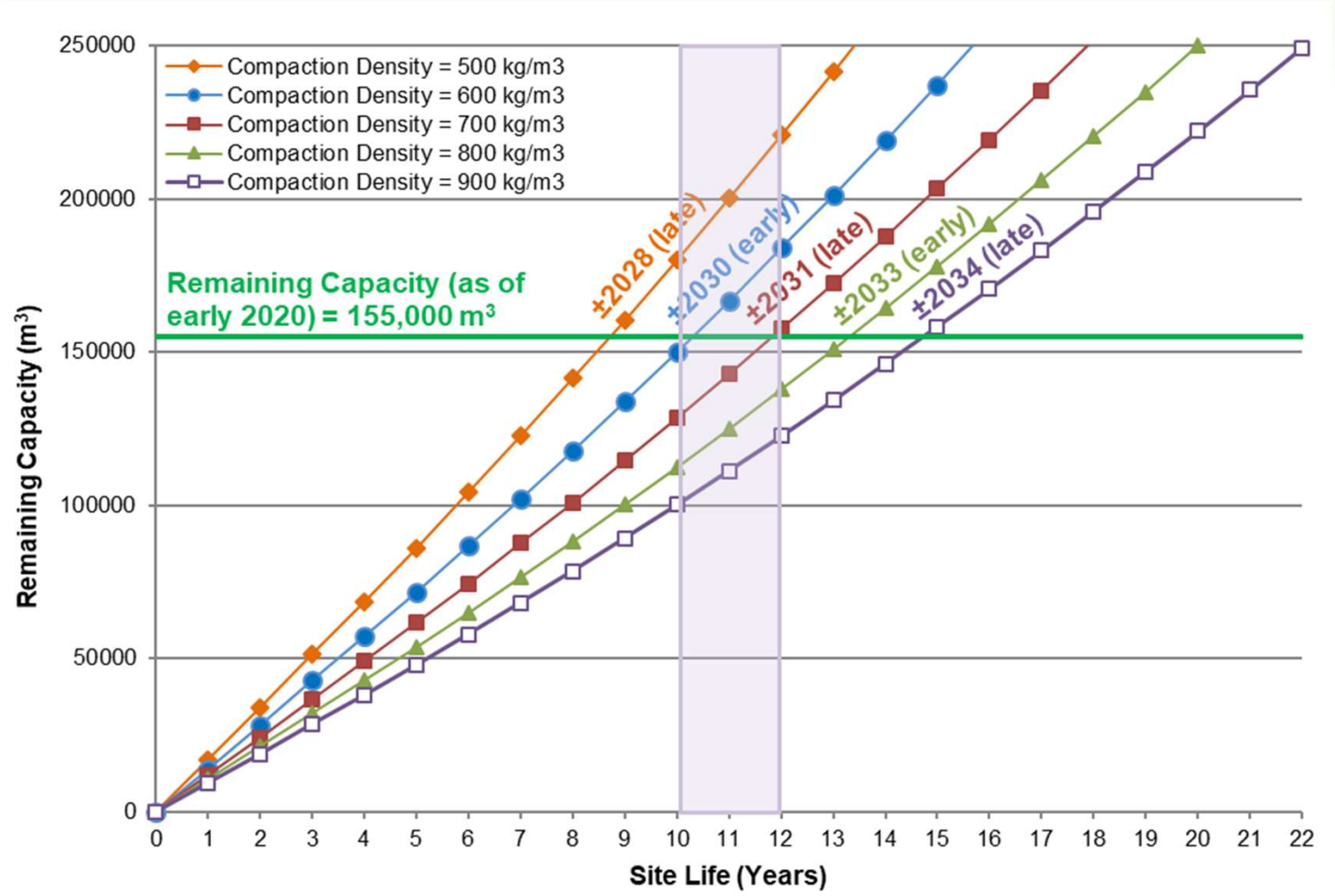
## 3. LANDFILL COMPACTION

Because approvals are based on airspace volume (i.e. cubic meters of waste)

**Increased COMPACTION = Increased SITE LIFE**

(i.e. greater mass of waste within a given volume)

# LANDFILL COMPACTION IMPLICATIONS




Note: Increased Site Life accounted for by increased compaction does not include additional waste diversion initiatives.

# RESIDUAL WASTE MANAGEMENT

# SHORT to MEDIUM TERM

## SOUTHAMPTON LANDFILL: MAXIMIZE CAPACITY

- Implement improvements to site controls and operational practices
- Maximize the success of the existing waste diversion programs
- Continue to initiate additional waste diversion strategies, as they become available

# LONG-TERM DISPOSAL OPTIONS

## CONTINUED USE OF EXISTING LANDFILL

- Most 'secure' waste management option
- No partnerships or reliance on a third-party would be involved
- Landfill 'expansion' would require the completion of an EAA Process (i.e. extensive public and agency consultation)
- There is a level of uncertainty associated with the ultimate approval of landfill 'expansion'
- Does not take advantage of 'economies of scale'
- Planning period = 5  to 10 years (or more)

# LONG-TERM DISPOSAL OPTIONS

## PARTNERSHIP (NEW or EXPANDING LANDFILL)

- Negotiations are time consuming and not guaranteed to be successful
- Opportunities may exist with local municipalities, particularly those in a similar position (i.e. capacity)
- Can take advantage of the economy of scale
- In general, a larger scale operation is a more efficient way to meet guidelines and targets
- Planning Period = 5 to 10 years (post negotiations)

# LONG-TERM DISPOSAL OPTIONS

## THERMAL AND INCINERATION

- High capital and operational costs
- Requires high volumes of waste to be economically feasible
- Not considered applicable at this time

## THIRD-PARTY SYSTEM

- Most certain and feasible, with least effort
- Least control: Waste acceptance and $$$$
- Could be used as a short-term solution, pending approvals and construction required for Town's selected long-term waste management alternative

# SUMMARY OF RECOMMENDATIONS

# WASTE DIVERSION

## ANNUALLY

- Review and evaluate waste collection and diversion programs
- Explore additional waste diversion options and incentive programs
- Update promotional materials and educational programs
- Train key program and landfill staff

## SHORT-TERM

- Implement an equivalent curbside pick-up service: 
- Maintain the pay-per-use system and consider a bag limit
- Update tipping fee schedule
- Consider the implementation of a clear-bag policy
- Explore and promote re-use opportunities
- Explore opportunities to improve IC&I waste diversion

## LONG TERM

- Evaluate source separated organics (SSO) collection system

# RESIDUAL WASTE

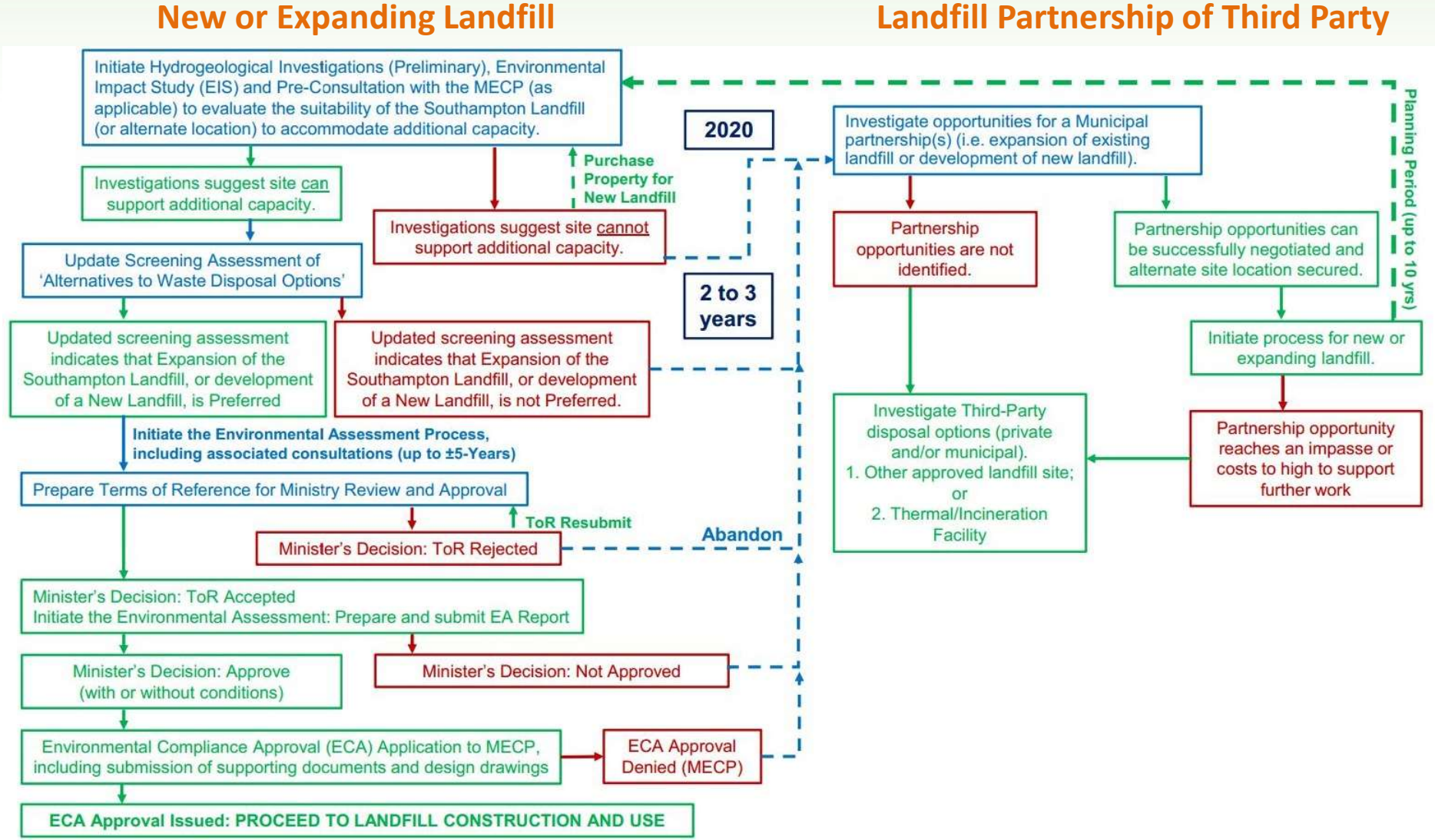
## SHORT-TERM

- Initiate planning of an improved waste receiving and transfer area (Design and Drawings)
- Confirm Town's preferred long-term residual waste management strategy and initiate planning, studies and/or negotiations.

## WITHIN 2 YEARS

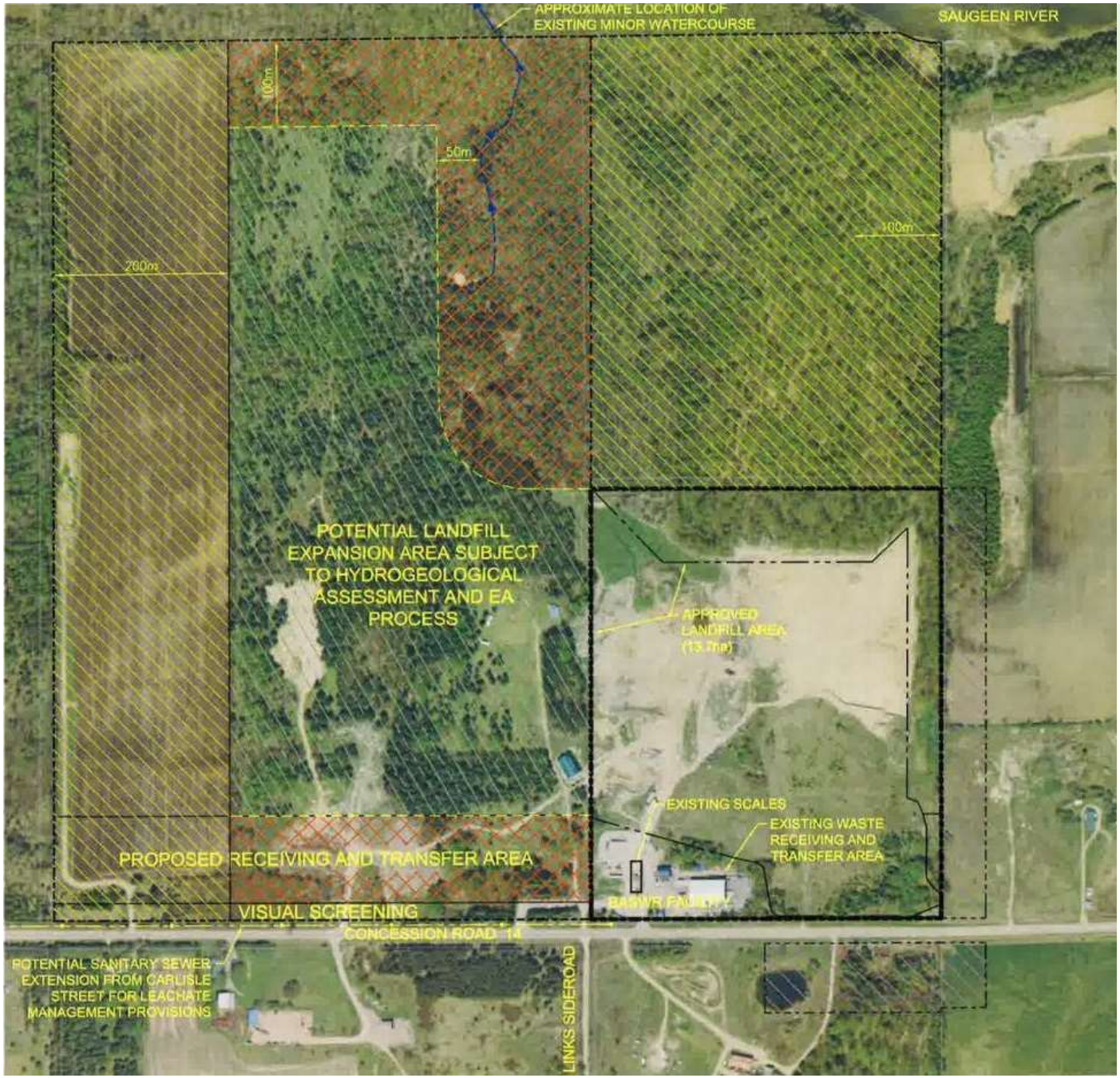
- Complete construction of waste receiving and transfer area
- Continue to evaluate Post-Closure residual waste disposal options

# LONG-TERM RESIDUAL WASTE MANAGEMENT SCHEMATIC



# MONITORING & CONTINUAL IMPROVEMENT

1. Monitor the waste diversion programs and results to compare benchmarks to targets/goals.
2. Stay abreast of waste diversion and disposal options and opportunities, including those with neighboring communities.
3. Periodically complete more detailed topographic surveys of the Southampton Landfill to update the Site Life estimates and provide the needed accuracy to ensure a sufficient planning period remains for future residual waste management.




# WASTE RECEIVING AND TRANSFER AREA

# WASTE RECEIVING AND TRANSFER AREA

